PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation

District 1

SR 45 (US 41) at Bonita Beach Road Project Development and Environment (PD&E) Study

Lee County, Florida

Financial Management Number: 444321-1-22-01

ETDM Number: 6291

July 2025

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

PROFESSIONAL ENGINEER CERTIFICATION

PRELIMINARY ENGINEERING REPORT

Project: SR 45 (US 41) at Bonita Beach Road Project Development and Environment (PD&E) Study

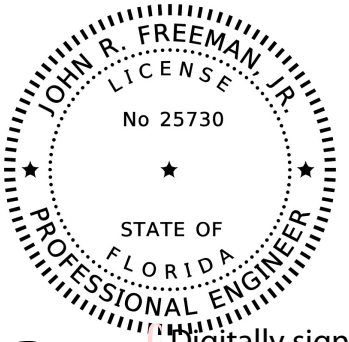
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Financial Project ID: 444321-1-22-01

Federal Aid Project Number: D123-081-B

This preliminary engineering report contains engineering information that fulfills the purpose and need for the SR 45 (US 41) at Bonita Beach Road Project Development & Environment Study in Lee County, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.

I hereby certify that I am a registered professional engineer in the State of Florida practicing with Kittelson & Associates, Inc., and that I have prepared or approved the evaluation, findings, opinions, conclusions or technical advice for this project.



John R Freeman Jr

Digitally signed by John R Freeman Jr
Date: 2025.07.22 16:16:08 -04'00'

This item has been digitally signed and sealed by *John R. Freeman, Jr., P.E.,* on the date adjacent to the seal.

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LIST OF ACRONYMS

AADT.....Annual Average Daily Traffic
ADT.....Average Daily Traffic
AE.....Authorized Engineer
AI..... Artificial Intelligence
APE..... Area of Potential Effect
BEBR.....Bureau of Economic and Business Research
BERT..... Bonita Estero Rail Trail
BFE..... Base Flood Elevation
BGEPA.....Bald and Golden Eagle Protection Act
BMP..... Best Management Practices
BWG..... Business Working Group
CA..... Consultation Area
CBC.....Concrete Box Culvert
CD..... Cross Drains
CEI.....Construction Engineering and Inspection
CFA.....Core Foraging Area
CRAS.....Cultural Resource Assessment Survey
CSER..... Contamination Screening Evaluation Report
DO.....Dissolved Oxygen
ECOS.....Environmental Council of the States
ETDM.....Efficient Transportation Decision Making
FAC.....Florida Administrative Code
FDACS..... Florida Department of Agriculture and Consumer Services
FDEP..... Florida Department of Environmental Protection
FDM..... FDOT Design Manual
FDOT..... Florida Department of Transportation
FEMA.....Federal Emergency Management Agency
FHWA..... Federal Highway Administration

FIRM ..... Flood Insurance Rate Map
FIS..... Flood Insurance Study
FLUCFS ..... Florida Land Use, Cover and Forms Classification System
FMSF ..... Florida Master Site File
FNAI ..... Florida Natural Areas Inventory
FWC ..... Florida Fish and Wildlife Conservation Commission
HCM6 ..... Highway Capacity Manual 6th Edition
IPaC ..... Infection Prevention and Control
ITS..... Intelligent Transportation Systems
LOS ..... Level-of-Service
LRE ..... Long Range Estimate
LRTP ..... Long-range Transportation Plans
MBTA ..... Migratory Bird Treaty Act
MOB ..... Mobilization
MOEs ..... Measures of Effectiveness
MOT ..... Maintenance of Traffic
MPO ..... Metropolitan Planning Organization
NAC..... Noise Abatement Criteria
NRCS…….. Natural Resources Conservation Service
NRE..... Non-recurring Engineer
NRHP ..... National Register of Historic Places
NWI ..... National Wetlands Inventory
OCI..... Overall Condition Index
OFW..... Outstanding Florida Water
OGT ..... Office of Greenways and Trails
PD&E ..... Project Development and Environment
PDLT ..... Partial Displaced Left Turn
PHB..... Pedestrian Hybrid Beacon
PLCD..... Pedestrian Longitudinal Channelizing Devices

PTAR.....Project Traffic Analysis Report
RCP.....Reinforced Concrete Pipe
ROW ..... Right of Way
SFWMD..... South Florida Water Management District
SHGWT.....Seasonal High Groundwater Table
SHPO ..... State Historic Preservation Officer
SLU .....Special Land Use
SPDI.....Single Point Diamond Interchange
SPICE .....Safety Performance for Intersection Control Evaluation
STIP .....State Transportation Improvement Plan
SWERP ..... Statewide Environmental Resource Permit Manual
TIP.....Traffic Improvement Plan
TMDL .....Total Maximum Daily Load
TN ..... Total Nitrogen
TNM ..... Traffic Noise Model
TSM&O .....Transportation System Management and Operations
UAO .....Utility Agency/Owners
USDA……United States Department of Agriculture
USFWS ..... United States Fish and Wildlife Service
WBID.....Waterbody Identification

1.0 PROJECT SUMMARY

Initiated in November 2019, this Project Development and Environment (PD&E) Study has been conducted to assess various intersection alternatives for State Road (SR) 45 (US 41) at Bonita Beach Road. This Preliminary Engineering Report (PER) documents the project's purpose and need, the alternatives developed, the process of selecting the preferred alternative, and presents the preliminary design analysis for the preferred alternative. SR 45 will be referred to as US 41 throughout the remainder of this report.

1.1 Project Description

The US 41 at Bonita Beach Road PD&E Study evaluated capacity, safety, and multi-modal improvements at the US 41 and Bonita Beach Road intersection, in the City of Bonita Springs, Lee County, Florida. The study area limits extend along US 41 from Foley Road to just south of the Imperial River bridge, a distance of approximately 0.9 miles. Additionally, the study area extends along Bonita Beach Road from Windsor Road to Spanish Wells Boulevard, a distance of approximately 0.8 miles.

US 41 is a north-south principal arterial roadway running parallel to Interstate 75 (I-75) and facilitates movement of regional and local traffic (including truck traffic) along Florida's west coast. Bonita Beach Road is an east-west minor arterial roadway providing a connection to I-75 and is one of two east-west connections between the Lee County mainland and coastal communities and barrier island tourist destinations and beaches to the west. US 41 is a state roadway maintained by the Florida Department of Transportation (FDOT) District 1, while Bonita Beach Road is maintained by Lee County. Both US 41 and Bonita Beach Road are designated as emergency evacuation routes.

US 41 within the project limits is a six-lane divided roadway with two 12' and one 11.5' travel lanes, a 22' raised median, dedicated turn lanes, 5' on-street bicycle lanes and 5' sidewalks on both sides of the roadway. Bonita Beach Road is a four-lane divided roadway with 12' travel lanes, a 22'-25' raised median, dedicated turn lanes, 5' sidewalks on both sides but no on-street bicycle facilities.

The US 41 at Bonita Beach Road intersection is currently a signalized intersection with two exclusive left turn lanes and an exclusive right turn lane in each approach. Aside from the main intersection, there is currently one other signalized intersection along US 41 at the Center of Bonita Springs entrance (Tuffy Auto/Advanced Auto Parts). There are three additional signalized intersections along Bonita Beach Road: at the Center of Bonita Springs, Arroyal Road, and Spanish Wells Boulevard.

The existing US 41 and Bonita Beach Road intersection has high-volume left turn movements, particularly eastbound to northbound and southbound to eastbound. To address these, the City of Bonita Springs initiated the "Network Enhancement Alignment Study – Quadrant Plan" in May

2017. As a result, a two-lane quadrant roadway connecting Bonita Beach Road at Windsor Road to US 41 at the Center of Bonita Springs is being designed and constructed by the City. This Northwest Quadrant Roadway is expected to be completed prior to the US 41 and Bonita Beach Road intersection improvements.

The proposed improvements will modify the signalized configuration of the US 41 and Bonita Beach Road intersection to be a partial displaced left turn (PDLT), with the northbound and southbound left turn movements to crossover and be located outside of the opposing traffic flow. This configuration will allow the northbound and southbound left turning movements to operate in the same signal phase or simultaneously as the northbound and southbound through movements. To accommodate the PDLT configuration and facilitate the relocation of northbound and southbound turning vehicles, two new signalized "crossover" intersections will be added along US 41 approximately 675' south and 460' north of Bonita Beach Road. The southbound and eastbound left turn movements are proposed to have three lanes each, and the eastbound and westbound right turn movements are proposed to have two lanes each. The thru lanes along US 41 and Bonita Beach Road within the project limits are proposed to be 11' wide, as well as each of the turn lanes at modified intersections within the study area.

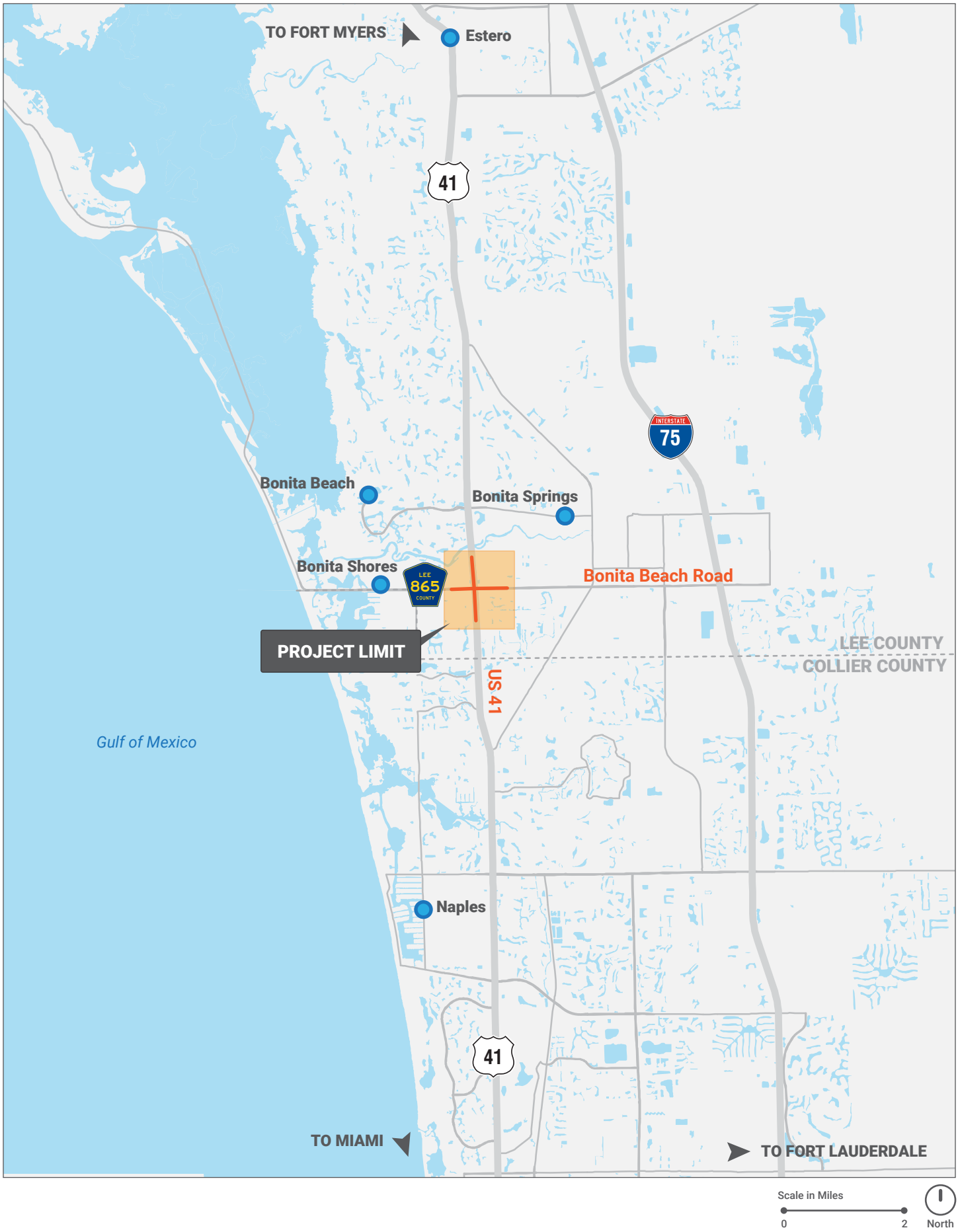
The preferred alternative is anticipated to impact 18 parcels and requires approximately 3.5 acres of right-of-way for the roadway impacts. Stormwater impacts associated with the preferred alternative is anticipated to impact an additional six parcels for approximately 4.9 acres, for a total anticipated right-of-way impact of 8.4 acres with two business relocations.

The US 41 and the Center of Bonita Springs intersection is proposed to be changed from a standard signalized intersection to a "thru-cut" intersection. A thru-cut intersection restricts through movements from the minor street, typically due to operational and/or geometric conditions. In this case, the west leg is being widened from two lanes to five lanes (four eastbound approach lanes and one westbound receiving lane) and the east leg is being widened from two lanes to four lanes (two westbound approach lanes and two eastbound receiving lanes). This creates skew issues for any east/west through movements and creates operational constraints that are alleviated by the thru-cut intersection configuration. Tying into the east leg of the US 41 and the Center of Bonita Springs intersection will be a new Northeast Quadrant Roadway connecting US 41 to Arroyal Road, northeast of the US 41 and Bonita Beach Road intersection. This will be a new three-lane roadway, to be constructed as part of this project, having two lanes eastbound and one lane westbound.

Along US 41 in the northbound direction, a 6' sidewalk is proposed from Foley Road to Springs Plaza and a 12' shared-use path is proposed from Springs Plaza to just north of the Imperial River Boat Ramp. In the southbound direction, a 12' shared-use path is proposed from just north of the Imperial River Boat Ramp to Bonita Funeral Home and a 6' sidewalk is proposed from Bonita Funeral Home to Foley Road. Along both sides of Bonita Beach Road, the sidewalks will be

widened to 12' shared-use paths from the Center of Bonita Springs to Arroyal Road. Signalized marked crosswalks will be maintained on every leg of the PDLT, including the channelized right turn lanes. Signalized marked crosswalks will also be provided on every leg of each signalized intersection along US 41 and Bonita Beach Road within the study area.

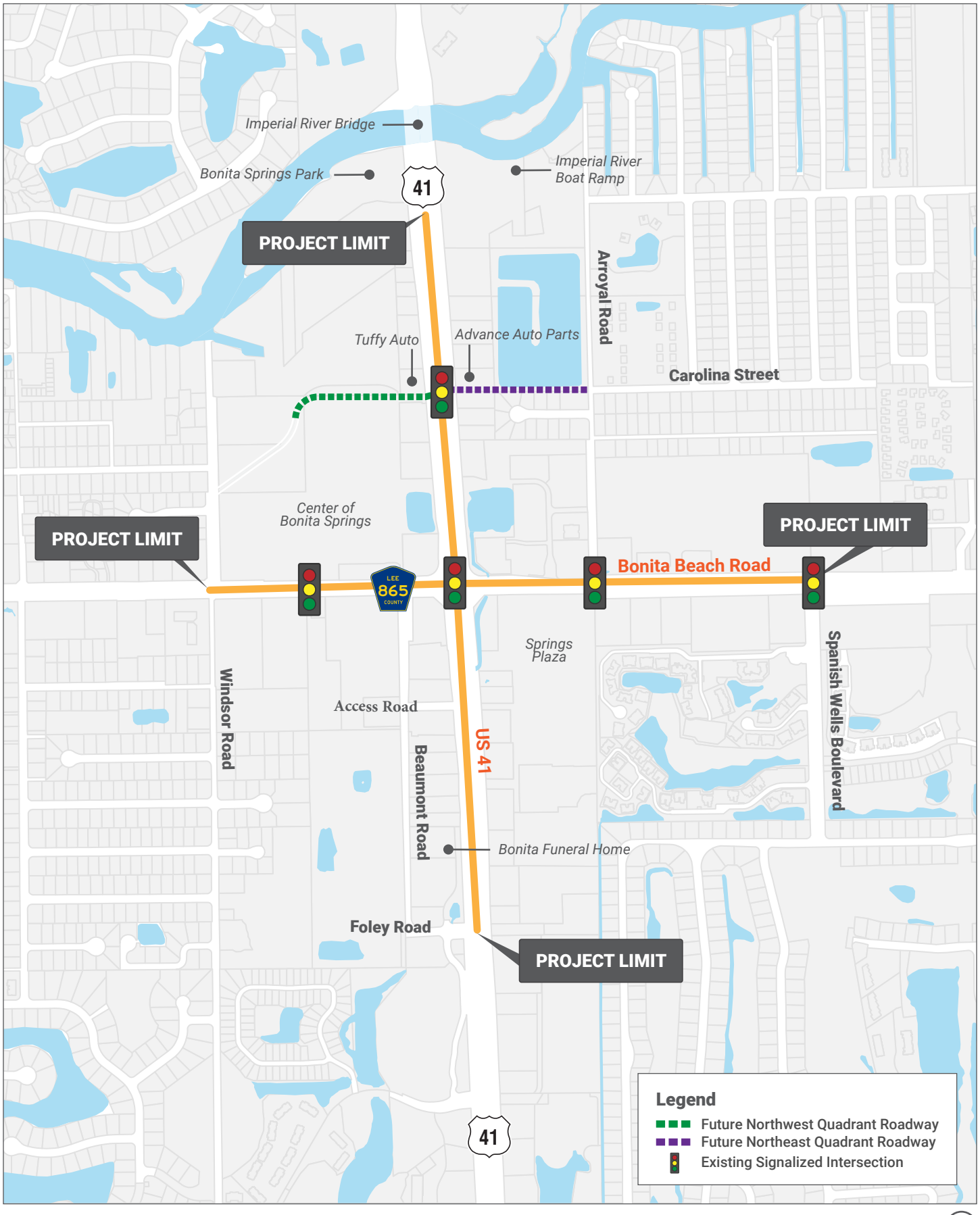
Construction for the project is currently unfunded but is noted in the 2031-2035 time band in the Lee County MPO LRTP. The project location is shown in **Figure 1** and the study area is shown in **Figure 2**.



US 41 at Bonita Beach Road PD&E Study

Figure 1 | Project Location

FPID 444321-1-22-01



US 41 at Bonita Beach Road PD&E Study

FPID 444321-1-22-01

Figure 2 | Study Area

1.2 Purpose & Need

The purpose of this project is to address the deficient operational capacity of the US 41 and Bonita Beach Road intersection to relieve existing congestion and accommodate projected transportation demand/capacity. The project's secondary goals are to 1) Enhance Safety; 2) Improve Modal Interrelationships; and 3) Enhance System Linkage through regional and local mobility. The need for these improvements is described in this section.

1.2.1 Transportation Demand/Capacity

The US 41 at Bonita Beach Road intersection experiences chronic congestion. As population and employment growth are expected to continue within this area of Lee County, the intersection's congestion is anticipated to increase. Based on 2019 traffic counts taken, the existing Annual Average Daily Traffic (AADT) ranges from 39,000 to 53,000 along US 41 and was 30,000 along Bonita Beach Road. New traffic counts were taken at the study intersections in 2022 to inform the opening and design year turning movement counts (TMCs). Based on future growth projections to a 2050 design year, the AADTs are forecast to range from 60,000 to 78,000 along US 41. The future 2050 AADT forecast along Bonita Beach Road is 39,000.

The US 41 at Bonita Beach Road intersection's existing (2019) mid-day traffic analysis shows that six of the 12 movements operate at Level of Service (LOS) of F, with one of those being overcapacity (volume-to-capacity >1.0). The intersection's existing (2019) PM traffic analysis shows that seven of the 12 movements operate at Level of Service (LOS) of F, with two of those being overcapacity. In the future 2050 condition, the no-build intersection operates at LOS F (target LOS is D) with an overall average vehicle delay less than 90 seconds. While there are a similar number of LOS F movements between the existing and future no-build, latent demand is expected to increase by nearly 30 percent. The future no-build intersection is serving approximately the same amount of traffic volume as the existing condition, but with the increased volumes there are more vehicles in the overall network not being served.

1.2.2 Safety

Crash records were obtained for both US 41 and Bonita Beach Road within the study area, as described below:

- US 41 from Foley Road (MP 0.540) to the Imperial River bridge (MP 1.482); and
- Bonita Beach Road from 400' west of Windsor Road to 450' east of Spanish Wells Boulevard.

Crash data was obtained for the most recent five-year period on record (2018 through 2022). The crash data was obtained from the University of Florida's Signal Four (S4) Analytics crash database for US 41 and Bonita Beach Road. The safety analysis was performed for the most recent five years of crash data (January 1, 2018 – December 31, 2022). Supplemental crash data from previous years

(2014 to 2017) and January 1, 2023 to June 30, 2023 were also analyzed to verify crash trends and patterns.

Figure 3 displays a summary of crash frequency by year along with the respective severities from 2014 to 2022 for the entire study area. There was an increase in crashes between 2014 and 2017, but there has been a decrease in crashes between 2017 and 2019 before an approximate 30 percent drop in crashes due to the COVID-19 pandemic in 2020. The number of crashes have stayed relatively constant in 2021 and 2022. There were 163 crashes per year on average between 2014 to 2017. However, there were 146 crashes per year on average in the study area between 2018 to 2022, not including 2020 (a 10 percent decrease). The fatal crash in 2019 involved a vehicle striking a pedestrian on US 41 just south of Bonita Beach Road, and the fatal crash in 2021 involved an angle crash at the intersection of US 41 at Foley Road/Shanna Lane.

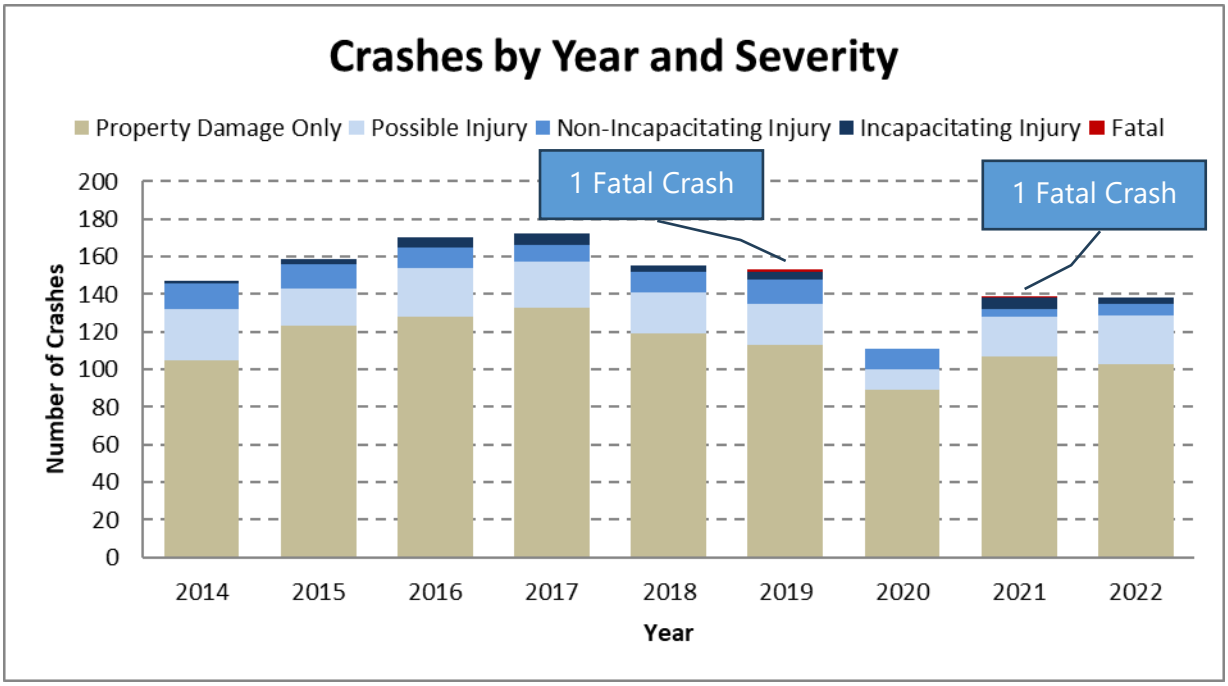


Figure 3: Crashes per Year (Entire Study Area)

Forty three percent of the total study area crashes were located within the intersection influence area of US 41 and Bonita Beach Road. **Figure 4** displays a summary of crash frequency by year along with the respective severities from 2018 to 2022 for the US 41 and Bonita Beach Road intersection. There was a total of 298 reported crashes during this period, 65 injury crashes (22 percent), and one fatal crash (in 2019). As displayed in **Figure 4**, there were an average of 60 crashes per year at the intersection.

Figure 5 displays the crashes at the intersection by type and severity for the five-year study period for the US 41 and Bonita Beach Road intersection. The highest crash type observed was rear end, comprising 59 percent of the total crashes. Sideswipe crashes (13 percent) and left turn (8 percent)

were the second and third highest crash types. These trends are consistent with the overall study area. The fatal crash in 2019 occurred when a vehicle struck a pedestrian crossing US 41.

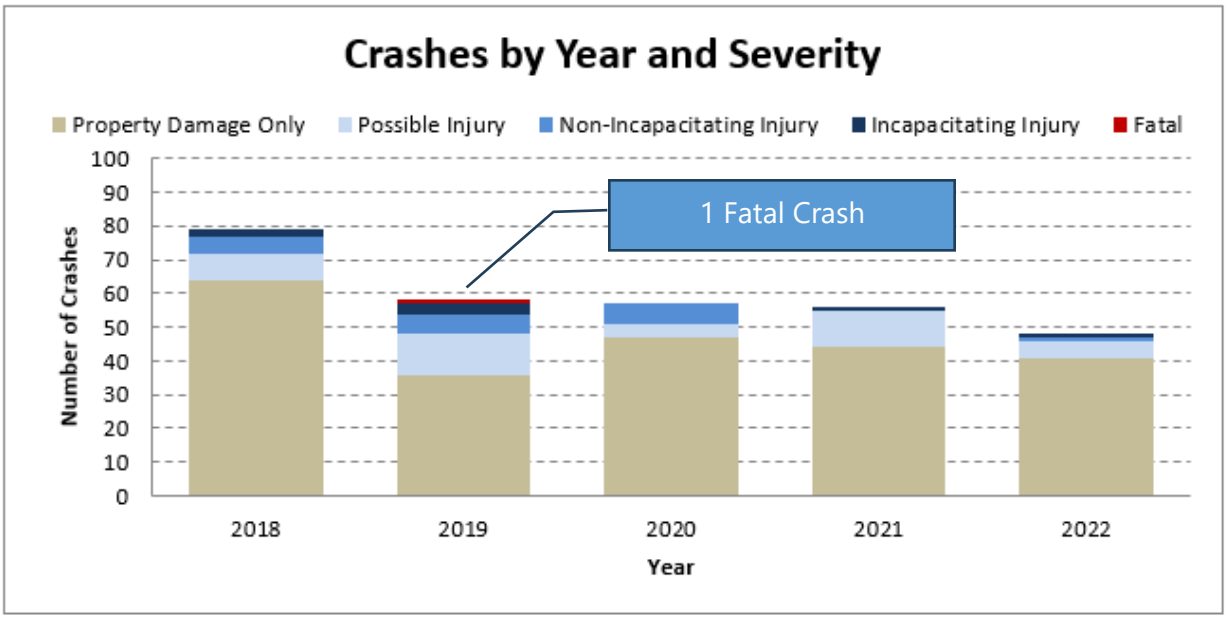


Figure 4: Crashes per Year (US 41 and Bonita Beach Road Intersection)

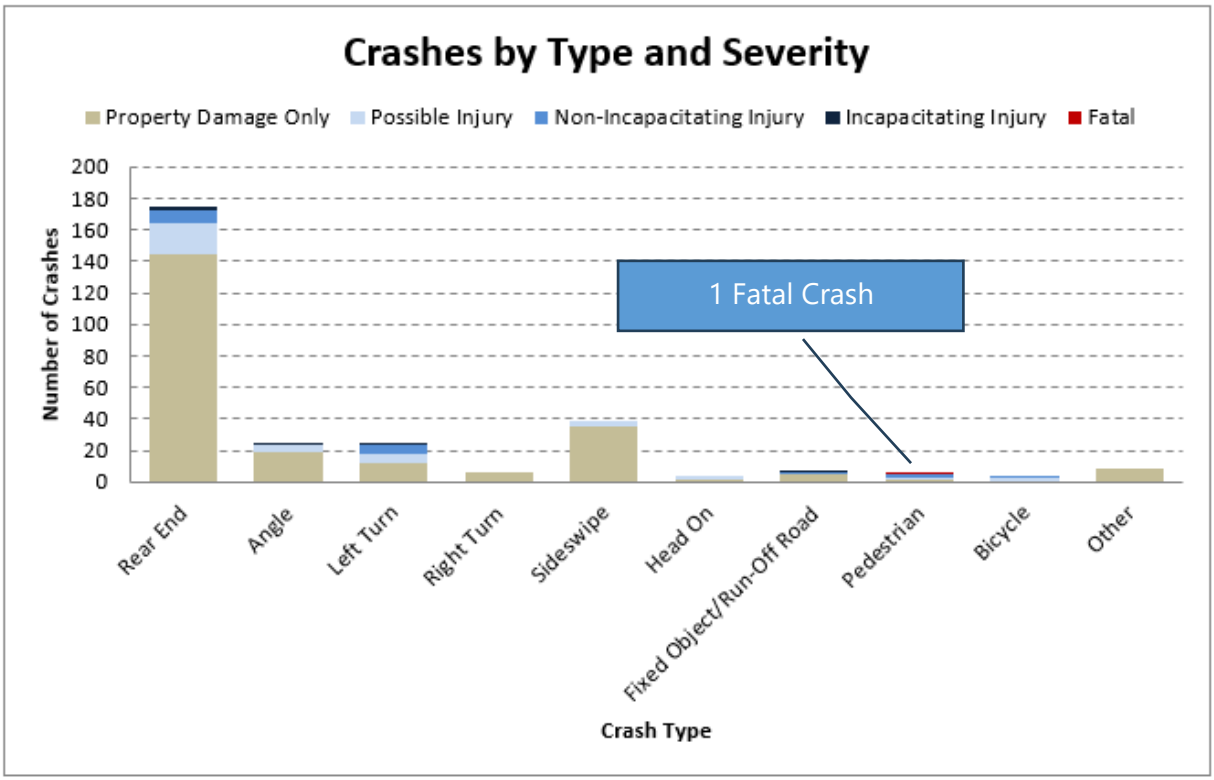


Figure 5: Crashes by Type and Severity (US 41 and Bonita Beach Road Intersection: 2018 to 2022)

A crash rate analysis was performed for the US 41 at Bonita Beach Road intersection for the years 2018 through 2022. The study intersection experienced higher than average Statewide crash rates in both 2018 and 2020 (safety ratios >1.25) and had crash rates nearing the Statewide averages in 2019, 2021, and 2022 (safety ratios ranging between 0.87 and 0.95). The study intersection experienced higher than average Districtwide crash rates in 2018 through 2020 (safety ratios ranging between 1.1 and 1.6), and had crash rates nearing the Districtwide averages in 2021 and 2022 (safety ratios of 0.99 and 0.93, respectively).

US 41 and Bonita Beach Road are designated emergency evacuation routes for both the Florida Division of Emergency Management and Lee County. Providing parallel service to I-75, US 41 plays an important role in facilitating north-south traffic during incidences and emergency evacuation periods (particularly within southwest Florida). Bonita Beach Road also serves a critical role during emergency evacuation periods as it connects US 41 and I-75 (facilities of the state evacuation route network) and provides one of two connections for residents and tourists between the barrier islands/tourist destinations to the west and mainland of Lee County.

1.2.3 Modal Interrelationships

While sidewalks are present on both sides of US 41 and Bonita Beach Road, the only bicycle facilities present in the study area are 5′ marked bicycle lanes along both sides of US 41. One LeeTran bus route (Route 600) operates along US 41 and Bonita Beach Road. In addition to the one bus route, LeeTran has partnered with Uber to provide ULTRA On-Demand Transit service in the Bonita Springs area. With LeeTran's ULTRA On-Demand Transit service, a deluxe mini-bus is available seven days a week from 7:00 AM to 6:00 PM. ULTRA On-Demand Transit allows riders to request a ride as needed, with curb to curb service.

Due to the presence of these facilities/services and the surrounding urban environment, heavy pedestrian and bicycle traffic exists in the area (as observed during field reviews conducted for the project).

The Office of Greenways and Trails (OGT) and the Lee County Metropolitan Planning Organization (MPO) have identified trail opportunities in the vicinity of the US 41 and Bonita Beach Road study intersection. The Coastal Loop Trail is a spur loop from the Southwest Coastal Regional Trail, which is part of the larger FDOT Shared-Use Nonmotorized (SUN) Trail Program. This is a planned loop trail that begins at the Southwest Coastal Regional Trail in Bonita Springs, travels along Bonita Beach Road to the barrier islands, then travels through Fort Myers Beach and southern Fort Myers before connecting back to the Southwest Coastal Regional Trail east of US 41 in Fort Myers. Through discussions with Lee County MPO, no future funding has been dedicated for Coastal Loop Trail improvements in the vicinity of the US 41 and Bonita Beach Road intersection.

1.2.4 System Linkage

US 41 serves as a critical arterial in facilitating the north-south movement of regional and local traffic (including truck traffic) as it runs parallel to I-75 along Florida's west coast. US 41 is designated as a regional freight mobility corridor (Tier 1 Regional Freight Corridor) in the Lee County 2045 Long Range Transportation Plan.

Similarly, Bonita Beach Road serves as a major east-west local roadway within Lee County, linking US 41 and I-75 and providing access (as one of two connections) between the mainland of Lee County and coastal communities/tourist destinations to the west (i.e., barrier islands and beaches). Further, both US 41 and Bonita Beach Road are designated as emergency evacuation routes for both the Florida Division of Emergency Management and Lee County.

The City of Bonita Springs performed the Network Enhancement Alignment Study, also known as the "Quadrant Plan", in May 2017. The purpose of the Quadrant Plan is to develop an expanded roadway network between Bonita Beach Road with US 41 that improves the area's mobility, maintains a high-quality environment for the community, and minimizes impacts to the natural environment. The City is moving forward with design and construction for a northwest quadrant roadway.

1.2.5 Planning Consistency

The design phase was created under 444321-2, with $2.801M SU funds and $0.7M local funds for a total funding allocation of $3.501M. The project's design funding is programmed in the TIP/STIP for FY2026. A $5.5M earmark for the right-of-way phase is programmed for FY 2025 in the STIP. The LRTP will not need updating at this time unless project information changes. Planning consistency documentation is included in the Categorical Exclusion.

1.3 Commitments

To ensure the project will not adversely affect protected species and their habitats, the following commitments will be implemented:

- The US 41 southbound bus stop located at the beginning of the southbound turn lane serving Beaumont Road will be relocated approximately 500' south to be in front of Kentucky Fried Chicken (28200 S Tamiami Trail, Bonita Springs, FL 34134). Associated with this relocation, a US 41 northbound bus stop will be added across the street from the southbound bus stop and the two bus stops will be connected by a proposed crosswalk with Pedestrian Hybrid Beacon (PHB).
- The most recent version of the USFWS Standard Protection Measures for the Eastern Indigo Snake will be utilized during construction.
- If the tri-colored bat is listed by the USFWS as Threatened or Endangered and the project may affect the species, FDOT commits to initiating consultation with the USFWS to

determine the appropriate avoidance and minimization measures for protection of the newly listed species.

- If the monarch butterfly is listed by the USFWS as Threatened or Endangered and the project may affect the species, FDOT commits to initiating consultation with the USFWS to determine the appropriate avoidance and minimization measures for protection of the newly listed species.
- If required, FDOT will provide mitigation for impacts to wood stork SFH within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank.
- FDOT is committed to the construction of feasible and reasonable noise abatement measures, specifically noise barrier WB1 (CNE WB2), as identified in the Noise Study Report, contingent upon the following conditions:
    - Final recommendations on the construction of abatement measures are determined during the project's final design and through the public involvement process;
    - Detailed noise analyses during the final design process support the need, feasibility, and reasonableness of providing abatement;
    - Cost analysis indicates that the cost of the noise barrier(s) will not exceed the cost-reasonable criterion;
    - Community input supporting types, heights, and locations of the noise barrier(s) is provided to FDOT;
    - Safety and engineering aspects have been reviewed, and any conflicts or issues resolved.

1.4 Alternatives Analysis Summary

1.4.1 No-Build Alternative

The No-Build Alternative assumes that no modifications or improvements will be implemented for the US 41 and Bonita Beach Road intersection. The No-Build Alternative's primary advantages are it does not require any capital or expenditure of local, state, or federal transportation funds, and it results in no impacts to the social, natural, cultural, or physical environment. The No-Build Alternative's primary disadvantage is it will not address the Purpose and Need for this project.

Advantages of the No-Build Alternative include:

- No right-of-way acquisition or business impacts/displacements;
- No design, right-of-way, or construction costs;
- No inconvenience to the traveling public and property owners during construction;
- No impacts to utilities and drainage structures; and
- No impacts to the natural, social, cultural, or physical environment.

Disadvantages of the No-Build Alternative include:

- It is not consistent with local government plans, the Lee County MPO LRTP, or TIP;
- It does not address the project's Purpose and Need to include:
    - It does not improve levels of service or address traffic congestion;
    - Safety is not improved, and the number of crashes is projected to increase;
    - It does not improve multi-modal mobility; and
    - It does not provide the system linkage necessary to improve north-south or east-west travel by the public.

The No-Build Alternative will not meet the Purpose and Need for this project.

1.4.2 Prior Grade Separated Alternative

During the preliminary alternatives analysis efforts in 2020, a single point diamond interchange (SPDI) was one of two alternatives being considered (along with the PDLT). The SPDI alternative assumes the northbound and southbound through lanes on US 41 are elevated over Bonita Beach Road. Turning movements for US 41 and Bonita Beach Road occur at a single intersection underneath the US 41 overpass. To allow access to local businesses, through movements on the US 41 ramps were allowed. The US 41 overpass begins between the two access points for Springs Plaza on the south side of Bonita Beach Road and ends north of the Crown Lake Boulevard intersection to the north. Access to any minor streets along the US 41 ramps are maintained as intersections with the US 41 ramps only.

The SPDI alternative was reviewed as part of the Stage 1 Intersection Control Evaluation. During this evaluation, a new development was approved with their primary access to US 41 occurring at the Center of Bonita Springs signalized intersection via the northwest quadrant roadway. The overpass' ramps would tie-in to US 41 north of this location and convert the Center of Bonita Springs intersection into a right-in/right-out configuration. With this new development needing full access to US 41 at the Center of Bonita Springs, the SPDI alternative was removed from consideration and an enhanced at-grade traffic signal was reviewed (as discussed in the next section).

1.4.3 Intersection Alternatives

Two intersection alternatives were developed to support the US 41 at Bonita Beach Road purpose and need:

- Alternative A – Enhanced Traffic Signal (**Figure 6**)
    - Widens US 41 to eight lanes from Foley Road to the southern end of the Imperial River bridge.
    - Provides additional turn lane improvements to the existing signalized intersection.
- Alternative B – Partial Displaced Left Turn (**Figure 7**)
    - Northbound and southbound left turn movements are relocated to the outside of the opposing flow of traffic, allowing the northbound and southbound left turning

movements to operate in the same signal phase as the northbound and southbound through movements.

- Two new signalized "crossover" intersections are proposed along US 41 approximately 675' south and 460' north of Bonita Beach Road to allow left turning vehicles to cross to the other side of the opposing flow.
- The southbound and eastbound left turn movements are proposed to have three lanes each.
- The eastbound and westbound right turn movements are proposed to have two lanes each.

The intersection alternatives were developed using design provisions from the FDOT Design Manual (FDM). Each of the proposed intersection alternatives were applied along US 41 from Sta. 221+19 to Sta. 271+81 and along Bonita Beach Road from Sta. 254+57 to Sta. 300+33.

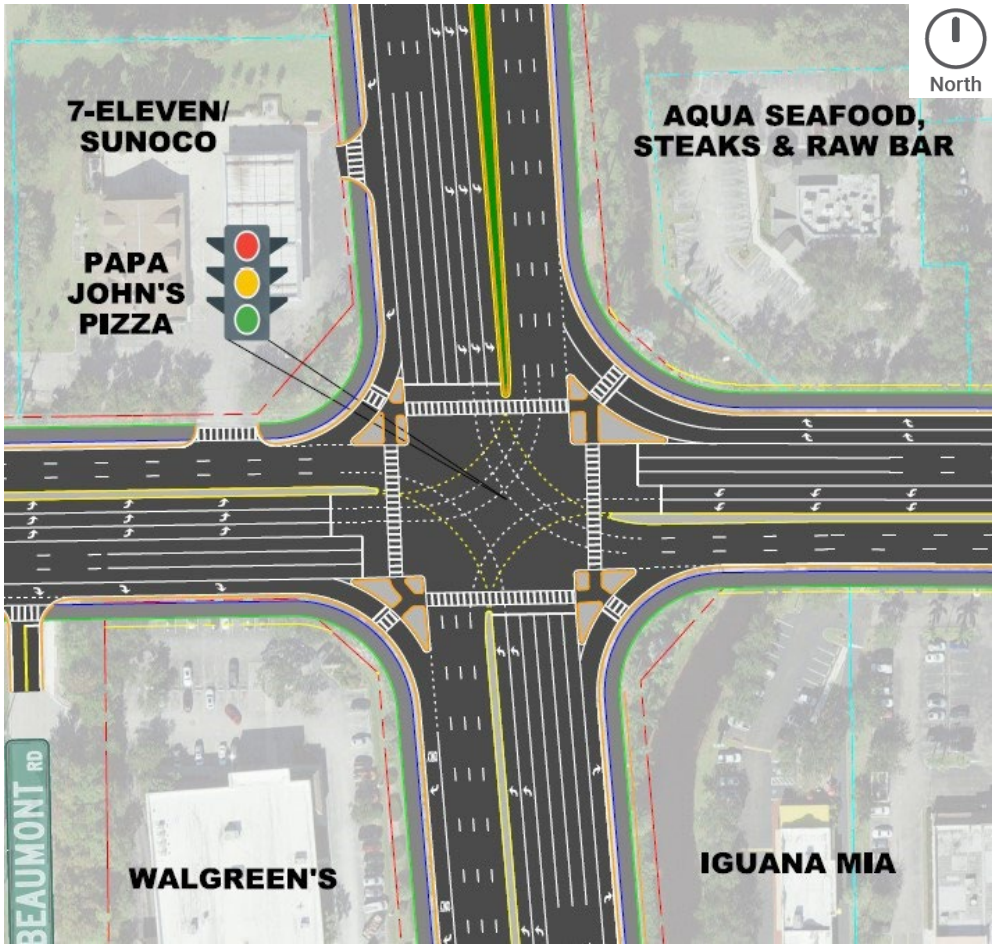


Figure 6: Alternative A – Enhanced Traffic Signal

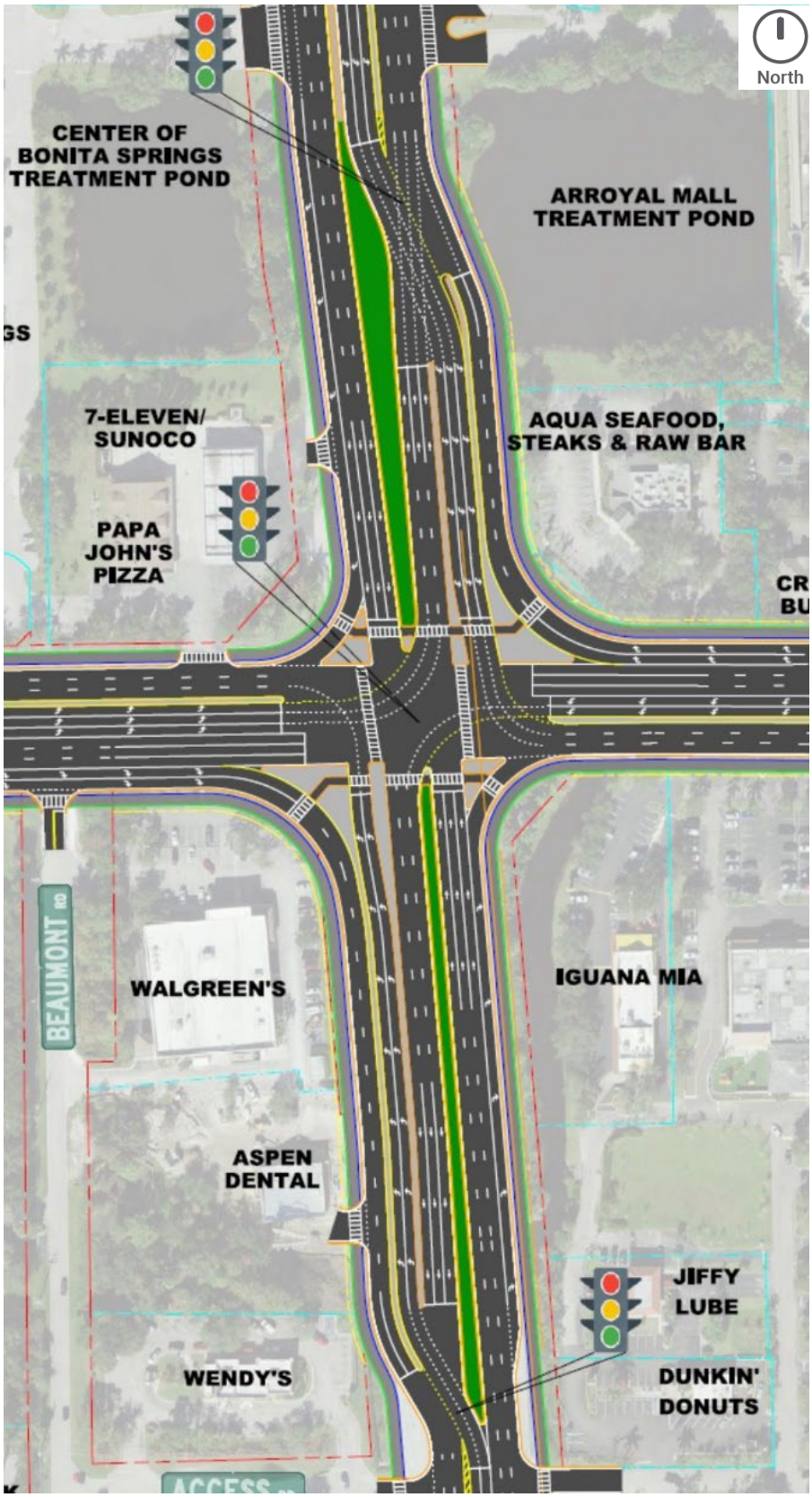


Figure 7: Alternative B – Partial Displaced Left Turn

1.4.4 Other US 41 Improvements (Outside of Main Intersection)

1.4.4.1 Alternative A – Enhanced Traffic Signal

For Alternative A, US 41 is proposed to be modified based on the following:

- Adding a fourth travel lane in each direction and reducing the lane widths to 11′:
  - Additional northbound travel lane will start just north of Foley Road (Sta. 223+50) and end at the driveway for the Imperial River Boat Ramp (Sta. 270+00).
  - The additional southbound travel lane will start at Sta. 265+00 (halfway between the Imperial River Boat Ramp driveway (Sta. 270+00) and the US 41/Center of Bonita Springs intersection (Sta. 260+00)) and end at the Foley Road intersection (Sta. 222+75).
- A 12′ shared-use path is proposed on both sides of US 41 in lieu of the on-street bicycle facilities:
  - In the northbound direction from Springs Plaza (Sta. 232+50) to just north of the Imperial River Boat Ramp (Sta. 271+00).
  - In the southbound direction from just north of the Imperial River Boat Ramp (Sta. 271+00) to Bonita Funeral Home (Sta. 231+00).
- A 7′ on-street buffered bicycle lane is proposed on the south end of the corridor:
  - In the northbound direction from Foley Road (Sta. 222+75) to just north of Springs Plaza (Sta. 234+50).
  - In the southbound direction from Bonita Funeral Home (Sta. 231+00) to Foley Road (Sta. 222+75).
- A 6′ sidewalk is proposed on the south end of the corridor:
  - In the northbound direction from Foley Road (Sta. 222+75) to Springs Plaza (Sta. 232+50).
  - In the southbound direction from Bonita Funeral Home (Sta. 231+00) to Foley Road (Sta. 222+75).

A graphic depiction of the widening and shared-use path configuration for Alternative A is shown in **Figure 8** below. The buffered bicycle lanes and sidewalks configuration is only present for approximately 1,000′ on the south end of the corridor thus was not considered part of the "typical" section. The total estimated cost for this alternative is $38,130,000. Further details of this cost are provided in **Table 30**.

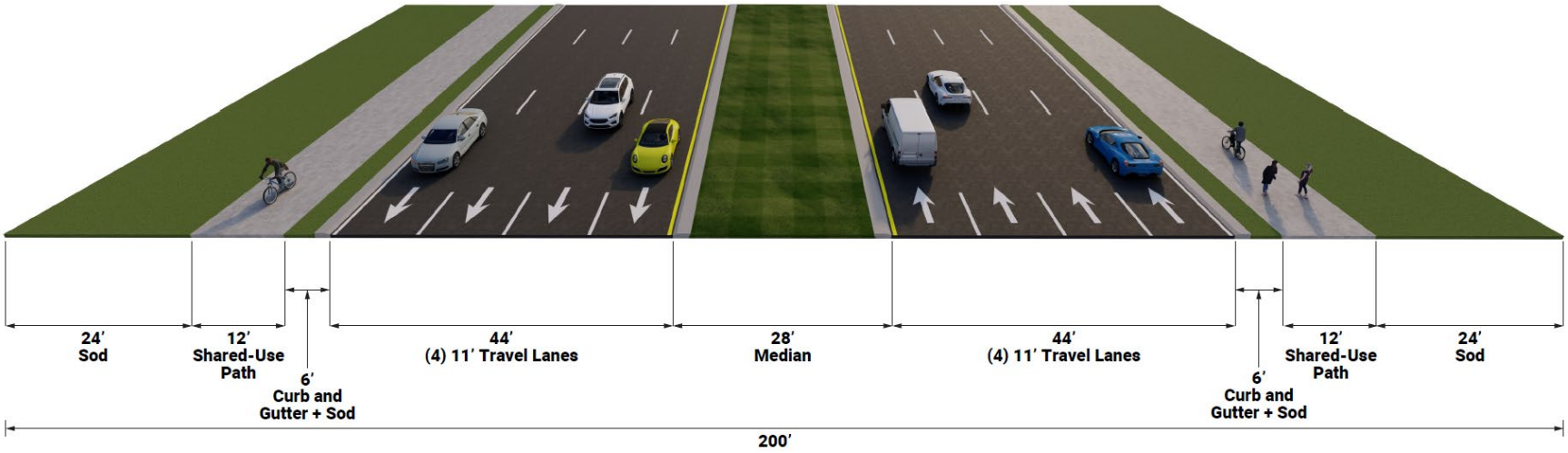


Figure 8: Alternative A US 41 Roadway Features

1.4.4.2 Alternative B – Partial Displaced Left Turn

For Alternative B, the northbound and southbound left turn movements will be relocated outside of the opposing flow of traffic. This configuration will allow the northbound and southbound left turning movements to operate in the same signal phase as the northbound and southbound through movements. To accommodate the Alternative B configuration and facilitate the relocation of northbound and southbound turning vehicles, two new signalized "crossover" intersections will be added along US 41 approximately 675' south and 460' north of Bonita Beach Road (as shown in **Figure 7**). The following features detail the improvements proposed as part of the new "crossover" intersections:

- Between Foley Road (Sta. 222+75) and southern "crossover" intersection (Sta. 239+00):
  - Three 11' northbound and southbound through lanes.
- Between southern "crossover" intersection (Sta. 239+00) and US 41 and Bonita Beach Road intersection (Sta. 246+00) (described from right side to left side across US 41 and shown in **Figure 9**):
  - Exclusive 11' northbound right turn lane.
  - Three 11' northbound and southbound through lanes.
  - Dual 11' northbound exclusive left turn lanes positioned outside of the southbound through lanes.
  - Dual 11' eastbound to southbound exclusive right turn lanes positioned outside of the northbound left turn lanes.
- Between US 41/Bonita Beach Road intersection (Sta. 246+00) and northern "crossover" intersection (Sta. 251+00) and (described from right side to left side across US 41):
  - Dual 11' westbound to northbound exclusive right turn lanes positioned outside of the southbound left turn lanes.
  - Triple 11' southbound exclusive left turn lanes positioned outside of the northbound through lanes.
  - Three 11' northbound and southbound through lanes.
  - Exclusive 11' southbound right turn lane.
- Between northern "crossover" intersection (Sta. 251+00) and US 41/Center of Bonita Springs intersection (Sta. 260+00):
  - Four 11' northbound through lanes.
  - Three 11' southbound through lanes.
- Between US 41 and Center of Bonita Springs intersection (Sta. 260+00) and the Imperial River Boat Ramp (Sta. 266+50):
  - Four 11' northbound through lanes (outside lane drops at the Imperial River Boat Ramp).

    - Three 11′ southbound through lanes (a fourth "auxiliary" lane begins at Sta. 265+00 that drops into the triple southbound left turn lanes).
- A 12′ shared-use path is proposed on both sides of US 41 in lieu of the on-street bicycle facilities:
    - In the northbound direction from Springs Plaza (Sta. 232+50) to just north of the Imperial River Boat Ramp (Sta. 271+00).
    - In the southbound direction from just north of the Imperial River Boat Ramp (Sta. 271+00) to just south of Access Road (Sta. 237+00).
- A 7′ on-street buffered bicycle lane is proposed on the south end of the corridor:
    - In the northbound direction from Foley Road (Sta. 222+75) to just north of Springs Plaza (Sta. 234+50).
    - In the southbound direction from just south of Access Road (Sta. 237+00) to Foley Road (Sta. 222+75).
- A 6′ sidewalk is proposed on the south end of the corridor:
    - In the northbound direction from Foley Road (Sta. 222+75) to Springs Plaza (Sta. 232+50).
    - In the southbound direction from just south of Access Road (Sta. 237+00) to Foley Road (Sta. 222+75).

The total estimated cost for this alternative is $45,950,000. Further details of this cost are provided in **Table 30**.

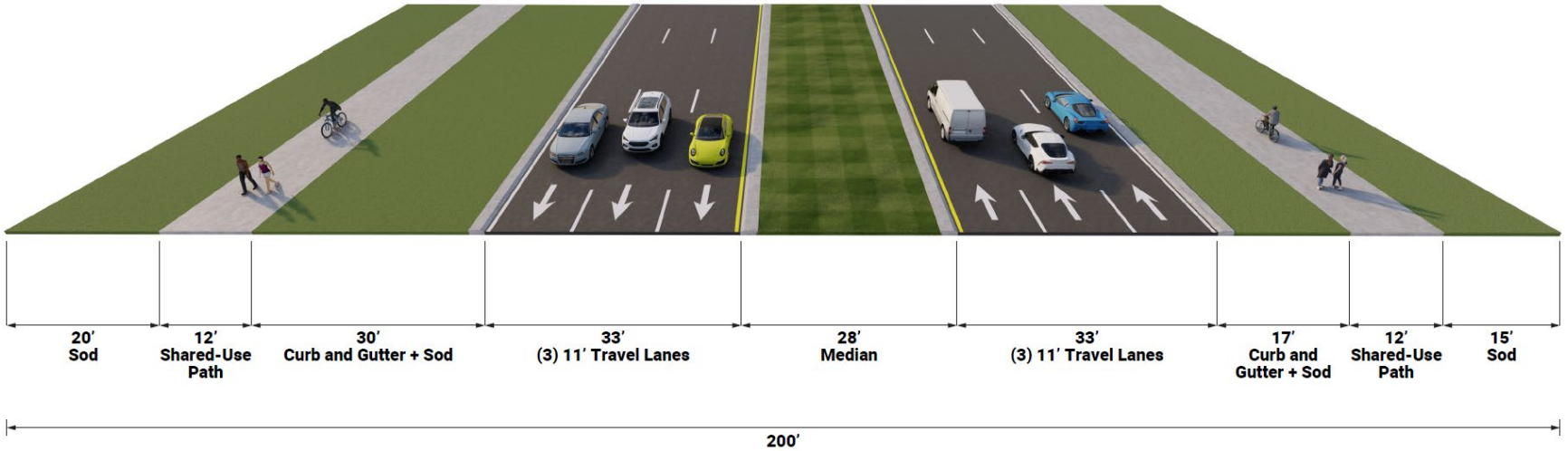


Figure 9: Alternative B US 41 Roadway Features

1.5 Description of Preferred Alternative

1.5.1 Preferred Intersection Control Alternative

The project's purpose is to address the deficient operational capacity of the US 41 and Bonita Beach Road intersection to relieve existing congestion and accommodate projected future traffic demand. The project's secondary goals are to 1) Enhance regional and local mobility; 2) Enhance safety conditions; and 3) Improve multi-modal access.

Alternatives A (Enhanced Traffic Signal) and B (PDLT) were presented at the Alternatives Public Workshop conducted virtually on Monday April 3 and in-person on Tuesday April 4, 2023. Following the workshop, feedback was gathered from members of the public for both alternatives. The majority of public comments received expressed support for Alternative B, PDLT. Alternative B was favored as it does not add through lanes along US 41, was viewed as being more operationally efficient, and provided better pedestrian and bicyclist safety. These alternatives were also presented to the Lee County MPO on June 16, 2023 and the public support for the PDLT alternative was documented with the MPO Board.

Discussions were held with FDOT District 1 after the Alternatives Public Workshop and it was determined Alternative B – PDLT best aligns with the project's purpose and need and was selected as the preferred alternative. The following bullets summarize how the PDLT recommendation meets the primary and secondary purpose and need goals noted above:

- Transportation Demand/Capacity
    - In the 2050 future build condition, the average network delay for vehicles traveling through the PDLT would be approximately 50 percent less than the No-Build Alternative.
    - The estimated number of vehicles served by the PDLT in 2050 would be approximately 20 percent higher than the No-Build Alternative.
    - The PDLT is anticipated to improve average vehicle delay by over 45 seconds in both the 2050 mid-day and PM peak hours when compared to the No-Build Alternative at the main US 41 at Bonita Beach Road intersection only.
- Safety
    - Using the predictive safety analysis methods provided in the FDOT Safety Performance for Intersection Control Evaluation (SPICE) Tool, the PDLT intersection is predicted to decrease total and fatal/injury crashes by over 10 percent vs the No-Build Alternative over the 20-year life cycle from 2030 to 2050.
    - Increase the volume of residents and tourists from coastal communities that can be evacuated during an emergency event by improving operations at the intersection of two major evacuation routes.
    - Enhance access to facilities of the state evacuation route network.

  - Improve response times (due to enhanced access) to emergency events and incidences.
- Modal Interrelationships
  - Sidewalks in the study area are proposed to be widened to 12' shared-use paths along both sides of US 41 and Bonita Beach Road.
  - These shared-use paths will improve pedestrian/bicycle access and circulation by modifying/limiting opportunities for conflicts between automobiles and pedestrians/bicyclists.
  - The 12' shared-use path improvements proposed as part of the PDLT would help further enhance the future vision of the Coastal Loop Trail in the study area.
  - Additional median and concrete traffic separators are included in the PDLT concept to provide pedestrian refuge areas and better facilitate non-motorist crossings.
  - The PDLT will also enhance the performance and reliability of transit service operating along US 41 and Bonita Beach Road by reducing delays at the intersection.
- System Linkage
  - Improve the viability of US 41 as a regional alternative facility to I-75 by reducing travel delay.
  - Enhance east-west access between two primary north-south transportation corridors (US 41 and I-75) as well as between the mainland of Lee County and coastal communities/tourist destinations to the west.
  - Enhance freight mobility and access within the area as US 41 is designated as regional freight mobility corridor (Tier 1 Regional Freight Corridor) in the Lee County 2045 Long Range Transportation Plan.
  - The proposed PDLT improvements will support local system linkage planning efforts by providing a Northeast Quadrant Roadway connecting US 41 to Arroyal Road. It will also widen the US 41 and Northeast Quadrant Roadway intersection's west approach to meet the intersection's future traffic demands.

The preferred alternative concept plans can be found in **Appendix H**.

1.5.2 Preferred Alternative Features

The following highlights the key improvement elements within the US 41 at Bonita Beach Road intersection area for Alternative B:

1.5.2.1 US 41

The proposed roadway/intersection improvements discussed in **Section 1.4.1** and **1.4.4.2** were brought forward as part of the preferred alternative design. Outside of the main US 41 and Bonita

Beach Road intersection and "crossover" locations, additional intersection improvements are included as part of the preferred alternative:

- Signalization and turn lane improvements at the intersection of US 41 and Foley Road (Sta. 222+75).
- Modified "thru-cut" signalized intersection at US 41 and Center of Bonita Springs (Sta. 260+00) as shown in **Figure 10**:
    - A thru-cut intersection restricts through movements from the minor street typically due to operational and/or geometric conditions. In this case, the west leg is being widened from two lanes to five lanes (four eastbound approach lanes and one westbound receiving lane) and the east leg is being widened from two lanes to four lanes (two westbound approach lanes and two eastbound receiving lanes).
    - Dual southbound left turn lanes are also proposed in the new thru-cut configuration.

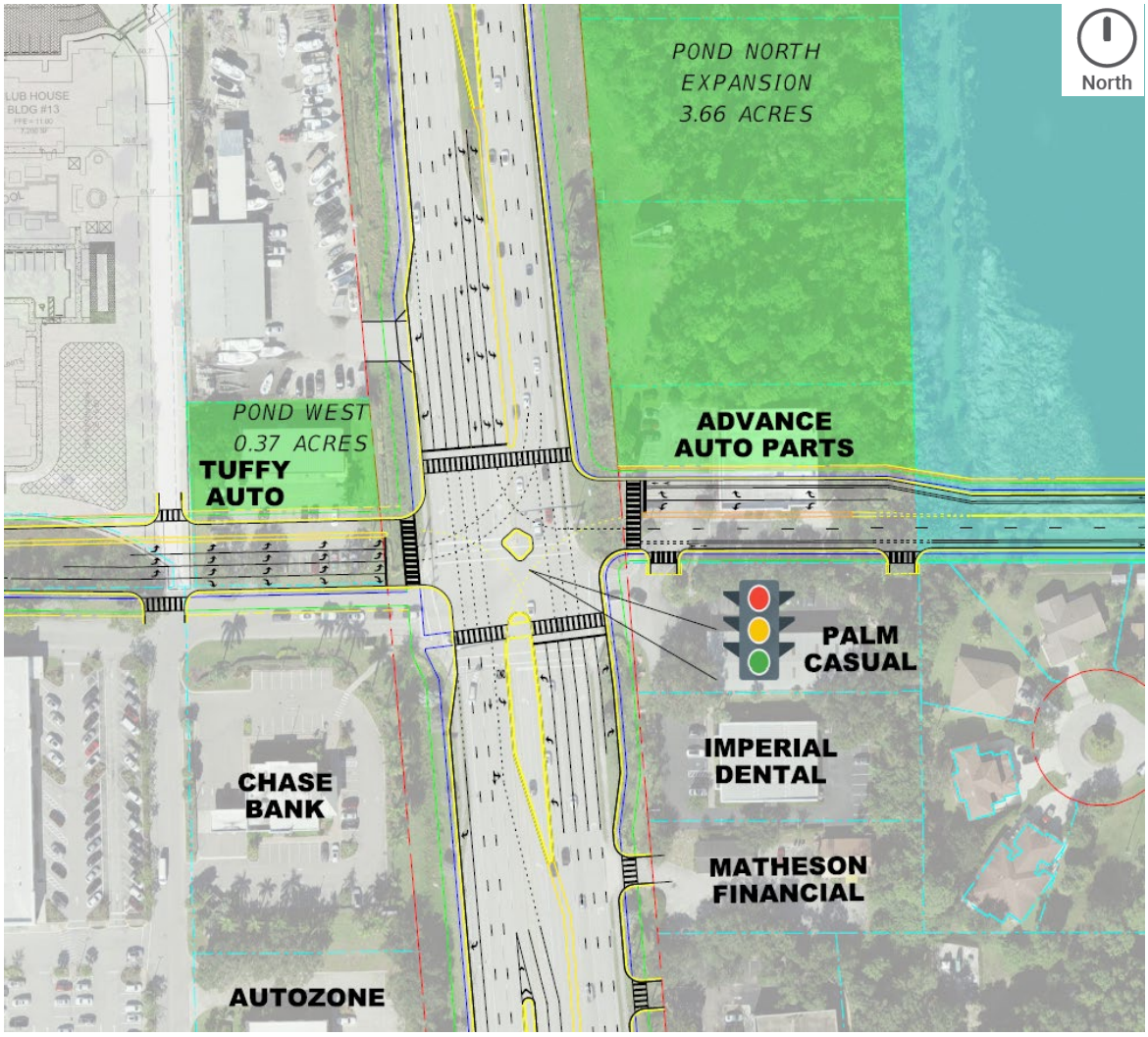


Figure 10: US 41/Center of Bonita Springs "Thru-Cut" Intersection

1.5.2.2 Bonita Beach Road

The following roadway improvements are proposed along Bonita Beach Road as part of the preferred alternative:

- Three 11′ travel lanes in each direction from the Center of Bonita Springs (Sta. 266+50) to Arroyal Road (Sta. 286+25). The third eastbound through lane drops at the Spanish Wells Boulevard signal.
- Widening the sidewalk to be a 12′ shared-use path on both sides from the Center of Bonita Springs (Sta. 266+50) to Arroyal Road (Sta. 286+25).

At intersections along Bonita Beach Road, the following features are included as part of the preferred alternative:

- Bonita Beach Road at Center of Bonita Springs (Sta. 266+50):
  - Develop a third 11′ eastbound travel lane departing intersection.
- Bonita Beach Road at Arroyal Road (Sta. 286+25):
  - One additional 11′ eastbound through lane (will be a shared through/right configuration).
  - Develop a third 11′ westbound travel lane departing intersection.
  - The southbound approach will be modified to include two southbound left turn lanes and one southbound shared through/right turn lane.

1.5.2.3 Quadrant Roadway System

A new Northwest Quadrant Roadway from Bonita Beach Road at Windsor Road (Bonita Beach Road Sta. 260+00) to US 41 at the Center of Bonita Springs (US 41 Sta. 260+00) will be constructed by the City of Bonita Springs before the preferred alternative is planned to be constructed at the US 41 and Bonita Beach Road intersection. The following features describe the Northwest Quadrant Roadway improvements as shown in **Figure 11**:

- Intersection of Bonita Beach Road and Windsor Road (Bonita Beach Road Sta. 260+00):
  - An eastbound displaced left turn to the Northwest Quadrant Roadway with a new crossover intersection just west of Windsor Road.
  - The southbound approach from Windsor Road will be widened to two lanes.
  - An exclusive westbound right turn lane will be added.
- Along Windsor Road:
  - Two southbound lanes and one northbound lane.
  - 6′ sidewalk on the west side and 12′ shared-use path on the east side of the roadway.
- Along New Roadway between Windsor Road and the Northwest Corner of the Center of Bonita Springs Shopping Plaza:
  - One 11′ travel lane in each direction.

- 4′ paved shoulders in each direction.
- 6′ sidewalk on the west side and 12′ shared-use path on the east side of the roadway.

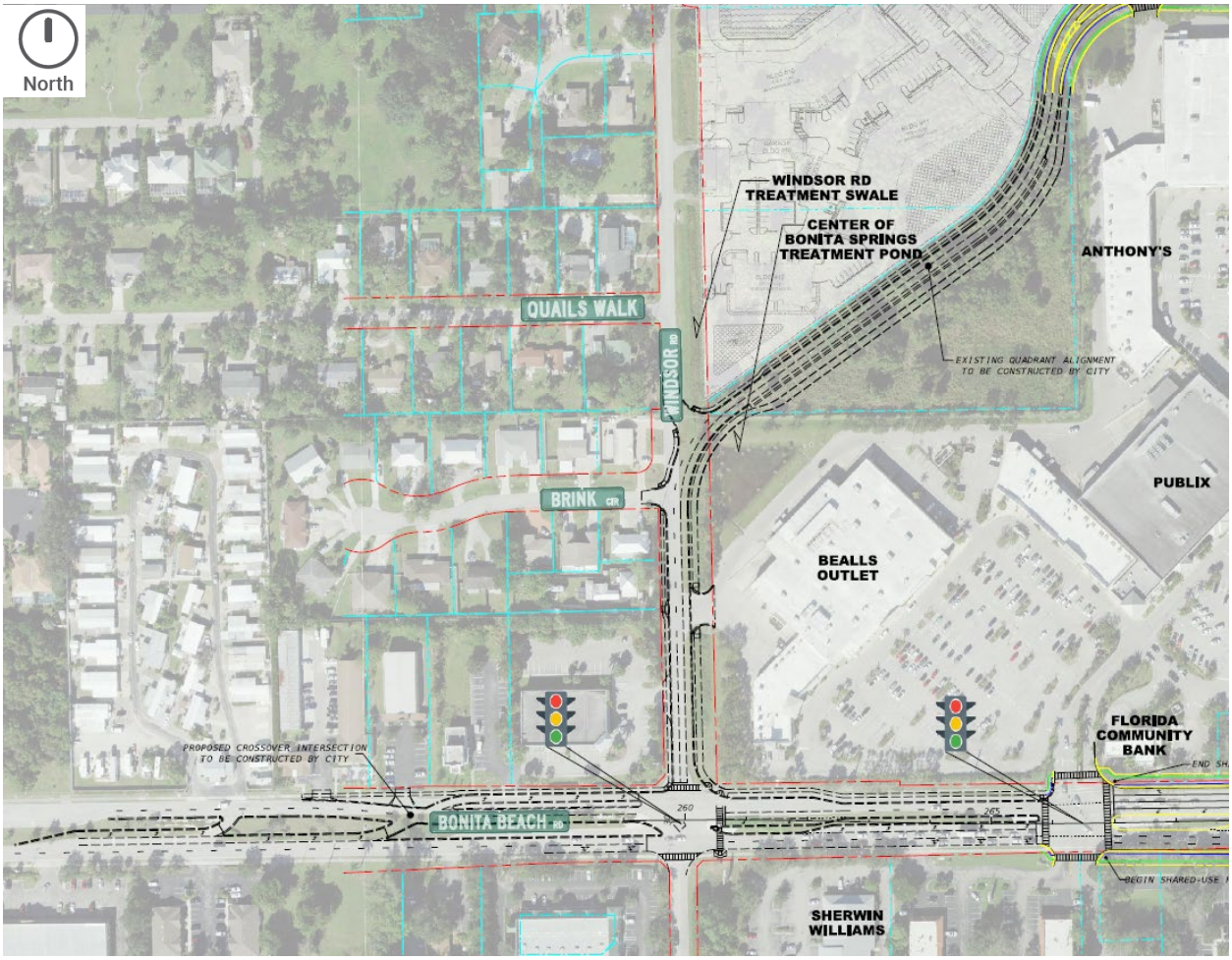


Figure 11: Northwest Quadrant Roadway – Proposed City Alignment

The City's Northwest Quadrant Roadway design concept ties in at the existing US 41/Center of Bonita Springs intersection and is not making any improvements to this intersection. In the future condition, this intersection will not have enough capacity to accommodate the forecasted traffic demand, necessitating additional turn lane improvements on the intersection's west leg. As part of the preferred alternative, the City built Northwest Quadrant Roadway would be modified from the northwest corner of the Center of Bonita Springs Shopping Plaza to US 41. These changes are described below and shown in **Figure 12**:

- Northwest Corner of the Center of Bonita Springs Shopping Plaza to US 41:
  - Roadway is widened to develop a center median with varying width.
  - One 11′ travel lane in each direction.
  - 6′ sidewalk on the north side of the roadway.

- 12′ shared-use path on the south side of the roadway.
- New 11′ westbound left turn lane into Center of Bonita Springs behind the Old Time Pottery building.

- West Leg at US 41 Intersection:
  - One 11′ eastbound right turn lane.
  - Three 11′ eastbound left turn lanes.
  - One 11′ westbound receiving lane.

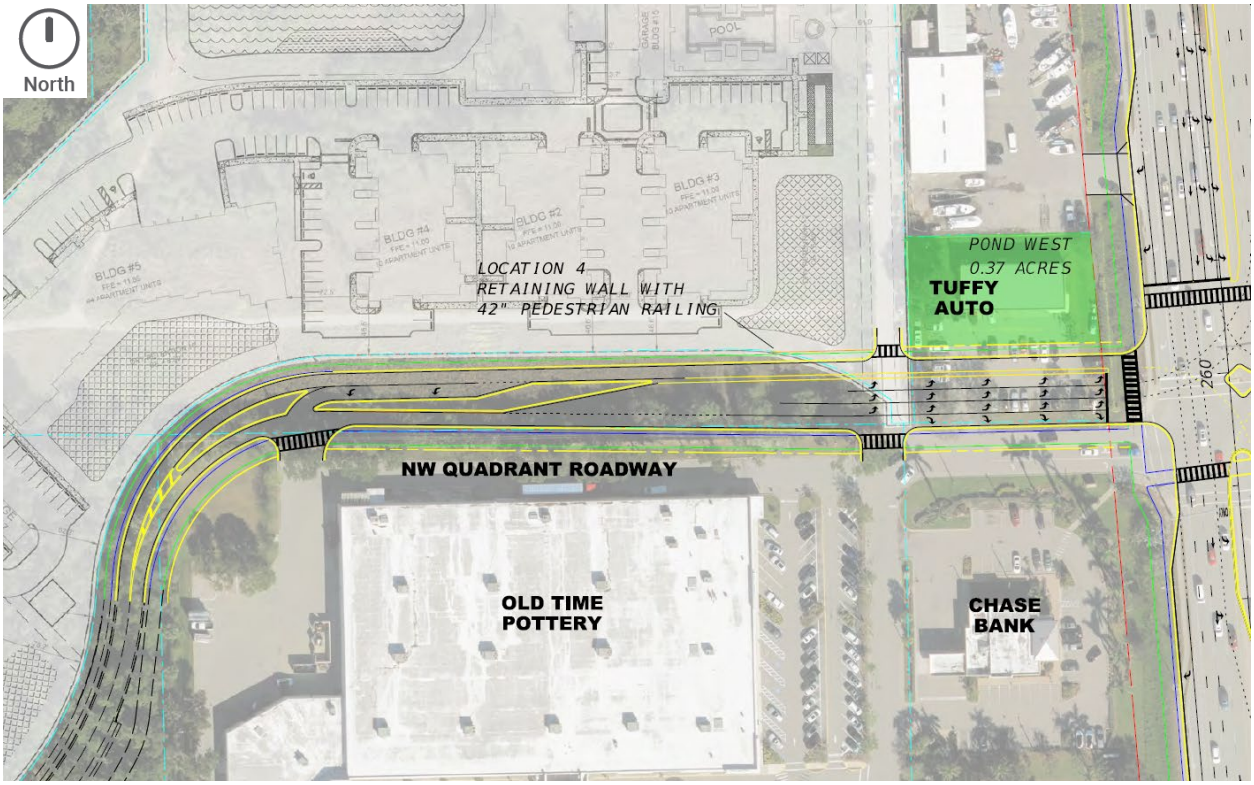


Figure 12: Northwest Quadrant Roadway – West Leg at US 41

Tying into the US 41 intersection's east leg is the Northeast Quadrant Roadway proposed between US 41 and Arroyal Road, intersecting at Arroyal Road and Carolina Street. The Northeast Quadrant Roadway will be built as part of this project. This will be a new three-lane roadway with two lanes eastbound and one lane westbound, as shown in **Figure 13**. The lane configuration at the US 41 intersection is discussed below:

- One 11′ westbound left turn lane.
- One 11′ westbound right turn lane.
- Two 11′ eastbound receiving lanes.

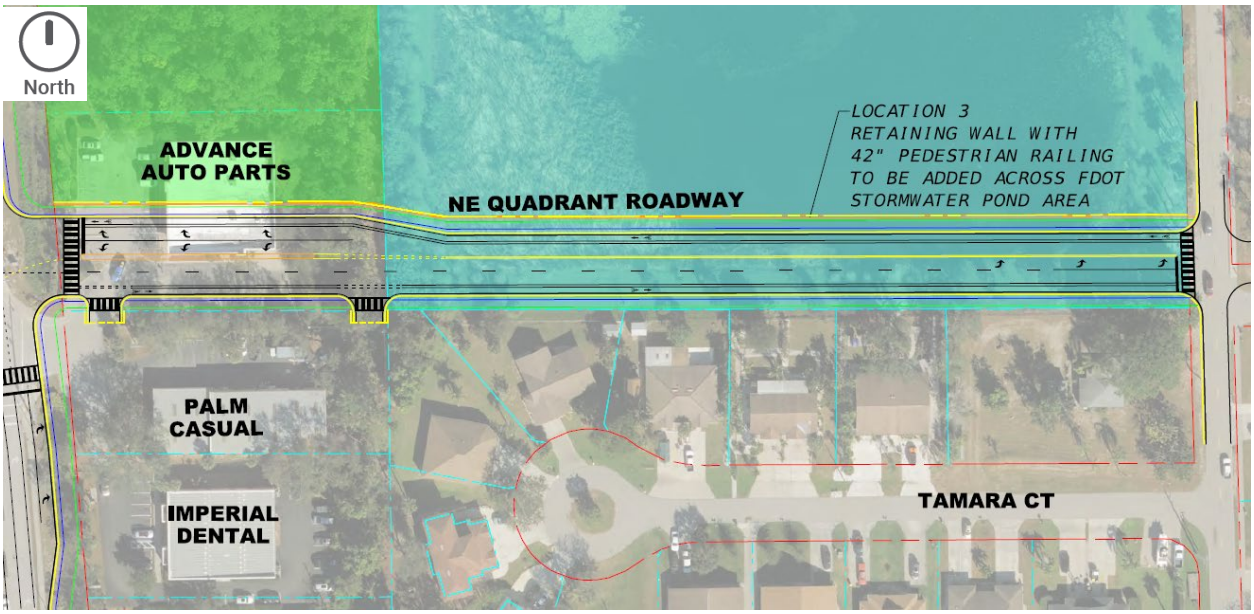


Figure 13: Northeast Quadrant Roadway – East Leg at US 41

1.5.3 Cost Estimates

The total estimated project cost, as shown in **Table 1**, displays the total construction cost, the wetland mitigation cost, the anticipated right-of-way cost, the design cost (funding set aside in the FDOT Work Program), and the CEI cost (calculated as 10 percent of the total construction cost) for the PDLT. For details of the right-of-way costs see **Table 32**. All estimates are based on 2024 dollars. Right-of-way acquisition is partially funded with a $5.5M earmark programmed for FY 2025, but construction is not currently programmed.

Table 1: US 41 at Bonita Beach Road Total Project Cost Estimates

Cost Element	Cost
Total Construction Cost	$41,700,000
Wetland Mitigation Cost	$300,000
ROW Cost	$22,100,000
Design Cost	$3,500,000
CEI Cost	$4,170,000
Total Project Cost	**$71,770,000**

1.6 List of Technical Documents

The following is a list of technical documents prepared for the SR 45 (US 41) at Bonita Beach Road PD&E Study:

- Comments and Coordination Report – July 2024

- Conceptual Stage Relocation Plan – January 2024
- Cultural Resources Assessment Survey (CRAS) – January 2024
- U.S. Department of Agriculture Farmland Conversion Impact Rating Form – November 2023
- Geotechnical Technical Memorandum – July 2020
- Level 1 Contamination Screening Evaluation Report (Mainline) – February 2024
- Level 1 Contamination Screening Evaluation Report (Ponds) – February 2024
- Location Hydraulics Report – February 2024
- Natural Resources Evaluation – July 2024
- Noise Study Report – January 2024
- Pond Siting Report – February 2024
- Project Traffic Analysis Report – February 2024
- Public Involvement Plan – February 2020
- Utility Assessment Package – January 2024
- Water Quality Impact Evaluation Checklist – February 2024

2.0 EXISTING CONDITIONS

The purpose of the existing conditions analysis is to inform future improvement efforts by gaining an understanding of how the corridor performs today. The topics addressed in the existing conditions analysis include existing roadway conditions, typical sections, right-of-way, traffic operations, safety, and environmental information, among others.

2.1 Previous Planning Studies

As noted in **Section 1.2.4**, the City of Bonita Springs performed the *Network Enhancement Alignment Study*, also known as the "Quadrant Plan", in May 2017. The purpose of the Quadrant Plan is to develop an expanded roadway network between Bonita Beach Road with US 41 improving the area's mobility, maintains a high-quality community environment, and minimizes impacts to the natural environment. The City explored potential new quadrant roadway alignments in each of the four intersection quadrants (northwest, northeast, southeast, and southwest. The culmination of the *Network Enhanced Alignment Study "Quadrant Plan"* was presented to the Bonita Springs City Council, in a Workshop setting, on March 15, 2017. This Workshop helped provide City Council with the direction needed to address the Quadrant Plan at the regularly scheduled Council meeting of March 15, 2017, that followed the Workshop. In conclusion, the City adopted the Quadrant Plan Maps, as a *Planning Tool*. At the City Attorney's direction, the City Council was provided an approach, which afforded them more flexibility to take advantage of the plan, and to work in tandem with the concurrent aspects of their Land Use and Transportation Planning elements. As of the date of this report, the City is moving forward with design and construction for the northwest quadrant roadway. Also, refer to **Section 2.4.1: Social Environment** for information regarding ongoing developments within the project study area.

Outside of the project's immediate study area, FDOT District 1 is conducting a PD&E Study along Old 41 (CR 887) from US 41/Tamiami Trail in Collier County to Bonita Beach Road in Lee County (FPIDs: 435110-1 and 435347-1). Old 41 splits from US 41 approximately 2.3 miles south of the US 41/Bonita Beach Road study intersection and parallels US 41 to the east. The Old 41/Bonita Beach Road intersection is approximately 1.65 miles to the east of the study intersection.

2.2 Existing Roadway Conditions

2.2.1 Roadway Characteristics

Within the study intersection's area, US 41 and Bonita Beach Road are the primary roadways. US 41 is a six-lane divided, urban principal arterial roadway, while Bonita Beach Road is a four-lane divided urban minor arterial. Existing roadway characteristics for US 41 and Bonita Beach Road are summarized in **Table 2**. An initial field review was conducted on March 4, 2020, and supplemental field reviews have been conducted since 2020, to verify the summarized characteristics.

Table 2: Existing Roadway Characteristics Summary

Characteristic	US 41 & Bonita Beach Road Intersection Area Roadway Segments	
	US 41 – Foley Road to South of Imperial River Bridge	Bonita Beach Road – Windsor Road to Spanish Wells Boulevard
Segment Length (mi.)	0.90	0.78
Functional Classification	Urban Principal Arterial – Other	Urban Minor Arterial
Maintaining Jurisdiction	FDOT	Lee County
Speed Limit	50 mph	45 mph
Lane Width	12 feet/11.5 feet[1]	12 feet
Paved Shoulder Width	None	None
Median	22 feet with Type E curb	22 to 25 feet with Type E curb
Outside Curb and Gutter	Type F	Type F
Sidewalks	Sidewalk on both sides of roadway	Sidewalk on both sides of roadway
Bike Lanes	5 feet	None
Segment Street Lighting	Lighting present	Lighting present

[1] US 41 has two 12-foot travel lanes and one 11.5-foot travel lane in each direction

US 41, from Foley Road (Sta. 222+75) to 475 feet south of the Imperial River bridge (Sta. 270+00) includes the following roadway characteristics. A cross section of these characteristics located at Sta. 237+00 is shown in **Figure 14**:

- 22′ median with Type E curb and gutter;
- Three travel lanes in each direction (two 12′ lanes and one 11′ lane);
- 5′ bicycle lanes in each direction outside of the travel lanes;
- Right turn lanes are present in both directions for much of this roadway segment;
- Type F curb and gutter outside of the bicycle lanes;
- Curb inlets with spacing generally between 130′ and 300′.
- Varies 3′ to 4′ grass strip between the back of curb and sidewalk;
- 5′ sidewalk on both sides of the road; and
- Varies 28′ to 40′ landscape area between the back of sidewalk and right-of-way line.

The roadway characteristics of Bonita Beach Road from Windsor Road (Sta. 260+00) to Spanish Wells Boulevard (Sta. 300+33) vary because it is within the US 41 intersection influence area,

including elements such as turn lanes and varying median widths. To illustrate the existing conditions along Bonita Beach Road, three cross sections along the roadway are provided. The existing cross sections along Bonita Beach Road 41 include the following roadway characteristics:

*From Windsor Road (Sta. 260+00) to US 41 (Sta. 277+00) (**Figure 15**) –*

- 7′ traffic separator;
- Two eastbound and three westbound 12′ travel lanes;
- Two 12′ eastbound left turn lanes;
- One 12′ eastbound right turn lane;
- Type F curb and gutter outside of the travel lanes with curb inlets;
- Varies 2′ to 3′ grass strip between the back of curb and sidewalk;
- 5′ sidewalk on both sides of the road; and
- Varies 10′ to 15′ landscape area between the back of sidewalk and right-of-way line.

*From US 41 (Sta. 277+00) to Arroyal Road (Sta. 286+30) (**Figure 16**) –*

- 7′ traffic separator;
- Two 12′ eastbound travel lanes;
- Two 12′ westbound travel lanes;
- Two 12′ westbound left turn lanes;
- One 12′ westbound right turn lane;
- Type F curb and gutter outside of the travel lanes with curb inlets;
- Varies 0′ to 4′ grass strip between the back of curb and sidewalk;
- 5′ sidewalk on both sides of the road; and
- Varies 6′ to 14′ landscape area between the back of sidewalk and right-of-way line.

*From Arroyal Road (Sta. 286+30) to Spanish Wells Boulevard (Sta. 300+33) (**Figure 17**) –*

- 22′ median with Type E curb and gutter;
- Two 12′ travel lanes in each direction;
- Type F curb and gutter outside of the travel lanes with curb inlets;
- Varies 2′ to 28′ grass strip between the back of curb and sidewalk;
- 5′ sidewalk on both sides of the road; and
- Varies 0′ to 28′ landscape area between the back of sidewalk and right-of-way line.

As noted previously, the City is moving forward with design and construction for the northwest quadrant roadway. As this roadway is anticipated to be an existing condition prior to the construction of this project, two typical sections along the northwest quadrant roadway are provided in **Figure 18** and **Figure 19**, and include the following roadway characteristics:

*From Sta. 206+80.95 to Sta. 207+25.48 (**Figure 18**) –*

- Two 11′ travel lanes in each direction with no median;

- Type F curb and gutter outside of the travel lanes;
- 6′ sidewalk on west/north side of the road with no grass strip between the back of curb and sidewalk;
- 10′ shared-use path on east/south side of the road with varying 6′-8′ grass strip between the back of curb and path; and
- Varies 1′ to 6′ grass area between the back of sidewalk/path and right-of-way line.

*From Sta. 207+25.48 to Sta. 213.51.14 (**Figure 19**) –*

- Two 11′ travel lanes in each direction with no median;
- Type F curb and gutter on the west/north side of the roadway;
- 5′ paved shoulder on the east/south side of the roadway;
- 6′ sidewalk on west/north side of the road with 4′ grass strip between the back of curb and sidewalk;
- 10′ shared-use path on east/south side of the road with varying 5′-16.5′ swale between the back of curb and path; and
- Varies 1′ to 6′ grass area between the back of sidewalk/path and right-of-way line.

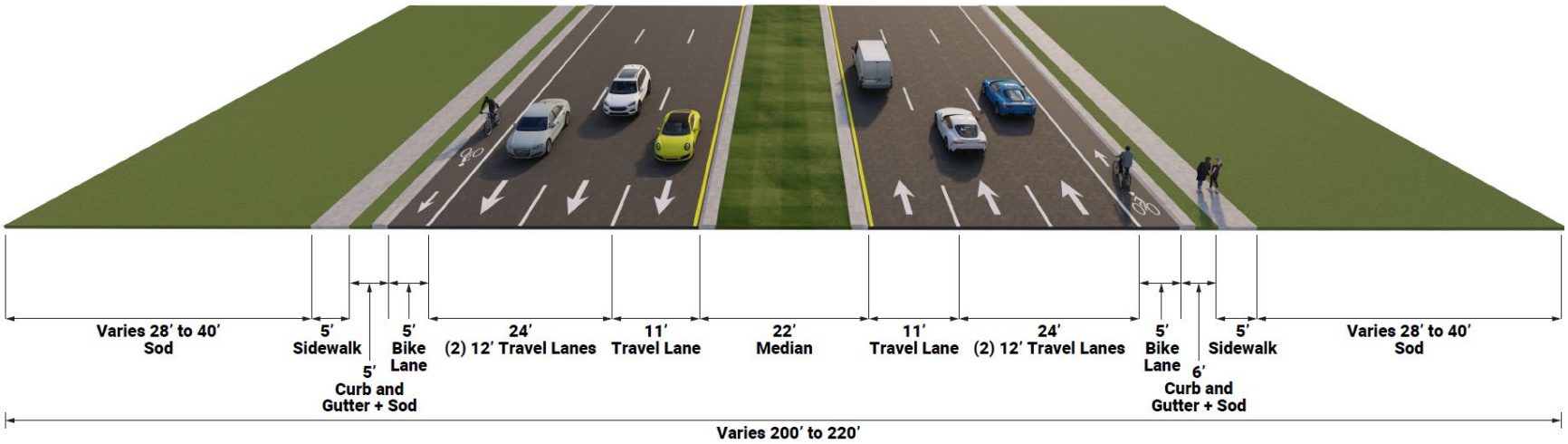


Figure 14: US 41 Existing Cross Section at Sta. 228+00

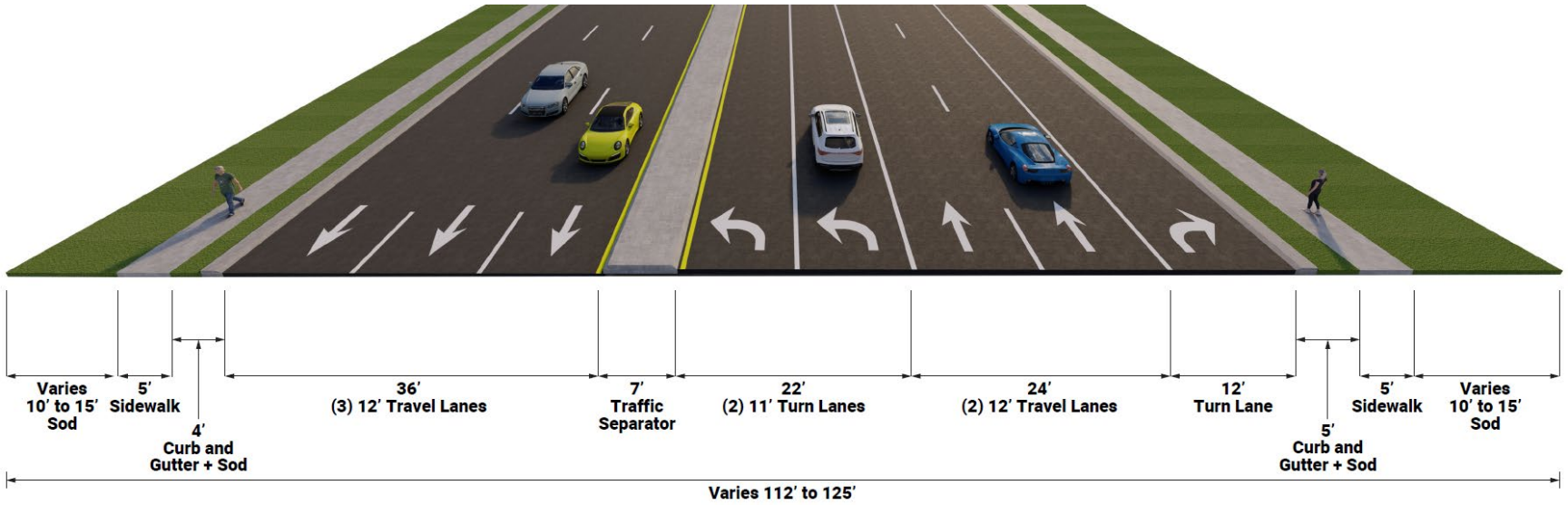


Figure 15: Bonita Beach Road – Existing Cross Section at Sta. 275+00

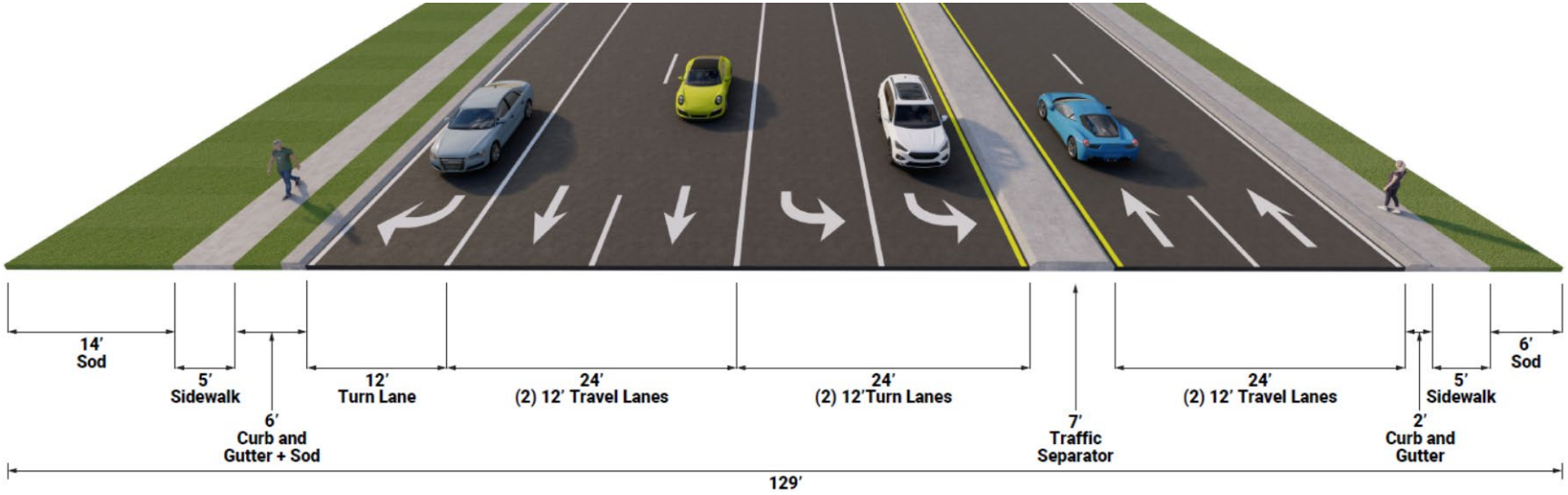


Figure 16: Bonita Beach Road – Existing Cross Section at Sta. 280+80

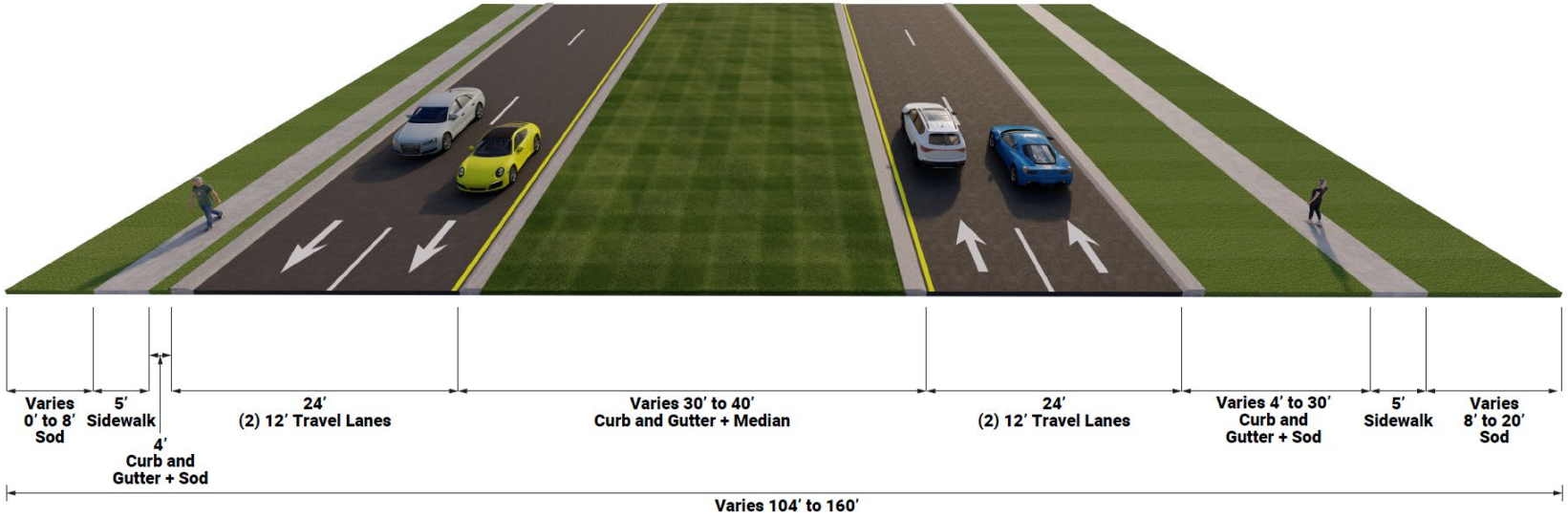


Figure 17: Bonita Beach Road – Existing Cross Section at Sta. 291+50

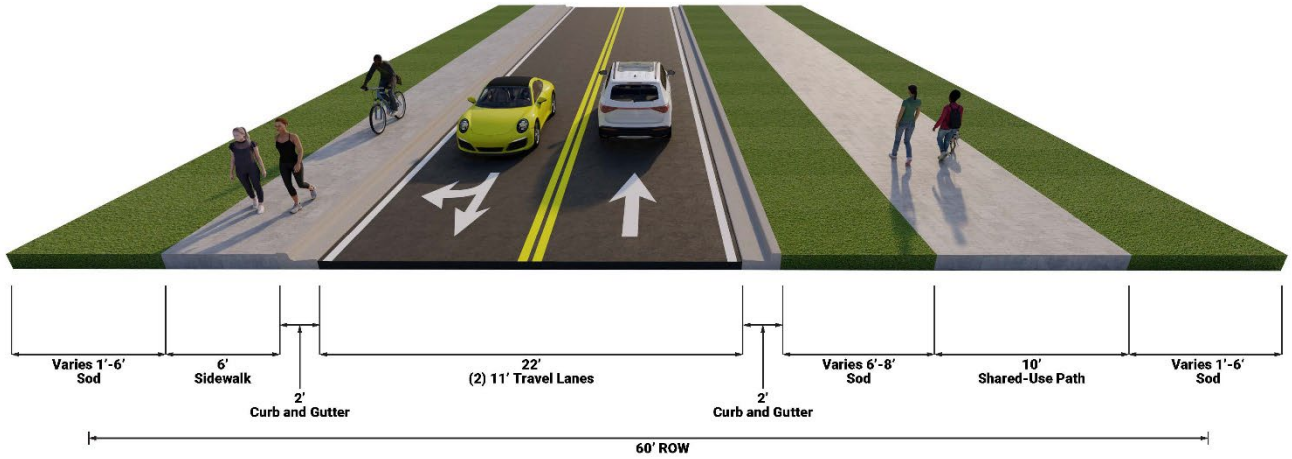


Figure 18: NW Quadrant Road – Typical Section from Sta. 206+80.95 to Sta. 207+25.48

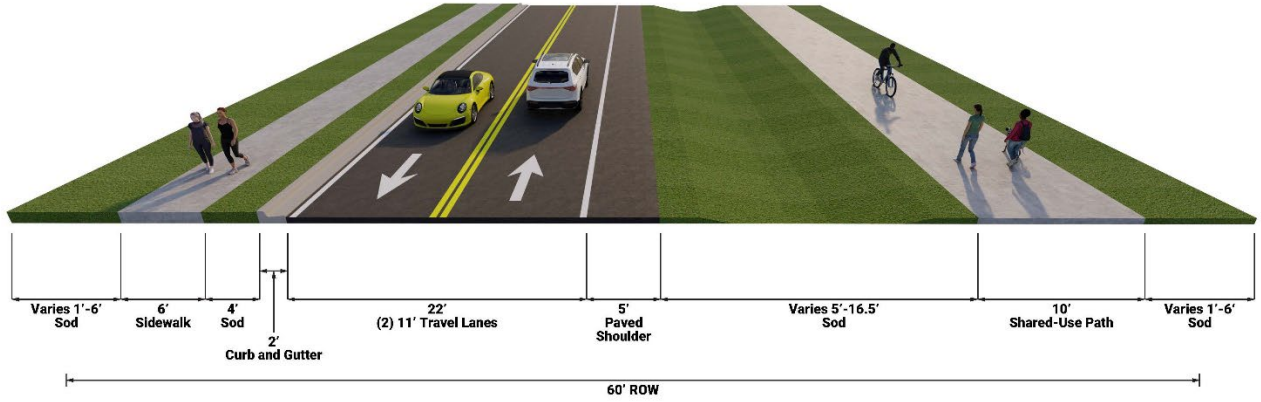


Figure 19: NW Quadrant Road – Typical Section from Sta. 207+25.48 to Sta. 213+51.14

2.2.2 Roadway Functional & Context Classification

Within the study area, US 41 is a six-lane divided, urban principal arterial – other roadway. Bonita Beach Road is a four-lane divided, urban minor arterial roadway. The context classification for US 41 between Woods Edge Parkway and Riverview Entrance/Bay Land Shopping Center is C3C – Suburban Commercial based on a review by FDOT District 1 on May 27, 2020. The C3C – Suburban Commercial context classification is recommended based on the distinguishing characteristics, future land use, and primary measures. The area along the corridor is zoned for general commercial, not changing from the existing land use, with large building footprints, and large parking lots within large blocks. Moreover, the intersection density along the corridor is less than 100 per square mile, with blocks over 660 feet in length. Bonita Beach Road is a local road within the project limits and therefore does not have an assigned context classification.

Both US 41 and Bonita Beach Road are designated as emergency evacuation routes for both the Florida Division of Emergency Management and Lee County. Additionally, US 41 is designated as regional freight mobility corridor (Tier 1 Regional Freight Corridor) in the Lee County 2045 Long Range Transportation Plan.

2.2.3 Access Management Classification

The existing access management classification for US 41 is an Access Class 5 (Restrictive) facility (based on FDOT's Roadway Characteristics Inventory (RCI)) with a 50 mph posted speed limit. Per Table 201.4.2 of the FDM, the access management spacing criteria are as follows:

- Connection Spacing: 440 feet for >45 mph
- Directional Median Opening Spacing: 660 feet
- Signal Spacing: 2,640 feet for >45 mph

The US 41 and Center of Bonita Springs signalized intersection is approximately 1,300 feet north of the US 41 and Bonita Beach Road signalized intersection. This does not meet median opening spacing criteria. All other US 41 median openings meet spacing criteria. Regarding driveways, the connection criteria is 440 feet for this Class 5 >45 mph roadway. All US 41 driveways south of Bonita Beach Road meet this criteria. North of Bonita Beach Road, in the northbound direction there are two locations where single driveways into private property are approximately 250 feet to 350 feet from public streets. There is one location on US 41 southbound at the 7-Eleven/Sunoco gas station on US 41 and Bonita Beach Road intersection's northwest corner having two US 41 driveways to the same property approximately 100 feet apart. These do not meet the connection criteria.

While Bonita Beach Road is a local roadway, the existing access management classification also most closely resembles an Access Class 5 (Restrictive) facility.

2.2.4 Right-of-Way

Parcel information and property lines were obtained from the local property appraiser. Right-of-Way information was obtained from a combination of the following as-built plans along US 41:

- FID 195736-1-52-01: Six-lane widening of US 41 from Woods Edge Parkway to north of Bonita Beach Road completed in 2002; and
- FID 195737-1-52-01: Six-lane widening of US 41 from north of Bonita Beach Road to Pelican Landing Parkway completed in 2005.

For the segments of Bonita Beach Road, right-of-way information was obtained from final design plans for the Bonita Beach Road six-lane widening from Windsor Road to Old 41 Road (Lee County Project No. 4152) in 2013.

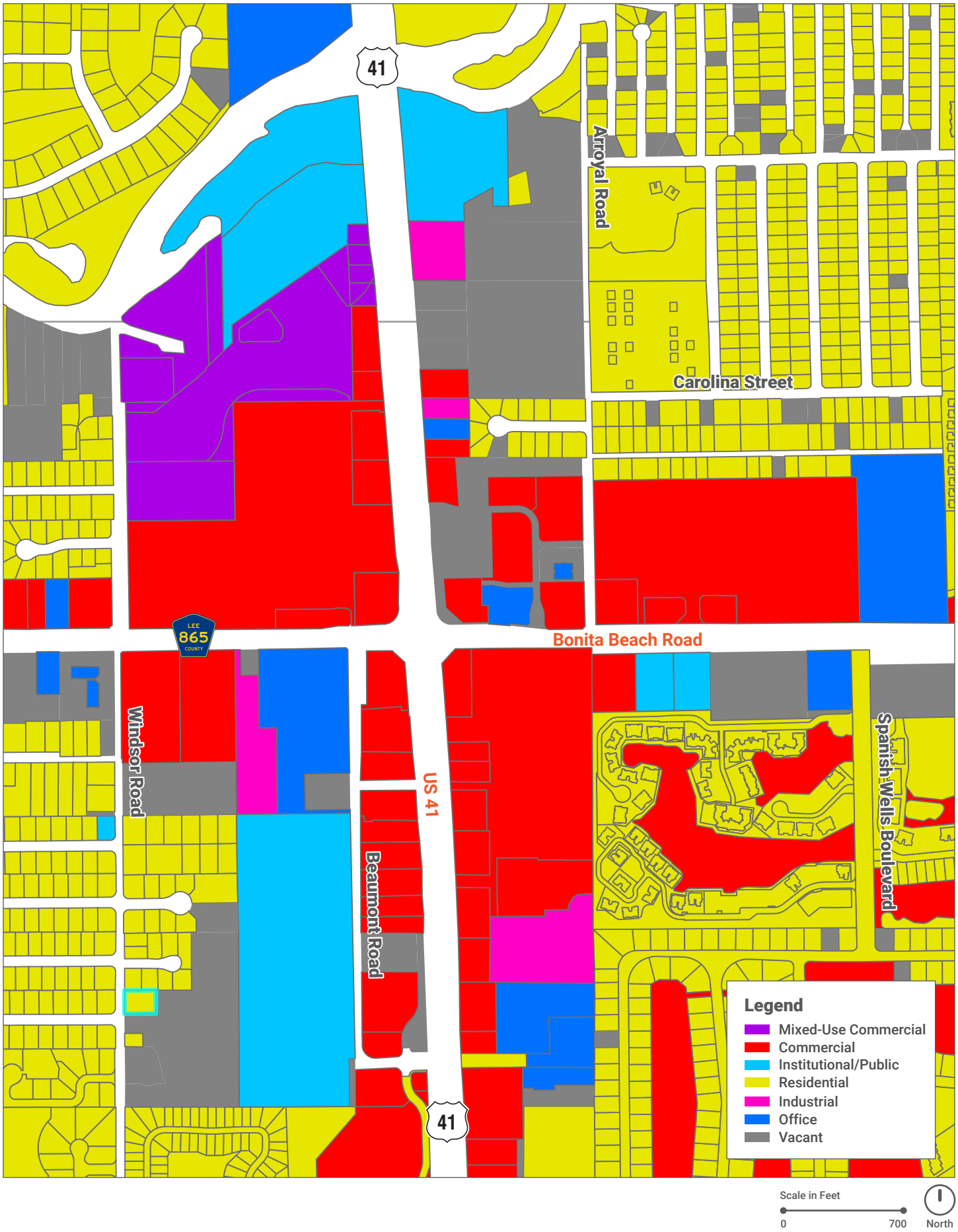
The right-of-way along US 41 varies from 200' south of Bonita Beach Road up to 220' north of Bonita Beach Road. The right-of-way along Bonita Beach Road varies between 105' and 160'. **Table 3** provides a detailed overview of the existing right-of-way present along US 41 and Bonita Beach Road in the study area.

Table 3: Existing Right-of-Way Summary

From	To	Stationing	Length (Miles)	ROW Width (Feet)
US 41				
Foley Road	475' North of Bonita Beach Road	222+75 to 251+00	0.54	200
475' North of Bonita Beach Road	230' South of Imperial River bridge	251+00 to 270+00	0.36	Varies 210 to 220
Bonita Beach Road				
Windsor Road	560' West of US 41	260+53.4 to 271+25.4	0.20	Varies 112 to 125
560' West of US 41	50' West of Arroyal Road	271+25.4 to 285+85	0.28	Varies 104 to 145
50' West of Arroyal Road	Spanish Wells Boulevard	285+85 to 301+00	0.29	160

2.2.5 Adjacent Land Use

Adjacent land use was obtained from readily available Lee County GIS databases. The existing land adjacent to US 41 are primarily commercial. Along Bonita Beach Road, the western end has a mix of commercial, office, and industrial whereas the eastern end has more public land uses. Some specific adjacent land uses include the Center of Bonita Springs retail development (northwest corner of study intersection), United States Postal Service (USPS), and the City of Bonita Springs City Hall. **Figure 20** displays the existing land use map.



US 41 at Bonita Beach Road PD&E Study

Figure 20 | Existing Land Use

FPID 444321-1-22-01

2.2.6 Pavement Type & Condition

Within the project limits, the asphalt pavement condition of US 41 was rated by FDOT in 2023. The ride is rated between 0 to 10, used to evaluate the smoothness of the pavement condition. For speed limits greater than or equal to 50 miles per hour, a ride rating of 6.4 or less is considered deficient. The ride score for the northbound direction was 7.4 and the southbound direction was 7.2. The five-year projected ride score (for 2028) is 7 for the northbound direction and 6.8 for the southbound direction. US 41 was last repaved in the mid-2000's when the roadway was widened from four to six lanes.

The cracking is rated between 0 to 10, used to indicate the pavement cracking condition. Any crack rating of 6.4 or less is considered deficient pavement. The cracking score along US 41 for 2023 within the project limits was rated as 9 in both directions. The five-year projected cracking score (for 2028) is 6.5 for both directions.

The overall condition index (OCI) for the segments of Bonita Beach Road, within the project limits, was obtained from Lee County. The OCI is a numerical index between 0 and 100, used to indicate the general condition of a pavement section. The OCI from Windsor Road to Spanish Wells Boulevard ranged from a low of 71.87 to a high of 83.78 collected in June 2023 by Lee County. Bonita Beach Road in the study area was last repaved in the mid-2000's as part of the same project that widened US 41 to six lanes.

During final design, pavement coring should be completed along existing corridor sections to determine the existing pavement section's structural integrity, pavement section depths, and base design resilient modulus.

2.2.7 Existing Design & Posted Speeds

The existing design and posted speeds along US 41 and Bonita Beach Road are shown below:

- US 41
    - Foley Road (Sta. 222+75) to 475 feet south of the Imperial River bridge (Sta. 270+00) – 45 mph design / 50 mph posted; and
- Bonita Beach Road
    - Windsor Road (Sta. 259+91) to Spanish Wells Boulevard (Sta. 301+00) – 45 mph design / 45 mph posted.

The existing design speed along US 41 was verified by the as-built plans of the six-lane widening along US 41 completed in 2005 (FDOT FID 195737-1-52-01). The existing design speed was verified for the Bonita Beach Road corridor by the design plans for Lee County Project No. 4152. The existing posted speeds were verified by field review observations.

2.2.8 Horizontal Alignment

An existing roadway alignment was provided by the City of Bonita Springs for use within this study. The existing alignment along US 41 and Bonita Beach Road consists of a combination of tangential sections and horizontal curves. Information for the tangential sections can be seen in **Table 4**. Information for the curved sections can be seen in **Table 5**.

Table 4: Horizontal Alignment Tangential Sections

Begin STA	End STA	Length (FT)	Bearing	Deflection Angle
US 41				
220+00	229+48.18	948.18	N2°36'20"W	01°19'18"
243+25.35	270+00	2,674.65	N4°54'03"W	3°37'00"
Bonita Beach Road				
267+48.55	281+91.34	1,442.79	N88°45'42"E	0°02'44"
293+77.75	316+47.18	2,269.42	N88°09'31"E	0°33'26"

Table 5: Horizontal Alignment Curved Sections

PC STA	PI STA	PT STA	Length (FT)	Radius (FT)
US 41				
229+48.18	236+36.86	243+25.35	1,377.17	34,377.47
Bonita Beach Road				
258+99.13	260+83.20	262+67.20	368.07	7,816.50
262+67.20	265+07.92	267+48.55	481.35	9,963.50
281+91.34	284+60.02	287+28.57	537.23	9,943.50
287+28.57	290+53.27	293+77.75	649.18	10,056.50

2.2.9 Vertical Alignment

As-built plans for the US 41 six-lane widening from Woods Edge Parkway to Pelican Landing Parkway (FID 195736-1-52-01 and 195737-1-52-01) were reviewed. It was determined the existing grade elevation is approximately 14.7' at the US 41 and Foley Road intersection (Sta. 222+75). The elevation gradually increases and decreases along US 41, with grade changes staying within 0.20 percent and the elevation averaging approximately 14.5' to the Park Drive driveway, south of the Imperial River Bridge (Sta. 270+00). North of Park Drive, as US 41 approaches the Imperial River, the elevation begins increasing and reaches a height of approximately 16.5' at the start of the Imperial River Bridge. There is one 328 foot (100 meter) vertical curve present along US 41 as it approaches the Imperial River bridge. This vertical curve begins with an elevation of approximately 11.7 feet (3.6 meters) at Sta. 267+37 and ends with an elevation of approximately 14.7 feet (4.5

meters) at Sta. 270+65, for a total elevation change of 3 feet (0.9 meters). Other grade changes fell within the allowable 0.70 percent for 45 mph roadways as detailed in Table 210.10.2 of the FDM. This indicates the alignment of US 41 through the study area is flat.

Final design plans for the Bonita Beach Road six-lane widening from Windsor Road to Old 41 Road (Lee County Project No. 4152) were reviewed. From Project No. 4152, completed in 2012, it can be determined the existing grade elevation is approximately 14.5′ at the Bonita Beach Road and Windsor Road intersection (Sta. 259+91). The elevation gradually increases and decreases along Bonita Beach Road, with the elevation averaging approximately 14.5′ until the Arroyal Road intersection (Sta. 286+20). East of Arroyal Road, the elevation gradually begins increasing and reaches a height of approximately 18.5′ at the Spanish Wells Boulevard intersection (Sta. 301+00). No vertical curves were present along the existing alignment as grade changes fell within the allowable 0.70 percent for 45 mph roadways as detailed in Table 210.10.2 of the FDM. This indicates the alignment of Bonita Beach Road through the study area is flat.

Elevations for the US 41 alignment through the Bonita Beach Road intersection area (Sta. 245+00 to 247+40) are included in both the FID 195736-1-52-01 and Project No. 4152 plans. The existing grade elevation along US 41 through the Bonita Beach Road intersection ranged from 14′ to 14.5′.

2.2.10 Multi-Modal Facilities

Pedestrian accommodations, bicycle/trail facilities, and transit facilities were reviewed within the project limits. These facilities are summarized below and in **Figure 21**.

2.2.10.1 Pedestrian Facilities

Within the project limits there are 5′ sidewalks on both sides of US 41 and Bonita Beach Road.

Standard marked crosswalks, in various conditions, are present at the stop-controlled intersections along both US 41 and Bonita Beach Road. Standard marked crosswalks are present at all legs of the signalized intersection of US 41 and Bonita Beach Road. Standard marked crosswalks are also present at the following signalized intersections within the project limits:

- US 41 and Center of Bonita Springs – all legs
- Bonita Beach Road and Center of Bonita Springs – north, west, and south legs
- Bonita Beach Road and Arroyal Road – all legs
- Bonita Beach Road and Spanish Wells Boulevard – all legs

2.2.10.2 Bicycle Facilities

The only bicycle facilities present in the study area are 5′ marked bicycle lanes along both sides of US 41. There are no on-road bicycle facilities along Bonita Beach Road.

2.2.10.3 Transit Facilities

One LeeTran bus route (Route 600) operates along Bonita Beach Road (east of US 41) and US 41 (south of the intersection at Bonita Beach Road). Route 600 operates between Coconut Point on Coconut Road and Creekside Transfer Center along Immokalee Road. Route 600 primarily serves the City of Bonita Springs traversing along US 41, Old 41, Bonita Beach Road, and Immokalee Road. Route 600 is the only fixed route that provides service to Collier County as well as the Creekside Transfer Center. Route 600 operates with one-hour headways from approximately 5:45 AM to 8:25 PM on weekdays and Saturday and from 7:25 AM to 5:15 PM on Sunday.

Four bus stops exist for this route within the project limits on the east and south legs of US 41 and Bonita Beach Road, respectively. The eastbound bus stop (stop ID 12146) by Bonita Springs City Hall includes a concrete pad, trash can, and shelter. The westbound bus stop (stop ID 12145) adjacent to Bonita Beach Balloon Bar & Grill and the eastbound bus stop (stop ID 12144) by Springs Plaza include a sign post adjacent to the sidewalk. The southbound bus stop along US 41 (stop ID 11847) by Wendy's includes a sign post adjacent to the sidewalk.

LeeTran has partnered with Uber to provide ULTRA On-Demand Transit service in the Bonita Springs area. LeeTran's ULTRA On-Demand Transit service is a deluxe mini-bus available seven days a week from 7:00 AM to 6:00 PM. ULTRA On-Demand Transit allows riders to request a ride as needed, with curb-to-curb service. With creating this service, LeeTran has discontinued service on Route 150 and the bus stop with shelter near the US 41 and Bonita Beach Road northwest corner is no longer in use.

Per LeeTran, Route 600 has an annual ridership of 75,473. The transit route and stops, along with the ULTRA service area, are presented in **Figure 21** and the supporting transit data is documented in **Appendix A**.

2.2.11 Intersections

The *SR 45 (US 41) at Bonita Beach Road Project Traffic Analysis Report (PTAR)* study area extends along US 41 between the Woods Edge Parkway and the Center of Bonita Springs (north) intersections, approximately 1.1 miles. In the east-west direction, the PTAR's study area extends along Bonita Beach Road between the Vanderbilt Drive/Luke Street and Spanish Wells Boulevard intersections, approximately 1.3 miles. The PTAR's study area was selected in order to show the potential diversion from all four proposed quadrant roadways.

Sixteen intersections in the study area were analyzed for existing conditions. The existing lane configurations for each intersection are shown in **Figure 22**. Of the study intersections, the following seven are signalized:

- US 41 and Woods Edge Parkway;
- US 41 and Bonita Beach Road;

- US 41 and Center of Bonita Springs;
- Bonita Beach Road and Vanderbilt Drive/Luke Street;
- Bonita Beach Road and Center of Bonita Springs;
- Bonita Beach Road and Arroyal Road; and
- Bonita Beach Road and Spanish Wells Boulevard.

The existing conditions operations analysis for these signalized intersections is shown in **Table 8**.

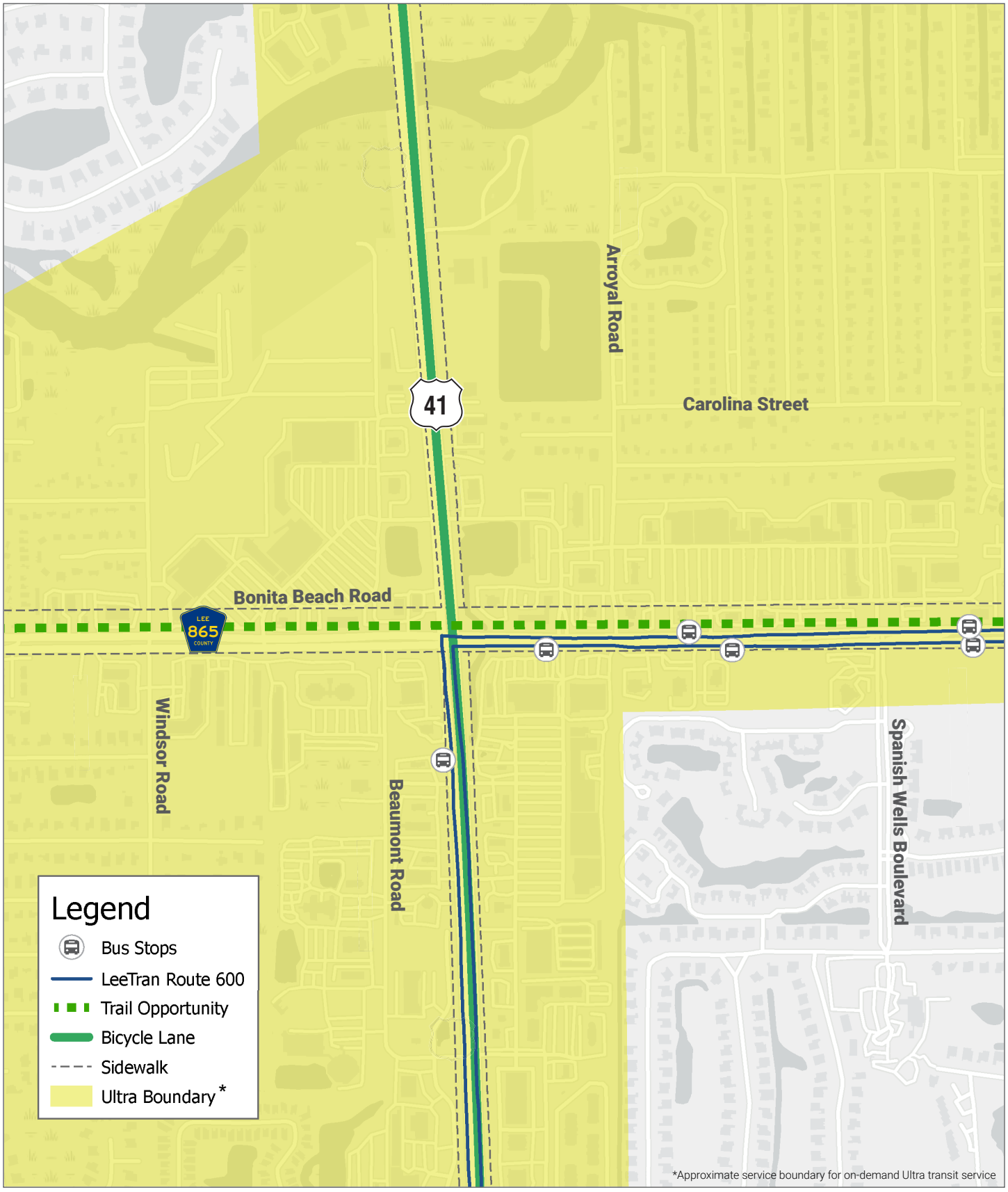
The remaining nine are two-way stop controlled (TWSC) intersections. A field review was conducted to verify the intersection geometrics.

2.2.12 Physical or Operational Restrictions

Approximately 500 feet south of the Bonita Beach Road intersection, a double 8-ft X 4-ft concrete box culvert crosses under US 41. There is metal pedestrian railing on top of the culvert's headwalls beside the existing sidewalk. Approximately 0.60 miles north of the US 41 & Bonita Beach Road study intersection (MP 1.482) is the Imperial River. A bridge spanning the Imperial River begins approximately ½ mile north of the study intersection.

Approximately 200 feet east of the Bonita Beach Road intersection, a single 10-ft X 7-ft concrete box culvert crosses under Bonita Beach Road. The culvert's headwalls are guardrail protected. Part of the westbound lanes guardrail is at the back of curb.

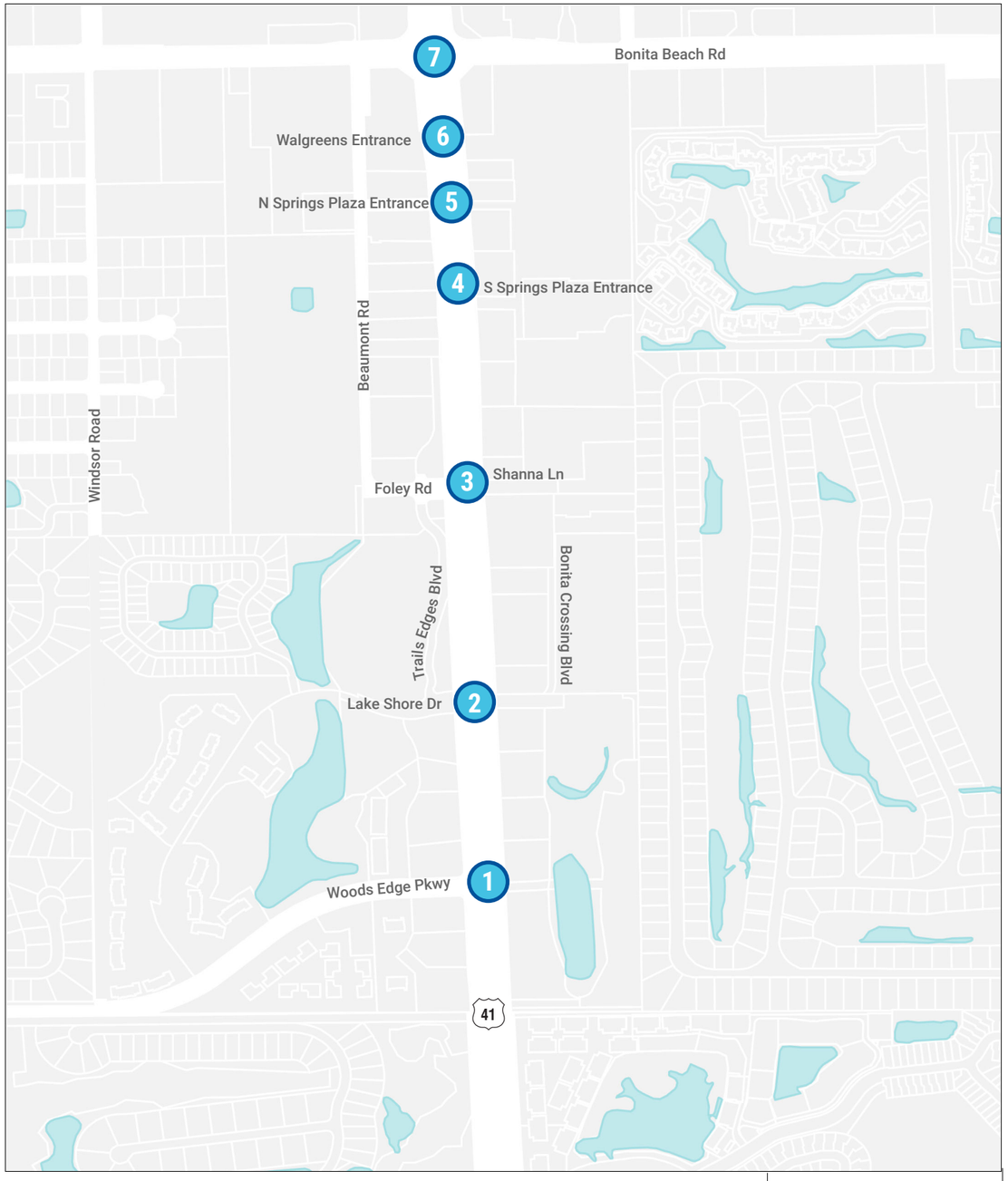
No other physical or operational restrictions are present in the study area along US 41 or Bonita Beach Road.



US 41 at Bonita Beach Road PD&E Study

FPID 444321-1-22-01

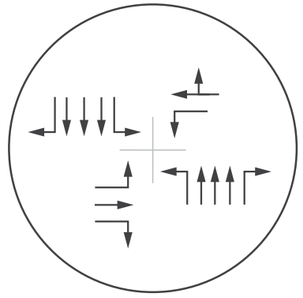
Figure 21 | Multi-Modal Facilities



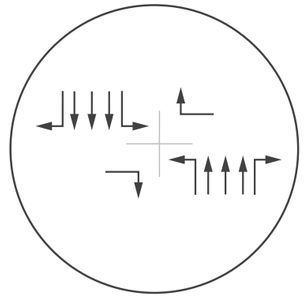
Scale in Feet
0 750 North

LEGEND
- X — Study Intersection
- Turning Movement Configurations

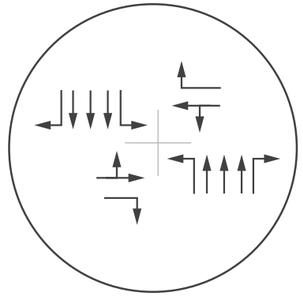
1 US 41 & Woods Edge Pkwy



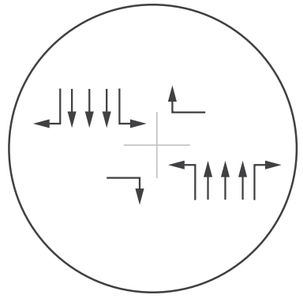
2 US 41 & Lake Shore Dr



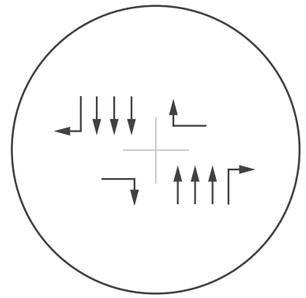
3 US 41 & Foley Rd/Shanna Ln



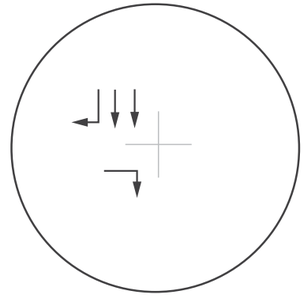
4 US 41 & S Springs Plaza Entrance



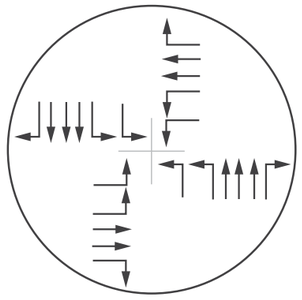
5 US 41 & N Springs Plaza Entrance

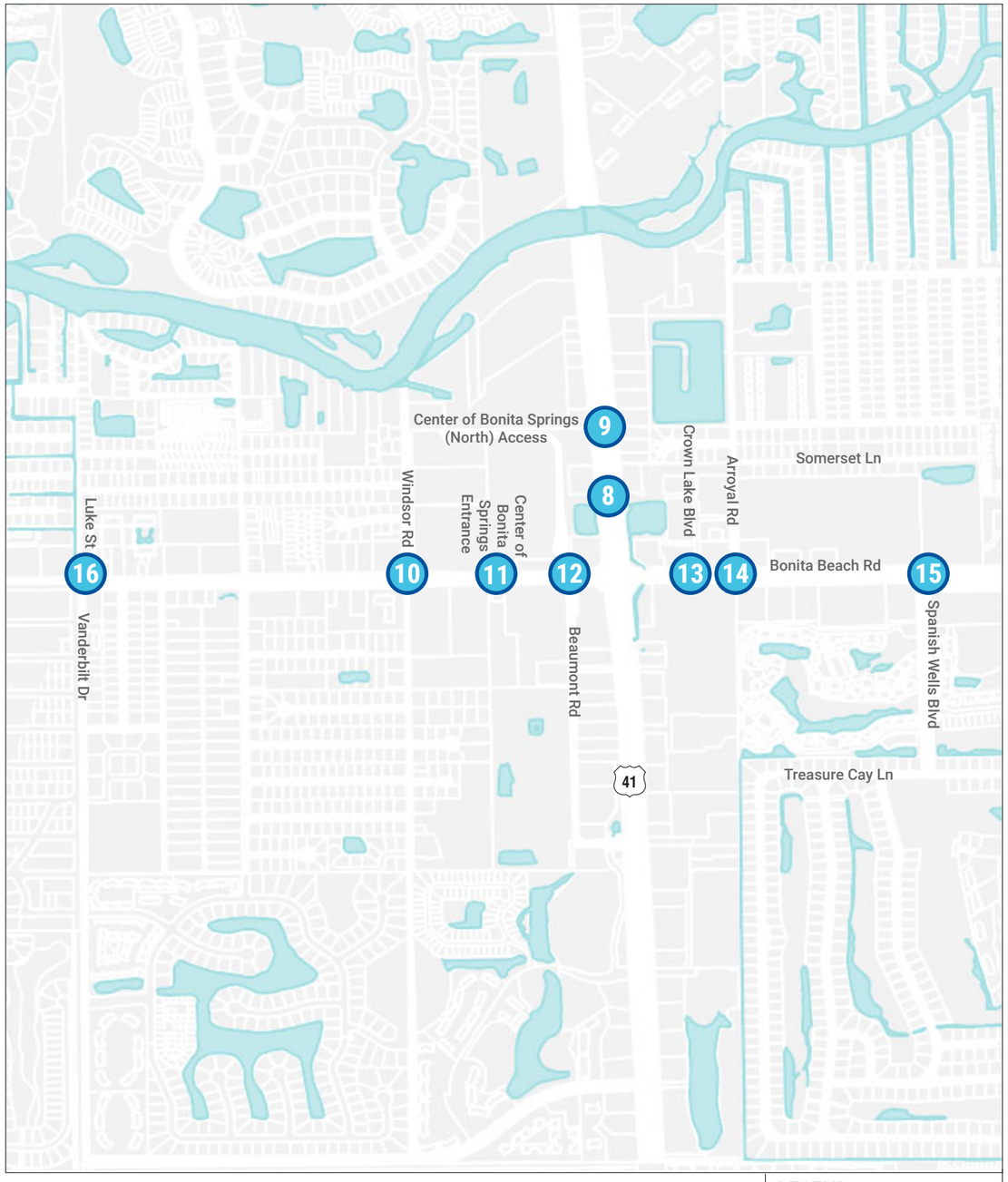


6 US 41 & Walgreens Entrance

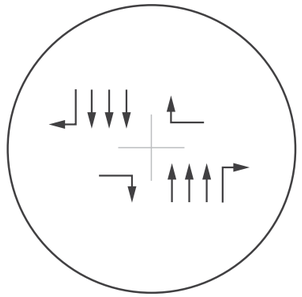


7 US 41 & Bonita Beach Rd

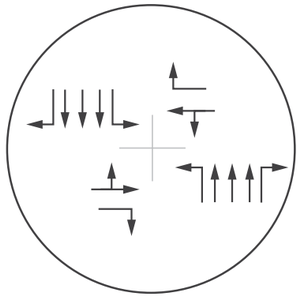




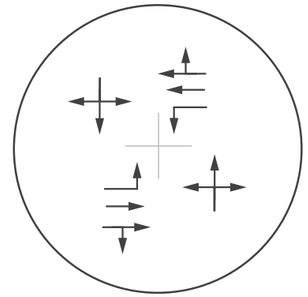
8 **US 41 & Crown Lake Blvd**



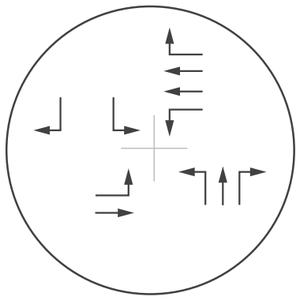
9 **US 41 & Center of Bonita Springs (North) Access**



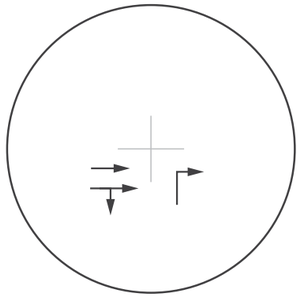
10 **Windsor Rd & Bonita Beach Rd**



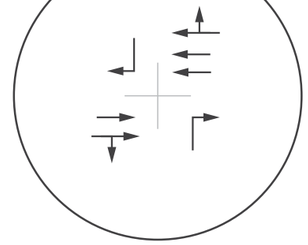
11 **Center of Bonita Springs Entrance & Bonita Beach Rd**



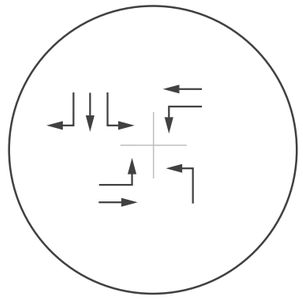
12 **Beaumont Rd & Bonita Beach Rd**



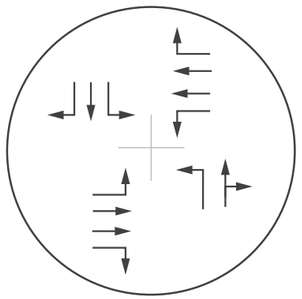
13 **Crown Lake Blvd & Bonita Beach Rd**



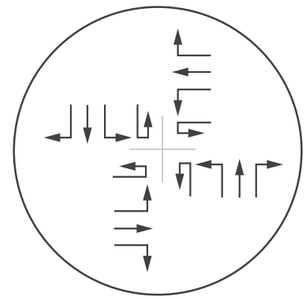
14 **Arroyal Rd & Bonita Beach Rd**



15 **Spanish Wells Blvd & Bonita Beach Rd**



16 **Vanderbilt Dr/Luke St & Bonita Beach Rd**



2.2.13 Traffic Data

Existing April 2019 and August 2019 traffic volumes were collected, including weekday 72-hour segment classification counts and individual intersection turning movement counts. The existing 72-hour segment classification counts were used to determine existing D and T_{24} factors and existing Annual Average Daily Traffic (AADT) volumes. Updated 72-hour volume counts and turning movement counts were collected in April 2022.

The existing 2019 AADT values and T_{24} factors along the study corridor are presented in **Table 6**. T_{24} factors were developed by reviewing the historical data at the FDOT count site locations. The review of the trucks showed a relatively steady trend over the nine-year period (between 2009 to 2017). Therefore, the historical average of T_{24} factors was selected as the recommended T_{24} factor for each segment. The DHT percentage is equal to half of the daily truck traffic as per the FDOT *Project Traffic Forecasting Handbook* (2019). Using the collected traffic volumes, existing traffic factors were calculated for the individual peak hour and are summarized in **Table 6**. A seasonal factor of 0.97 was used for the April 16, 2019 turning movement counts and a seasonal factor of 1.04 was used for the August 28, 2019 turning movement counts

A mid-day peak hour was chosen between 12 PM to 1 PM, as opposed to an AM peak hour, as the traffic on the study roadways increases through the morning hours and then plateaus for approximately six hours in the afternoon and evening.

Existing peak hour volumes are provided in **Figure 23**. Directional Design Hour Volumes (DDHVs) were not calculated for the existing condition. A summary of the April 2022 pedestrian/bicycle counts is shown in **Table 7** and the raw count data can be found in the project's PTAR Appendix B. No transit data was collected for this project.

Table 6: Weekday Existing 2019 Traffic Volumes and Factors

Roadway	AADT	K	Mid-Day D	PM D	T_{24} Factors	DHT
US 41, North of Bonita Beach Road	53,000	0.11	50.2	57.4	2.6	1.3
US 41, South of Bonita Beach Road	39,000	0.11	50.9	59.5	3.2	1.6
Bonita Beach Road, East of US 41	30,000	0.11	50.8	60.4	6.0	3.0
Bonita Beach Road, West of US 41	30,000	0.11	52.3	53.5	3.6	1.8

Table 7: April 5, 2022 Pedestrian and Bicycle Volumes (10AM-6PM)

Intersection	Pedestrian					Bicycle					Total Pedestrian/Bicycle				
	South Leg	West Leg	North Leg	East Leg	Total	South Leg	West Leg	North Leg	East Leg	Total	South Leg	West Leg	North Leg	East Leg	Total
US 41 at Woods Edge Parkway/ Service Road	0	1	0	5	6	13	10	27	24	74	13	11	27	29	80
US 41 at Lake Shore Drive/ Bonita Crossings Boulevard	1	2	0	2	5	0	9	0	17	26	1	11	0	19	31
US 41 at Foley Road/Shanna Lane	0	4	0	2	6	5	10	1	16	32	5	14	1	18	38
US 41 at Sportsmans/KFC Driveway/Springs Plaza	0	4	2	2	8	2	10	2	15	29	2	14	4	17	37
US 41 at Beaumont Road/ Springs Plaza	1	5	0	2	8	1	9	1	13	24	2	14	1	15	32
US 41 at Aspen Dental	0	10	0	0	10	0	13	0	0	13	0	23	0	0	23
US 41 at Bonita Beach Road	7	7	11	7	32	37	23	50	13	123	44	30	61	20	155
US 41 at Boston Road/Crown Lake Boulevard	0	2	1	0	3	0	19	2	15	36	0	21	3	15	39
US 41 at Publix Plaza/Advance Auto Parts	4	0	0	7	11	23	23	12	36	94	27	23	12	43	105

Intersection	Pedestrian					Bicycle					Total Pedestrian/Bicycle				
	South Leg	West Leg	North Leg	East Leg	Total	South Leg	West Leg	North Leg	East Leg	Total	South Leg	West Leg	North Leg	East Leg	Total
Bonita Beach Road at Vanderbilt Drive/ Luke Street	11	0	5	1	17	43	22	55	20	140	54	22	60	21	157
Bonita Beach Road at Windsor Road	8	0	17	2	27	38	9	48	5	100	46	9	65	7	127
Bonita Beach Road at Publix Plaza	8	22	3	1	34	34	13	33	2	82	42	35	36	3	116
Bonita Beach Road at Beaumont Road	7	1	0	1	9	34	0	0	0	34	41	1	0	1	43
Bonita Beach Road at Crown Lake Boulevard/ Springs Plaza	8	4	10	0	22	21	1	38	1	61	29	5	48	1	83
Bonita Beach Road at Arroyal Road/Springs Plaza	8	11	4	5	28	13	5	31	29	78	21	16	35	34	106
Bonita Beach Road at Sunshine Plaza/ Spanish Wells Boulevard	3	5	1	1	10	45	0	27	14	86	48	5	28	15	96

2.2.14 Study Area Operational Conditions

2.2.14.1 Existing 2019 Peak Hour Intersection Operations

Existing intersection level-of-service (LOS) analyses were conducted using the *Highway Capacity Manual 6th Edition* (HCM6) methodologies as implemented by Synchro 11. **Figure 23** summarizes the existing mid-day and PM peak hour intersection turning movement volumes and **Table 8** summarizes the existing intersection volume-to-capacity (v/c) ratio for each movement at the study intersections. For the purposes of this analysis, existing roadway geometry and signal timings parameters were maintained. The following through and turning movements do not meet the LOS D target and/or have intersection turning movements with a v/c ratio greater than 1.0:

- US 41 & Woods Edge Parkway
  - Northbound left-turn movement in the mid-day peak period
- US 41 & South Springs Plaza Entrance
  - Westbound right-turn movement in the PM peak period
  - Southbound left-turn movement in the mid-day and PM peak periods
- US 41 & North Springs Plaza Entrance
  - Westbound right-turn movement in the PM peak period
- US 41 & Bonita Beach Road
  - Overall intersection during mid-day and PM peak periods
  - Eastbound left-turn and through movements in the mid-day and PM peak periods, and right-turn movement in the PM peak period
  - Westbound all movements in the mid-day and PM peak periods
  - Northbound all movements in the mid-day peak period, and left-turn and through movements in the PM peak period
  - Southbound left-turn movement in the mid-day and PM peak periods, and through movement in the mid-day peak period
- US 41 & Center of Bonita Springs North
  - Eastbound left-turn and right-turn movements in the mid-day and PM peak periods
  - Westbound left-turn and right-turn movements in the mid-day and PM peak periods
- Bonita Beach Road & Center of Bonita Springs
  - Eastbound left-turn movement in the PM peak period
  - Westbound left-turn movement in the PM peak period
  - Northbound all movements in the mid-day and PM peak periods
  - Southbound left-turn and right-turn movements in the mid-day and PM peak periods

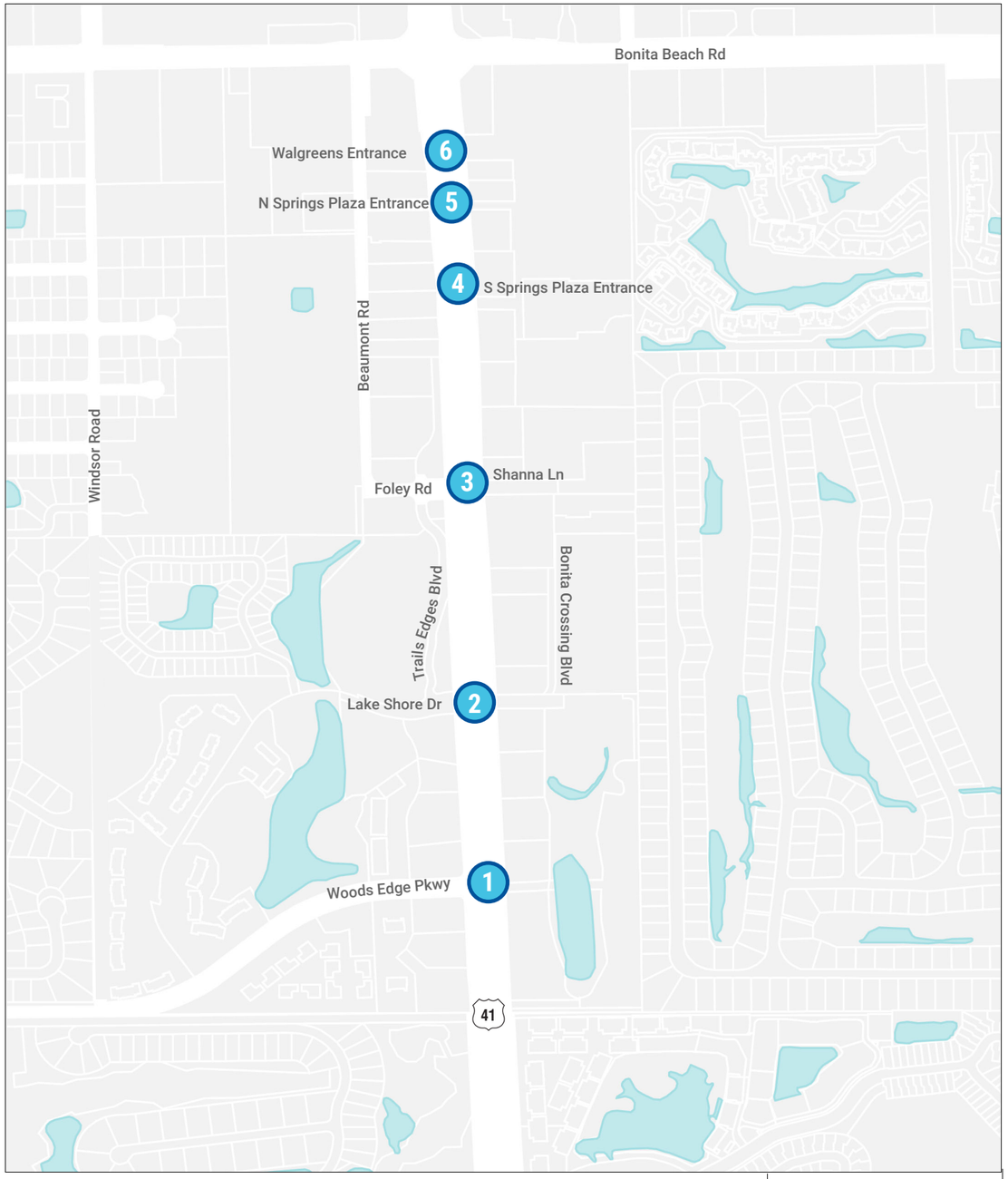
- Bonita Beach Road & Arroyal Road
    - Northbound left-turn and right-turn movements in the mid-day and PM peak periods
    - Southbound all movements in the mid-day and PM peak periods

The Synchro output results for the intersection operations can be found in the project's PTAR.

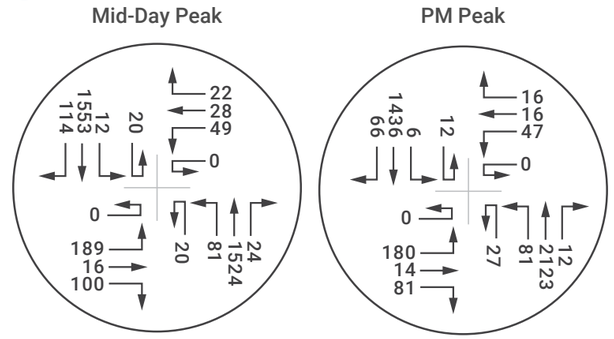
Table 8: Existing Signalized Intersection Delay Summary

Intersection	MD Peak Delay (s) & LOS	PM Peak Delay (s) & LOS
US 41 & Woods Edge Pkwy.	22.9 C	23.0 C
US 41 & Bonita Beach Rd.	83.0 F	80.1 F
US 41 & Center of Bonita Springs (North) Access	63.1 E	11.3 B
Vanderbilt Dr./Luke St. & Bonita Beach Rd.	25.4 C	22.3 C
Center of Bonita Springs & Bonita Beach Rd.	37.9 D	31.8 C
Arroyal Rd. & Bonita Beach Rd.	21.5 C	11.2 B
Spanish Wells Blvd. & Bonita Beach Rd.	13.7 B	10.5 B

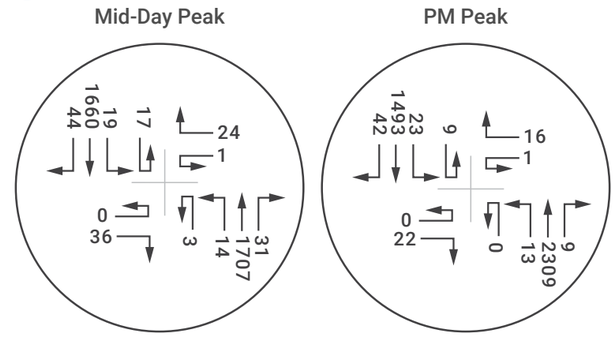
[1] Based on 2022 data.



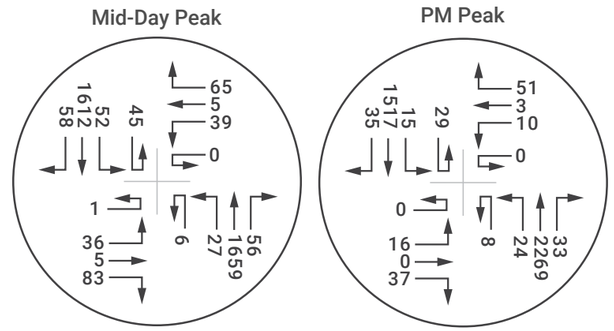
1 US 41 & Woods Edge Pkwy



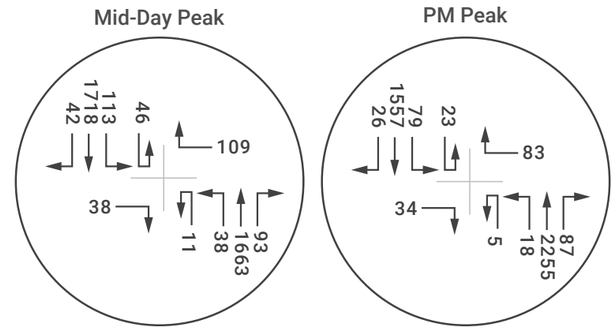
2 US 41 & Lake Shore Dr



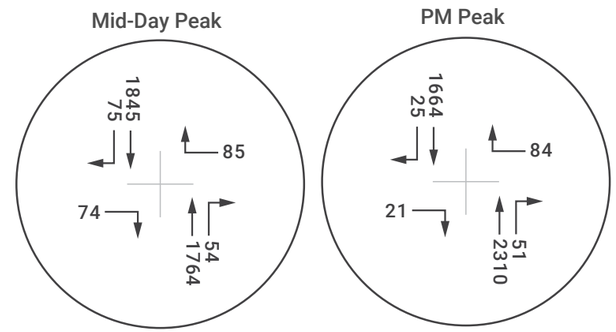
3 US 41 & Foley Rd/Shanna Ln



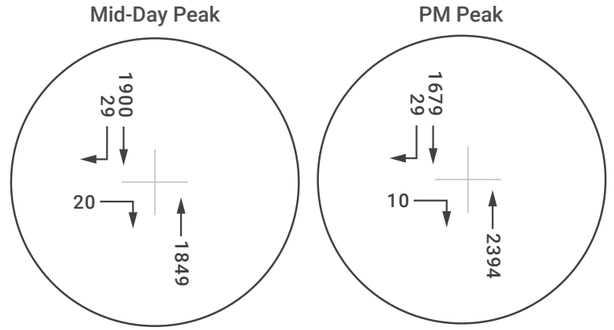
4 US 41 & S Springs Plaza Entrance



5 US 41 & N Springs Plaza Entrance



6 US 41 & Walgreens Entrance

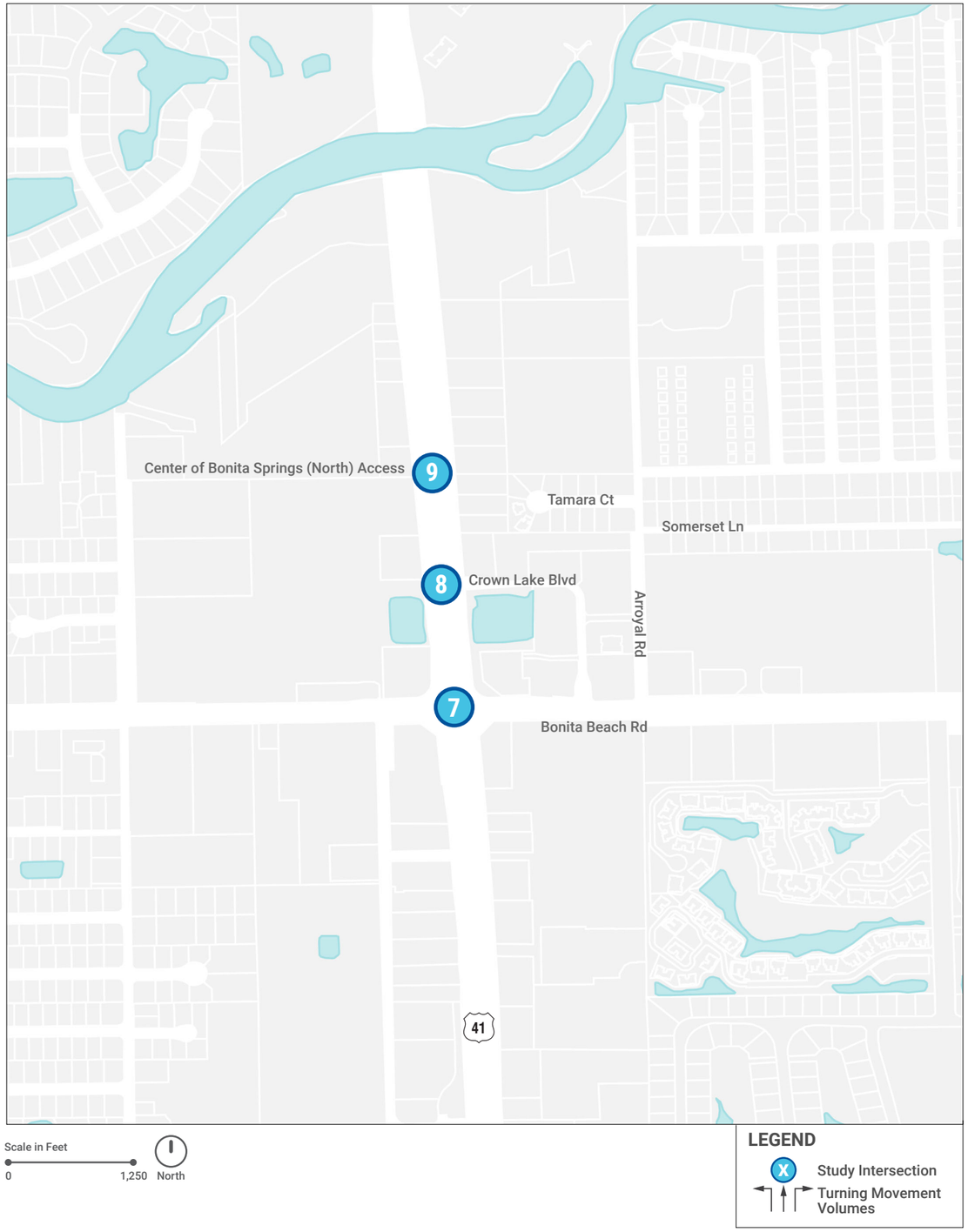


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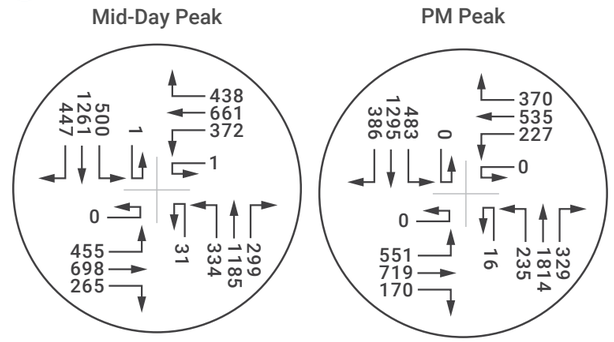
FPID 444321-1-22-01

2019 Existing TMCs

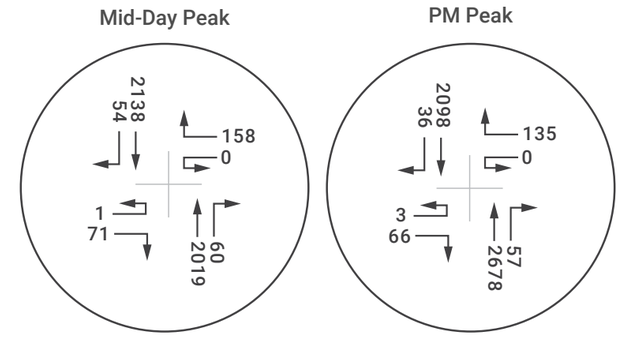
FIGURE 23A



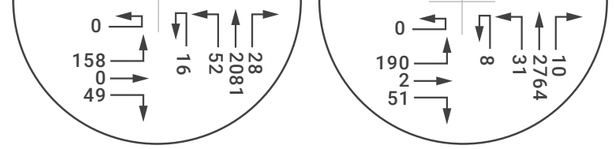
7 US 41 & Bonita Beach Rd



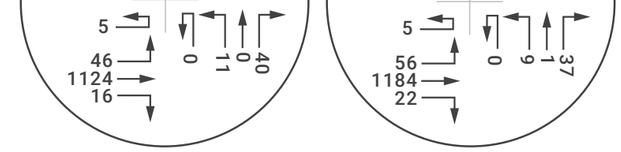
8 US 41 & Crown Lake Blvd



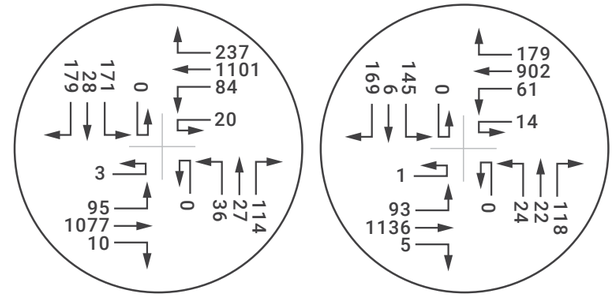
9 US 41 & Center of Bonita Springs (North) Access



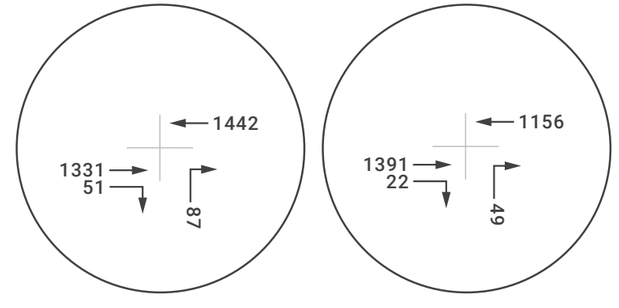
10 Windsor Rd & Bonita Beach Rd



11 Center of Bonita Springs Entrance & Bonita Beach Rd



12 Beaumont Rd & Bonita Beach Rd

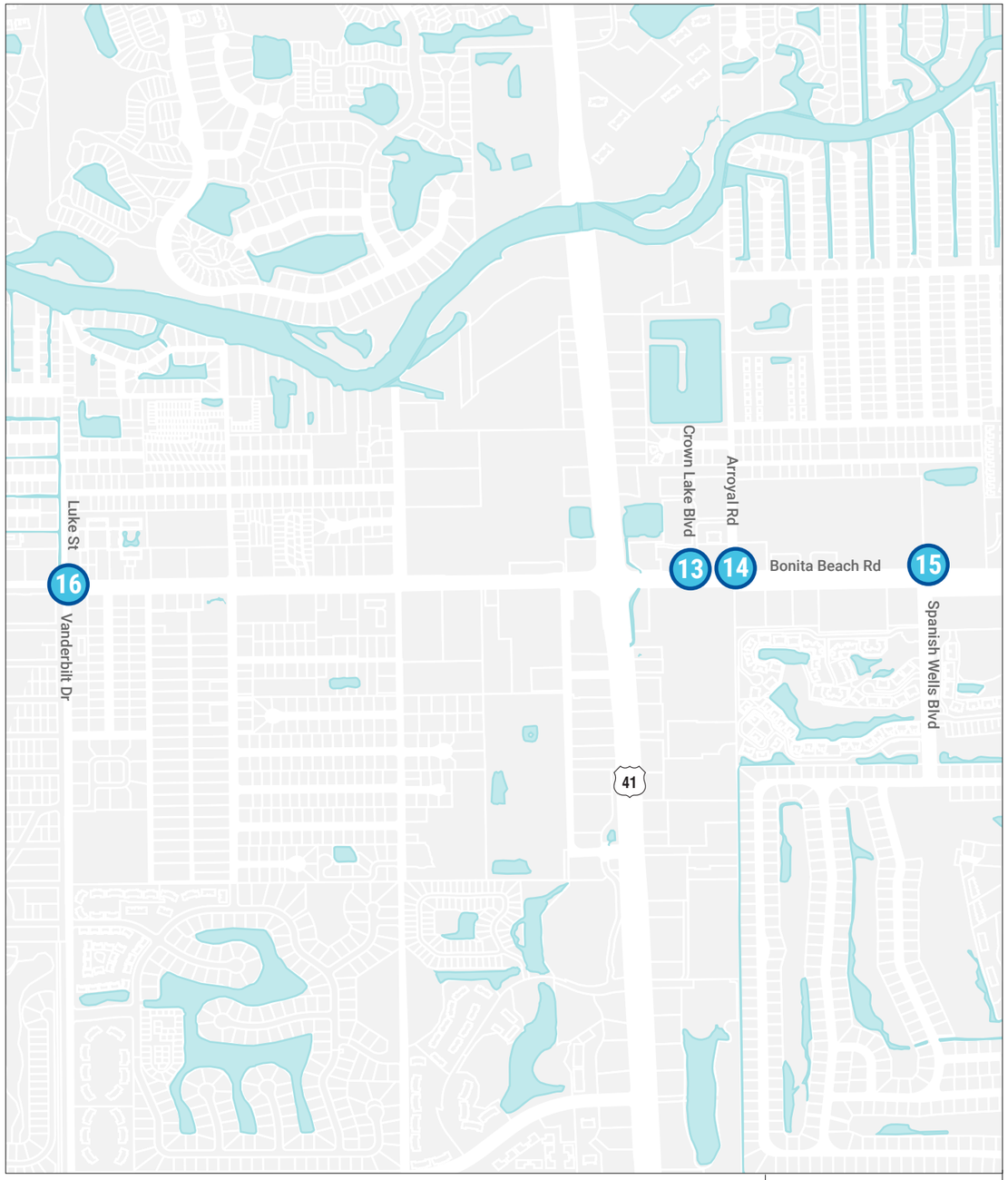


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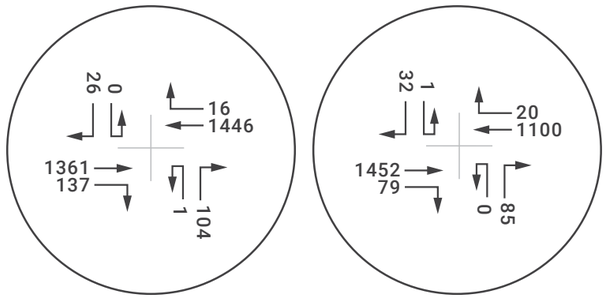
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2019 Existing TMCs

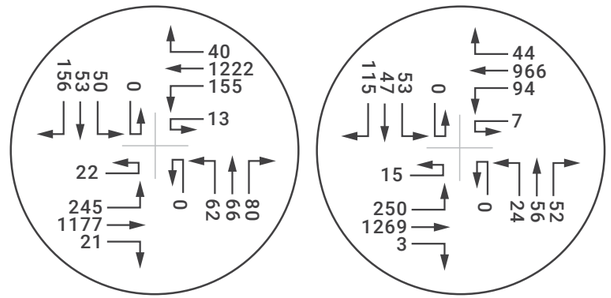
FIGURE 23B



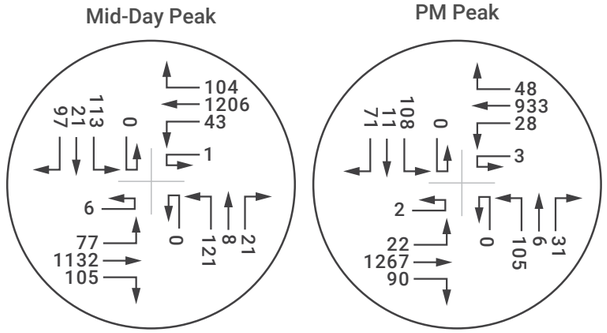
13 Crown Lake Blvd & Bonita Beach Rd



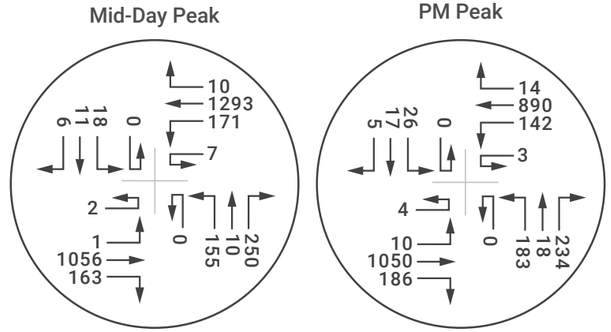
14 Arroyal Rd & Bonita Beach Rd



15 Spanish Wells Blvd & Bonita Beach Rd



16 Vanderbilt Dr/Luke St & Bonita Beach Rd



2.2.14.2 Existing 2019 Peak Hour Segment Operations

Roadway segment operations conditions for Bonita Beach Road and US 41 were analyzed based upon the *HCM6 Urban Street Segments* Methodology. The base free flow speed (BFFS) was calculated using the methodology described within Chapter 18 from the HCM. The BFFS was then compared to the roadway segment speed outputs from Synchro 11 to determine the segment LOS during both peak hours. The following roadway segments do not meet the LOS target:

- US 41 from Woods Edge Parkway to Bonita Beach Road
  - Northbound in the PM peak period
- US 41 from Bonita Beach Road to Center of Bonita Springs North
  - Southbound in the mid-day and PM peak periods
  - Northbound in the PM peak period
- Bonita Beach Road from Center of Bonita Springs to US 41
  - Eastbound and westbound in the mid-day and PM peak periods
- Bonita Beach Road from US 41 to Arroyal Road
  - Westbound in the mid-day and PM peak periods

These lower levels-of-service are likely due to the relatively short length of segments between signalized intersections and relatively high control delay of the adjacent signalized intersections. Therefore, the intersection operating conditions are a better indicator of adjacent segment operations. The Synchro output results for the segment operations can be found in the project's PTAR.

2.2.15 *Managed Lanes*

There are no managed lanes within the project limits.

2.2.16 Crash Data

Crash records were obtained for both US 41 and Bonita Beach Road within the study area, as described below:

- US 41 from Foley Road (MP 0.540) to the Imperial River bridge (MP 1.482);
- Bonita Beach Road from 400' west of Windsor Road to 450' east of Spanish Wells Boulevard; and
- Bonita Beach Road at Vanderbilt Drive.

Crash data was obtained for the most recent five-year period on record (2018 through 2022). The crash data was obtained from the University of Florida's Signal Four (S4) Analytics crash database for US 41 and Bonita Beach Road. The safety analysis was performed for the most recent five years of crash data (January 1, 2018 – December 31, 2022). Supplemental crash data from previous years (2014 to 2017) and January 1, 2023 to June 30, 2023 were also analyzed to verify crash trends and

patterns. This is consistent with the approved methodology for this study and with guidance from the 2023 FDOT Safety Crash Data Guidance published by the State Safety Office[1].

This section summarizes the study area crash statistics. A detailed review of fatal crashes and pedestrian/bicycle safety is also discussed in this section. A more detailed summary of the 2018 to 2022 crash data and supplemental 2023 crash data sets are also provided in **Appendix B**. It is important to note that the 2020 crash data may have been impacted by the COVID-19 pandemic and caution should be used in drawing conclusions using the 2020 data.

2.2.16.1 Study Area Crash Statistics

Figure 24 displays a summary of crash frequency by year along with the respective severities from 2014 to 2022. As displayed in **Figure 24**, there was an increase in crashes between 2014 and 2017, but there has been a decrease in crashes between 2017 and 2019 before an approximate 30 percent drop in crashes due to the COVID-19 pandemic in 2020. The number of crashes have stayed relatively constant in 2021 and 2022. There were 166 crashes per year on average between 2014 to 2017. However, there were 146 crashes per year on average in the study area between 2018 to 2022, not including 2020 (a 12 percent decrease).

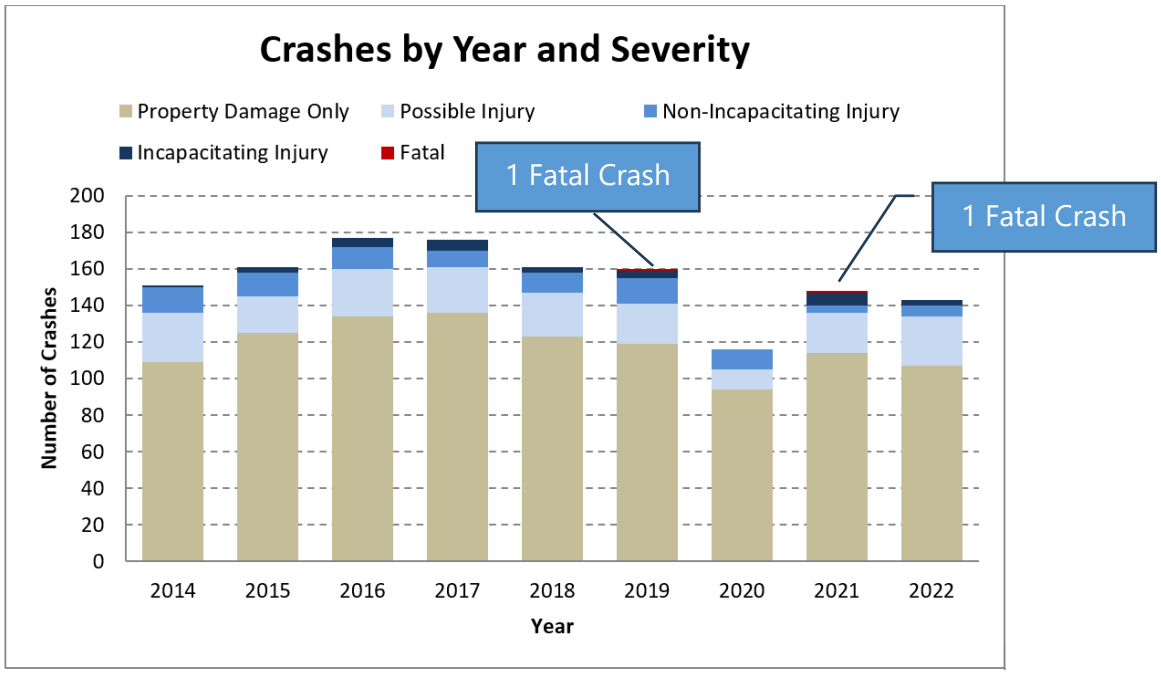


Figure 24: Crashes per Year (Entire Study Area)

[1] State Safety Office, Florida Department of Transportation. (04/17/2023). Safety Crash Data Guidance. https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/safety/11a-safetyengineering/crash-data/25998_crash-data-process_v18.pdf?sfvrsn=b50e9f4e_2

Within the study area for the most-recent five years (2018 to 2022) there was a total of 728 reported crashes during this period, with 171 crashes resulting in 255 injuries and two crashes resulting in two fatalities (one in 2019 and one in 2021).

Figure 25 displays the crashes within the study area by type and severity for the most-recent five-year study period (2018 to 2022). The highest crash type observed was rear end, comprising 52 percent of the total crashes. Sideswipe (12 percent) and left turn crashes (12 percent) were the second and third highest crash types. The fatal crash in 2019 involved a vehicle striking a pedestrian and the fatal crash in 2021 involved an angle crash at the intersection of US 41 at Foley Road/Shanna Lane.

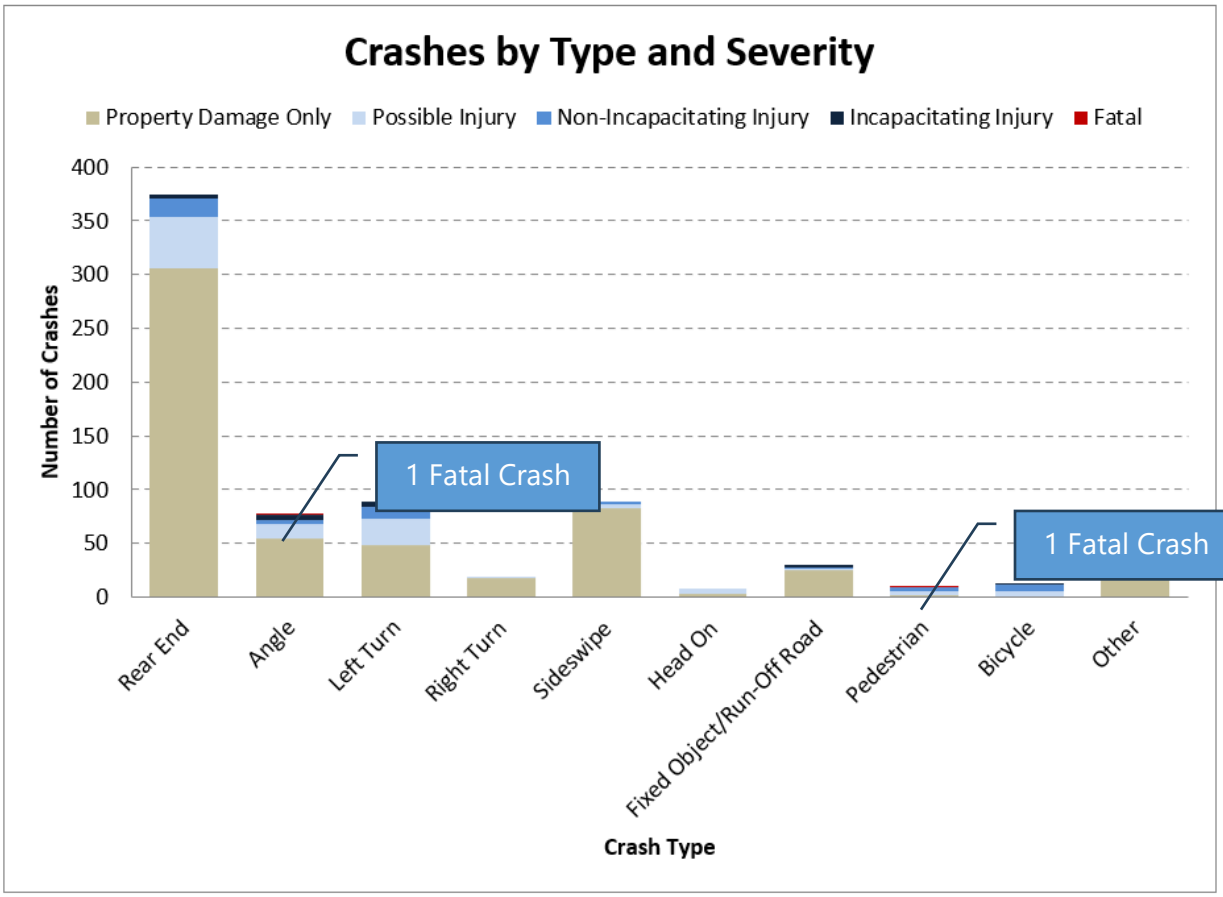


Figure 25: Crashes by Type and Severity (Study Area: 2018 to 2022)

Other crash statistics to note include the following:

- Crashes occurring during non-daylight hours accounted for 21 percent of the crashes.
- Ninety-one percent of crashes occurred during dry roadway conditions.
- Crashes involving alcohol and/or drugs accounted for three percent of the crashes.
- The highest crash hours of the day were observed in the afternoon between 12 PM and 6 PM (58 percent of crashes occurred during this time period).

- The highest crash month was March (14 percent) and most crashes occurred during week days (78 percent).

2.2.16.2 US 41 at Bonita Beach Road Crash Statistics

Crashes were analyzed for the intersection influence area of US 41 and Bonita Beach Road as described below:

- 805' south of Bonita Beach Road to 720' north of Bonita Beach Road; and
- 830' west of US 41 to 570' east of US 41.

Forty one percent of the total study area crashes were located within the intersection influence area of US 41 and Bonita Beach Road. **Figure 26** displays a summary of crash frequency by year along with the respective severities from 2018 to 2022 for the US 41 and Bonita Beach Road intersection. There was a total of 298 reported crashes during this period, 65 injury crashes (22 percent), and one fatal crash (in 2019). As displayed in **Figure 26**, there were an average of 60 crashes per year at the intersection.

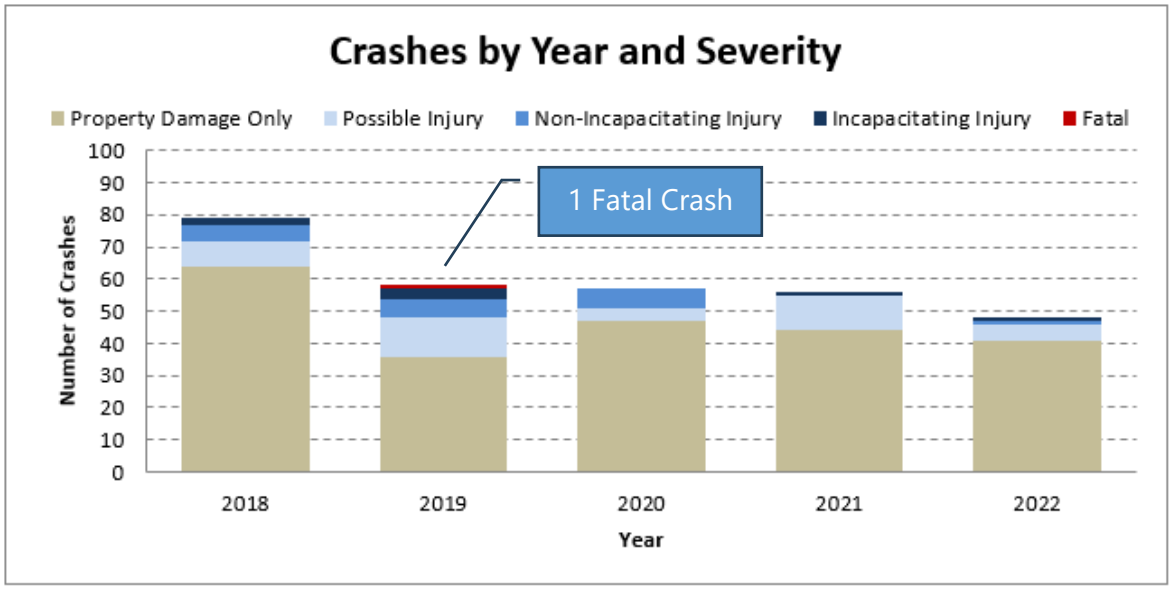


Figure 26: Crashes per Year (US 41 and Bonita Beach Road Intersection)

Figure 27 displays the crashes at the intersection by type and severity for the five-year study period for the US 41 and Bonita Beach Road intersection. The highest crash type observed was rear end, comprising 59 percent of the total crashes. Sideswipe crashes (13 percent) and left turn (8 percent) were the second and third highest crash types. These trends are consistent with the overall study area. The fatal crash in 2019 occurred when a vehicle struck a pedestrian crossing US 41 just south of Bonita Beach Road.

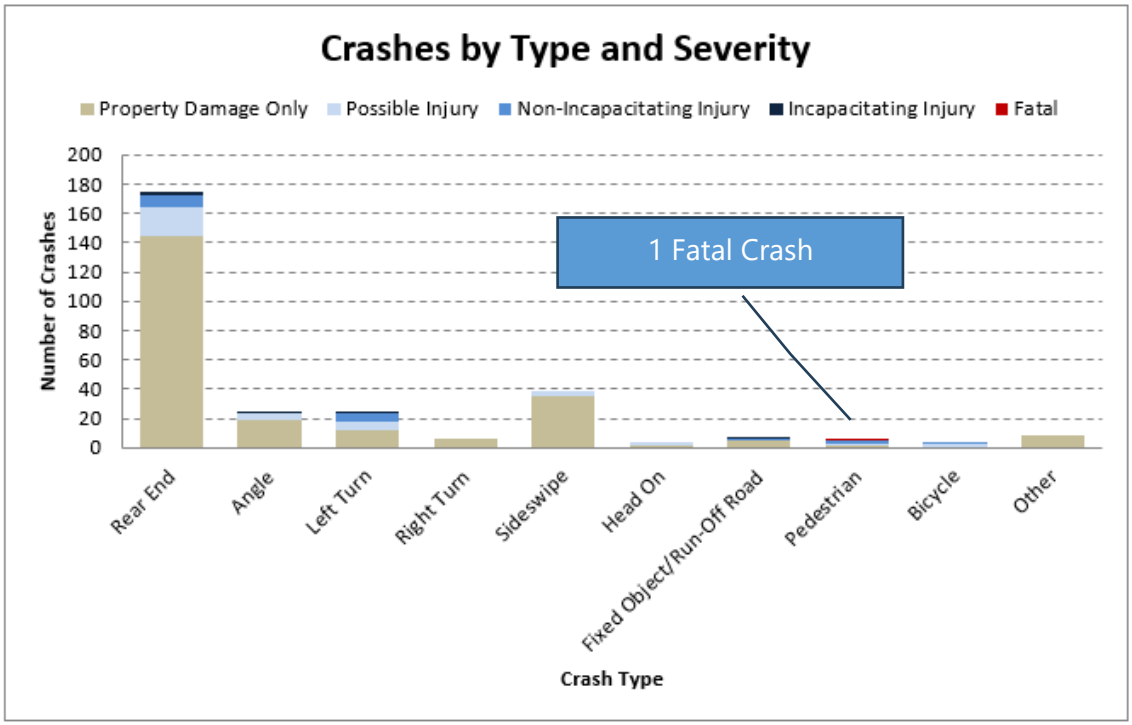


Figure 27: Crashes by Type and Severity (US 41 and Bonita Beach Road Intersection: 2018 to 2022)

2.2.16.3 US 41 South of Bonita Beach Road Crash Statistics

Crashes were analyzed for segment south of the intersection of US 41 and Bonita Beach Road from Foley Road (MP 0.540) to 805 feet south of Bonita Beach Road (MP 0.833), a distance of 1,550 feet.

Thirteen percent of the total study area crashes were located along US 41 south of Bonita Beach Road. **Figure 28** displays a summary of crash frequency by year along with the respective severities from 2018 to 2022. There was a total of 89 reported crashes during this period, 26 (29 percent) resulted in injury and one resulted in a fatality. A majority (55 percent) of the crashes within this segment were at the intersection of US 41 and Foley Road.

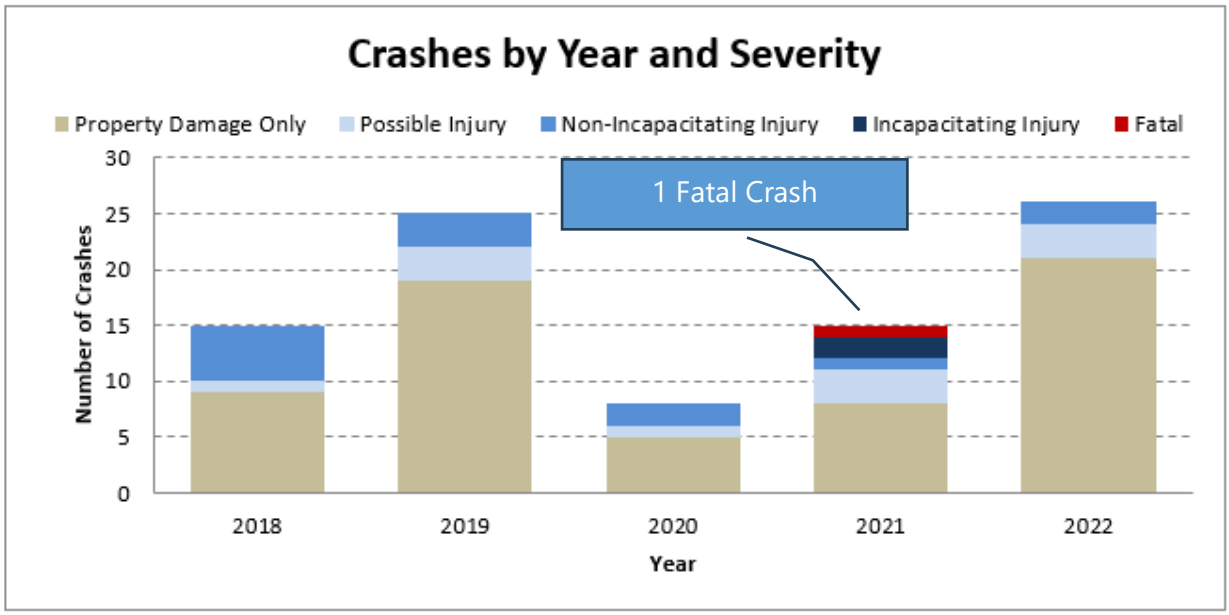


Figure 28: Crashes per Year (US 41 South of Bonita Beach Road)

Figure 29 displays the crashes along the segment by type and severity for the five-year study period. The highest crash type observed was angle, comprising 27 percent of the total crashes. Left turn (21 percent) and rear end crashes (17 percent) were the second and third highest crash types. The fatal crash in 2021 was an angle crash which occurred at the intersection of US 41 and Foley Road.

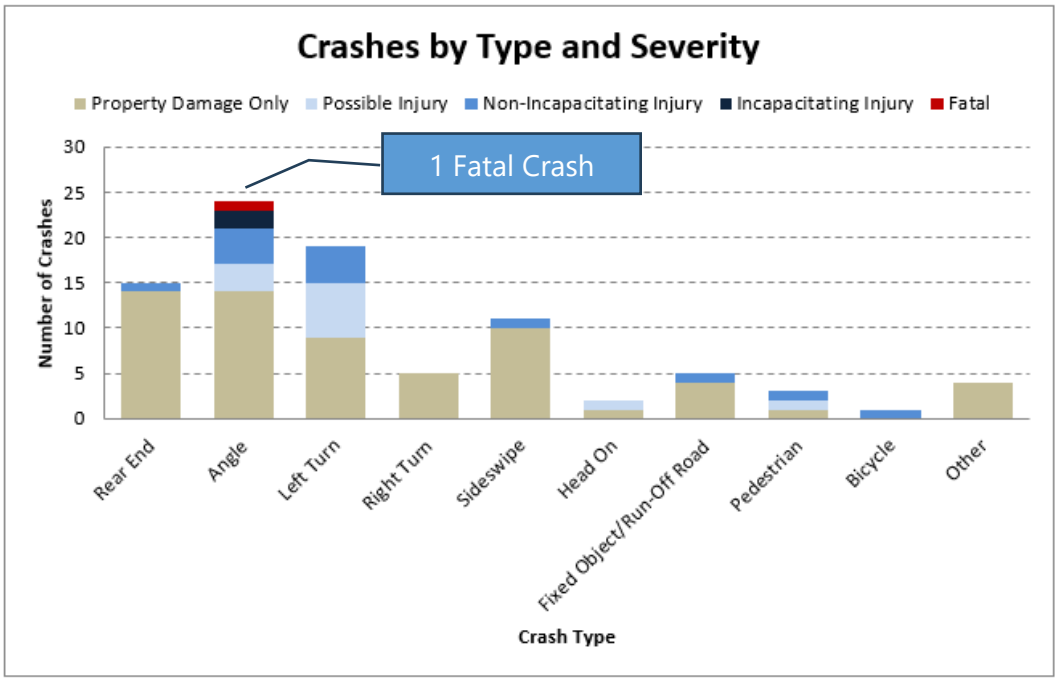


Figure 29: Crashes by Type and Severity (US 41 South of Bonita Beach Road: 2018 to 2022)

2.2.16.4 US 41 North of Bonita Beach Road Crash Statistics

Crashes were analyzed for the segment north of the intersection of US 41 and Bonita Beach Road from 720' north of Bonita Beach Road (MP 1.126) to the Imperial River bridge (MP 1.482), a distance of 1,880'.

Ten percent of the total study area crashes were located along US 41 north of Bonita Beach Road. **Figure 30** displays a summary of crash frequency by year along with the respective severities from 2018 to 2022. There was a total of 74 reported crashes during this period, 18 (24 percent) resulted in injury and there were no reported fatal crashes. Forty-five of the 74 total crashes (61 percent) along US 41 north of Bonita Beach Road were located at the signalized intersection of US 41 and the Center of Bonita Springs.

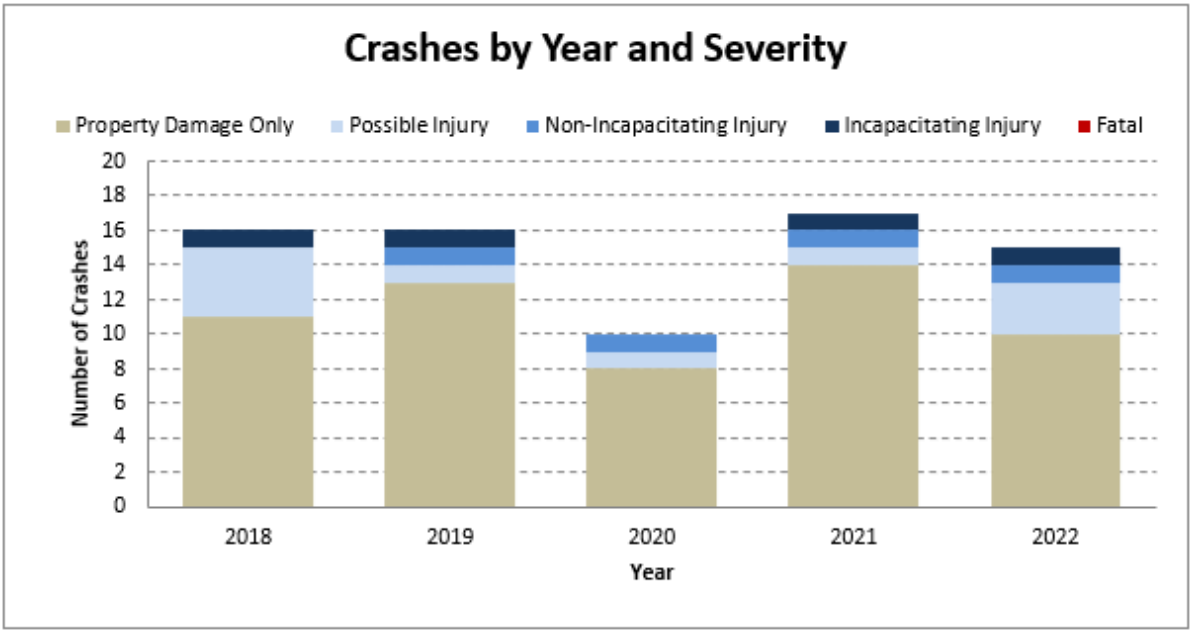


Figure 30: Crashes per Year (US 41 North of Bonita Beach Road)

Figure 31 displays the crashes along the segment by type and severity for the five-year study period. The highest crash type observed was rear end, comprising 69 percent of the total crashes. Left turn (12 percent) and sideswipe crashes (7 percent) were the second and third highest crash types. These trends are consistent with the overall study area.

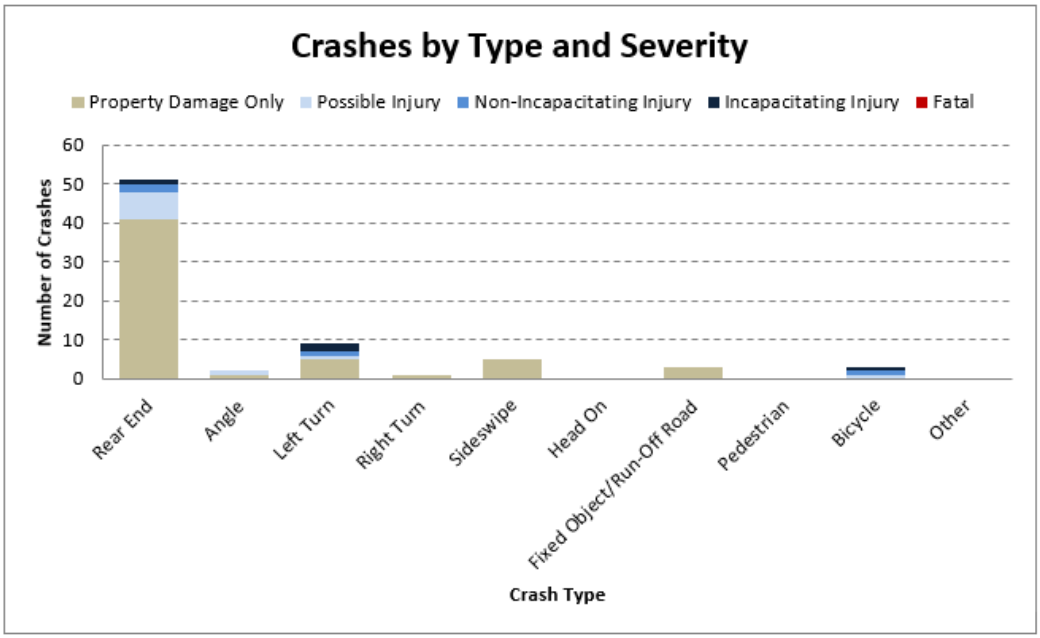


Figure 31: Crashes by Type and Severity (US 41 North of Bonita Beach Road: 2018 to 2022)

2.2.16.5 Bonita Beach Road West of US 41 Crash Statistics

Crashes were analyzed for segment west of US 41 and Bonita Beach Road from 400' west of Windsor Road to 830' west of the intersection, a distance of 1,300'.

Fourteen percent of the total study area crashes were located along Bonita Beach Road west of US 41. **Figure 32** displays a summary of crash frequency by year along with the respective severities from 2018 to 2022. There was a total of 95 reported crashes during this period, 26 (27 percent) resulted in injury and there were no reported fatal crashes. Forty-six of the 95 total crashes along Bonita Beach Road west of US 41 (48 percent) were located at the signalized intersection of Bonita Beach Road and the Center of Bonita Springs.

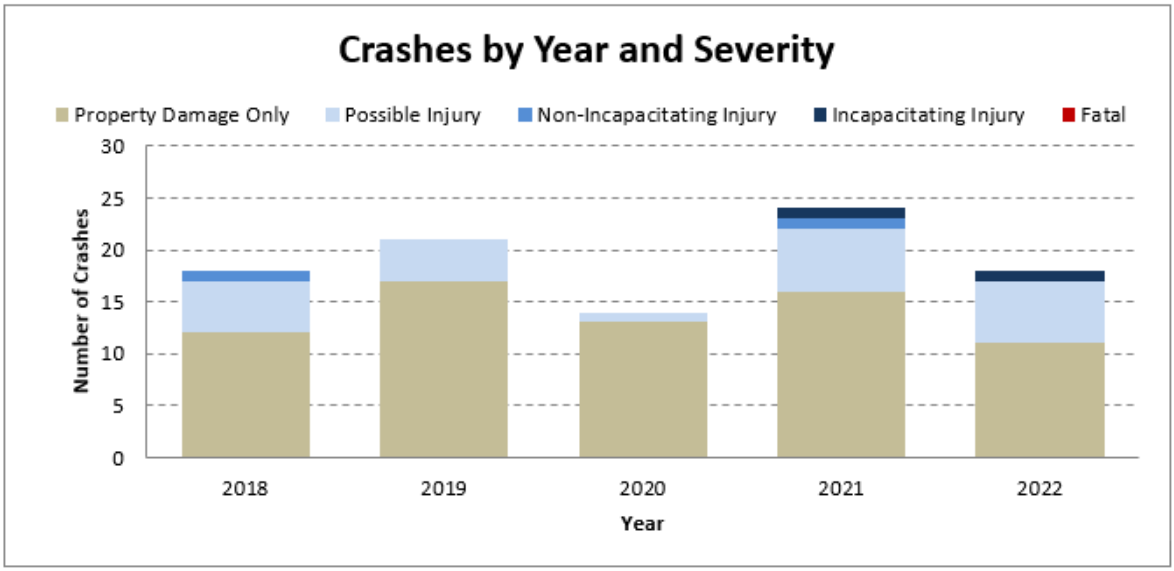


Figure 32: Crashes per Year (Bonita Beach Road West of US 41)

Figure 33 displays the crashes along the segment by type and severity for the five-year study period. The highest crash type observed was rear end, comprising 50 percent of the total crashes. Left turn crashes (17 percent) and angle crashes (13 percent) were the second and third highest crash types.

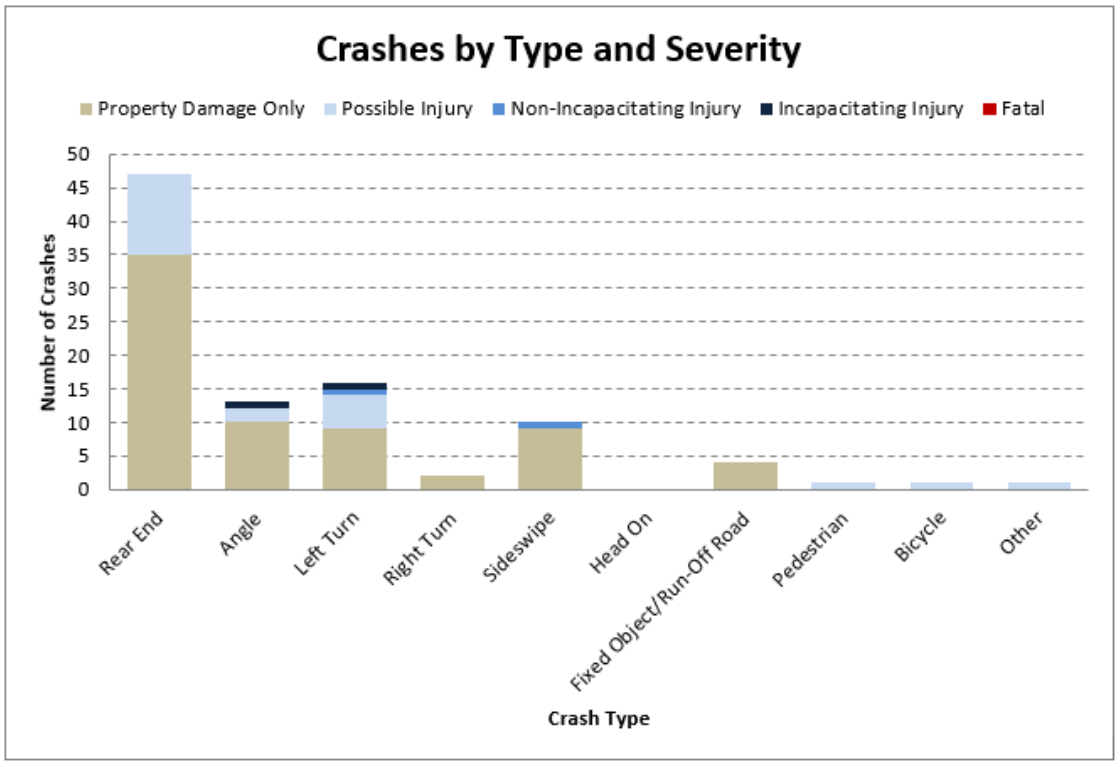


Figure 33: Crashes by Type and Severity (Bonita Beach Road West of US 41: 2018 to 2022)

2.2.16.6 Bonita Beach Road East of US 41 Crash Statistics

Crashes were analyzed for segment east of US 41 and Bonita Beach Road from 570' east of US 41 to 450' east of Spanish Wells Boulevard, a distance of 2,300'.

Twenty percent of the total study area crashes were located east of the intersection of US 41 and Bonita Beach Road. **Figure 34** displays a summary of crash frequency by year along with the respective severities from 2018 to 2022. There was a total of 140 reported crashes during this period, 28 (20 percent) resulted in at least one injury. Seventy-eight of the 140 total crashes along Bonita Beach Road east of US 41 (56 percent) were located at the signalized intersection of Bonita Beach Road and Arroyal Road.

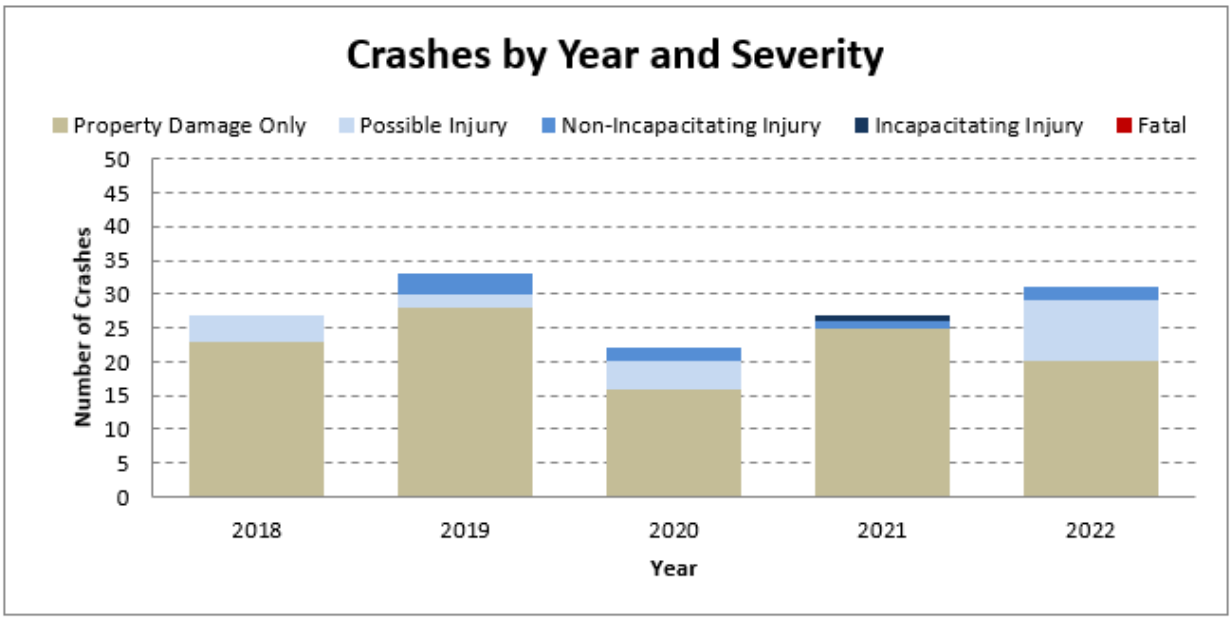


Figure 34: Crashes per Year (Bonita Beach Road East of US 41)

Figure 35 displays the crashes along the segment by type and severity for the five-year study period. The highest crash type observed was rear end, comprising 48 percent of the total crashes. Sideswipe (16 percent) and left turn crashes (12 percent) were the second and third highest crash types.

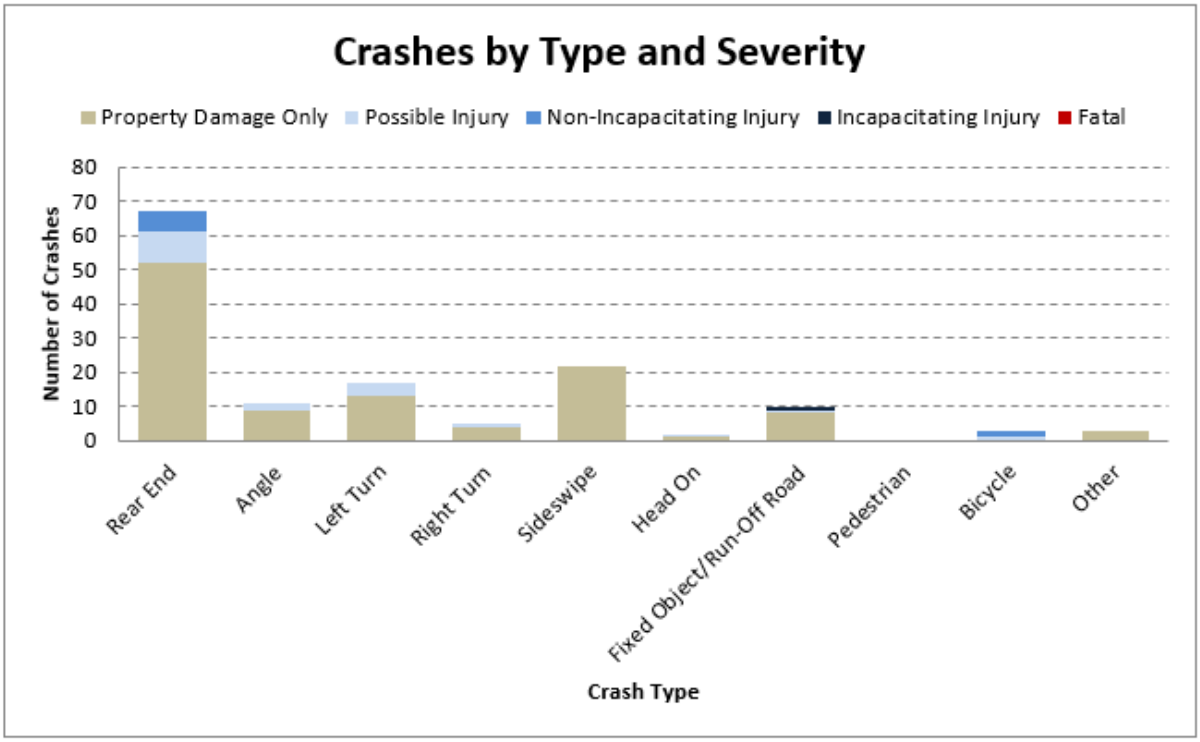


Figure 35: Crashes by Type and Severity (Bonita Beach Road East of US 41: 2018 to 2022)

2.2.16.7 Bonita Beach Road at Vanderbilt Drive Crash Statistics

Crashes were analyzed for the intersection of Bonita Beach Road and Vanderbilt Drive (from 400' west of the center of the intersection to 525' east of the center of the intersection, a distance of 925'). There was a total of 32 reported crashes during this period, six (19 percent) resulted in at least one injury (including one incapacitating injury crash in 2021). **Figure 36** displays the crashes along the segment by year and severity for the five-year study period.

Figure 37 displays the crashes at the intersection by type and severity for the five-year study period. The highest crash type observed was rear end, comprising 64 percent of the total crashes. Angle (12 percent) and left turn crashes (9 percent) were the second and third highest crash types.

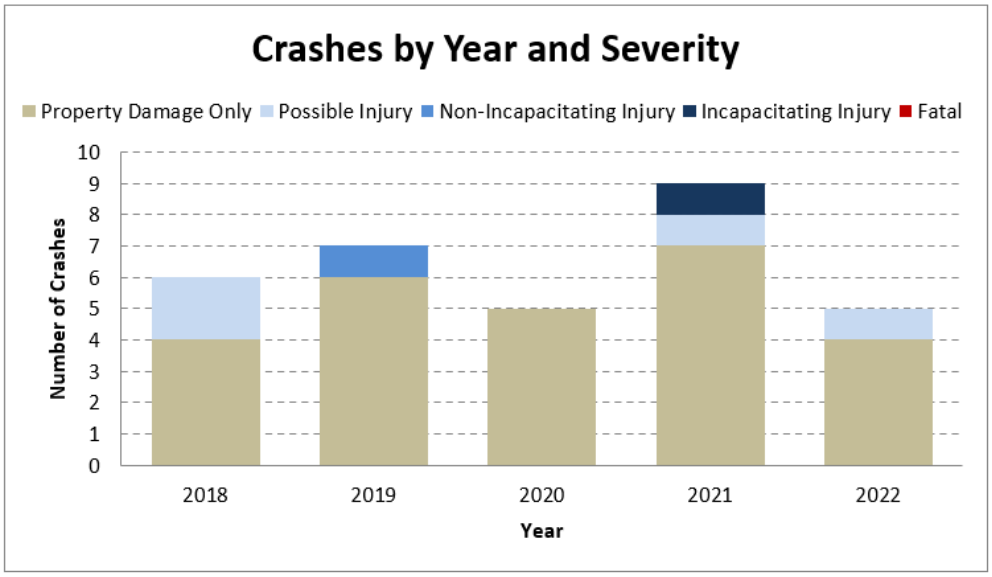


Figure 36: Crashes by Year and Severity (Bonita Beach Road and Vanderbilt Drive: 2018 to 2022)

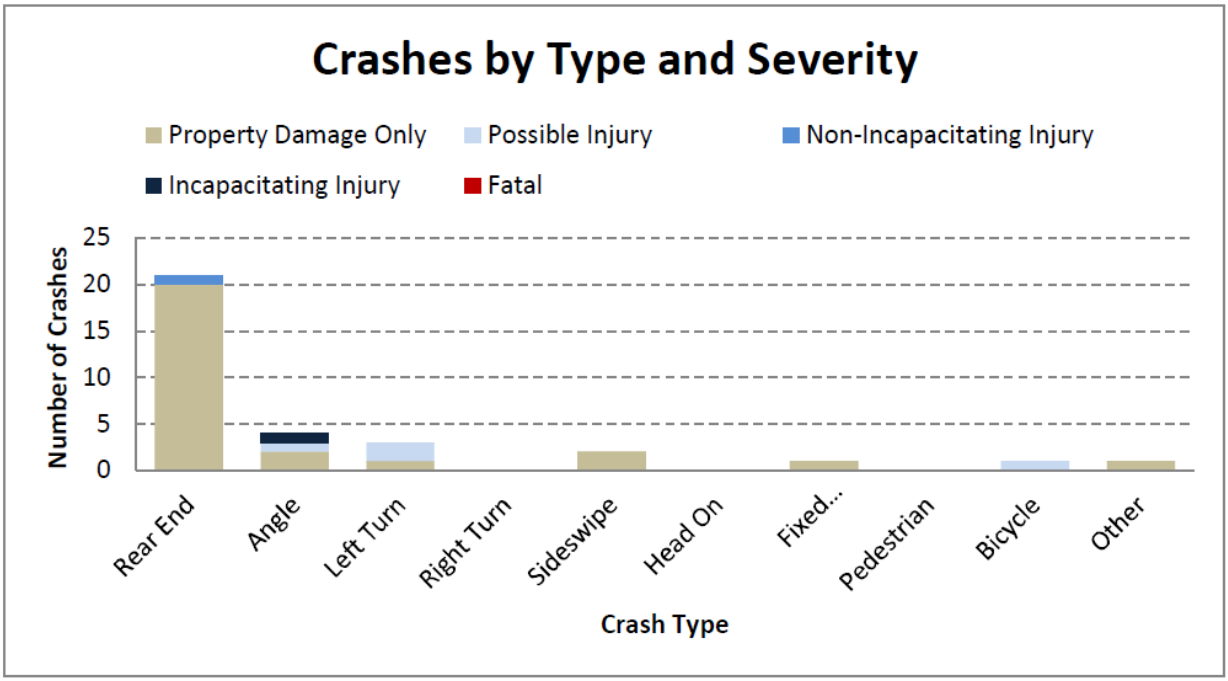


Figure 37: Crashes by Year and Severity (Bonita Beach Road and Vanderbilt Drive: 2018 to 2022)

2.2.16.8 Safety Ratio Evaluation

A crash rate analysis was performed for the main intersection of US 41 and Bonita Beach Road using the crash data from **Section 2.2.16.2** for the years 2018 through 2022.

Actual Crash rates for intersections is calculated from the total number of crashes in a year, Daily Entering Vehicles (DEV), and the length of the segment (assumed to be 1 for intersections) based on the equation below:

Actual Crash Rate = (Number of crashes per year x 1,000,000) / (365 x DEV x segment length (assumed to be 1))

Traffic data, such as functional classification and AADTs, were obtained from the FDOT Florida Traffic Online (FTO) website and the Lee County Traffic Count Database. The traffic data utilized for the crash rate analysis is provided in **Appendix B**. The calculated actual crash rates were compared to the critical crash rate to find the safety ratio for the US 41 and Bonita Beach Road intersection. The critical crash rate is calculated using the statewide or districtwide average crash rates for similar facilities/intersections based on the equation below:

Critical Crash Rate = Average Crash Rate + (K Factor x SQRT {Average Crash Rate / Vehicle Exposure}) + (0.5 / Vehicle Exposure)[2]

Where Vehicle Exposure for Segments = (ADT x 365 x Segment Length) / 1,000,000
Vehicle Exposure for Intersections = (DEV x 365) / 1,000,000

Safety Ratio = Actual Crash Rate / Critical Crash Rate

The intersection type and Statewide/Districtwide average crash rates for the study intersection are summarized in **Table 9**. **Table 10** and **Table 11** provide a Statewide and Districtwide crash rate and safety ratio summary for the US 41 at Bonita Beach Road intersection. The study intersection experienced higher than average Statewide crash rates in both 2018 and 2020 (safety ratios >1.25), and had crash rates nearing the Statewide averages in 2019, 2021, and 2022 (safety ratios ranging between 0.87 and 0.95). The study intersection experienced higher than average Districtwide crash rates in 2018 through 2020 (safety ratios ranging between 1.1 and 1.6), and had crash rates nearing the Districtwide averages in 2021 and 2022 (safety ratios of 0.99 and 0.93, respectively).

The detailed crash rate analysis for each of the segments and intersections can be found in **Appendix B**.

[2] Critical Crash Rate Equation (4-11) derived from the Highway Safety Manual (HSM) in Chapter 4, Page 4-44. American Association of State Highway Transportation Officials (AASHTO). (2010). *The Highway Safety Manual*

Table 9: Intersection Type and Average Crash Rates

Intersection	Intersection Type	Crash Rate Type	Year				
			2018	2019	2020	2021	2022
US 41 & Bonita Beach Road	Urban Intersection, 3+ Lanes per Direction, Divided SHS Road, 4-Leg Intersection	Statewide	1.562	1.564	1.224	1.499	1.305
		District 1	1.168	1.177	1.105	1.419	1.206

Table 10: US 41 and Bonita Beach Road Statewide Crash Rates and Safety Ratios

Intersection	Metric	2018	2019	2020	2021	2022
US 41 & Bonita Beach Road	Actual Crash Rate	**2.992**	2.080	**2.568**	2.198	1.786
	Critical Crash Rate	**2.381**	2.361	**2.020**	2.317	2.049
	Safety Ratio	**1.257**	0.881	**1.272**	0.949	0.872

Bold Rows denote that crash rates are higher than rates of similar facilities.

Table 11: US 41 and Bonita Beach Road Districtwide Crash Rates and Safety Ratios

Intersection	Metric	2018	2019	2020	2021	2022
US 41 & Bonita Beach Road	Actual Crash Rate	**2.992**	**2.080**	**2.568**	2.198	1.786
	Critical Crash Rate	**1.880**	**1.871**	**1.862**	2.215	1.921
	Safety Ratio	**1.592**	**1.112**	**1.379**	0.992	0.930

Bold Rows denote that crash rates are higher than rates of similar facilities.

2.2.16.9 Review of Fatal Crashes

As noted above, two fatal crashes occurred in the US 41/Bonita Beach Road study area between 2018 and 2022 resulting in two fatalities. The following section describes the fatal crashes in more detail:

- **Crash Number 88223264**
  The fatal crash occurred on November 16, 2019 at 8:31 PM on US 41 south of Bonita Beach Road. The crash involved a vehicle and a pedestrian on dry road surface during dark – lighted conditions. The pedestrian was attempting to cross the southbound lanes of US 41 when struck by a vehicle, resulting in one fatality.
- **Crash Number 24691655**
  The fatal crash occurred on October 26, 2021 at 8:09 AM at the intersection of US 41 at Foley Road/Shanna Lane. The angle crash involved two vehicles and a truck on dry road surface during daylight conditions. The vehicle was traveling eastbound and leaving the

minor street of Foley Road/Shanna Lane when struck by a truck. The crash resulted in one fatality.

2.2.16.10 Pedestrian and Bicycle Crash Review

There were 6 pedestrian crashes and 4 bicycle crashes during the most-recent five-year study period at the intersection of US 41 and Bonita Beach Road. Eight crashes resulted in injury and there was one reported fatality. Crashes by location are summarized below:

- One bicycle crash occurred at the intersection of Bonita Beach Road and Beaumont Road. This crash resulted in injury.
- One bicycle crash and one pedestrian crash occurred along US 41 (approximately 800 feet south of the intersection of US 41 and Bonita Beach Road). The pedestrian crash did not result in injury and the bicycle crash did result in injury.
- One pedestrian crash occurred along US 41 (approximately 725 feet south of the intersection of US 41 and Bonita Beach Road). The crash did result in injury.
- One pedestrian crash occurred along US 41 (approximately 300 feet south of the intersection of US 41 and Bonita Beach Road). The crash resulted in a fatality.
- Three pedestrian crashes and two bicycle crashes occurred at the intersection of US 41 and Bonita Beach Road. All five crashes resulted in injury.

Additionally, there were three bicycle crashes during 2023 (between January 1, 2023 to June 30, 2023).

- Two bicycle crashes occurred at the intersection of Bonita Beach Road and Beaumont Road. One crash resulted in injury and one crash did not result in injury.
- One bicycle crash occurred along US 41 (approximately 660 feet south of the intersection of US 41 and Bonita Beach Road). The crash did result in injury.

2.2.16.11 2023 Fatal and Serious Injury Crash Statistics

Fatal and serious injury crash data was analyzed from January 1, 2023 to June 30, 2023 for the study area. There were no reported crashes during this period resulting in an incapacitating injury or fatality.

2.2.16.12 Contributing Factors

After reviewing the crash data and crash locations, several patterns emerged to help identify contributing causes of crashes in the study area.

Rear End Crashes

Fifty-two (52) percent of crashes along the study corridor were rear end crashes. Approximately three quarters of the rear end crashes occurred at the signalized intersections, which is indicative of congestion.

Sideswipe Crashes

Sideswipe crashes accounted for the second highest crash type (12 percent) within the study area. Over two thirds of the sideswipe crashes occurred at the signalized intersections. The most likely contributing cause for sideswipe crashes at signalized intersections is drivers not adequately pre-positioning to make turning movements.

Left Turn Crashes

Left turn crashes accounted for the third highest crash type (12 percent) within the study area. Just over half of the left turn crashes occurred at the signalized intersections and the other left turn crashes occurred at the unsignalized full or bi-directional median openings. The most likely contributing cause is the re-occurring congestion in the study area and drivers making left turn movements with less than desirable gaps in opposing traffic.

Midday and PM Peak Hour Crashes

In addition to crash types, the time of crashes was also reviewed. It was noted that there are increases in the number of crashes during the Midday and PM peak hours. Twenty-nine (29) percent of crashes occurred between 11 AM to 2 PM and 24 percent of crashes occurred from 3 PM to 6 PM, suggesting Midday and PM congestion is contributing to crashes during peak travel times.

2.2.17 Railroad Crossings

There are no railroad crossings in the project study area.

2.2.18 Drainage

The study area is located in the Estero Bay Watershed within the jurisdiction of the South Florida Water Management District (SFWMD). The project is just south of the Imperial River, Waterbody ID (WBID) 3258EB – Imperial River (Marine Segment), which is an Outstanding Florida Water (OFW) and the ultimate outfall for the project. There is a Total Maximum Daily Load (TMDL) for Dissolved Oxygen (DO) and Total Nitrogen (TN) for the Imperial River meaning nutrient loading analysis will be required. US 41 and Bonita Beach Road both collect stormwater runoff in curb and gutter along the roadways before conveying the runoff via closed storm sewer systems to permitted stormwater treatment facilities within the study limits. The surrounding commercial developments at the US 41 and Bonita Beach Road intersection also have their own stormwater treatment

facilities that treat onsite runoff before discharging offsite. Many of these permitted facilities discharge to the canal along the east side of US 41 conveying the runoff to the Imperial River.

2.2.18.1 Drainage Basins

There are currently four existing drainage basins within the project limits. Existing basin limits were determined by reviewing permitted plans and available LIDAR data to identify the most probable drainage patterns and outfall locations. **Figure 38** shows the study area's four existing drainage basins. The sections below describe the basin limits and characteristics.

Windsor Road/Northwest Quadrant Basin

The Windsor Road Swale Basin and Northwest Quadrant Roadway Basin begins at the study area's western limit along Bonita Beach Road, approximately 1,100 feet west of Windsor Road, and continues east towards the US 41 intersection. The basin includes the proposed Northwest Quadrant Roadway, which is currently being designed by others. Runoff from Bonita Beach Road is collected in curb and gutter inlets and conveyed to the Windsor Road swale before discharging to the Imperial River. The swale is permitted under Permit No. 36-03971-P. This basin is considered an open basin.

Basin West

Basin West encompasses the area along Bonita Beach Road between the limits of the Windsor Road Swale Basin and the US 41 intersection. Bonita Beach Road runoff is collected in curb and gutter inlets and conveyed to a ditch heading south along Beaumont Road conveying stormwater south to the ditch system crossing underneath US 41 and Bonita Beach Road eventually flowing to the Arroyal Mall Pond. This basin is considered an open basin and the ultimate outfall is the Imperial River.

Basin East

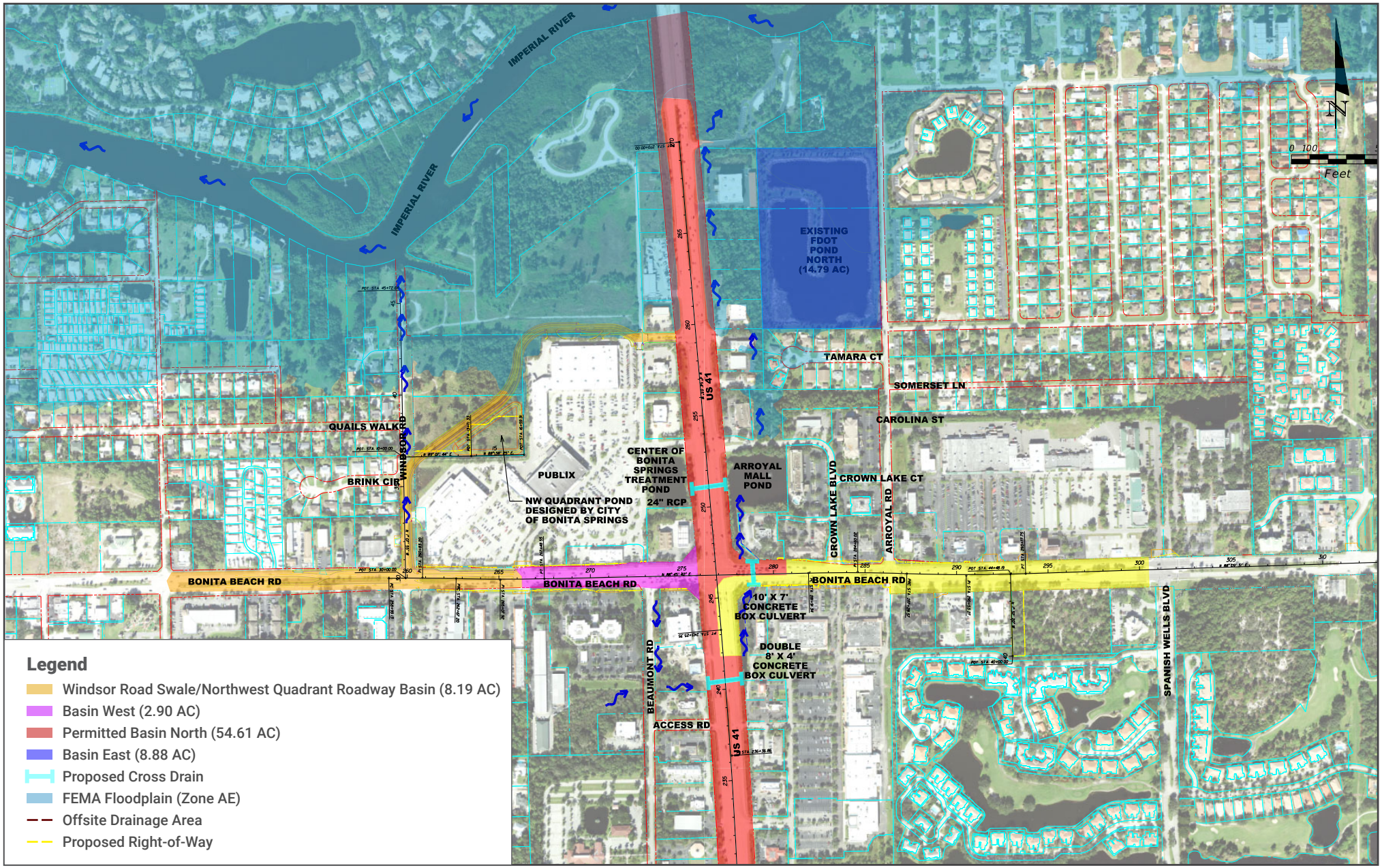
Basin East begins at the US 41 and Bonita Beach Road intersection and continues east to Spanish Wells Boulevard. Stormwater runoff from Bonita Beach Road and a portion of the intersection is collected within curb and gutter inlets and discharged directly to the concrete box culvert underneath Bonita Beach Road, which conveys the canal north to the Arroyal Mall Pond. This basin is considered an open basin with the Arroyal Mall Pond ultimately outfalling to the Imperial River via an outfall ditch to the north.

Basin North

Basin North is currently permitted under SFWMD Permit No. 36-02988-P. This permit is for the surface water management system for a 3.10-mile segment of US 41 from CR 887 (Old US 41 Road) to north of Bonita Beach Road. Treatment and attenuation are provided in a permitted FDOT pond (Pond North) located east of US 41 just south of the Imperial River. Stormwater runoff from US 41 is collected within curb and gutter inlets and conveyed to the pond via a closed stormsewer system. This basin is considered an open basin with Pond North ultimately discharging to the Imperial River.

2.2.18.2 Floodplains

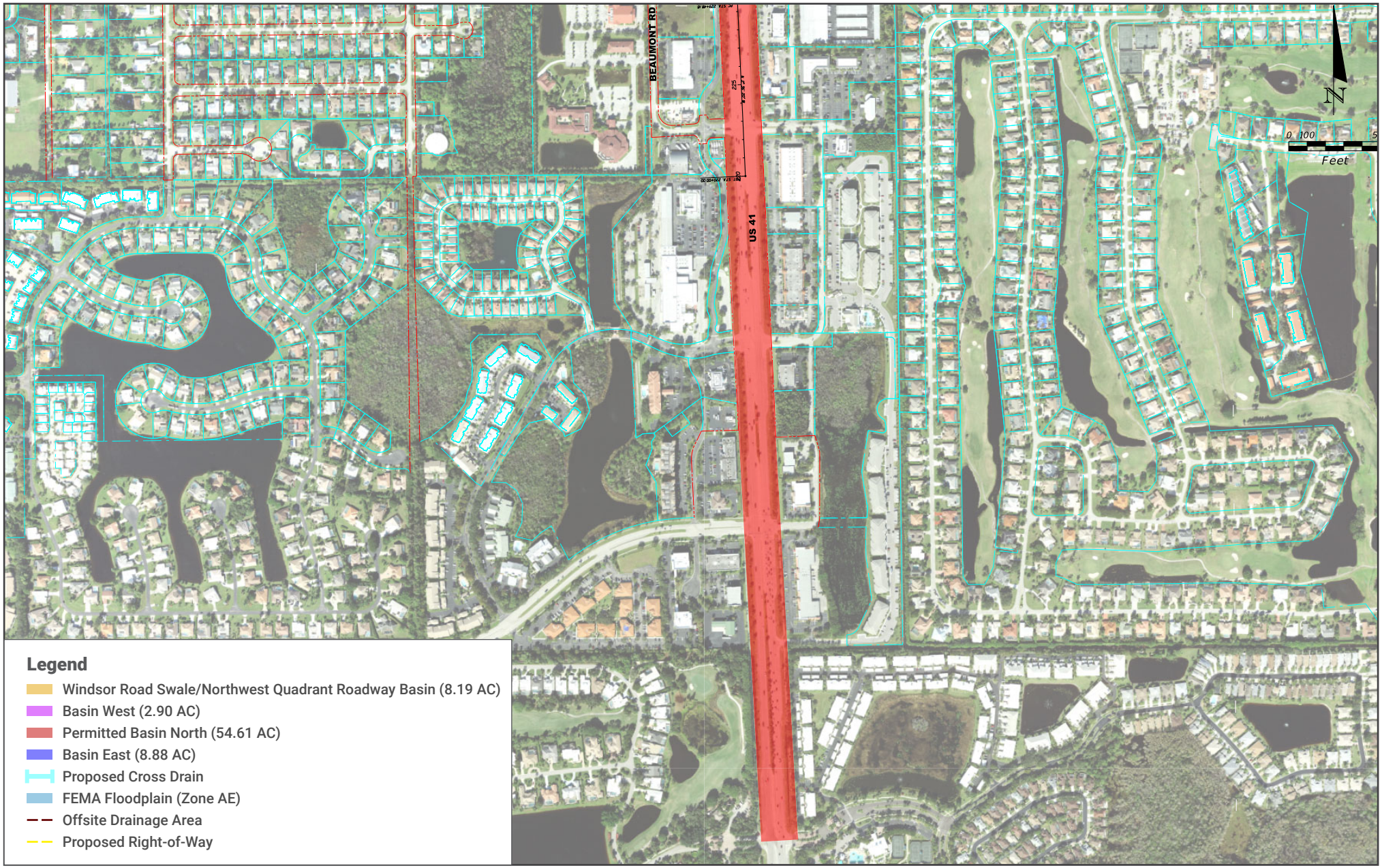
The Federal Emergency Management Agency (FEMA) flood insurance rate map (FIRM) for Lee County (Map No. 12071C0658G) dated November 17, 2022 indicates that portions of the study area are within Zone AE floodplains (Flood El. 10.0 feet NAVD and El. 9.00 feet NAVD). The floodplain area within the study limits is tidally influenced and will not require compensation for impacts anticipated from the proposed study per coordination with SFWMD. The Imperial River is considered a regulatory FEMA floodway; however, the proposed improvements considered for this study will not impact the roadway or bridge at the Imperial River. Additional information regarding floodplains will be documented in the Location Hydraulics Report prepared for this study. Initial coordination with the City of Bonita Springs indicated a flooding concern at the homes and road systems west of Beaumont Road and upstream of the double 8′ x 4′ concrete box culvert (CBC) under US 41. The flooding issues are outside the project study limits and will be further verified during final design. This has been documented in the Location Hydraulics Report. **Figure 39** shows the FEMA FIRM for the study area.



US 41 at Bonita Beach Road PD&E Study

FPID 444321-1-22-01

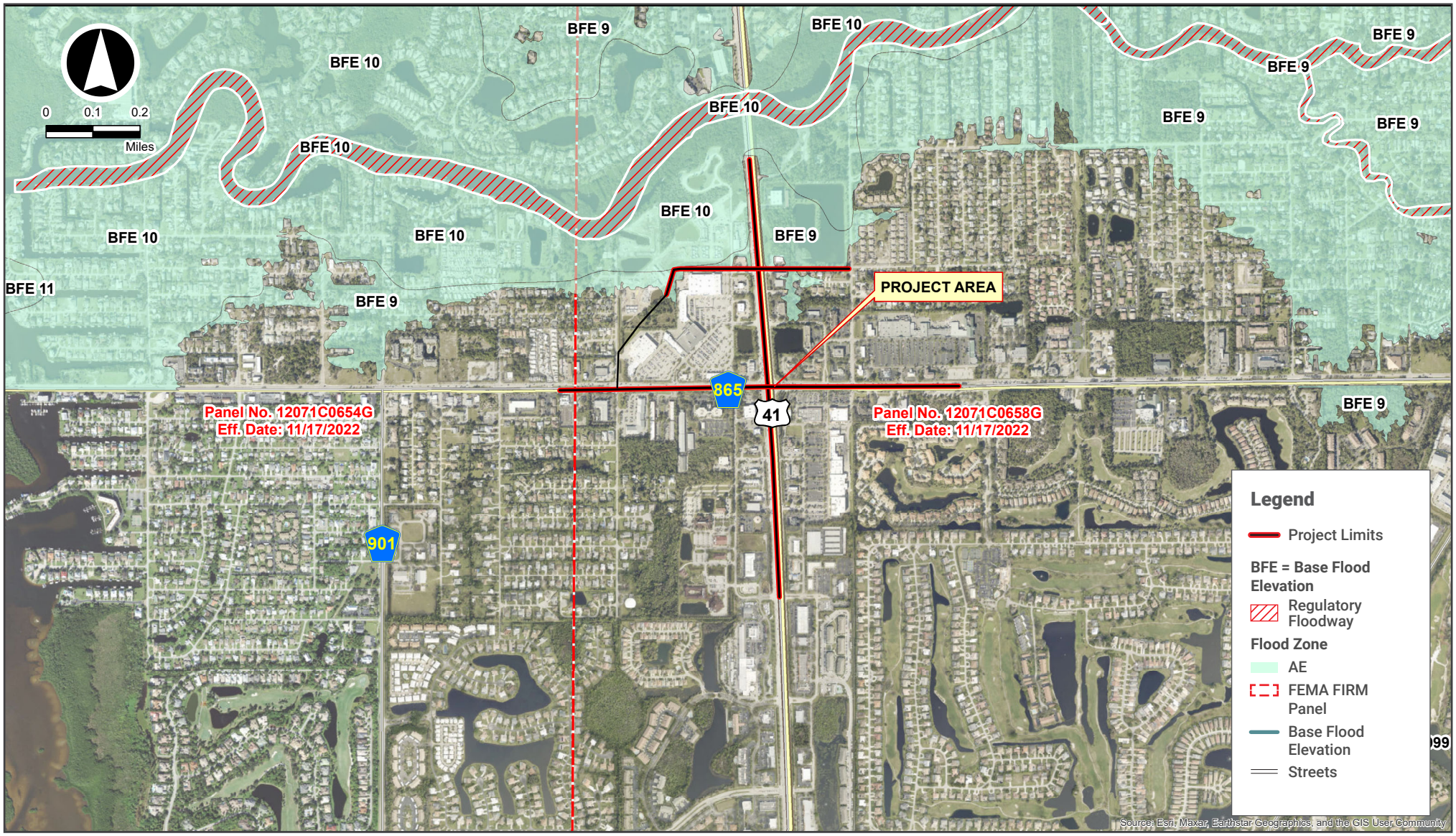
Figure 38A | Existing Basin Map



US 41 at Bonita Beach Road PD&E Study

FPID 444321-1-22-01

Figure 38B | Existing Basin Map



US 41 at Bonita Beach Road PD&E Study

FPID 444321-1-22-01

Figure 39 | FEMA Floodplains Map

2.2.18.3 Permits

US 41/SR 45 Permit (36-02988-P): This permit is for the surface water management system for a 3.10-mile segment of US 41 from north of SR 887 to Old 41 Road. The north basin of the permitted project is within the limits of this study. Treatment and attenuation are provided in a permitted FDOT pond (Pond North) located east of US 41 just south of the Imperial River. Pond North discharges to a swale adjacent to US 41, outfalling to the Imperial River.

Spring Plaza East Permit (36-00317-S): This permit is for the water management system serving the residential and commercial land along the southwest corner of US 41 and Bonita Beach Road. Treatment is provided within a series of swales and dry treatment ponds prior to discharging into the canal running along US 41 at the southeast corner of the US 41 and Bonita Beach Road intersection.

Walgreens/Bonita Springs Permit (36-02746-S): This permit is for the treatment of the Walgreens property at the southwest corner of the intersection. Treatment is provided by a dry retention swale at the southwest corner of the property, discharging to a large ditch leading to the canal flowing underneath US 41 via a concrete box culvert and then north towards the Imperial River.

Center of Bonita Springs (36-00718-S): This permit is for the surface water management of the commercial development at the northwest corner of US 41 and Bonita Beach Road. Treatment is provided for the site by a wet detention pond on the east side of the property, discharging under US 41 to the Arroyal Mall Pond, as well as a dry retention pond at the northwest side of the property which discharges to the Windsor Road treatment swale.

Arroyal Mall (36-00863-S): This permit is for the commercial site at the northeast corner of the US 41 and Bonita Beach Road. The pond adjacent to US 41 at the west side of the property provides treatment and attenuation for onsite runoff as well as accepting and routing runoff from regional drainage areas totaling approximately 393.5 acres. The areas routed through the pond are listed below and are conveyed to the pond through outfall pipes and by the canal that runs through the study area:

- Onsite Area – 18.1 acres
- Permit No. 36-00317-S Springs Plaza – 24.8 acres
- Permit No. 36-00718-S Center of Bonita Springs – 32.0 acres
- Permit No. GP 87-20 Bonita Beach Boulevard – 18.6 acres
- Permit No. 36-00854-S Woods Edge DRI – 119.5 acres
- Undeveloped off-site area – 180.5 acres.

The pond discharges north through a weir into a ditch system that leads to the Imperial River.

Windsor Road (36-03971-P): This permit is for the treatment swale that runs along Windsor Road. Stormwater runoff is collected via sheet flow and closed storm sewer systems and discharged into a series of swales. There is a control structure at the north end of Windsor Road which outfalls into the Imperial River.

Angler's Paradise (36-07247-P): This permit is for the Angler's Paradise surface water management system located north of the west quadrant roadway. Stormwater runoff is collected and conveyed to both dry and wet pretreatment systems prior to discharging into a wet detention system via control structure. The system will provide treatment and attenuation for the development prior to outfalling into the Imperial River.

2.2.18.4 Cross Drains

There are three existing drainage crossings within the study limits. A double 8′ x 4′ CBC is located underneath US 41 south of Bonita Beach Road which conveys a drainage ditch from the west side of US 41 to the canal along the east side of US 41. A single 10′ x 7′ CBC is located underneath Bonita Beach Road east of US 41 conveying the canal north to the Arroyal Mall Pond. A 24″ outfall pipe crosses underneath US 41 from the Center of Bonita Springs treatment pond into the Arroyal Mall Pond. The cross drains are summarized in **Table 12** and shown on the concept plans in **Appendix H**.

Table 12: Summary of Cross Drains

Structure No.	Station	Description	Remarks
CD-1	240+40	Double 8′ x 4′ CBC	US 41
CD-2	278+80	10′ x 7′ CBC	Bonita Beach Rd
CD-3	251+00	Single 24″ RCP	US 41

2.2.19 Lighting

Roadway lighting exists along US 41 starting at the Collier County line and extending beyond the Imperial River Bridge. The lighting is on both sides of US 41 with 400-watt high pressure sodium luminaires and on 40′ aluminum poles with decorative light fixtures. The lighting spacing is approximately 150′. This decorative street lighting is maintained by the City of Bonita Springs.

The same lighting is provided on Bonita Beach Road at the signalized intersections with the Center of Bonita Springs, Arroyal Road, and Spanish Wells Boulevard. This lighting is located on the south side of Bonita Beach Road with two luminaires located on each side of the intersection. Decorative street lighting is also present on both sides of Bonita Beach Road in the study area and is maintained by the City of Bonita Springs.

2.2.20 Utilities

Nine Utility Agency/Owners (UAO) have been identified within the project area through the Sunshine 811 Design Ticket and utility coordination efforts. **Table 13** identifies the UAO's contacted and a general description of their facilities located on the project. Additional information regarding the existing utilities and anticipated impacts can be found in the 444321-1-22-01 Utility Assessment Package, currently in development.

The utility providers listed in **Table 13** were initially contacted on March 31, 2020. The utility providers were contacted again in September/October 2023 with the proposed improvements and were requested to identify any easements and the location of their existing/planned utilities within the project area.

Table 13: Existing Utilities in Study Area

Utility Company	Utility Contact	Facility	Description
City of Bonita Springs	Joel Langaney; joel.langaney@cityofbonitasprings.org; 239-949-6242	Decorative Light/ Irrigation	• Decorative Street Lighting on both sides of Bonita Beach Road • Irrigation along the median
Bonita Springs Utilities, Inc.	Peter Rim; prim@bsu.us; 239-390-4973	Water/ Wastewater/ Sewer	• 12" water line along the north side of Bonita Beach Road • 12" sewer force main crossing Bonita Beach Road at Beaumont Road, and Meadowlark Lane • Two out-of-service water mains on the south side of Bonita Beach Road • Existing 12" water main along the east side of US 41
Comcast	Xavier Medina; xavier_medina@comcast.com; 239-671-5713	CATV	• Buried COAX-BTV, FOC-BTV North and South of Bonita Beach Road • OTV on the north side of Bonita Beach Road
Crown Castle Fiber	Danny Haskett; danny.haskett@crowncastle.com; 786-246-7827	FOC	• Existing 1.5" HDPE Conduits and handholes south of Bonita Beach Road • Existing 1.5" HDPE Conduits and handholes west of US 41
Florida Power and Light	Michael Martinez; michael.martinez@fpl.com; 239-353-6047	Electric	• Existing 23 KV OE on the west side of US 41 • Existing 23 KV OE on the north and south side of Bonita Beach Road

Utility Company	Utility Contact	Facility	Description
			• Existing 23 KV BE on the north side of Bonita Beach Road
Lee County – Traffic	James Fencil; jfencil@leegov.com; 239-707-4870	FOC	• Existing BFOC on the north side of Bonita Beach Road • Existing BFOC on the west side of US 41 south of Bonita Beach Road and on the east side north of Bonita Beach Road • Existing Traffic Signals at the intersection of Bonita Beach Road and Arroyal Road, Bonita Beach Road and US 41, and Bonita Beach Road and 620 LF E of Windsor Road
Summit Broadband Inc.	James Yeakey; james.yeakey@summitbb.com; 239-571-5910	FOC	• Buried FOC on the north and south side of Bonita Beach Road
TECO Peoples Gas	Alex McFarlane; amcfarlane@tecoenergy.com; 813-275-3783	Gas	• Existing 8" gas main on the east side of US 41 • Existing 4" PE Gas Main North of Bonita Beach Road
CenturyLink/ Lumen	Zach Miller; zach.x.miller@lumen.com; relocations@lumen.com; 239-281-5128	FOC/Phone	• BFO on the east and west side of US 41 and the north side of Bonita Beach Road • BT on the east side of US 41 and the south side of Bonita Beach Road • Conduit System on the east side of US 41 and both sides of Bonita Beach Road • Handholes, manholes and, PEDs on both side of US 41 and Bonita Beach Road

2.2.21 Soils and Geotechnical Data

The following Lee County Geology information was paraphrased from the Florida Geological Survey, Open-File Report 80, 2001 and other geologic references. A Geotechnical Technical Memorandum has been prepared and is located in the project files.

The near surface geologic deposits and formations from youngest to oldest in Lee County include Holocene Sediment (Qh), Undifferentiated sediments (Qu), Shelly sediments (TQsu), the Tamiami Formation (Tt), the Peace River Formation (Thp), and the Arcadia Formation (Tha).

The Holocene sediments generally occur near the coastline and with river flood plains and include quartz sands, carbonate sand and muds with organics. The Undifferentiated sediments are siliciclastics that are light gray, tan, brown to black, unconsolidated to poorly consolidated, clean to clayey silty, unfossiliferous, variably organic-bearing sands to blue green to olive green, poorly to moderately consolidated, sandy, silty clays. The shelly sediments are variably calcareous and fossiliferous quartz sands to well indurated, sandy, fossiliferous limestones with clayey sands and sandy clays present.

The Tamiami Formation is a poorly defined lithostratigraphic unit containing a wide range of mixed carbonate-siliciclastic lithologies. The lithologies include: 1) light gray to tan, unconsolidated, fine to coarse grained, fossiliferous sand; 2) light gray to green, poorly consolidated, fossiliferous sandy clay to clayey sand; 3) light gray, poorly consolidated, very fine to medium grained, calcareous, fossiliferous sand; 4) white to light gray, poorly consolidated, sandy, fossiliferous limestone; and 5) white to light gray, moderately to well indurated, sandy, fossiliferous limestone. The Tamiami Formation has from highly permeable to impermeable lithologies that form a complex aquifer and primarily outcrops in most of eastern Lee County and can reach thicknesses of greater than 100 feet.

The Peace River Formation is primarily found near sea level elevation and is approximately 50 to 150 feet thick under the county. The Peace River Formation is composed of interbedded sands, clays and carbonates. The sands are generally light gray to olive gray, poorly consolidated, clayey, variably dolomitic, very fine to medium grained and phosphatic. The clays are yellowish gray to olive gray, poorly to moderately consolidated sandy, silty, phosphatic and dolomitic. The carbonates are light gray to yellowish gray, poorly to well indurated, variably sandy and clayey, and phosphatic. The carbonates often include opaline chert.

The Arcadia Formation is predominantly a carbonate unit with variable siliciclastic components and is found about 150 to 200 feet bls in Lee County. Arcadia Formation is composed of yellowish gray to light olive gray to light brown, micro to finely crystalline, variably sandy, clayey and phosphatic, fossiliferous limestones and dolostones. Thin beds of sand and clay are common. The sands are yellowish gray, very fine to medium grained, poorly to moderately indurated, clayey, dolomitic and phosphatic. The clays are yellowish gray to light olive gray, poorly to moderately indurated, sandy, silty, phosphatic and dolomitic.

Based upon the USDA-NRCS Soil Survey for Lee County, sandy soils are reported along the majority of the project corridor to depths of 80 inches below the natural ground surface. Isolated areas along the southern portion of US 41 within the project corridor is anticipated to contain shallow organic and clayey soils as well as shallow bedrock/caprock.

Information regarding the soils and groundwater conditions for the soil mapping units was obtained from the Lee County Soil Survey published by USDA-NRCS and the Web Soil Survey shown in **Figure 40** and is presented in **Table 14**.

In general, the reported sandy soils are suitable for supporting proposed roadway embankments after proper subgrade preparation and removal of unsuitable materials. Areas along the project corridor where shallow groundwater conditions, organic soils, shallow clay soils, or shallow bedrock/caprock may impact the project are detailed below.

2.2.21.1 Shallow Groundwater

The Seasonal High Groundwater Table (SHGWT) for the soil units presented above is reported to range from at or above the predevelopment natural grade to a depth of 5 feet below the predevelopment natural grade within the project limits. For the majority of the project corridor, the SHGWT is reported to be within 1.5 feet of the predevelopment natural grades.

Roadway base to groundwater clearance will need to be evaluated to ensure minimum separation between the base and the SHGWT is maintained or to determine if additional measures are required (i.e., blackbase, underdrains, etc.). In areas where the existing SHGWT is above grade, the SHWGT will have to be established by the project biologist utilizing biological indicators. Additionally, drainage design will need to consider the impact of shallow groundwater levels.

2.2.21.2 Near Surface Clayey Soils

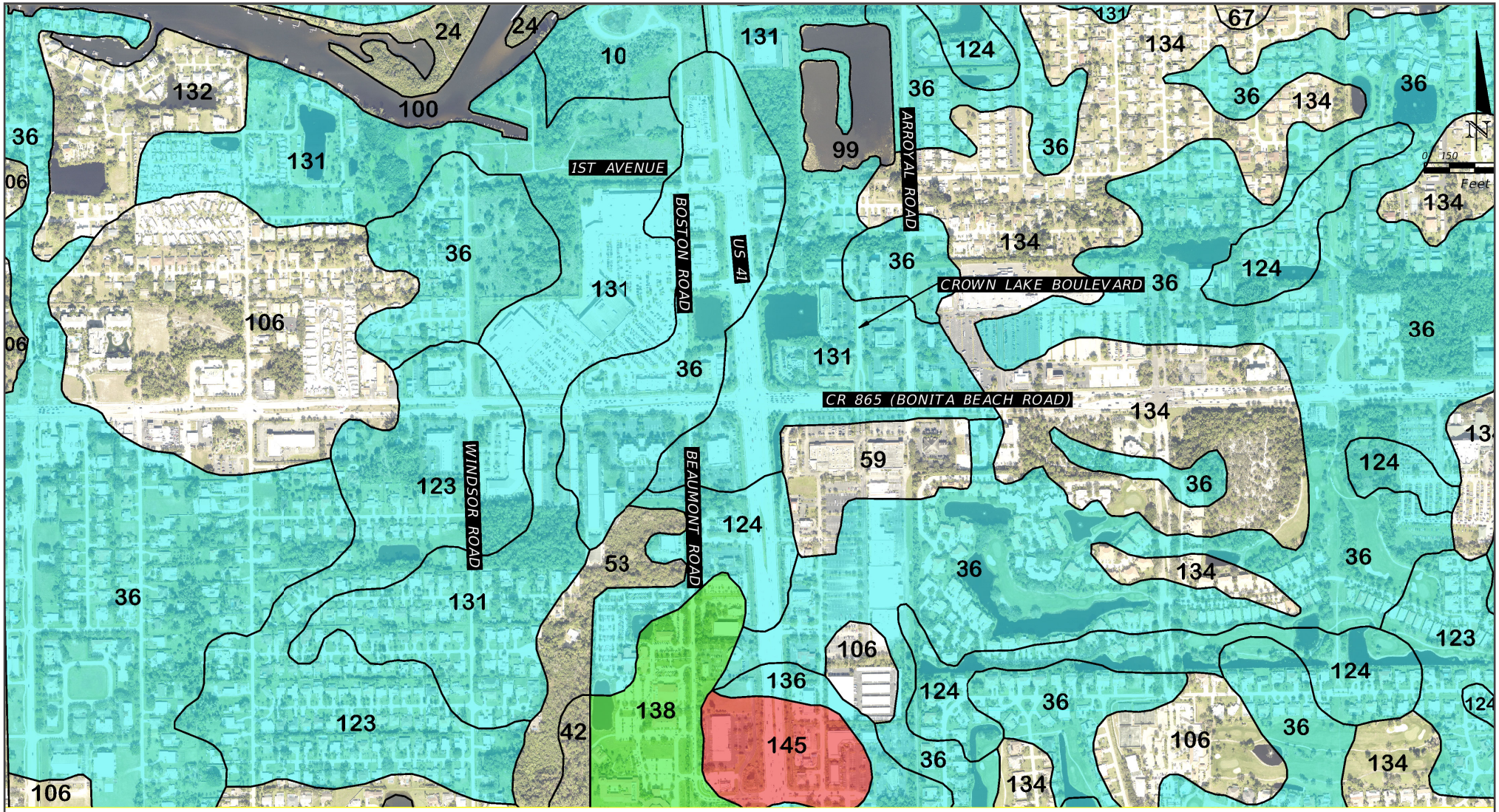
The following soil mapping units noted plastic/clayey soils (A-2-4/A-4/A-6/A-7-6) at reported depths within 18 to 45 inches of natural grades within the project corridor:

- Wabasso Sand, Limestone Substratum – Urban Land Complex (Unit 138)
- Gator Muck, Ponded – Urban Land Complex (Unit 145)

Plastic soils have limitations related to base clearance and are also poorly drained. Separation between plastic clayey soils and the roadway pavement sections should be in accordance with FDOT Standard Plans, Indices 120-001 and 120-002. As the project progresses beyond the PD&E stage, additional geotechnical services should be performed to determine the impact these materials will have to the proposed design.

Table 14: Lee County USDA NRCS Soil Survey Information

Map No.	Soil Name	Hydrologic Soil Group	Depth to High Water Table (ft)*	Typical Soil Types (Profile from Ground Surface to Depth of Approximately 80")
10	Pompano Fine Sand	A/D	0.3-1.5	Fine Sand
36	Immokalee Sand	B/D	0.5-1.5	Sand
59	Urban Land	Information not provided for Urban Land		
106	Daytona Sand – Urban Land Complex	A	3.5-5.0	Sand
123	Myakka Fine Sand – Urban Land Complex	A/D	0.5-1.5	Fine Sand
124	Myakka Fine Sand, Ponded – Urban Land Complex	A/D	+2.0-0.0	Fine Sand
131	Pompano Fine Sand – Urban Land Complex	A/D	0.3-1.5	Fine Sand
134	Satellite Fine Sand – Urban Land Complex	A	1.5-3.5	Fine Sand
136	Valkaria Fine Sand – Urban Land Complex	A/D	0.3-1.5	Fine Sand
138	Wabasso Sand	C/D	0.5-1.5	Sand to Sandy Clay Loam to Bedrock
145	Gator Muck, Ponded – Urban Land Complex	C/D	+2.0-0.0	Muck to Sandy Clay Loam to Fine Sandy Loam (Sandy Clay) to Fine Sand
* Depth to High Water Table is also commonly known as the depth to the Seasonal High Groundwater Table				



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Figure 40 | USDA Soils Surveys

2.2.21.3 Organic Soils

According to the USDA, an organic soil mapping unit is reported on the southern end of the project corridor. The following soil mapping unit noted organic/muck (A-8) soils from the predevelopment natural ground surface to 1½ feet below the ground surface within the project limits:

- Gator Muck, Ponded – Urban Land Complex (Unit 145)

Organic/muck (A-8) soil should be removed in accordance with FDOT Standard Plans, Index 120-002 and replaced with backfill in accordance with Index 120-001. As the project progresses beyond the PD&E phase, delineation of the locations identified by the USDA Soil Survey as potentially containing organic soils will be required to determine the impact of the organic soils on the proposed design. Additional geotechnical services should be performed to identify the vertical and horizontal limits of the organic soils within the project limits.

2.2.21.4 Shallow Bedrock/Caprock

The following soil unit, according to the USDA, noted shallow bedrock/caprock within the project corridor from depths ranging from 3½ to 4½ feet or greater below natural grades.

- Wabasso Sand, Limestone Substratum – Urban Land Complex (Unit 138)

The project corridor is in an area known for shallow limestone deposits, also known as caprock or bedrock. The limestone substrata vary in depth generally from about 7 to 10 feet below the natural ground surface and can be over 10 feet in thickness. Therefore, caprock shall be anticipated at varying depths below the ground surface throughout much of the project corridor.

Extremely hard intermittent layers of limestone and dolomitic rock may make excavating the substrata difficult. The caprock can impact excavations for stormwater management areas, utility relocations and stormwater conveyance systems. In addition, limestone is porous and will be difficult to dewater.

The Geotechnical Technical Memorandum concluded saying "In general, the existing subsurface soils appear capable of supporting the construction of the proposed roadway improvements subject to the above geotechnical considerations and after proper subgrade preparation."

2.2.22 Aesthetics Features

The project area primarily consists of commercial, retail, or office uses along both US 41 and Bonita Beach Road including two shopping centers in the northwest and southeast quadrants of the intersection. Residential land uses sit behind the commercial activities. Given the heavy commercial character of each corridor and aesthetic character of the intersection, minimal involvement regarding aesthetic effects is anticipated.

The project is anticipated to impact the existing landscaping and decorative lighting within FDOT's right of way. Currently there is extensive landscaping including royal palms and shrubbery beds within all four quadrants on the intersection of US 41 and Bonita Beach Road, as well as palm trees and shrubbery within US 41's existing medians.

2.2.23 Traffic Signs

There are no major overhead traffic signs located along US 41 or Bonita Beach Road within the project limits.

2.2.24 Noise Walls and Perimeter Walls

No noise walls or perimeter walls are located along US 41 or Bonita Beach Road within the project limits.

2.2.25 Intelligent Transportation Systems (ITS)/Transportation System Management and Operations (TSM&O) Features

There are existing ITS/TSM&O features located along US 41 and Bonita Beach Road within the project limits including traffic cameras at the four quadrants of the US 41 and Bonita Beach Road intersection. There is buried fiber optic cable along both US 41 and Bonita Beach Road and the signalized intersections noted in **Section 2.2.11** are coordinated using Econolite ASC/3 controllers.

2.3 Bridges and Structures

There are two existing concrete box culverts within the project limits, one underneath US 41 and another underneath Bonita Beach Road, both serving the same canal system. The existing concrete box culvert underneath US 41 south of Bonita Beach Road is a 175' long 8'x4' double barrel located at approximately Station 240+50 (approximately 570' south of Bonita Beach Road). The existing concrete box culvert underneath Bonita Beach Road east of US 41 is a 129.5' long 10'x7' single barrel located at approximately Station 279+00 (approximately 120' east of US 41).

2.4 Existing Environmental Features

2.4.1 Social Environment

The existing and future land uses abutting the US 41 and Bonita Beach Road intersection are primarily commercial/retail/office with shopping centers in the northwest and southeast quadrants. The major vacant land parcels in the northwest quadrant have recently started construction of a mixed-use development called Angler's Paradise, containing up to 260 residential units, 30,000 SF of retail and office, and 160 hotel rooms. Residential uses are located behind the commercial/retail/office uses. One other Residential Planned Development, Windsor GBM, is located east of Windsor Road south of Bonita Beach Road. The 4.66 acre site has been approved for up to 19 single family residential units.

Within the project study area is the Bonita Springs City Hall beside the US Post Office on Bonita Beach Road. In the intersection's southwest quadrant is the St. Leo Catholic Church on Beaumont Road. The Lee County Sheriff's Office South District office is located in the Springs Shopping Center. At the study area's northern end are two public recreational areas along the southern shore of the Imperial River. West of US 41 is the Bonita Springs River Park with hiking trails and picnic areas. East of US 41 is Lee County's Imperial River Boat Ramp. These community features are shown **Figure 41**.

Based on the U.S. Census Bureau 2018-2022 American Community Survey 5-Year Estimates, there are approximately 2,500 households with a population of 4,800 residents identified within the study area. Approximately 64 percent of households are single family dwelling units while approximately 36 percent are multifamily units. The median income is approximately $71,500 with just under 6 percent of the households below poverty level. Minority population comprises approximately 9 percent of the total population in the study area.



Not to Scale

North

US 41 at Bonita Beach Road PD&E Study

Figure 41 | Community Map

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2.4.2 Natural Environment

The Natural Resources Evaluation Report has been completed for this project and existing conditions are summarized below from this report and field studies.

2.4.2.1 Potentially Occurring Listed Species

A total of 35 protected species have the potential to occur in the US 41 and Bonita Beach Road study area, according to the information obtained during the preliminary data collection. These include the 12 avian, six mammal, four reptile, one insect and 12 plant species shown in **Appendix C**. Ecologists determined a species' potential occurrence in the study area based on its habitat preferences and distributions, existing site conditions, historical data, and field survey results. The potential of occurrence was rated as no, low, moderate, high, or observed. Protected species occurrences within the study area are shown on **Figure 42**.

2.4.2.2 Federally Listed Species and Designated Critical Habitat

The study area is located within or partially within the USFWS Consultation Area (CA) of the Florida bonneted bat. A full acoustic survey and roost survey were conducted in October 2023 to determine Florida bonneted bat activity within the study corridor. The survey methodology was submitted and approved by the USFWS prior to the commencement of the surveys (NRE Appendix D). A supplemental survey methodology was developed based on the need to adjust proposed detector locations due to ongoing construction activities and access. This amended survey methodology was submitted and approved by USFWS (NRE Appendix D). The acoustic survey was conducted from October 4 through October 10, 2023. The results of the survey determined no Florida bonneted bats in the study area. The survey report has been added in NRE Appendix G.

The study area is also located within or partially within the CA of the Florida scrub-jay. While the study area is not within the USFWS Florida panther CA, according to IPaC and ECOS, the project site is within the panther's range. The study area also falls within one wood stork Core Foraging Area (CFA), which include suitable foraging areas important to the reproductive success of known wood stork nesting colonies. The existing habitats in the study area may also support other federally protected species, including the eastern indigo snake, tricolored bat (a candidate species), and monarch butterfly (a candidate species). According to the FNAI and USFWS, two (2) federally protected plants have the potential to occur within the study area: 1. The beautiful pawpaw; and 2. The aboriginal prickly-apple.

There is no Critical Habitat within or abutting the project corridor.



Not to Scale

North

US 41 at Bonita Beach Road PD&E Study

Figure 42 | Protected Species and Habitat Map

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2.4.2.3 State Listed Species

The Florida Fish and Wildlife Conservation Commission (FWC) maintains the list of animals designated as federally endangered, federally threatened, state threatened, or species of special concern. The FWC has developed a comprehensive management plan and species action plans for the state's 59 state-listed species (FWC 2016, 2020). For this project, the following state listed species were identified: Big Cypress Fox Squirrel, Florida Burrowing Owl, Florida Pine Snake, Florida Sandhill Crane, Gopher Tortoise, Least Tern, and Imperiled Wading Birds.

Ten state protected plant species have the potential to occur in Lee County. State threatened plant species include the pinewoods bluestem, many-flowered grass-pink, nodding pinweed, Florida beargrass, and giant orchid. Endangered plants with potential to occur in Lee County include sand-dune spurge, pine pinweed, Small's flax, celestial lily, and scrub stylisma.

2.4.2.4 Other Protected Species or Habitats

For this project, the following other protected species or habitats were identified: Bald Eagle and Florida Black Bear.

2.4.2.5 Aquatic Preserves and Outstanding Florida Waters

The Imperial River, a tributary of Estero Bay (a designated Aquatic Preserve) is located adjacent to the northern boundary of the study area. Estero Bay tributaries are designated OFWs. Special protection is given to OFWs under 62-302.700, F.A.C. The project, including the proposed stormwater management system, will be developed to meet the design and performance criteria established in the SFWMD Environmental Resource Permit Applicant's Handbook Volumes I and II for the treatment and attenuation of discharges to OFWs. Best management practices will also be utilized during project activities to prevent impacts (primarily siltation) to proximate estuarine habitats.

2.4.2.6 Wetlands and Other Surface Waters

A wetland evaluation was performed for the study area. The wetland evaluation relied on literature reviews and field surveys to identify the location, extent, and functional value of wetlands in the study area; the potential direct, indirect, or cumulative effects of the project's actions to those wetlands; and available mitigation options to satisfy permit requirements from regulatory agencies. This wetland evaluation was performed in accordance with the Presidential Executive Order (EO) 11990 ("Protection of Wetlands"); U.S. Department of Transportation Order 5560.1A ("Preservation of Nation's Wetlands"); Federal Highway Administration Technical Advisory T6640.8A regarding the preparation of environmental documents; and the Wetlands and Other Surface Waters chapter of the FDOT's PD&E Manual.

Table 15 and **Figure 43** provides details identifying each wetland and surface water including number, Florida Land Use, Cover and Forms Classification System (FLUCFCS) and National

Wetlands Inventory (NWI) classification, and a brief description. FLUCFCS classifications are based on the results of the data analysis and field reviews of the study area. NWI classifications were not altered and are based on the listed classification of the nearest NWI wetland system as applicable.

Table 15: Wetland and Other Surface Waters in Study Area

Surface Water ID	FLUCFCS Classification	NWI Classification	Description
WL 1	630	PFO4/1A	Wetland Forested Mixed
WL 2	617	PFO3/2C	Mixed Wetland Hardwoods
WL 3	612/625	PSS4A, PFO4A, PSS1/EM1R, E2SS3N	Mangrove Swamps/Hyric Pine Flatwoods
WL 4	612	E2SS3N, E2EM1P	Mangrove Swamps
SW 1	510	N/A	Streams and Waterways
SW 2	510	N/A	Streams and Waterways
SW 3	510	PUBHx	Streams and Waterways
SW 4	510	N/A	Streams and Waterways
SW 5	530	PUBHx	Reservoirs
SW 6	530	PUBHx	Reservoirs
SW 7	510	N/A	Streams and Waterways
SW 8	510	N/A	Streams and Waterways
SW 9	530	N/A	Reservoirs
SW 10	510	N/A	Streams and Waterways



Not to Scale

North

US 41 at Bonita Beach Road PD&E Study

Figure 43 | Wetlands and Surface Waters Map

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2.4.3 Physical Environment

2.4.3.1 Cultural Resources

A Cultural Resource Assessment Survey (CRAS) has been conducted to locate and identify any archaeological sites and historic resources within the project area of potential effect (APE) and to assess their significance in terms of eligibility for listing in the National Register of Historic Places (NRHP).

Archaeological background research and a review of the Florida Master Site File (FMSF) indicated that no archaeological sites are recorded within or adjacent to the APE but five sites are recorded within one mile. These consisted of various types of mounds, only one of which has been evaluated by the State Historic Preservation Officer (SHPO). A review of relevant site locational information for environmentally similar areas within Lee County and the surrounding region indicated that the APE was considered to have a low to moderate potential for archaeological sites although the ETDM report 6291 indicated a minimal impact to cultural resources. As a result of field investigation, including the excavation of 35 shovel tests, no archaeological sites were discovered.

Historic background research, including a review of the FMSF and the NRHP databases, indicated that two historic resources (8LL01426 and 8LL02543) were previously recorded within the APE. However, the FMSF notes both buildings no longer exist. A review of relevant historic United States Geological Survey (USGS) quadrangle maps, historic aerial photographs, and the Lee County property appraiser's website data revealed the potential for four new historic resources 45 years of age or older (constructed in 1978 or earlier) within the APE (Caldwell 2023). These include three buildings (8LL02984, 8LL02985, and 8LL02986), constructed between ca. 1945 and 1975, and one linear resource (8LL02987) being an unnamed drainage ditch. Background research did not reveal any historic associations with significant persons and/or events. Thus, these historic resources do not appear eligible for listing in the NRHP, either individually or as a part of a historic district.

2.4.3.2 Contamination

A Level I Contamination Screening Evaluation Report (CSER) was prepared to support this project. Fifteen Low rated locations, four Medium rated locations (Map ID 3, Map ID 5, Map ID 6, and Map ID 8), and one High rated location (Map ID 7) were identified in the study area. The following summarizes the four Medium/High rated locations:

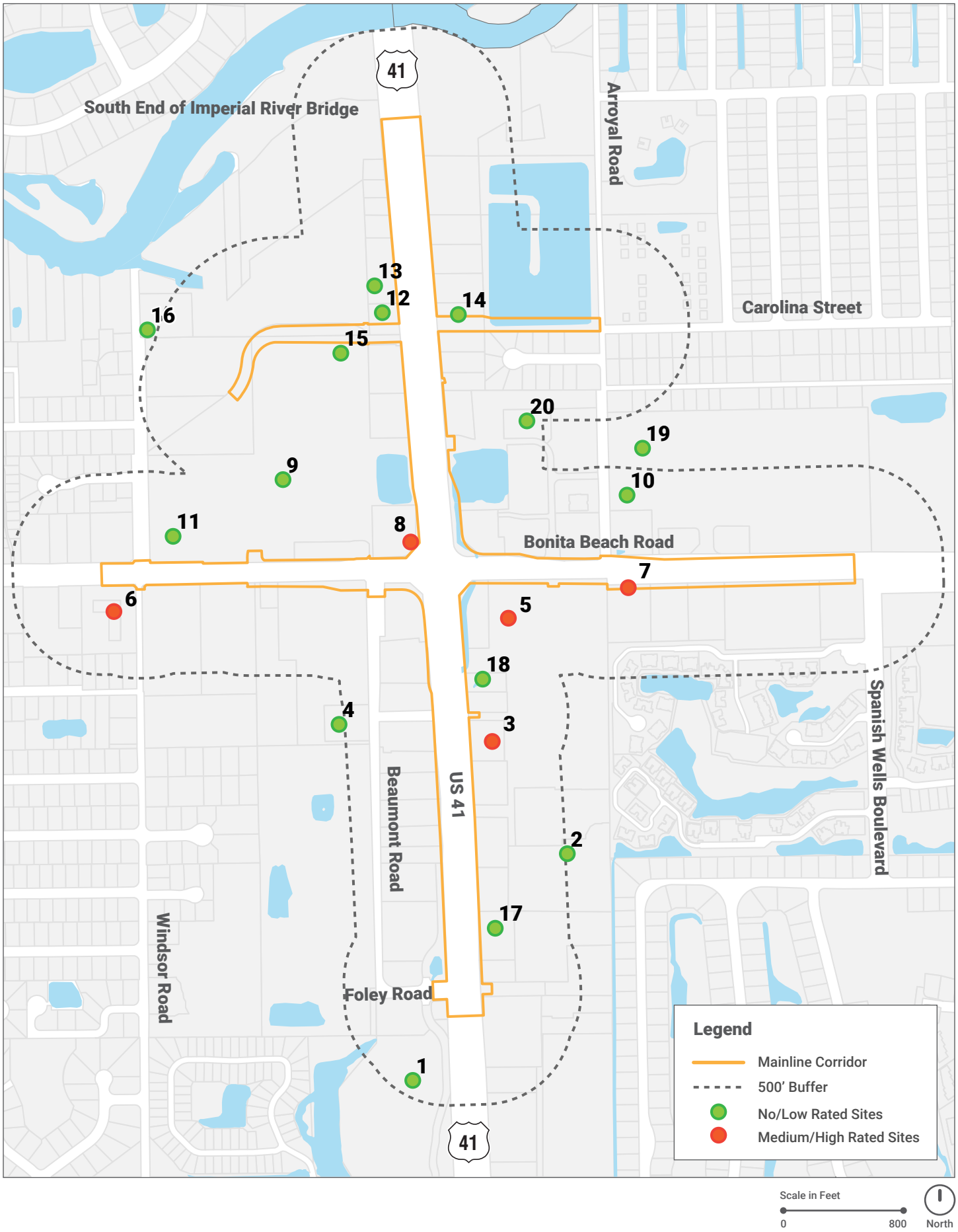
- **Map ID 3 – Medium Risk** – 7-Eleven Store #34806, 28175 South Tamiami Trail, Bonita Springs, FL 33923.
    - Petroleum tanks with five listed discharges by the Florida Department of Environmental Protection (FDEP). Active retail gas station.
- **Map ID 5 – Medium Risk** – Spring Fresh Dry Cleaners, 8951 Bonita Beach Road, Suite 21D, Bonita Springs, FL 33923

  - Former dry cleaning facility from the 1980s to the 1990s. Entered FDEP Voluntary Cleanup Program and their Remedial Action Plan (RAP) was approved in June 1999. RAP activities ceased in March 2004. Remains on FDEP's contamination site listing.
  - Currently Smilecreator of Bonita dentist office.
- **Map ID 6 – Medium Risk** – Martinizing Dry Cleaning, 3525 Bonita Beach Road, Bonita Springs, FL 34134.
  - Active dry cleaning facility with no previous contamination reports in FDEP database.
- **Map ID 8 – Medium Risk** – 7-Eleven Store #40327/Apex Station, 27990 Tamiami Trail, Bonita Springs, FL 34134.
  - Petroleum tanks with three listed discharges by FDEP. Active retail gas station.
- **Map ID 7 – High Risk** – BP – Bonita-Oleum Corp., 9021 Bonita Beach Road, Bonita Springs, FL 33923.
  - Petroleum tanks (removed 1994). 1995 Site Closure Report indicated 400 tons of contaminated soil removed from site for treatment. 2017 measured groundwater flows toward Bonita Beach Road. Currently site for Fifth Third Bank.

Contamination screening of the proposed pond sites show there are two low risk sites, one medium risk site and one high risk site. The following summarizes the four Medium/High rated locations:

- **Pond West – Medium Risk –** There are two nearby facilities identified as potential contamination sources. Tuffy Tire & Auto Service Center, 27790 South Tamiami Trail, Bonita Springs, FL 34134 and Bonita Boat Center, 27760 South Tamiami Trail, Bonita Springs, FL 34134
  - The Tuffy site is active and contains one aboveground storage tank and seven within-the-ground hydraulic lifts. There are no noted issues with this site.
  - The Bonita Boat site is an operational marine/boat dealer and service/repair center. No FDEP OCULUS regulatory files were found regarding this site.
- **Pond East (Alternative 1) – High Risk –** This is the same site as Map ID 7 listed above.

Figure 44 shows the locations of the potential contamination sites from the Level 1 CSER.



US 41 at Bonita Beach Road PD&E Study

Figure 44 | Potential Contamination Sites from Level 1 CSER

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2.4.3.3 Noise Impacts

A Noise Study Report has been conducted for the project. Existing noise levels are measured in the project corridor to confirm if traffic is the primary source of noise. These field measurements are also required to verify the accuracy of the Traffic Noise Model (TNM) before it can be used to predict noise levels. Three 10-minute measurements were taken on September 6, 2023, using an Extech Instruments Model 407780 Type 2 Integrating Sound Level Meter. The sound level meter, calibrated at 114.0 dB(A) with an Extech Instruments Model 407766 calibrator, was adjusted to the A-weighted frequency scale, which approximates the frequency sensitivity of the human ear. Traffic data, including vehicle volumes, speeds by type, and meteorological conditions, were recorded during each measurement session.

Noise sensitive land uses within the study area fall under Noise Abatement Criteria (NAC) B, C, and E. NAC B land uses are residential which generally do not front either US 41 or Bonita Beach Road. The NAC C land uses within the study corridor pertain to exterior use areas associated with the Learning City Pre-School, Noah's Ark Academy, and the future Angler's Paradise pool deck. The Shiknay's Bonita Funeral Home was considered an NAC D site because this type of site is similar to a church but does not have a readily defined area of frequent exterior use. The NAC E land uses include several commercial properties with outdoor uses ranging from open-air dining, benches, and a swimming pool. The remainder of the corridor is NAC G undeveloped land.

Using 2019 traffic volumes, noise levels were predicted for 57 noise sensitive sites representing 42 residences (NAC B), four SLU NAC C receptors, and 11 SLU NAC E receptors. Only one site, the Noah's Ark Academy on Bonita Beach Road has a predicted 2019 predicted noise level at 69.5 dB(A) above the NAC impact criterion of 66.0 dB(A).

3.0 FUTURE CONDITIONS

This section summarizes the traffic forecasting and future no-build traffic evaluation for the US 41 and Bonita Beach Road intersection. The future build traffic evaluation is discussed in **Section 5.4.3**. For more information, please see the project's PTAR.

3.1 Traffic Forecasting

As part of the intersection's original analysis, a Traffic Analysis Methodology detailing the data and assumptions used to develop the 2045 design year and 2025 opening year volumes was approved by FDOT in May 2020. During the course of the analysis, two external factors were introduced into the study which caused a reconsideration of the alternatives. The addition of the Angler's Paradise development and the programming of the funds to construct a quadrant road in the intersections northwest quadrant caused the grade separated alternatives to no longer be viable. Thus, the Traffic Analysis Methodology assumptions and analysis of the volumes diverted to the northwest and northeast quadrant roadway network had to be revised. The methodology to generate volumes on the quadrant roadways were reviewed and approved by FDOT District 1 in November 2021 and is described in the revised Traffic Analysis Methodology starting on page 19. These volumes were updated using the same methodologies using turning movement splits from 2022 to determine the updated volumes for the 2030 opening year and 2050 design year. The final revised Traffic Analysis Methodology (October 2023) is located in the *PTAR's Appendix A* and the project files.

FDOT District 1 developed a validated subarea model for this project by using the District 1 Regional Planning Model (v1.0.6) (D1RPM 1.0.6). This subarea model included the 2010 validation year and a 2040 horizon year. The subarea model validation was summarized within the FDOT District 1 prepared *Travel Demand Forecasting Subarea/Corridor Validation Tech Memo for the SR 45 (US 41) at Bonita Beach Road PD&E Study*, dated October 2019 (located in the project files). In April 2022, FDOT District 1 reevaluated the model projections using the updated D1RPM 2.0 and found "the 2045 AADT volumes remain applicable, and could potentially be used to represent 2050 volumes" (Kyle Purvis email dated April 7, 2022, located in the appendix of the final revised Traffic Analysis Methodology (October 2023), which is located in the *PTAR's Appendix A* and the project files).

Opening and design year volumes were developed for the US 41 and Bonita Beach Road intersection consistent with the approved traffic analysis methodology. Volumes were developed using the travel demand model outputs and compared to historical and projected growth rates (FTI Database for historical counts; BEBR projections for projected growth) for reasonableness. Future volumes were developed for the 2030 (Opening Year) and 2050 (Design Year), as shown in **Table 16**.

Table 16: Roadway Segment AADTs

Road	Segment	2010 Historic	2019 Existing	2030 Opening Year	2050 Design Year
US 41	South of Bonita Beach Road	33,789	39,000	44,000	60,000
US 41	North of Bonita Beach Road	47,000	53,000	59,000	78,000
Bonita Beach Road	West of US 41	23,053	30,000	32,000	39,000
Bonita Beach Road	East of US 41	28,000	30,000	32,000	39,000

3.2 Future No-Build Evaluation

The No-Build scenario was analyzed, assuming the new roadway network in the intersection's northwest quadrant diverting some volume from the US 41 and Bonita Beach Road intersection. As part of this roadway network's completion, the Bonita Beach Road and Windsor Road intersection is expected to be modified to include an eastbound approach displaced left-turn. No changes are being made at the US 41 and Center of Bonita Springs (North) Access intersection to facilitate the quadrant road's movement. The Northwest Quadrant Roadway included in the future No-Build scenario is shown in **Figure 45**.

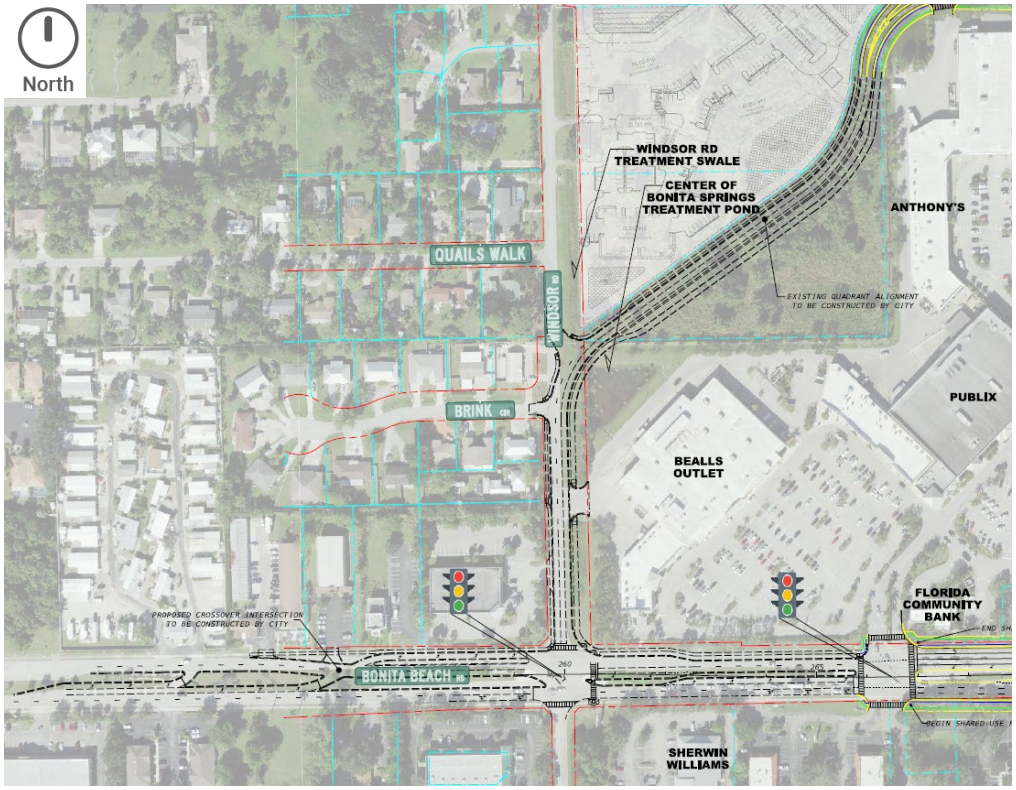


Figure 45: Northwest Quadrant Roadway – Proposed City Alignment

The future intersection turning movement volumes were analyzed using VISSIM. For the purposes of this analysis, the existing US 41 at Bonita Beach Road intersection lane configurations and signal cycle lengths were maintained, although signal timing splits were optimized with the no-build volumes. Network Measures of Effectiveness (MOEs) for the no-build analysis are shown in **Table 17**.

The performance measures of effectiveness for the intersections include the average delay for each movement and the average and maximum queue length. The average delay at each of the signalized intersections in the no-build scenario is summarized in **Table 18**. Detailed analysis results are included in the project's PTAR.

Table 17: No-Build Network Measures of Effectiveness

Measure of Effectiveness	Opening Year (2030)		Design Year (2050)	
	MD Peak	PM Peak	MD Peak	PM Peak
Average Delay (s)	269.0	346.1	367.1	426.9
Average Speed (mph)	11.2	9.3	8.8	7.8
Total Delay (hr)	1017.8	1309.0	1419.3	1628.6
Active Vehicles (at end of peak hour)	1,618	1,912	1,865	2,070
Vehicles Arrived (during peak hour)	12,011	11,701	12,062	11,666
Total peak hour vehicles (Active + Arrived)	13,629	13,613	13,927	13,736
Latent Demand (at end of peak hour)	863.6	836.8	3868.4	4310.7
Latent Demand as Percentage of Total Volume	6%	6%	28%	31%
Latent Delay (hr)	248.2	312.5	1825.5	2173.0
Latent Delay as Percentage of Total Delay	24%	24%	129%	133%
Travel Time (s): Northbound US 41	453.8	717.6	792.2	805.8
Travel Time (s): Southbound US 41	449.7	379.5	480.5	370.3
Travel Time (s): Northbound Left-Turn	652.3	830.6	980.2	911.6
Travel Time (s): Southbound Left-Turn	406.4	472.1	409.9	460.4
Travel Time (s): Eastbound Left-Turn	327.6	675.3	415.0	788.3

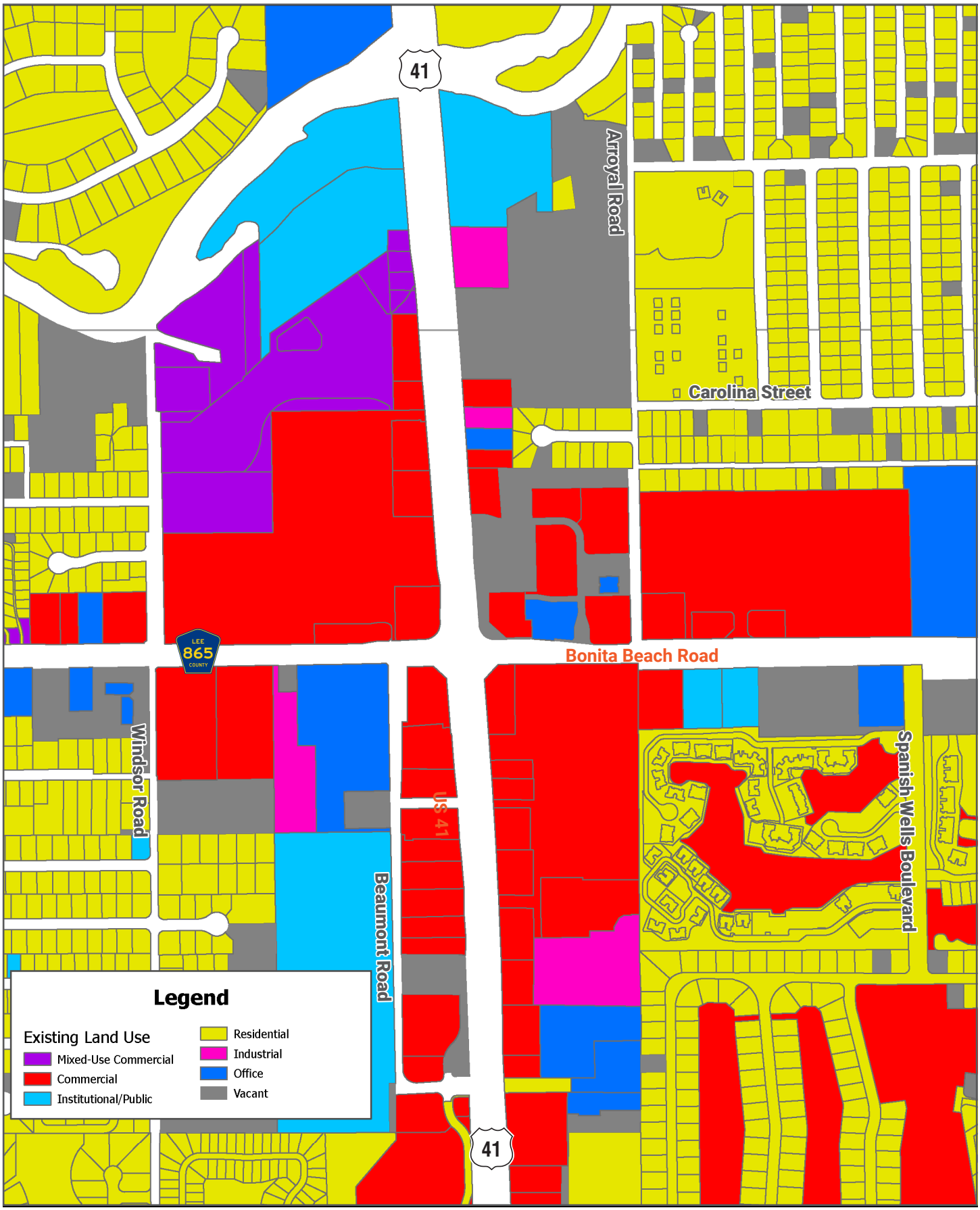
Table 18: No-Build Signalized Intersection Average Delay and LOS

Intersection	Opening Year (2030)		Design Year (2050)	
	MD Peak Delay (s) & LOS	PM Peak Delay (s) & LOS	MD Peak Delay (s) & LOS	PM Peak Delay (s) & LOS
US 41 & Woods Edge Pkwy.	23.2 C	62.5 E	70.7 E	99.3 F
US 41 & Bonita Beach Rd.	91.2 F	88.4 F	102.1 F	87.6 F
US 41 & Center of Bonita Springs (North) Access	47.3 D	60.3 E	67.0 E	63.6 E
Vanderbilt Dr./Luke St. & Bonita Beach Rd.	52.3 D	84.7 F	54.2 D	97.8 F
Windsor Rd. & Bonita Beach Rd.	25.3 C	95.0 F	38.1 D	108.3 F
Center of Bonita Springs & Bonita Beach Rd.	76.2 E	62.3 E	84.4 F	81.2 F
Arroyal Rd. & Bonita Beach Rd.	91.9 F	50.4 D	121.1 F	116.5 F
Spanish Wells Blvd. & Bonita Beach Rd.	22.5 C	45.8 D	23.1 C	66.4 E

3.3 Future Land Use & Context Classification

The future land uses are generally consistent with the existing land uses (discussed in **Sections 2.2.5** and **2.4.1**). The study area's future land use categories include commercial, residential, industrial, mixed-use/planned development, public, and recreational land uses. The larger vacant parcels in the study area's northwest quadrant are being developed into a mixed-use development called Angler's Paradise which will contain up to 260 residential units, 30,000 square feet of retail and office and 160 hotel rooms. One other Residential Planned Development, Windsor GBM, is located east of Windsor Road south of Bonita Beach Road. The 4.66 acre site has been approved for up to 19 single family residential units. **Figure 46** displays the future land use map.

The context classification for US 41 between Woods Edge Parkway and Riverview Entrance/Bay Land Shopping Center is C3C – Suburban Commercial, and is not anticipated to change in the future.



Scale in Feet

0 Not to Scale

North

US 41 at Bonita Beach Road PD&E Study

Figure 46 | Future Land Use

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4.0 PROJECT DESIGN CONTROLS & CRITERIA

4.1 Design Controls

4.1.1 Roadway Design Controls

With US 41 being a State maintained roadway, the 2023 FDOT Design Manual (FDM) is the controlling design guide for roadway components. The roadway design control list used for this study is listed in **Table 19**.

Table 19: Design Control List

Design Control	US 41	Bonita Beach Road	Source
Design Vehicle	WB-62FL	WB-62FL	Set by FDOT
Functional Class	Urban Principal Arterial – Other	Urban Minor Arterial	Set by FDOT
Context Classification	C3C	N/A	Set by FDOT
Proposed Access Management Classification	5	N/A	Set by FDOT
Design/Posted/Target Speed	Design: 45 mph Posted: 45 mph Target: 45 mph	Design: 45 mph Posted: 45 mph Target: N/A	Set by FDOT (US 41) Set by Study (Bonita Beach Road)
Design Year	2050	2050	Scope of Services
Facility within Urban Boundary?	Yes	Yes	Florida Urban Area Buffer Maps
LOS Target	LOS D	N/A	Set by FDOT
Pedestrian and Bicycle Requirements	Facilities to be provided at intersection	Facilities to be provided at intersection	FDM Chapters 222, 223, and 224
Physical Constraints	None	None	N/A
Environmental Constraints	None	None	N/A
Type of Stormwater Management Facilities	Closed	Closed	Match Existing

4.1.2 Stormwater Design Controls

The design of the project's stormwater management facilities is governed by the rules set forth by the SFWMD and FDOT. Wet detention ponds, dry retention ponds, and swale systems will

provide for water quality improvements as well as project runoff water quantity attenuation. Refer to the sections below for the project's pond facilities configuration criterion used.

- Pond Configuration:
    - Wet Detention Ponds: The water's flow path from the inlets to the pond's outlet of the must be maximized to promote good mixing with no dead spots, minimize short circuiting, and maximize pollutant removal efficiency and mixing.
        - Area – 0.5 acre minimum
        - Width – 100 feet minimum for linear areas in excess of 200 feet length
        - Littoral Zone – The littoral zone shall be a portion of the wet retention/detention bodies shallower than 6 feet as measured from below the control elevation. The minimum area shall be the lesser of 20 percent of the wet retention/detention area or 2.5 percent of the total of the retention/detention area plus the basin contributing areas.
            - Littoral Zone Alternatives:
                - An additional 50% of the appropriate permanent pool volume.
                - Pre-treatment of stormwater prior to the stormwater entering the wet detention pond. The level of pretreatment must be at least that required for retention, underdrain, exfiltration or swale systems.
        - Pond Depth – Maximum pond depth of 12 feet and a mean depth (pond volume divided by the pond area at the control elevation) between 2 and 8 feet.
        - Side Slopes – The pond must be designed so that the average pond side slope measured between the control elevation and two feet below the control elevation is no steeper than 1V:4H.
- Retention Ponds and Linear Swales: The effectiveness of retention facilities is controlled by two key factors: the construction procedures for the facility and the overall sequence of the site construction.
    - Initially construct the retention basin to rough grade by under-excavating the basin bottom and sides by approximately 12 inches.
    - After the drainage area contributing to the retention basin has been fully stabilized, the interior side slopes and basin bottom should be excavated to final design specifications.
    - Once the retention basin has been excavated to final grade, the entire basin bottom should be deep raked and loosened for optimal infiltration.
    - The retention basin should be stabilized with pervious material or permanent vegetative cover.

- In areas where weathered limestone/cap rock is present, construction precautions shall be taken in excavating through this material and will require non-conventional construction techniques and specialized equipment. Limestone/cap rock is porous and will be difficult to dewater.

4.2 Design Criteria

4.2.1 Roadway Design Criteria

During the alternatives analysis stage, the 2024 FDM was utilized for the design of both the Enhanced Traffic Signal and the Partial Displaced Left Turn alternatives. In FDM 212.1.1, a Displaced Left Turn is identified as an alternative intersection and notes that guidance on its design should reference the informational guide published by the Federal Highway Administration (FHWA). Based on this criterion, design elements for the Partial Displaced Left Turn alternative were developed following guidance from the *2014 FHWA Displaced Left Turn Intersection Informational Guide*.

The current roadway and intersection design criteria used for this study are listed in **Table 20** through **Table 24**. This design criterion is subject to change and only the most current design criteria should be used for the final design phase.

Table 20: Design Standards List for Roadway Elements

Design Standards		US 41/ Bonita Beach Road	Source
Roadway Element	Lane Widths	11′	FDM Table 210.2.1
	Pavement Cross Slope	0.02 (typ.) 0.04 (max)	FDM Section 210.2.4
	Median Width (ft) (min)	22′	FDM Table 210.3.1
	Curb & Gutter Type	Type F (Outside) Type E (Inside)	FDM Section 210.5
	Minimum Grade Curbed Roadway	0.30%	FDM Section 210.10.1.1
	Border Width (ft) (min)	14′ (45 mph)	FDM Table 210.7.1
	Superelevation Transition Slope	1:160	FDM Table 210.9.3
	Stopping Sight Distance	360′	FDM Table 210.11.1
	Clear Zone Width	24′ (Travel Lanes)	FDM Table 215.2.1

Design Standards		US 41/ Bonita Beach Road	Source
		14′ (Auxiliary Lanes)	
	Lateral Offset (ft) (min)	4′ (for items that may be within Clear Zone)	FDM Table 215.2.2
	Roadside Slope Rate	Front Slope: 1:2 Back Slope: 1:3 Transverse Slope: 1:4	FDM Table 215.2.3
	Sidewalk Width (ft.)	6′ min.	FDM Table 222.2.1
	Bicycle Lane Width	N/A	FDM Section 223.2.1.1
	Shared-Use Path Width	12′	FDM Section 224.4

Table 21: Design Standards List for Intersection Elements

Design Standards		US 41/ Bonita Beach Road	Source
Intersection Element	Maximum Deflection Angle Through Intersection	3 Degrees (Not to exceed lane shift of more than 6′ from stop bar to stop bar)	FDM Table 212.7.1
	Minimum Area for Channelization Islands	75 Square Feet	FDM Section 210.3.2.1
	Lane Taper Lengths	50′ (Single Turn Lane) 100′ (Two to Three Turn Lanes)	FDM Exhibit 212-1
	Slope Rate for Intersection Approaches	1:150	FDM Table 212.8.1
	Maximum Intersection Sight Distance for Combined Vehicles	970′	FDM Exhibit 212-7
	Minimum Offset for Left-Turn Lanes (ft)	2′ (Opposing Car) 4′ (Opposing Truck)	FDM Table 212.14.1

Table 22: Design Standards List for Horizontal Alignment

Design Standards		US 41/ Bonita Beach Road	Source
Horizontal Alignment	Max Deflection Without a Horizontal Curve	1° 00′ 00″	FDM Section 210.8.1
	Max Deflection Angle Through Intersections	3° 00′ 00″	FDM Table 212.7.1
	Minimum Radius of Existing Mainline Curve (does not apply to PDLT)	694′	FDM Table 210.9.2
	Desired Length of New Curve	675′	FDM Table 210.8.1
	e_{max}	0.05	FDM Section 210.9

Table 23: Design Standards List for Vertical Alignment

Design Standards		US 41/ Bonita Beach Road	Source
Vertical Alignment	Max Grade	6%	FDM Table 210.10.1
	Max Change in Grade Without Using Vertical Curve	0.70%	FDM Table 210.10.2

Table 24: Design Standards List for Displaced Left Turn Intersection

Design Standards		US 41	Source
Partial Displaced Left Turn	Design Vehicle Maneuvers (Crossover Intersection and Main Left Turns)	WB-62FL utilizing all available lanes (no side-by-side movements)	Selected by Study
	Crossover Intersection Spacing	300 to 500 feet	FHWA DLT Guide Exhibit 7-18
	Right-Turn Bypass Merge with Cross Road Through Lanes	Signalized as part of the crossover signal	FHWA DLT Guide Exhibit 7-5
	Pedestrian and Bicycle Accommodations	Shared-Use Path	Selected by Study

4.2.2 Stormwater Design Criteria

Water treatment and attenuation requirements will comply with the guidelines as defined in Chapter 62-330 of the Florida Administrative Code (F.A.C.) and the Statewide Environmental Resource Permit Manual (SWERP).

4.2.2.1 SFWMD Criteria

- Water Quality:
    - Wet Detention Ponds: Treatment will be provided for the greater of one inch (1") of runoff over the drainage area or two and a half inches (2.5") of runoff from the net new impervious area (excluding water bodies). An additional 50% water quality treatment will be required for projects discharging to Outstanding Florida Waters (OFWs).
        - An orifice should be set at the control elevation and sized to drawdown a maximum of one-half of the required treatment volume within 24 hours.
    - Retention Ponds and Linear Swales:
        - Off-line Systems: retention will be provided for the greater of one-half inch (0.5") of runoff over the drainage area or one and a quarter inches (1.25") of runoff from the impervious area (excluding waterbodies).
        - On-line Systems: retention of an additional one-half inch (0.5") of runoff from the drainage area over the volume specified for off-line systems.
        - The entire treatment volume is to be infiltrated within 72 hours after a storm event.
        - Geometry – The pond will include a 15-foot minimum maintenance berm width (per FDOT), minimum 1:4 (V:H) side slopes, and a minimum 1-foot freeboard between the inside maintenance berm elevation and the Design High Water (DHW) stage.
- Water Quantity:
    - For open basins, SFWMD requires that the post-development peak discharge shall be at or below pre-development peak discharge for the 25-year/72-hour and mean annual storms.

5.0 ALTERNATIVES ANALYSIS

5.1 No-Build (No-Action) Alternative

The No-Build Alternative assumes that no modifications or improvements will be implemented for the US 41 and Bonita Beach Road intersection. The No-Build Alternative's primary advantages are it does not require any capital or expenditure of local, state, or federal transportation funds, and it results in no impacts to the social, natural, cultural, or physical environment.

The No-Build Alternative's primary disadvantage is it will not address the Purpose and Need for this project. As was shown in **Table 16**, significant traffic volume growth is expected on US 41 and Bonita Beach Road by the 2050 design year. US 41 combined with I-75 handles most of north-south regional trips in southern Lee County. Bonita Beach Road is one of two routes serving the barrier islands to the west. There are few alternative routes to accommodate the traffic increase resulting in increased congestion on both US 41 and Bonita Beach Road. **Table 18** shows that by 2050 in the PM peak hour, all study area intersections will be operating at either LOS E or F. As the traffic volume increases without capacity improvements, it can be expected the number of crashes will increase. Further, the increased intersection delay will negatively impact emergency response times.

The No-Build Alternative will remain under consideration throughout the study process.

5.1.1 Advantages of the No-Build (No-Action) Alternative

Advantages of the No-Build Alternative include:

- No right-of-way acquisition or business impacts/displacements;
- No design, right-of-way, or construction costs;
- No inconvenience to the traveling public and property owners during construction;
- No impacts to utilities and drainage structures; and
- No impacts to the natural, social, cultural, or physical environment.

5.1.2 Disadvantages of the No-Build (No-Action) Alternative

Disadvantages of the No-Build Alternative include:

- It is not consistent with local government plans, the Lee County MPO LRTP, or TIP;
- It does not address the project's Purpose and Need to include:
    - It does not improve levels of service or address traffic congestion;
    - Safety is not improved, and the number of crashes is projected to increase;
    - It does not improve multi-modal mobility; and
    - It does not provide the system linkage necessary to improve north-south or east-west travel by the public.

The No-Build Alternative will not meet the Purpose and Need for this project.

5.2 Transportation Systems Management and Operations (TSM&O) Alternative

TSM&O alternatives involve improvements designed to maximize the utilization and efficiency of the existing intersection through improved system and demand management. TSM&O options at a traffic signal generally include signal timing improvements, access management at adjacent intersections/median openings, transit improvements, and other low impact improvements such as the implementation of Intelligent Transportation System (ITS) components. The additional capacity needed to meet the 2050 design year projected volumes at the US 41 and Bonita Beach Road intersection and resultant LOS standards cannot be provided solely through implementing TSM&O improvements. TSM&O improvements by themselves cannot address the study intersection's long-term safety needs. However, intersection improvement TSM&O strategies, such as coordinated signal timings, are included as part of the Build Alternatives. In conclusion, the TSM&O alternative alone does not meet the capacity and safety needs for the project but will be considered as part of the Build Alternatives.

5.3 Multimodal Alternatives

A singular multimodal alternative would address the Model Interrelationships portion of the project's Purpose and Need, but would not address the Transportation Demand/Capacity, Safety, or System Linkage purpose and need elements. Multimodal alternatives (pedestrian, bicycle, and transit facilities) were included for each of the Build Alternatives to help satisfy the Purpose and Need's Modal Interrelationships portion. Improvements such as wider sidewalks and shared-use paths are proposed with the Build Alternatives. Existing transit stops will be relocated and upgraded where necessary in coordination with LeeTran.

5.4 Build Alternatives

5.4.1 Initial Grade Separated Alternative

A Single Point Diamond Interchange (SPDI) alternative was initially evaluated during the preliminary alternatives analysis efforts in 2020 and is shown in **Figure 47**. The SPDI alternative assumes the northbound and southbound through lanes on US 41 are elevated over Bonita Beach Road, as shown in **Figure 48**.

Turning movements for US 41 and Bonita Beach Road occur at a single intersection underneath the US 41 overpass. To allow access to local businesses, northbound and southbound through movements on the US 41 ramps were allowed, as shown in **Figure 49** and **Figure 50**.

The US 41 overpass begins between the two access points for Springs Plaza on the south side of Bonita Beach Road and ends north of the Crown Lake Boulevard intersection to the north. The access points where the US 41 overpass ramps begin and end are located approximately 1,200 feet from the US 41 and Bonita Beach Road intersection. Access to any minor streets along the US 41 ramps are maintained as right-in/right-out intersections with the US 41 ramps only.

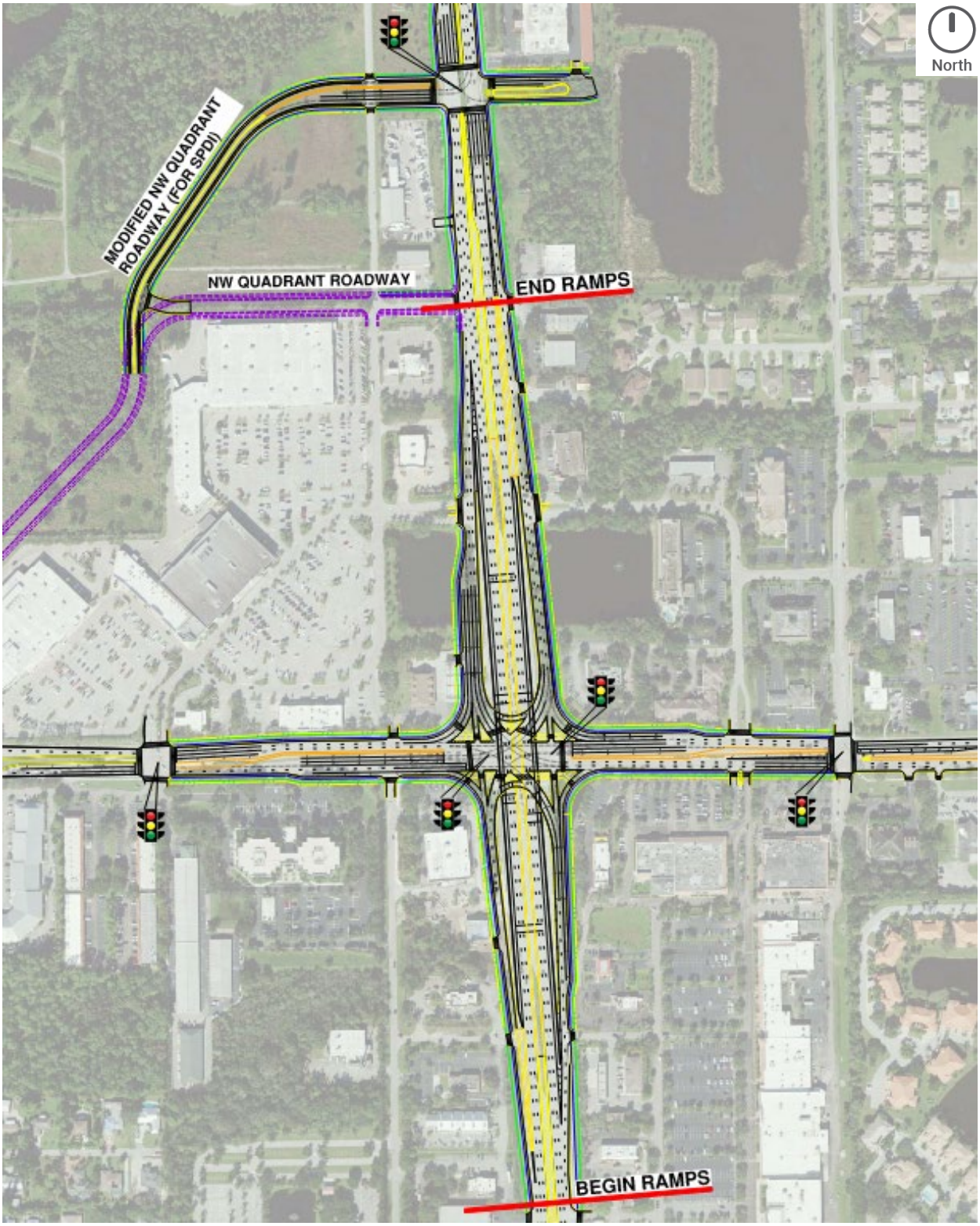


Figure 47: Single Point Diamond Interchange Alternative

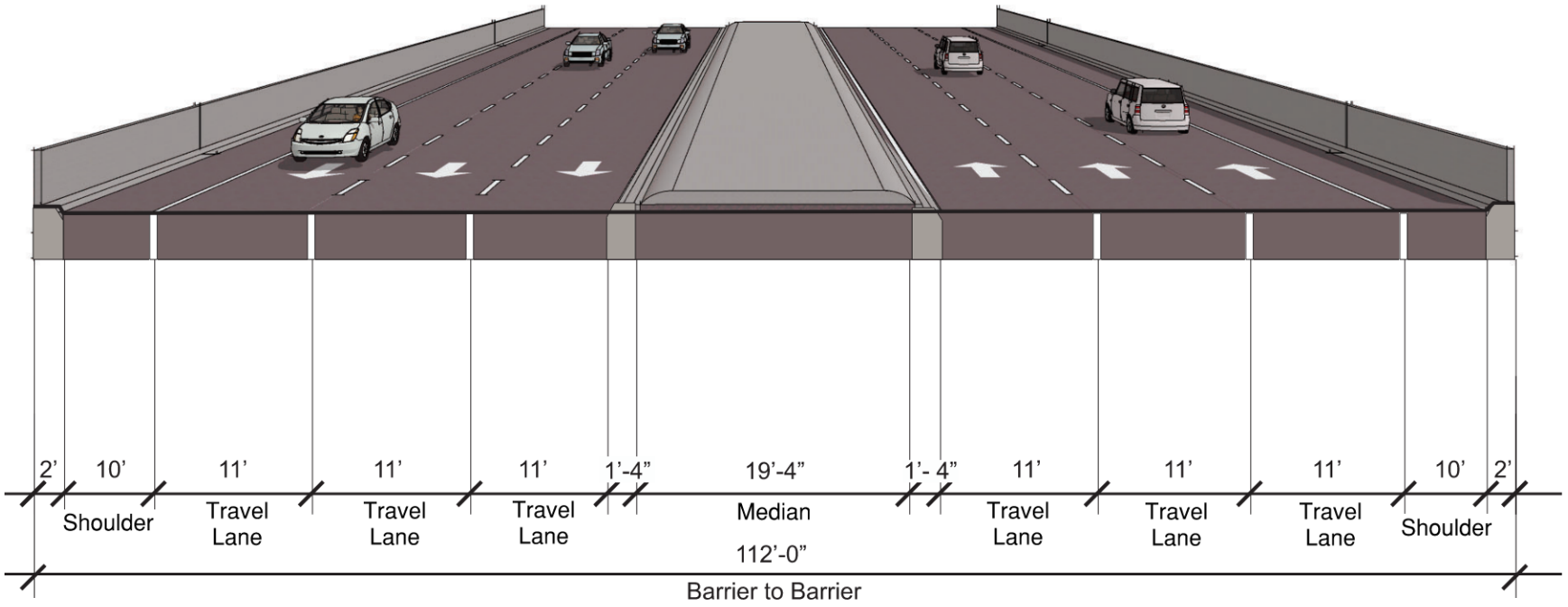


Figure 48: SPDI Elevated Typical Section

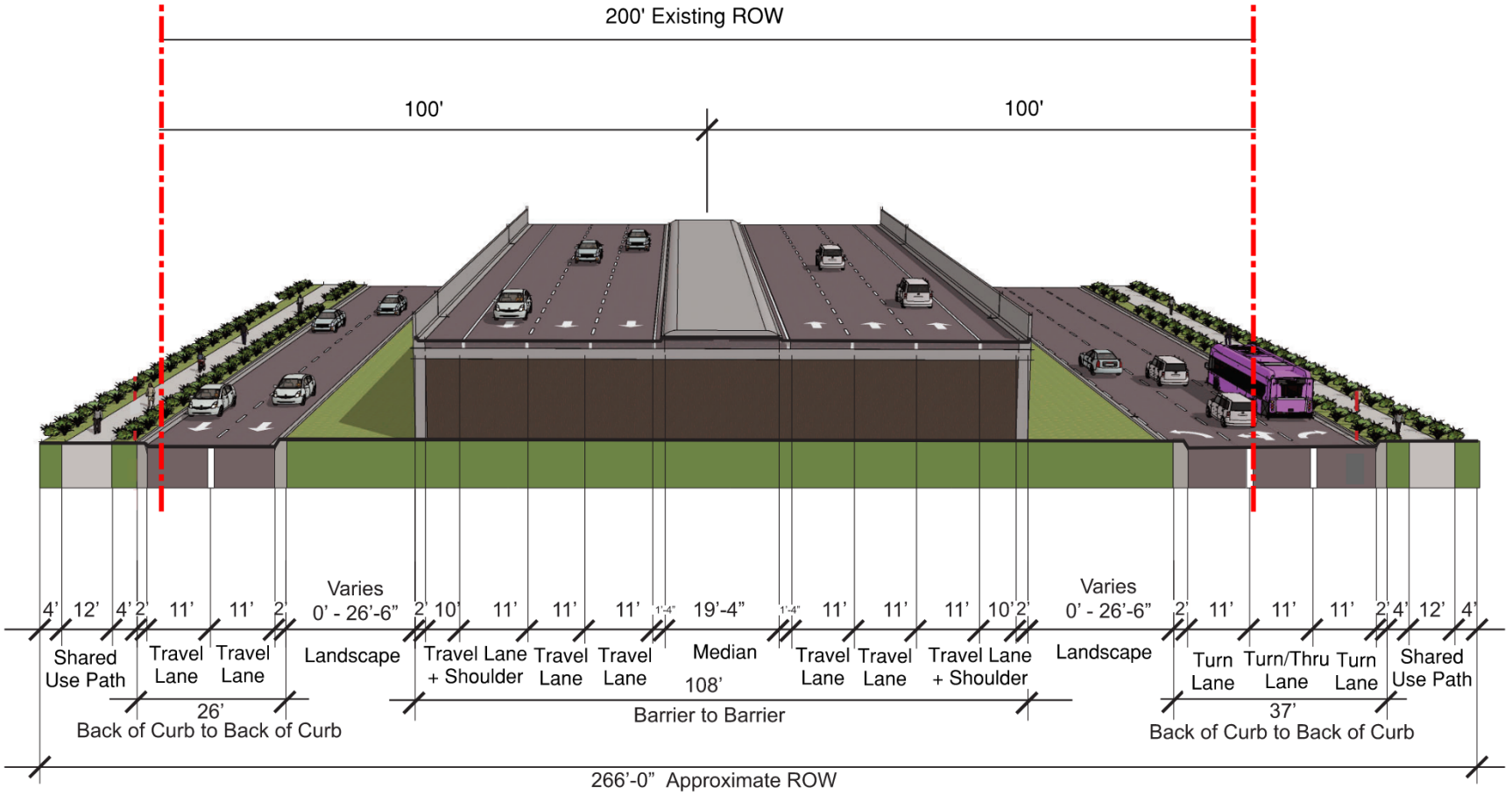


Figure 49: SPDI – US 41 South of Bonita Beach Road

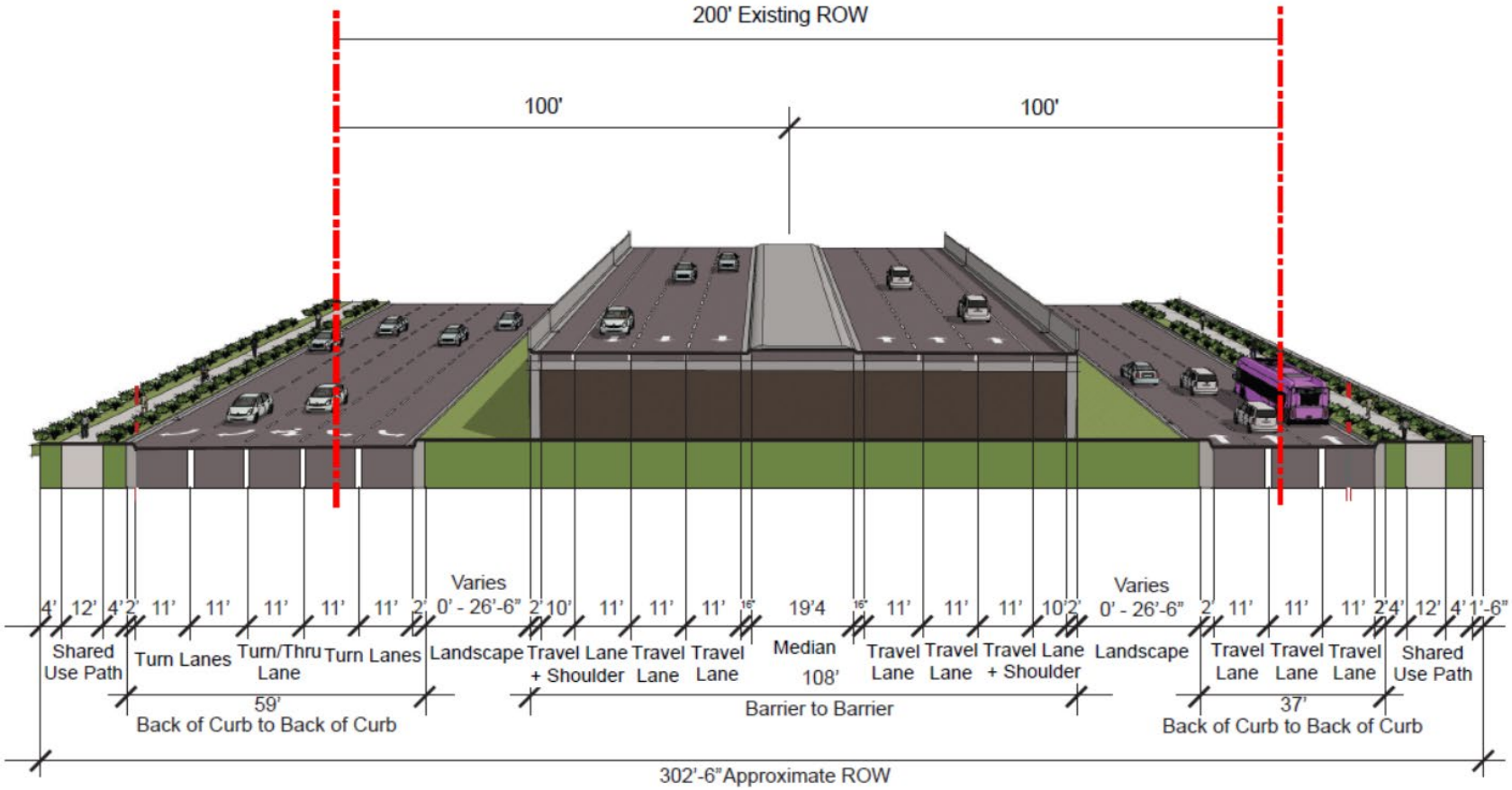


Figure 50: SPDI – US 41 North of Bonita Beach Road

During this evaluation, a new development called Angler's Paradise was approved by the City of Bonita Springs. The new development's primary access to US 41 is proposed to occur at the Center of Bonita Springs signalized intersection via a new proposed Northwest Quadrant Roadway. Based on the SPDI's initial concept, the overpass' ramps would tie-in to US 41 north of this location and convert the Center of Bonita Springs intersection into a right-in/right-out configuration. As this is the primary access for the new development, it was determined that full access to US 41 at the Center of Bonita Springs would need to be maintained. Additionally, the new development is planned where the initial Northwest Quadrant Roadway's proposed alignment was located. **Figure 51** shows the new development's conceptual site plan and the SPDI alternative's proposed configurations presented. Based on the new development's access considerations, the SPDI alternative was removed from consideration.

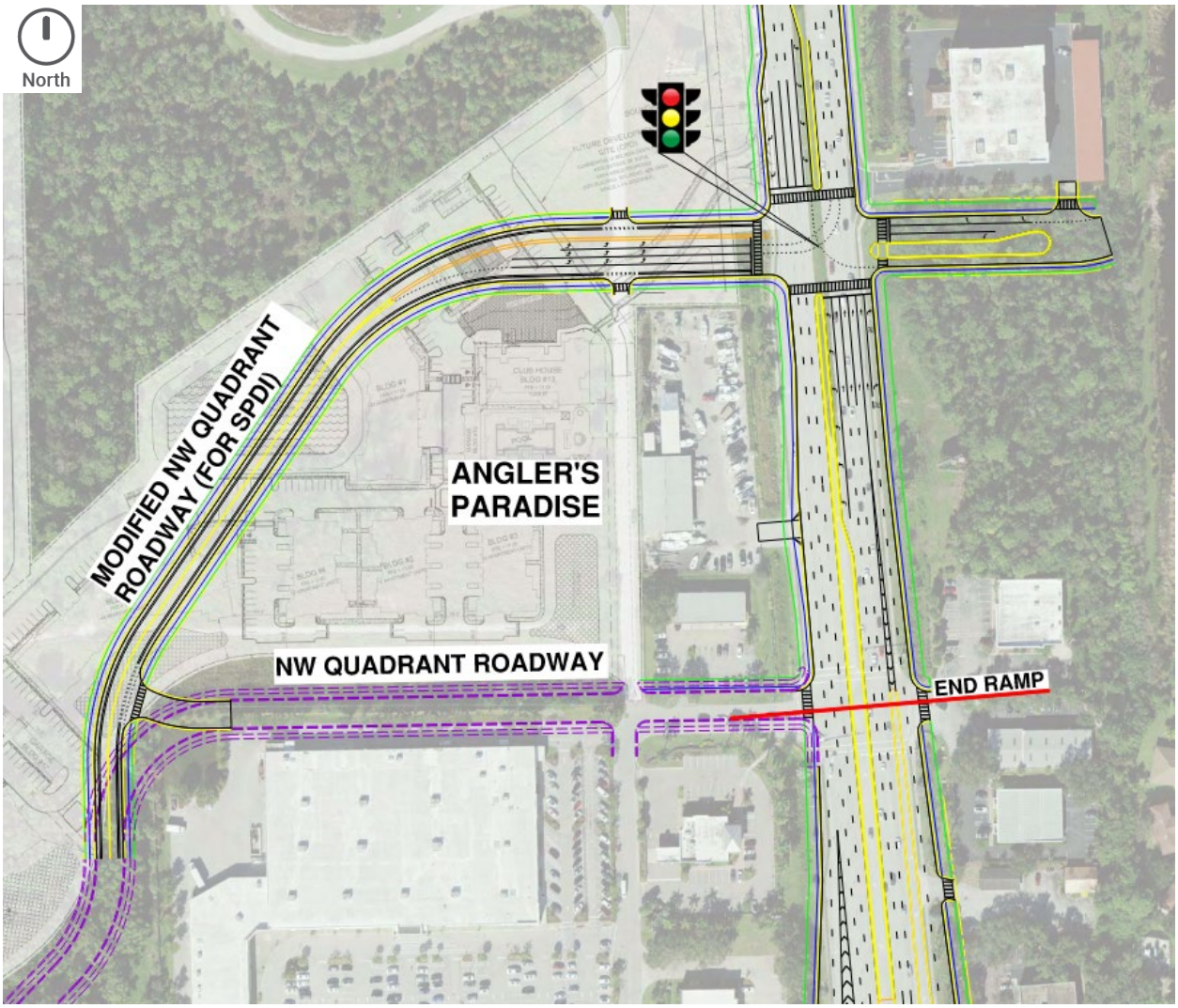


Figure 51: New Development and SPDI Configuration

5.4.2 At-Grade Intersection Alternatives

Two at-grade intersection alternatives were developed to support US 41 at Bonita Beach Road's Purpose and Need:

- Alternative A – Enhanced Traffic Signal (**Figure 52**)
  - Widens US 41 to eight lanes from Foley Road to the Imperial River bridge's southern end.
  - Provides additional turn lane improvements to the existing signalized intersection.
- Alternative B – Partial Displaced Left Turn (PDLT) (**Figure 53**)
  - Northbound and southbound left turn movements are relocated to the outside of the opposing traffic flow, allowing these turning movements to operate in the same signal phase as the northbound and southbound through movements.
  - Two new signalized "crossover" intersections are proposed along US 41 approximately 675' south and 460' north of Bonita Beach Road to allow left turning vehicles to cross to the opposing flow's other side.
  - The southbound and eastbound left turn movements are proposed to have three lanes each.
  - The eastbound and westbound right turn movements are proposed to have two lanes each and be located outside the northbound and southbound left turns.

The intersection alternatives were developed using design provisions from the FDM. Each of the proposed intersection alternatives were applied along US 41 from Sta. 221+19 to Sta. 271+81 and along Bonita Beach Road from Sta. 254+57 to Sta. 300+33, where they then tied into existing conditions. The conceptual layouts showing the alternatives' layout and stationing are provided in **Appendix D**.

As part of both Alternative A and B, Bonita Beach Road is planned to be widened from a four-lane typical section to a six-lane typical section from Sta. 267+00 to Sta. 286+00 (eastbound will extend the three lanes to Sta. 300+33). At the intersection of Bonita Beach Road with US 41, a third eastbound left turn lane will be added and a second right turn lane will be added in both the eastbound and westbound directions. Turn lane improvements are also proposed at the existing signalized intersections of the Center of Bonita Springs driveway and Arroyal Road with Bonita Beach Road.

A new Northwest Quadrant Roadway from Bonita Beach Road (east-west Sta. 259+91) to US 41 (north-south Sta. 260+00) will be constructed by the City of Bonita Springs. As it is currently under design and will be constructed in a few years, the Northwest Quadrant Roadway's presence was included in both alternatives. Also included in both alternatives is a new northeast quadrant roadway from US 41 to Arroyal Road tying into the new Northwest Quadrant Roadway and US

41 signal. Additional ancillary improvements are proposed for both Alternative A and Alternative B:

- Signalization and turn lane additions at the US 41 and Foley Road intersection.
- Access management refinements along US 41.

These improvements are discussed in more detail in **Section 7.0**.

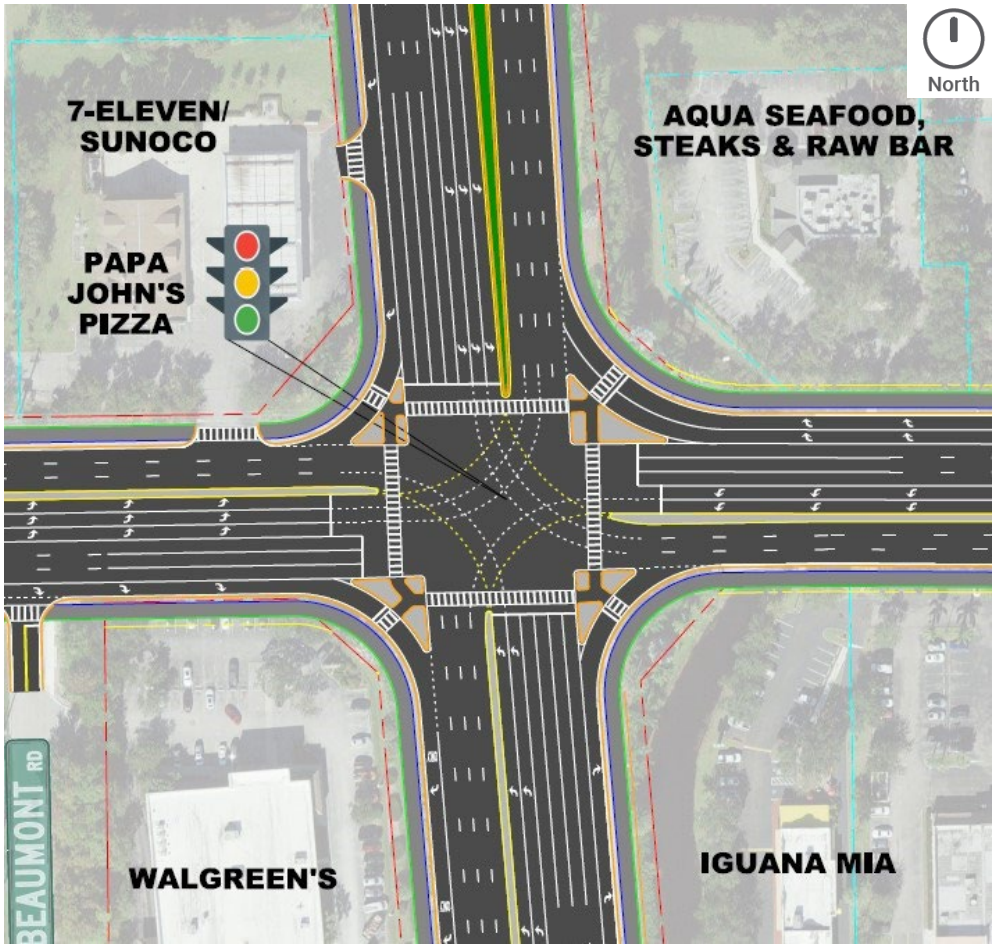


Figure 52: Alternative A – Enhanced Traffic Signal

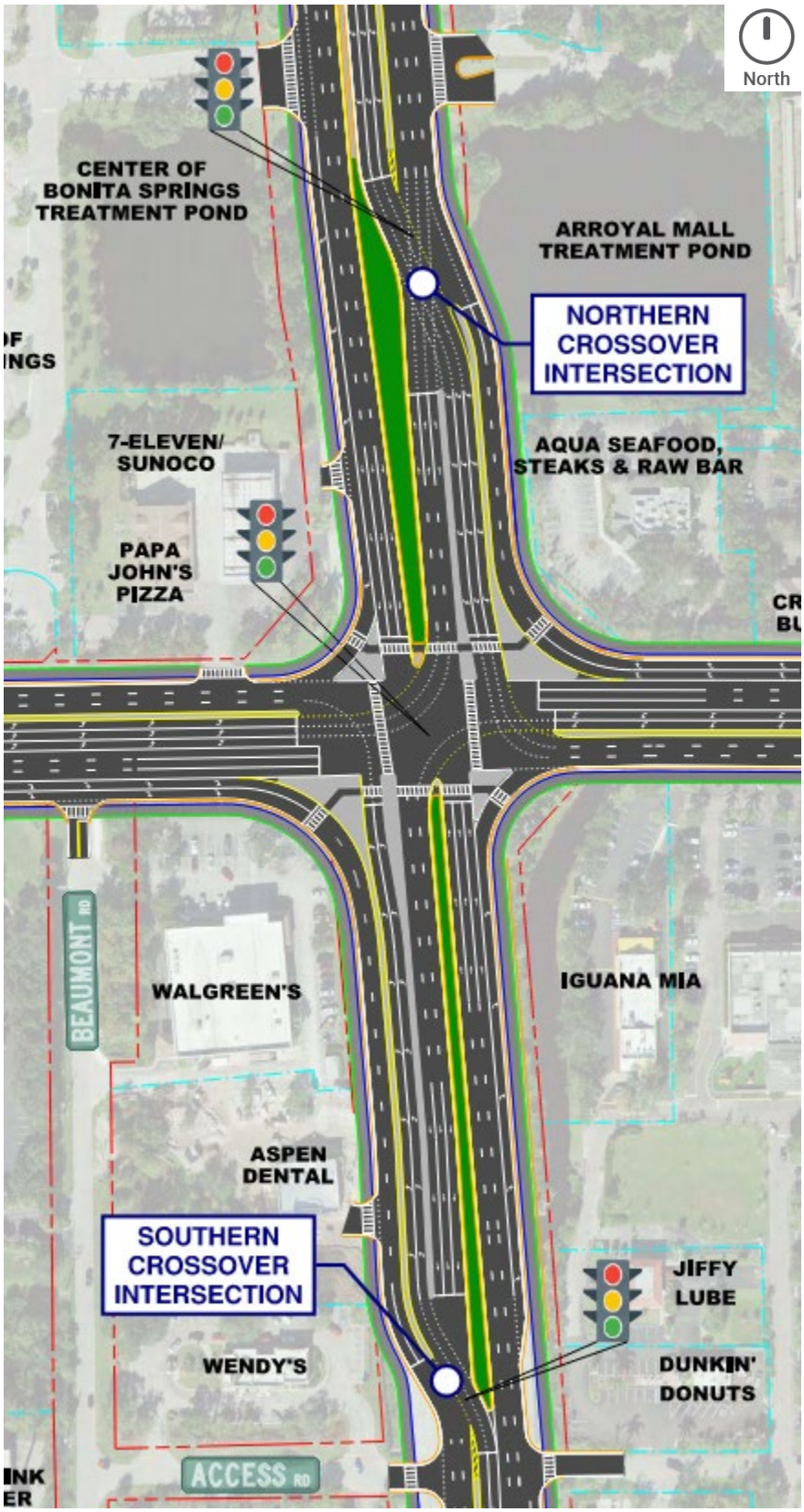


Figure 53: Alternative B – Partial Displaced Left Turn

5.4.2.1 Alternative A – Enhanced Traffic Signal

For Alternative A, US 41 is proposed to be modified based on the following:

- Adding a fourth travel lane in each direction and reducing the travel lane widths to 11':
  - Additional northbound travel lane will start just north of Foley Road (Sta. 223+50) and end at the Imperial River Boat Ramp driveway (Sta. 270+00).
  - The additional southbound travel lane will start at Sta. 265+00 (halfway between the Imperial River Boat Ramp driveway (Sta. 270+00) and the US 41/Center of Bonita Springs intersection (Sta. 260+00)) and end at the Foley Road intersection (Sta. 222+75).
- A 12' shared-use path is proposed on both sides of US 41 in lieu of the on-street bicycle facilities:
  - In the northbound direction from Springs Plaza (Sta. 232+50) to just north of the Imperial River Boat Ramp driveway (Sta. 271+00).
  - In the southbound direction from just north of the Imperial River Boat Ramp driveway (Sta. 271+00) to Bonita Funeral Home (Sta. 231+00).
- A 7' on-street buffered bicycle lane and a 6' sidewalk is proposed on the corridor's south end:
  - In the northbound direction from Foley Road (Sta. 222+75) to just north of Springs Plaza, 200' north of the start of the shared-use path.
  - In the southbound direction from Bonita Funeral Home (Sta. 231+00) to Foley Road (Sta. 222+75).

The Bonita Beach Road improvements include:

- The west approach improvements would be:
  - A third eastbound to northbound left turn lane.
  - An additional through lane to make three through lanes in both directions.
- The east approach improvements would be:
  - A second westbound to northbound right turn lane.
  - An additional through lane to make three through lanes in both directions.
- A 12' shared-use path is proposed on both sides of Bonita Beach Road in lieu of the on-street bicycle facilities:
  - Extends from the Center of Bonita Springs signal to the Arroyal Road signal.

Graphic depictions of the roadway features on US 41 for Alternative A is shown from **Figure 54** to **Figure 58** below.

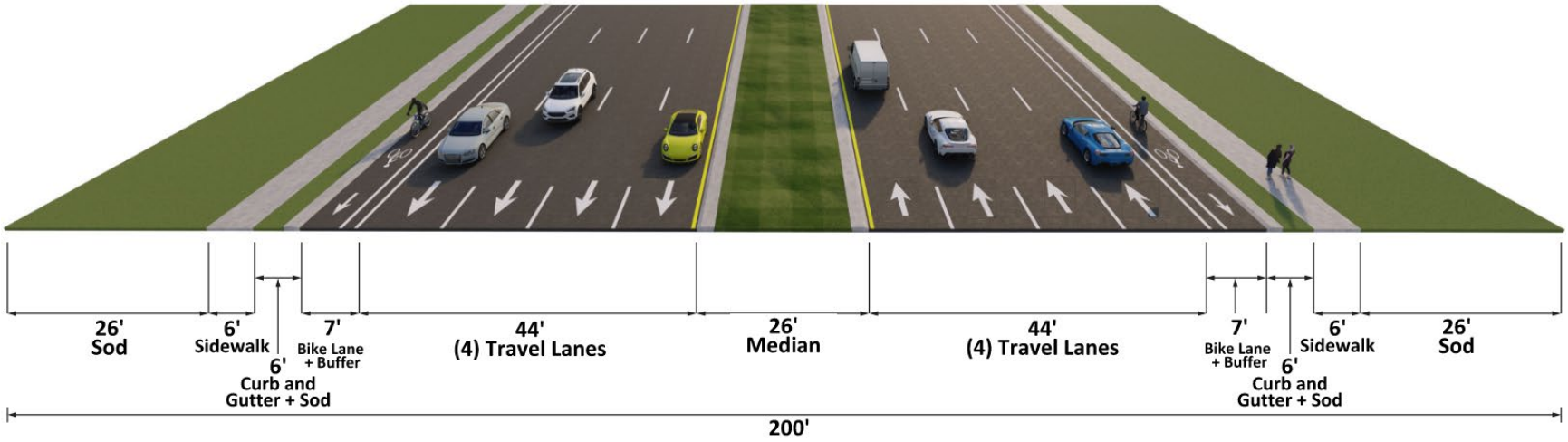


Figure 54: Alternative A – US 41 from Foley Road to Bonita Funeral Home/Springs Plaza

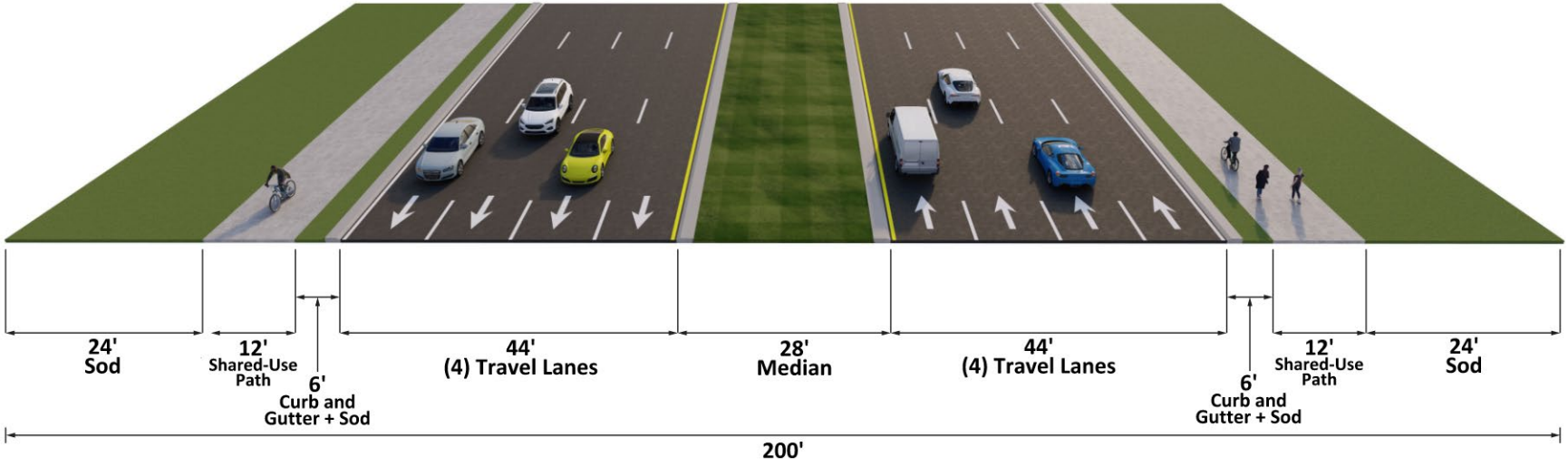


Figure 55: Alternative A – US 41 from Bonita Funeral Home/Springs Plaza to Bonita Beach Road

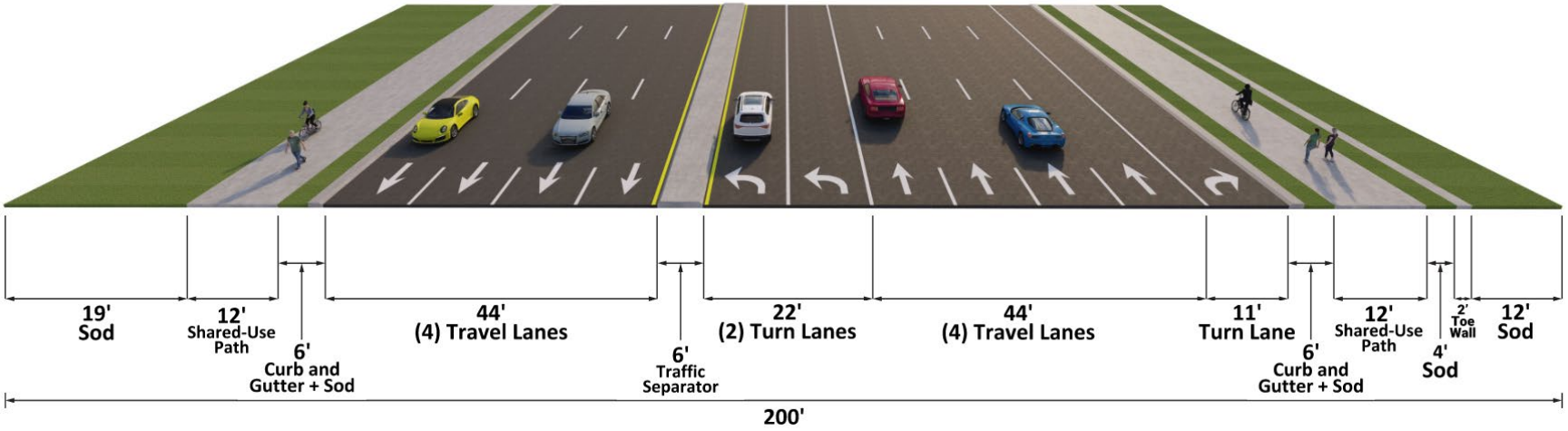


Figure 56: Alternative A – South Leg of US 41 and Bonita Beach Road Intersection

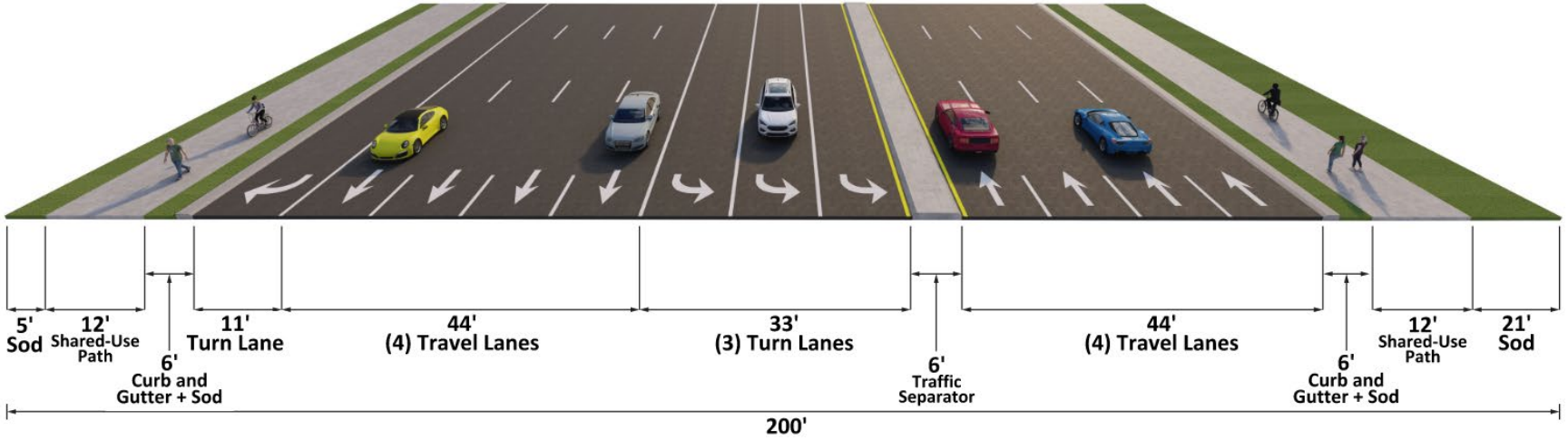


Figure 57: Alternative A – North Leg of US 41 and Bonita Beach Road Intersection

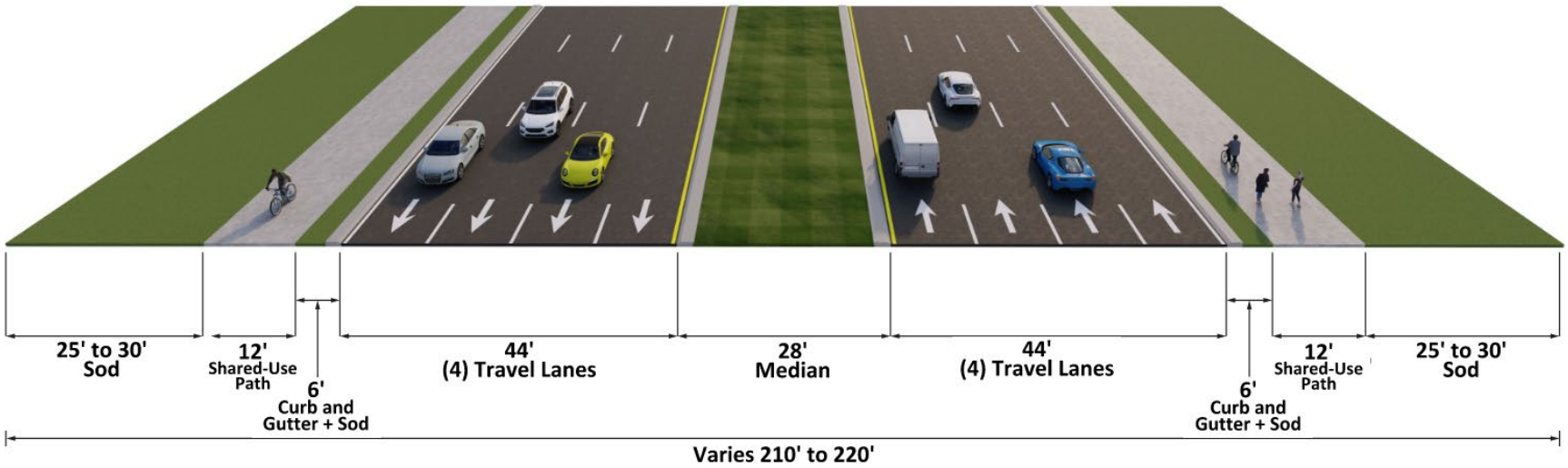


Figure 58: Alternative A – US 41 between Center of Bonita Springs and Imperial River Boat Ramp

5.4.2.2 Alternative B – Partial Displaced Left Turn

For Alternative B, the northbound and southbound left turn movements will use "crossover" intersections to be relocated outside of the opposing flow of traffic. This configuration will allow the northbound and southbound left turning movements to operate in the same signal phase as the northbound and southbound through movements. To accommodate the Alternative B configuration and facilitate the northbound and southbound turning vehicles relocation, two new signalized "crossover" intersections will be added along US 41 approximately 675' south and 460' north of Bonita Beach Road (as shown in **Figure 53**). The following details the lane configurations proposed along US 41 as part of Alternative B:

- Between Foley Road (Sta. 222+75) and Southern "Crossover" Intersection (Sta. 239+00) – **Figure 59** and **Figure 60**:
    - Three 11' northbound and southbound through lanes.
- Between Southern "Crossover" Intersection (Sta. 239+00) and US 41 and Bonita Beach Road Intersection (Sta. 246+00) (described from right side to left side across US 41) – **Figure 61**:
    - Exclusive 11' northbound right turn lane.
    - Three 11' northbound and southbound through lanes in each travel direction.
    - Dual 11' northbound exclusive left turn lanes positioned outside of the southbound through lanes.
    - Dual 11' eastbound to southbound exclusive right turn lanes positioned outside of the northbound left turn lanes.
- Between US 41/Bonita Beach Road Intersection (Sta. 246+00) and Northern "Crossover" Intersection (Sta. 251+00) and (described from right side to left side across US 41) – **Figure 62**:
    - Dual 11' westbound to northbound exclusive right turn lanes positioned outside of the southbound left turn lanes.
    - Triple 11' southbound exclusive left turn lanes positioned outside of the northbound through lanes.
    - Three 11' northbound and southbound through lanes in each travel direction.
    - Exclusive 11' southbound right turn lane.
- Between Northern "Crossover" Intersection (Sta. 251+00) and US 41/Center of Bonita Springs intersection (Sta. 260+00):
    - Four 11' northbound through lanes.
    - Three 11' southbound through lanes.
- Between US 41/Center of Bonita Springs Intersection (Sta. 260+00) and Imperial River Boat Ramp Driveway (Sta. 266+50):

  - Four 11′ northbound through lanes (outside lane drops at the Imperial River Boat Ramp).
  - Four 11′ wide southbound travel lanes, as shown in **Figure 63**. These travel lanes are comprised of the following:
    - Three southbound through lanes; and
    - A fourth "auxiliary" lane begins at Sta. 265+00 that drops into the triple southbound left turn lanes.

The following pedestrian/bicycle facilities are proposed as part of Alternative B:

- A 12′ shared-use path is proposed on both sides of US 41 in lieu of the on-street bicycle facilities:
  - In the northbound direction from Springs Plaza (Sta. 232+50) to just north of the Imperial River Boat Ramp (Sta. 271+00).
  - In the southbound direction from just north of the Imperial River Boat Ramp (Sta. 271+00) to just south of Access Road (Sta. 237+00).
- A 7′ on-street buffered bicycle lane and a 6′ sidewalk is proposed on the corridor's south end – **Figure 59**:
  - In the northbound direction from Foley Road (Sta. 222+75) to just north of Springs Plaza, 200′ north of the start of the shared-use path.
  - In the southbound direction from just south of Access Road (Sta. 237+00) to Foley Road (Sta. 222+75).

The Bonita Beach Road improvements include:

- The west approach improvements would be:
  - A third eastbound to northbound left turn lane.
  - An additional through lane to make three through lanes in both directions.
- The east approach improvements would be:
  - A second westbound to northbound right turn lane.
  - An additional through lane to make three through lanes in both directions.
- A 12′ shared-use path is proposed on both sides of Bonita Beach Road in lieu of the on-street bicycle facilities:
  - Extends from the Center of Bonita Springs signal to the Arroyal Road signal.

Graphic depictions of the roadway features on US 41 for Alternative B are shown from **Figure 59** to **Figure 63** below.

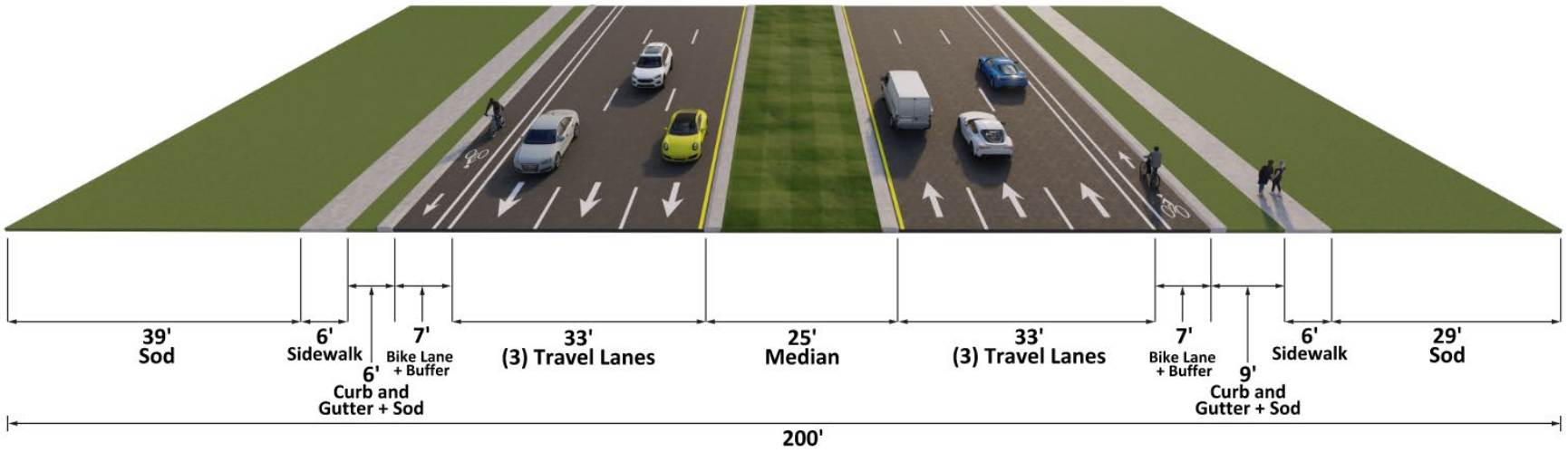


Figure 59: Alternative B – US 41 from Foley Road to Springs Plaza/Access Road

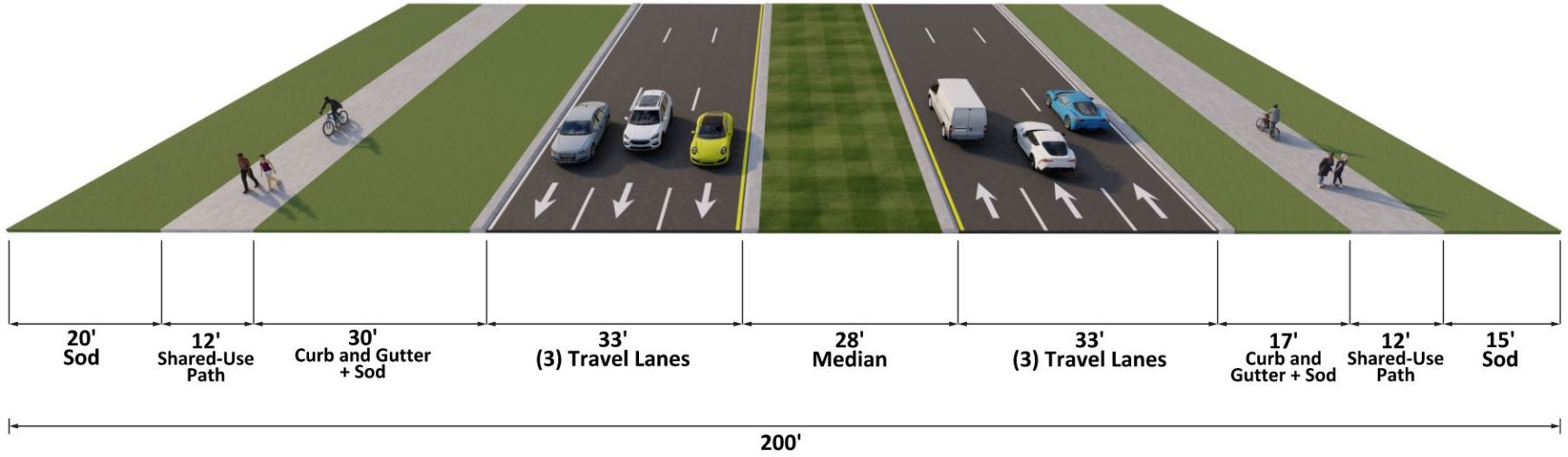


Figure 60: Alternative B – US 41 from Springs Plaza/Access Road to Southern Crossover

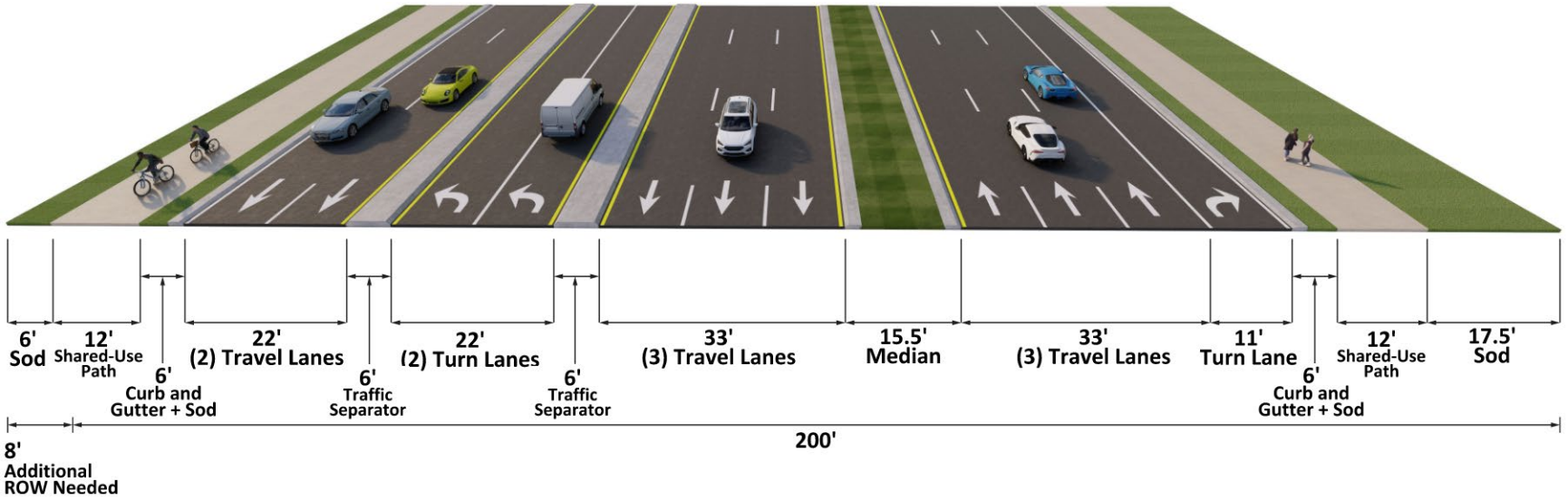


Figure 61: Alternative B – South Leg of US 41 and Bonita Beach Road Intersection

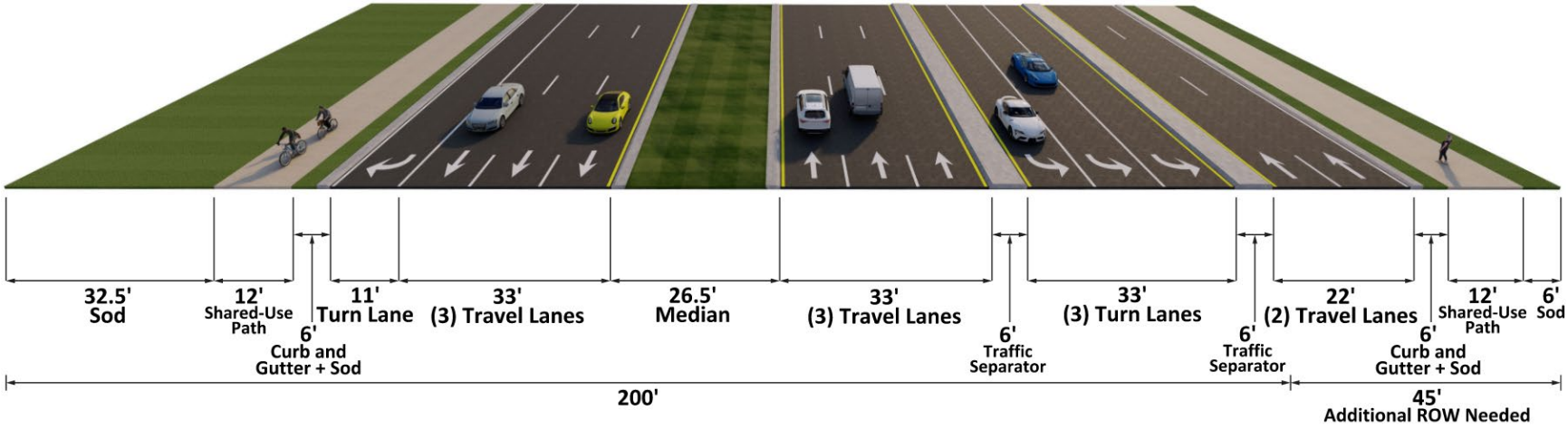


Figure 62: Alternative B – US 41 North Leg of US 41 and Bonita Beach Road Intersection

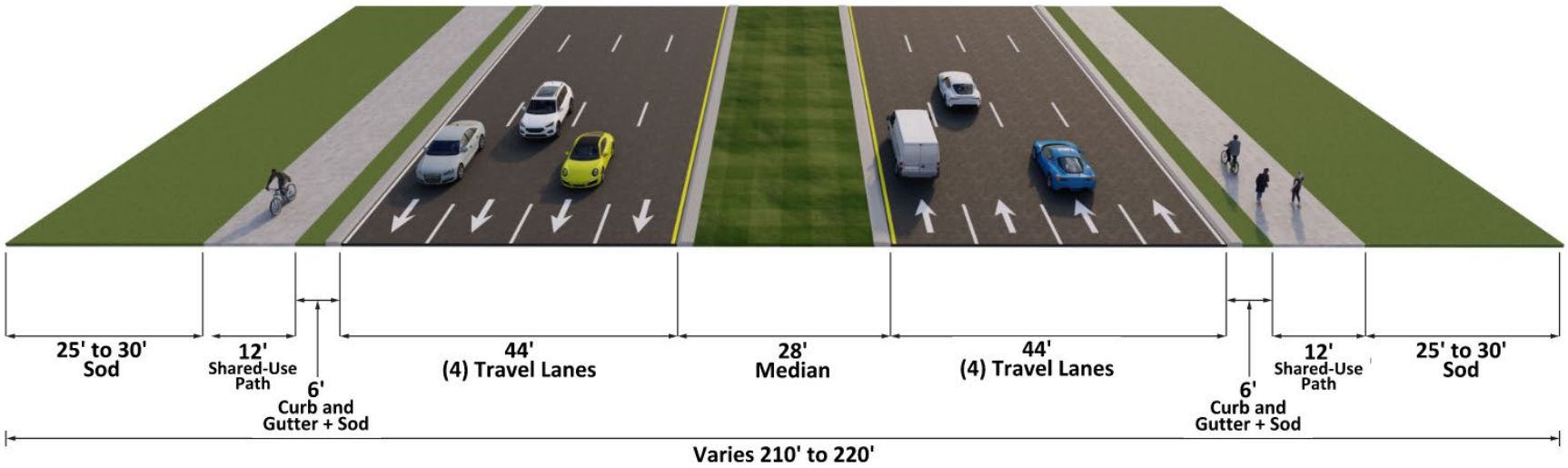


Figure 63: Alternative B – US 41 between Center of Bonita Springs and Imperial River Boat Ramp

5.4.3 Build Alternatives Operational Analysis

While both Build alternatives reduce delays and improve operations at the US 41 and Bonita Beach Road intersection, Alternative B – PDLT provides a more consistent operational improvement than Alternative A or the No-Build Alternative. This section details the comparative operational performance of the two intersection alternatives to the No-Build Alternative within the VISSIM roadway "network", consisting of US 41, Bonita Beach Road, and the proposed Northwest/Northeast Quadrant Roads.

5.4.3.1 Network Operations

Both Build alternatives result in a network operational improvement over the No-Build Alternative, as shown in **Table 25**. Alternative B reduces the average delay and total delay within the network by 40 to 62 percent. Alternative A reduces the average delay and total delay within the network by 28 to 52 percent. Both Build alternatives also increase the total number of peak hour vehicles able to be served in the network from 1,000 up to 3,000 vehicles in the opening year (2030) and from 650 up to 3,100 vehicles in the design year (2050). This indicates that the No-Build Alternative is not able to process as much demand as the two Build alternatives.

Table 25: Network Operations Summary

Alternative	Opening Year (2030)		Design Year (2050)	
	MD Peak	PM Peak	MD Peak	PM Peak
Average Delay (sec)				
No-Build	269.0	367.1	346.1	426.9
Alternative A – Enhanced Traffic Signal	130.3	188.8	170.1	258.0
Alternative B – PDLT	118.1	170.9	136.6	199.0
Total Delay (hr)				
No-Build	1,017.8	1,419.3	1,309.0	1,628.6
Alternative A – Enhanced Traffic Signal	531.4	674.3	878.4	1,174.3
Alternative B – PDLT	489.8	546.4	786.5	930.8
Vehicles Served (number of vehicles)				
No-Build	13,629	13,927	13,613	13,736
Alternative A – Enhanced Traffic Signal	14,686	16,750	14,274	16,400
Alternative B – PDLT	14,933	17,013	14,397	16,836

5.4.3.2 Travel Times

Travel times for the two major turning movements at the US 41 and Bonita Beach Road intersection, the eastbound left-turn and southbound left-turn, were compared. The travel times were measured from the extents of the study network. A travel time summary for the eastbound left-turn and southbound left-turn movements is shown in **Table 26**. For the eastbound left-turn movement, Alternative B provides improvement in both the mid-day and PM peak period, while Alternative A only provides an improvement in travel times in the PM peak period. For the southbound left-turn movement, both Build alternatives provide an improvement in travel times, with Alternative A providing a greater improvement in the mid-day peak period and Alternative B providing a greater improvement in the PM peak period.

Table 26: Travel Time Summary

Alternative	Opening Year (2030)		Design Year (2050)	
	MD Peak	PM Peak	MD Peak	PM Peak
Eastbound Bonita Beach Road to Northbound US 41 (sec)				
No-Build	327.6	675.3	415.0	788.3
Alternative A – Enhanced Traffic Signal	357.4	533.6	474.5	596.0
Alternative B – PDLT	274.4	525.6	281.2	519.4
Southbound US 41 to Eastbound Bonita Beach Road (sec)				
No-Build	406.4	472.1	409.9	460.4
Alternative A – Enhanced Traffic Signal	257.0	337.4	303.5	400.5
Alternative B – PDLT	308.1	298.6	338.8	393.8

5.4.3.3 US 41 and Bonita Beach Road

When isolating the operations at the US 41 and Bonita Beach Road intersection, Alternative B results in the lowest overall delay in both the mid-day peak and PM peak periods when compared to the No-Build Alternative and Alternative A, as shown in **Table 27**. Alternative A provides an improvement in the delay over the No-Build condition, but only reduces the average delay by up to 51 percent while Alternative B reduces the average delay by up to 66 percent.

The 2050 design year traffic analysis shows both build alternatives meet the transportation demand/capacity purpose and need. Alternative B – PDLT shows the best network delay values resulting in the best network travel times and the US 41 and Bonita Beach Road intersection is anticipated to have LOS D in the critical design year PM peak hour. This improved operations and intersection throughput will also aid in emergency response times and emergency evacuations.

Further, the Alternative B – PDLT intersection is predicted to enhance intersection safety. Research from PDLT built intersections in Utah have shown a Crash Modification Factor of 0.88 as compared

to signalized intersections. This factor demonstrates both Alternative A and the No-Build alternatives is predicted to have more crashes than Alternative B – PDLT. The 12-ft shared use paths on all intersection approaches with more intersection island area will enhance pedestrians and bicyclist ability to move through the intersection and project area.

Table 27: US 41 and Bonita Beach Road Overall Intersection Delay

Alternative	Opening Year (2030)		Design Year (2050)	
	MD Peak Delay (s) & LOS	PM Peak Delay (s) & LOS	MD Peak Delay (s) & LOS	PM Peak Delay (s) & LOS
No-Build	93.7 F	89.3 F	93.7 F	88.2 F
Alternative A – Enhanced Traffic Signal	46.3 D	67.0 E	51.9 D	79.0 E
Alternative B – PDLT	31.6 C	39.0 D	33.3 C	44.5 D

5.4.4 Pond Siting Alternatives Analysis

There are four proposed drainage basins within the project limits. The onsite roadway basin areas draining to the ponds were determined to be the areas within the proposed right-of-way limits. The outfall's location in the proposed condition is the same as the existing condition. Attenuation in the proposed ponds is provided in all basins. Please refer to the concept plans in **Appendix H** for the pond locations. **Table 28** and **Figure 64** provide a summary of the proposed basin limits.

Table 28: Summary of Proposed Drainage Basins

Basin Name	Basin Area	Remarks
Windsor Road/NW Quadrant Basin	8.19 acres	Includes NW Quadrant Roadway
Basin West	2.90 acres	
Basin East	8.88 acres	
Basin North	57.95 acres	Includes NE Quadrant Roadway and portion of intersections at US 41 and NW Quadrant Roadway

The locations of potential pond sites were selected by considering existing stormwater features, proximity to the outfall location, estimated average wet seasonal water elevations, soil types, land use, and aesthetic features. There are several existing ponds within the project limits permitted to treat the existing project roadway. Where viable, these ponds will be utilized and expanded to

continue to provide treatment for the project. Additionally, the Northwest Quadrant Roadway will be designed by the City of Bonita Springs and treatment and attenuation will be provided as part of that project. Additional information can be found in the *US 41 and Bonita Beach Road Pond Siting Report*.

5.4.4.1 Windsor Road/Northwest Quadrant Basin

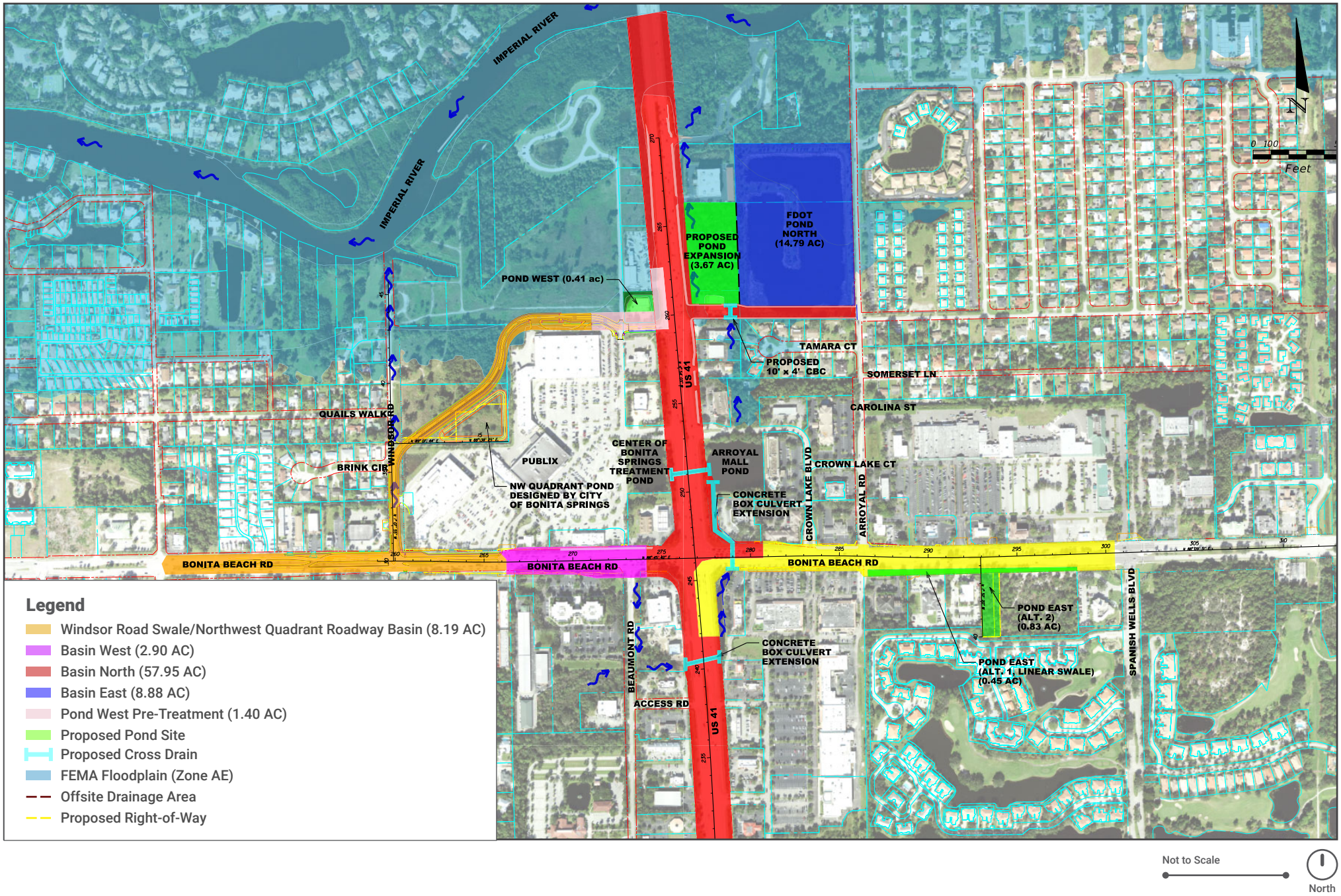
A portion of Bonita Beach Road west of US 41 and the Northwest Quadrant Roadway are being designed under a separate project led by the City of Bonita Springs. Runoff from Bonita Beach Road will be collected in curb and gutter inlets on Bonita Beach Road and in shallow swales along the Northwest Quadrant Roadway. Stormwater runoff will be conveyed to a proposed stormwater pond southeast of the quadrant roadway, ultimately outfalling to the Imperial River. Coordination with the City determined the pond would not be able to accommodate the additional improvements at the US 41 and Bonita Beach Road intersection or improvements at the US 41 and Northwest Quadrant Roadway intersection. Therefore, the limits of Basin West that are not being treated within the City's proposed pond will be accounted for within Pond West and by expansion of the existing FDOT North Pond for Basin North (discussed in **Section 5.4.4.4**).

Pond West

Pond West will serve as pre-treatment for the Basin North improvements. Portions of the improvements to the Northwest Quadrant Roadway proposed by this study and to Basin North will be routed to Pond West to assist in meeting nutrient loading requirements. Pond West is located west of US 41 at approximately Sta. 261+00 (LT.). The pond will encompass a total of 0.37 acres of the impacted parcel's remnant area.

5.4.4.2 Basin West

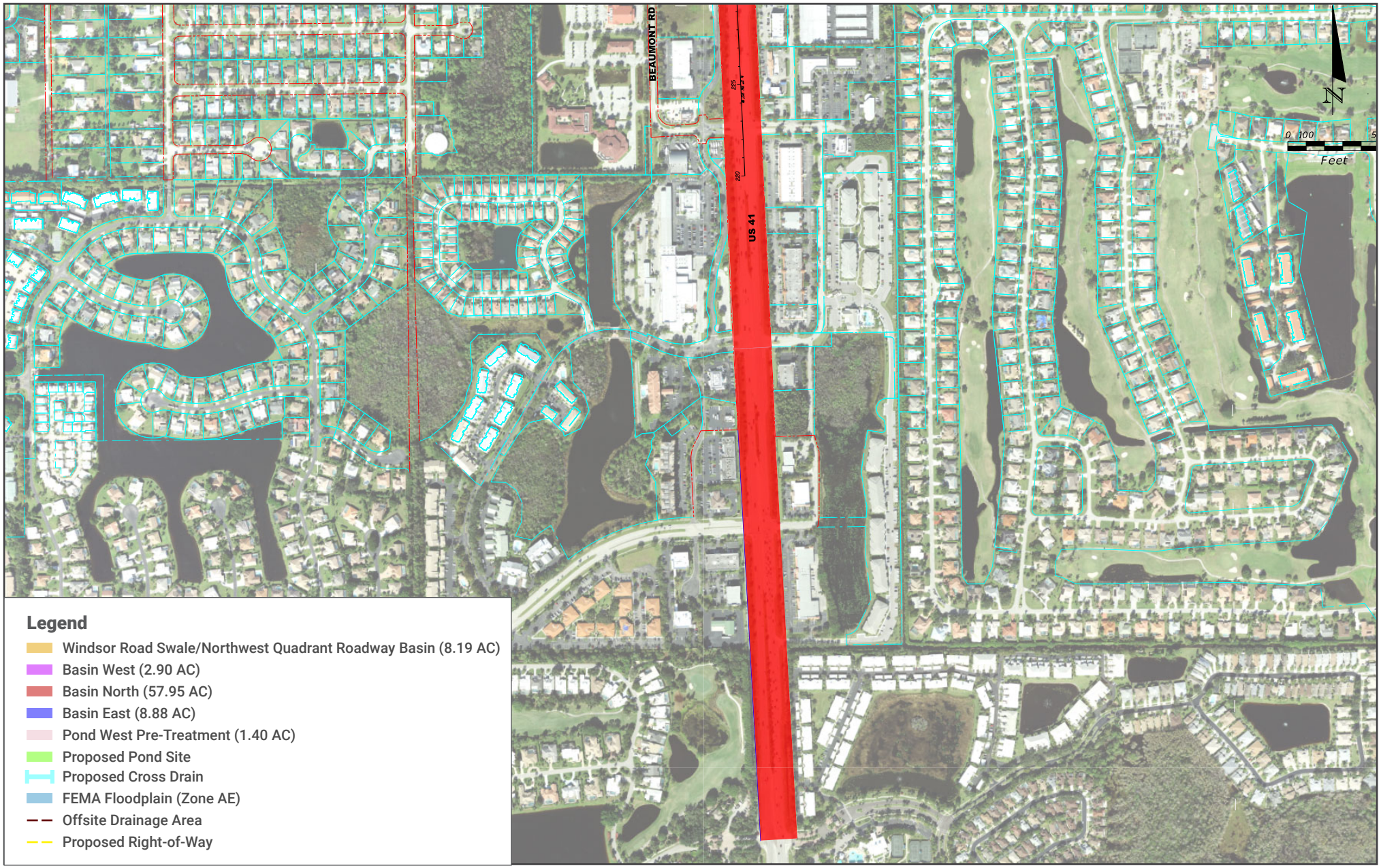
Basin West's eastern limit at the US 41 and Bonita Beach Road intersection will shift slightly west to reduce the basin's proposed limits to maintain the same basin area as the existing condition. Stormwater runoff from Basin West will maintain the existing outfall to Beaumont Drive's ditch to the south. Additional proposed areas will be collected within the storm sewer system along US 41 and conveyed and accounted for within the proposed Pond North expansion as part of Basin North.



US 41 at Bonita Beach Road PD&E Study

FPID 444321-1-22-01

Figure 64A | Proposed Basin Map



US 41 at Bonita Beach Road PD&E Study

FPID 444321-1-22-01

Figure 64B | Proposed Basin Map

5.4.4.3 Basin East

Basin East maintains the existing basin limits, beginning at the US 41 and Bonita Beach Road intersection and continuing east to Spanish Wells Boulevard. Stormwater runoff from Bonita Beach Road and a portion of the intersection will be collected within curb and gutter inlets and conveyed to a stormwater treatment facility prior to being discharged to the concrete box culvert underneath Bonita Beach Road, flowing to the Arroyal Mall Pond. There are two (2) alternatives being considered for this basin: 1. A dry retention swale; and 2. An offsite dry retention pond.

Pond East Alternative 1 – Dry Retention Swale

Pond East Alternative 1 would serve as the treatment and attenuation for Basin East. Alternative 1 is located south of Bonita Beach Road from approximately Sta. 286+50 (RT.) to Sta. 293+10. This swale is located within the existing roadway right-of-way. Preliminary sizing calculations indicate that the pond size will need to be approximately 30' wide by approximately 660' long (0.45 acres minimum). The proposed location of the swale has an area of approximately 0.74 acres due to the area not being a 30' typical width and accounting for driveways crosscutting the swale, thus the 0.45 acres needed for Pond East Alternative 1 will be accommodated. The swale will outfall to the concrete box culvert underneath Bonita Beach Road at the same location as the basin's existing condition outfall. This is the basin's preferred alternative.

Pond East Alternative 2 – Offsite Dry Retention Pond

Pond East Alternative 2 would serve as the treatment and attenuation pond for Basin East. Pond East Alternative 2 is located south of Bonita Beach Road at approximately Sta, 293+40 (RT.). This pond site is located within one parcel (00001.0120), as shown **Figure 65**. Preliminary pond sizing calculations indicate that this pond requires 0.83 acres of area. This pond will outfall to the concrete box culvert underneath Bonita Beach Road at the same location as the basin's existing condition outfall.

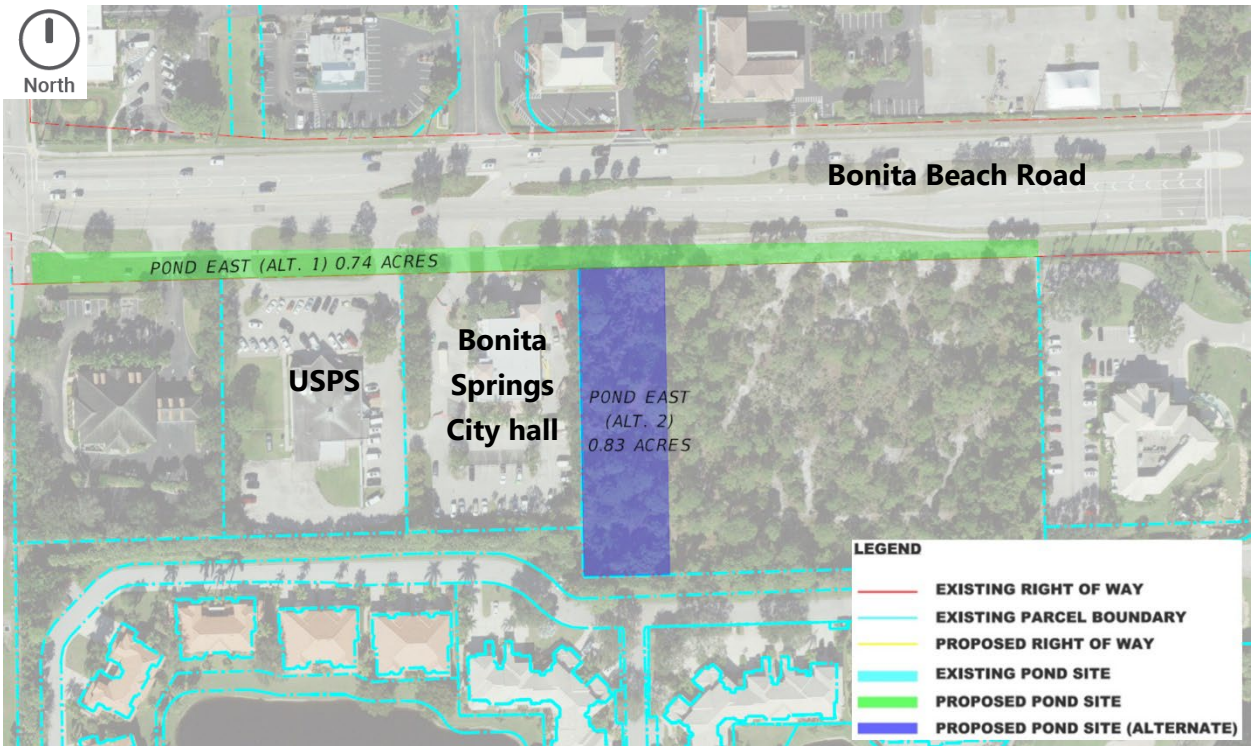


Figure 65: Pond East Alternative 2

5.4.4.4 Basin North

Basin North is currently permitted under SFWMD Permit No. 36-02988-P. This permit is for the surface water management system serving US 41 from CR 887 (Old US 41 Road) to north of Bonita Beach Road. In the proposed condition, the basin limits would be expanded at the intersections of Bonita Beach Road and the Northwest Quadrant Roadway to treat and attenuate for the additional areas not accounted within the northwest quadrant pond. This pond is currently being designed by the City of Bonita Springs. The basin's treatment and attenuation is provided in an existing FDOT pond, Pond North. The pond has been analyzed to be expanded to provide additional treatment and attenuation volume needed for the proposed intersection improvements.

Pond North

Pond North will serve as Basin North's primary treatment and attenuation pond. Pond North is located approximately 105 feet east of the US 41 alignment. The pond's southern end will be impacted by the proposed Northeast Quadrant Roadway. The pond will be expanded to the west into Parcel 00260.002A, which is also impacted by the proposed Northeast Quadrant Roadway, and into Parcels 00260.0010, 00257.0010 and 00257.0030, as shown in **Figure 66**. Preliminary pond sizing calculations indicate this pond will need to be expanded approximately 3.66 acres. This pond will maintain the existing outfall to the Imperial River.

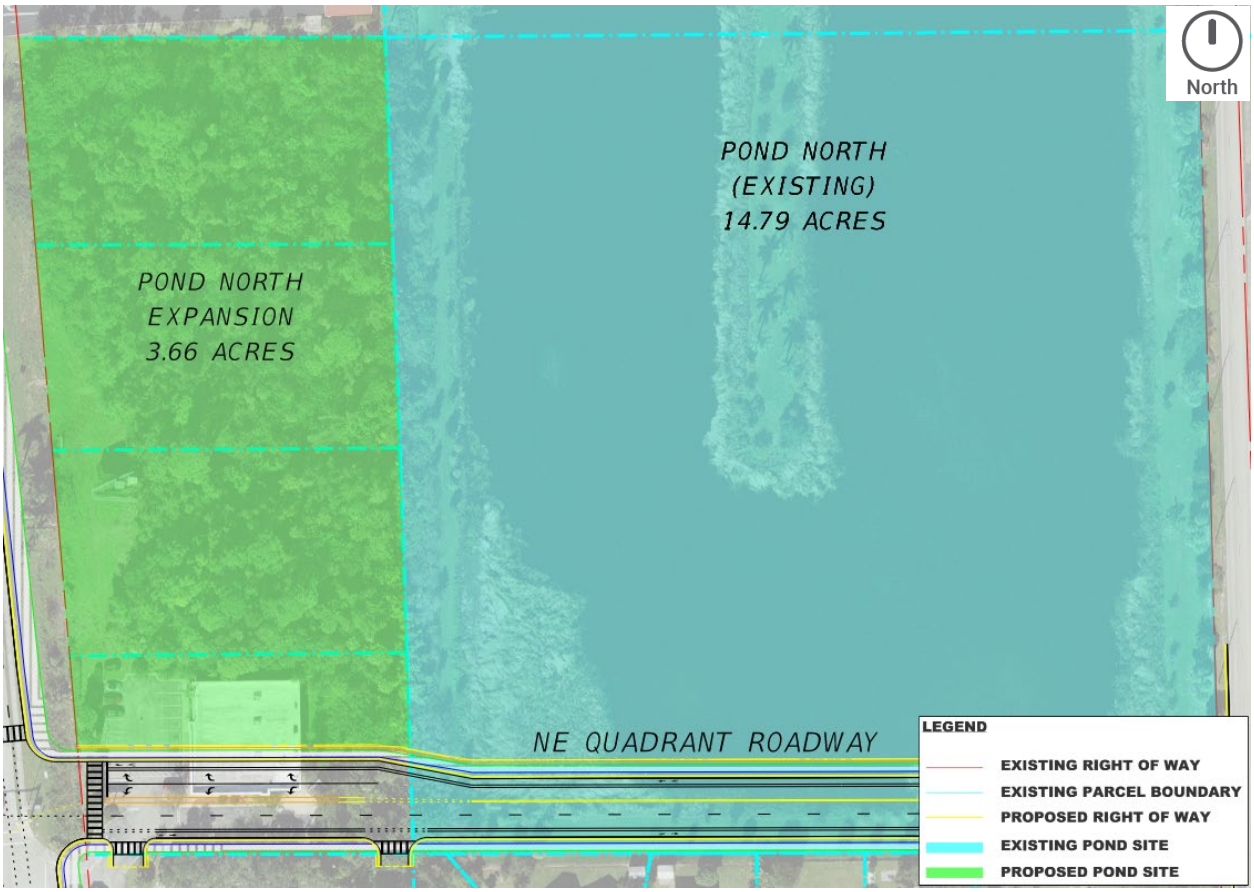


Figure 66: Pond North

5.4.4.5 Arroyal Mall Pond Impacts

The proposed improvements to the US 41 and Bonita Beach Road intersection will have impacts to the existing Arroyal Mall Pond, permitted under SFWMD Permit No. 36-00863-S. The canal running adjacent to US 41 from the concrete box culvert crossing at Bonita Beach Road north to the Arroyal Mall Pond would need to be enclosed to accommodate Alternative B if this alternative is the preferred alternative. Volumetric impacts to the Arroyal Mall Pond from the addition of the Alternative B are anticipated to be approximately 0.25 ac-ft. These impacts can be offset by re-grading the southern and western pond berms, which will provide approximately 0.33 ac-ft of added volume.

5.5 Comparative Alternatives Evaluation

The US 41 and Bonita Beach Road comparative evaluation matrix presented at the Alternatives Public Workshop is shown in **Table 30**. The comparative evaluation matrix reviews the following metrics for the no-build, Alternative A, and Alternative B:

- Ability to Meet Purpose and Need
    - Improves Traffic Operations

  - Improve Traffic Mobility and Transportation Network Access
  - Enhances Emergency Evacuation and Response Times
  - Enhance Mobility Options and Multi-Modal Access
- Potential Right-of-Way Impacts
  - Number of Business/Residential/Other Relocations
  - Number of Business/Residential/Other Parcels Impacted
  - Acres of Right-of-Way to be Acquired
- Potential Environmental Effects
  - Threatened/Endangered Species and Habitat Impacts
  - Acres of Wetlands Impacted
  - Acres of Floodplains Impacted
  - Archaeological/Historic Resources Impacts
  - Number of Public Recreation Resources Impacted
  - Number of Noise Sensitive Receptors Impacted
  - Number of Contamination Sites Impacted
  - Number of Utilities Impacted
- Traffic Operations
  - 2050 Average Vehicle Delay
  - Net Present Value of Improvement
- Estimated Project Costs
  - Right-of-Way Acquisition for Roadway
  - Wetland Mitigation
  - Final Design and Construction
  - Construction Engineering and Inspection

As shown in **Table 30**, Alternative B is anticipated to meet each of the four purpose and need elements while Alternative A is only anticipated to meet three. The proposed traffic separators on the intersection approaches as part of Alternative B provides a refuge area for pedestrians crossing the intersection. As Alternative A does not have this refuge area, it is a pedestrian safety issue and does not meet the purpose and need element of enhancing mobility options and multi-modal access. As discussed in **Section 3.0**, the No-Build does not improve traffic operations for the study intersection. Research from PDLT built intersections in Utah have shown a Crash Modification Factor of 0.88 as compared to signalized intersections. This factor demonstrates both Alternative A and the No-Build alternatives is predicted to have more crashes than Alternative B – PDLT. Also with no improvements, the No-Build will not enhance emergency evacuation/response times or mobility options/multi-modal access, thus the No-Build does not satisfy any purpose and need elements.

The right-of-way take area for Alternative B is approximately 0.7 acres higher than Alternative A, with an additional two parcels impacted. Each alternative also has the same number of commercial relocations.

The potential environmental impacts are generally the same for both intersection alternatives. Both alternatives have a low impact to threatened/endangered species and are also expected to have the same number of utility impacts due to the overhead electrical relocation.

Both Alternative A and Alternative B are expected to improve LOS and crash safety when compared to the No-Build alternative. Using *Highway Safety Manual (HSM)* predictive safety analysis methods provided in the FDOT Safety Performance for Intersection Control Evaluation (SPICE) Tool, the PDLT intersection is predicted to decrease total and fatal/injury crashes by approximately 12 percent vs the No-Build Alternative and by approximately 38 percent vs Alternative A – Enhanced Traffic Signal over the 20-year life cycle from 2030 to 2050. **Table 29** displays the crashes over the 20-year life cycle for the No-Build, Alternative A, and Alternative B.

Table 29: SPICE Crash Prediction Results

Crash Type	No-Build	Alt. A	Alt. B
Total Crashes	562.70	798.83	495.18
Fatal & Serious Injury Crashes	308.68	437.16	271.64

The FDOT ICE Tool was used to estimate the operational and safety benefit for the alternatives over a 20-year life cycle to understand the improvement's return on investment. These benefits were calculated as an estimated "Net Present Value" (NPV) to compare the alternatives. While Alternative B is approximately $7.8 million more expensive than Alternative A, the estimated NPV for Alternative B is approximately $51 million higher than Alternative A, meaning the PDLT is predicted to have a higher return on investment and more benefit for the users of the intersection. This is mostly in operational benefits over the 20-year life cycle. The results of the NPV analysis are provided in **Table 31**.

The output sheets for the SPICE and ICE analysis are provided in **Appendix E**.

Table 30: Alternatives Comparative Evaluation Matrix

EVALUATION FACTORS / Alternative	Alternative A: Enhanced Traffic Signal	Alternative B: Partial Displaced Left Turn	No Build
ABILITY TO MEET PURPOSE AND NEED			
Improves Traffic Operations	✓	✓	X
Improve Traffic Mobility and Transportation Network Access	✓	✓	X
Enhances Emergency Evacuation and Response Times	✓	✓	X
Enhance Mobility Options and Multi-Modal Access	X	✓	X
POTENTIAL RIGHT OF WAY IMPACTS			
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 Aqcuired (acres)	4.05	4.73	0
POTENTIAL ENVIRONMENTAL EFFECTS			
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-Mod/0	Low-Mod/0	N/A
Public Recreation Resources (#)	1	1	0
Noise Sensitive Receptors (#)	16	16	0
Contamination Sites (#Low/#Medium/#High Risk)	6/3/0	6/3/0	0/0/0
Utilities Impacted (#)	8	8	0
TRAFFIC OPERATIONS			
US 41/Bonita Beach Road Intersection 2050 Average Vehicle Delay in Seconds (Midday/PM)	71/93	69/98	231/256
Net Present Value[1] (Compared to No-Build)	$263,360,000	$314,380,000	N/A
ESTIMATED PROJECT COSTS (2023 $$)			
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
Preliminary Estimate of Total Project Cost[2]	**$38,130,000**	**$45,950,000**	**$0[3]**

[1] 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.

[2] Source: FDOT Long-Range Estimating System. Preliminary Estimate of Total Project Cost does not include maintenance costs.

[3] No-Build would result in higher maintenance costs.

Table 31: Net Present Value Analysis for Intersection Alternatives

Cost Categories	Net Present Value of Costs		
	No-Build	Alt. A	Alt B
Planning, Construction & R/W Costs	$0	$26,130,000	$33,110,000
Post-Opening Costs	$98,229	$98,229	$238,276
Auto Passenger Delay	$518,057,346	$214,690,192	$193,769,624
Truck Delay	$24,327,189	$10,083,158	$9,099,847
Safety	$67,707,714	$95,826,837	$59,592,328
Total Cost	**$610,190,479**	**$346,828,415**	**$295,810,075**
Benefit Categories	**No-Build**	**Alt. A**	**Alt. B**
Auto Passenger Delay	$0	$303,367,155	$324,287,722
Truck Delay	$0	$14,244,031	$15,227,342
Safety	$0	($28,119,123)	$8,115,387
Net Present Value of Benefits	**$0**	**$289,492,064**	**$347,630,451**
Net Present Value of Costs	**$0**	**$26,130,000**	**$33,250,048**
Net Present Value of Improvements	**$0**	**$263,362,064**	**$314,380,404**
Net Present Value of Alt B over Alt A	***N/A***	***$51,018,340***	

5.6 Selection of the Preferred Alternative

The project's purpose is to address the deficient operational capacity of the US 41 and Bonita Beach Road intersection to relieve existing congestion and accommodate projected future traffic demand. The project's secondary goals are to 1) Enhance safety conditions; 2) Improve multi-modal access; and 3) Enhance system linkage through regional and local mobility.

Alternatives A (Enhanced Traffic Signal) and B (PDLT) were presented at the Alternatives Public Workshop conducted virtually on Monday, April 3 and in-person on Tuesday, April 4, 2023. Following the workshop, feedback was gathered from members of the public for both alternatives. The majority of public comments received expressed support for Alternative B, PDLT. Alternative B was favored as it does not add through lanes along US 41, was viewed as being more operationally efficient, and provided better pedestrian and bicyclist safety. These alternatives were also presented to the Lee County MPO on June 16, 2023 and the public support for the PDLT alternative was documented with the MPO Board.

Discussions were held with FDOT District 1 after the Alternatives Public Workshop and it was determined Alternative B – PDLT best aligns with the project's purpose and need and was selected as the preferred alternative. The following bullets summarize how the PDLT recommendation meets the primary and secondary purpose and need goals noted above:

- Transportation Demand/Capacity
    - In the 2050 future build condition, the average network delay for vehicles traveling through the PDLT would be approximately 50 percent less than the No-Build Alternative.
    - The estimated number of vehicles served by the PDLT in 2050 would be approximately 20 percent higher than the No-Build Alternative.
    - The PDLT is anticipated to improve average vehicle delay by over 45 seconds in both the 2050 mid-day and PM peak hours when compared to the No-Build Alternative at the main US 41 at Bonita Beach Road intersection only.
- Safety
    - Using the predictive safety analysis methods provided in the FDOT Safety Performance for Intersection Control Evaluation (SPICE) Tool, the PDLT intersection is predicted to decrease total and fatal/injury crashes by over 10 percent vs the No-Build Alternative over the 20-year life cycle from 2030 to 2050.
    - Increase the volume of residents and tourists from coastal communities that can be evacuated during an emergency event by improving operations at the intersection of two major evacuation routes.
    - Enhance access to facilities of the state evacuation route network.
    - Improve response times (due to enhanced access) to emergency events and incidences.
- Modal Interrelationships
    - Sidewalks in the study area are proposed to be widened to 12' shared-use paths along both sides of US 41 and Bonita Beach Road.
    - These shared-use paths will improve pedestrian/bicycle access and circulation by modifying/limiting opportunities for conflicts between automobiles and pedestrians/bicyclists.
    - The 12' shared-use path improvements proposed as part of the PDLT would help further enhance the future vision of the Coastal Loop Trail in the study area.
    - Additional median and concrete traffic separators are included in the PDLT concept to provide pedestrian refuge areas and better facilitate non-motorist crossings.
    - The PDLT will also enhance the performance and reliability of transit service operating along US 41 and Bonita Beach Road by reducing delays at the intersection.
- System Linkage
    - Improve the viability of US 41 as a regional alternative facility to I-75 by reducing travel delay.

- Enhance east-west access between two primary north-south transportation corridors (US 41 and I-75) as well as between the mainland of Lee County and coastal communities/tourist destinations to the west.
- Enhance freight mobility and access within the area as US 41 is designated as regional freight mobility corridor (Tier 1 Regional Freight Corridor) in the Lee County 2045 Long Range Transportation Plan.
- The proposed PDLT improvements will support local system linkage planning efforts by providing a Northeast Quadrant Roadway connecting US 41 to Arroyal Road. It will also widen the US 41 and Northeast Quadrant Roadway intersection's west approach to meet the intersection's future traffic demands.

6.0 AGENCY COORDINATION & PUBLIC INVOLVEMENT

6.1 Agency Coordination

6.1.1 ETDM

Initial evaluations of the proposed US 41 and Bonita Beach Road project occurred during the Efficient Transportation Decision Making (ETDM) process. The ETDM process helps to identify project stakeholders and affected communities, obtain preliminary agency and public comments, and determine environmentally sensitive areas and project impact levels. The ETDM Summary Report (#6291) for US 41 and Bonita Beach Road was published on January 18, 2020. The ETDM Summary Report shows 1 resource to be enhanced, 16 resources to have minimal impact, and 2 resources to have moderate impact. No resources had a degree of effect of substantial or requiring issue resolution. The report can be accessed on the ETDM public website (https://etdmpub.fla-etat.org/est/) and is found in **Appendix F**.

6.1.2 Project Kick-Off Letter

To announce the project's start, and in place of a project kick-off meeting, letters were emailed to elected and appointed officials, and newsletters were mailed to those whose property lies, in whole or part, within at least 300 feet on either side of each project alternative, as well as other local citizens who may be impacted by the construction of this project. The project kick-off letter described the PD&E study process, the project purpose and need, and the project schedule. Elected and Appointed Officials contact information is listed in the Public Involvement Plan (PIP). Names and mailing addresses were obtained from the Lee County property appraiser website. The project's *Comments and Coordination Report* includes a package of the kick-off letters, Newsletters #1 and #2, contact information, mailing addresses, and a map identifying properties receiving mailed notifications.

6.1.3 Project Update Meetings

Various agency meetings were conducted to give a project update and collect comments. Project update meetings were performed with the following agencies on the following days:

1. City of Bonita Springs and FDOT District 1 – In-Person Meeting in Bartow, FL on January 29, 2020.
    - Project coordination meeting with City Council member and Assistant City Manager
2. City of Bonita Springs and FDOT District 1 – Virtual via Microsoft Teams on 2/24/2021
    - Discuss Purpose & Need, traffic analysis, and initial intersection alternatives
3. Lee County and FDOT District 1 – Virtual via GoToMeeting on 3/5/2021
    - Discuss Purpose & Need, traffic analysis, and initial intersection alternatives

4. City of Bonita Springs City Council Members and FDOT District 1 – Virtual via Microsoft Teams on 4/12/2021 and 4/13/2021
    - Project update meeting
5. City of Bonita Springs and FDOT District 1 – Virtual via Microsoft Teams on 8/30/2021
    - Project update meeting
6. City of Bonita Springs and FDOT District 1 – Virtual via Microsoft Teams on 1/24/2022
    - Project update meeting
7. City of Bonita Springs and FDOT District 1 – In-Person Meeting on 01/05/2023 at City Office.
    - Project update meeting
8. Lee County Department of Transportation and FDOT District 1 – In-Person Meeting on 01/05/2023 at County Office.
    - Project update meeting
9. Lee County MPO staff and FDOT District 1 – In-Person Meeting on 01/05/2023 at MPO Office.
    - Project update meeting
10. Lee MPO Technical Advisory Committee (TAC) and Citizen Advisory Committee (CAC) Meetings – In-Person Presentation on 6/1/2023.
    - Presented update on study, overview of intersection alternatives, and summary of the Alternatives Public Workshop
11. Lee MPO Governing Board – In-Person Presentation on 6/16/2023 at Board Meeting.
    - Presented update on study, overview of intersection alternatives, and summary of the Alternatives Public Workshop
12. Lee MPO Bicycle Pedestrian Coordinating Committee Meeting – In-Person Presentation on 6/27/2023.
    - Presented update on study, overview of intersection alternatives, and summary of the Alternatives Public Workshop
13. City of Bonita Springs, Lee County MPO, and FDOT District 1 – Virtual via Microsoft Teams on 7/14/2023
    - Project update meeting
14. City of Bonita Springs Consultant and FDOT District 1 – In-Person Meeting on 8/3/2023
    - Discuss Northwest Quadrant Roadway design status
15. LeeTran and FDOT District 1 – Virtual via Microsoft Teams on 9/21/2023
    - Discuss transit stop improvements to be included in the preferred alternative
16. City of Bonita Springs and FDOT District 1 – Virtual via Microsoft Teams on 12/8/2023
    - Discuss Northwest Quadrant Roadway design status

Meeting agendas, along with questions and comments obtained from these project update presentations, are contained in the project's *Comments and Coordination Report*.

6.1.4 Business Working Group

FDOT created a Business Working Group (BWG) of businesses in the immediate US 41 and Bonita Beach Road. The BWG's purpose was to meet virtually to obtain input about the transportation needs of the area, answer questions and keep business owners informed regarding the study. Letters were sent to eight business owners in May 2021. These were followed up with emails to each business owner on June 21, 2021, and one response was received. On June 29, 2021, a second email was sent to the business who had not responded. These emails included a Doodle poll to select a potential date for a virtual meeting. There were two responses showing interest in a virtual meeting. A different approach was taken. On July 21, 2021, FDOT District 1 and consultant team representatives traveled to Bonita Springs and conducted impromptu meetings with six of the eight businesses with a series of prepared questions we asked the person in-charge at the business at that time. The businesses were generally very cooperative, provided answers to our questions and supported improving the intersection. Following these meetings, no further BWG activities have occurred.

6.1.5 Transit Coordination

The PDLT concept will impact transit stops within the intersection study area thus coordination efforts were performed with the FDOT District 1 and LeeTran as part of refinements to the Preferred Alternative. FDOT District 1 Transit staff reviewed the Preferred Alternative PDLT concept and provided comments on transit stop impacts. A follow up meeting was held with these FDOT District 1 Transit staff on September 21, 2023 to discuss potential transit stop relocations prior to coordinating with LeeTran.

LeeTran was then contacted via email on September 22, 2023 to verify existing transit stops within the study area and provide input regarding relocation of potential transit stops as part of the PDLT concept. Dawn Huff, the Planning and Scheduling Manager with LeeTran, responded via email on October 11, 2023 with a review of the PDLT concept and input regarding each transit stop. A copy of this email and Ms. Huff's response to comments can be found in the project's *Comments and Coordination Report* and **Appendix G**. The proposed transit stop locations are discussed in **Section 7.7**.

6.2 Public Involvement

6.2.1 Public Workshop Announcements

To announce the virtual (April 3, 2023) and in-person (April 4, 2023) Alternatives Public Meeting and solicit participation, the following notifications were sent to potential attendees or published on the following dates:

1. Invitation letters emailed to 84 elected and appointed officials – emailed 03/06/2023;
2. Newsletters mailed to 754 property owners and interested persons – 03/06/2023;

3. Display advertisement published in the News-Press – 03/24/2023;
4. Notification posted in the Florida Administrative Register (FAR) – 03/24/2023;
5. Notification posted to the project website and FDOT public notices webpage – 03/27/2023; and
6. Press release sent by FDOT District 1 – 03/27/2023.

A package of the announcements is contained in the project's *Comments and Coordination Report*.

6.2.2 Alternatives Public Workshop

The Alternatives Public Workshop was performed in a hybrid format consisting of both a virtual component hosted online via GoToWebinar at 6:00 PM on Monday, April 3, 2023, as well as an in-person component located at the Bonita Springs Recreation Center (26740 Pine Ave., Bonita Springs, FL 34135) from 5:00 PM to 7:00 PM on Tuesday, April 4, 2023. This process followed and was consistent with the most current FDOT guidelines for Hybrid Public Meetings.

The online component consisted of a live introduction by the FDOT Project Manager followed by a narrated presentation and a live question and answer period with the project team. The in-person meeting consisted of an open house format to provide an opportunity for the public to review the proposed project, speak one-on-one with project team members, and voice their comments or concerns. Project documents, including comment forms, were available for public review on the project website: https://www.swflroads.com/project/444321-1 beginning on March 27, 2023. Additionally, there was a link on the project website that allowed citizens to submit comments without the use of the comment form. Phone and email were also available for providing input. A total of 12 guests attended the public workshop virtually using GoToWebinar and a total of 30 guests attended the public workshop in person. Of the 30 public citizens that attended the in-person workshop, eight were public officials or representatives.

A total of 18 responses (emailed comments, in-person, virtual, and website) were received during the comment period between April 3 and April 14, 2023. Of these, 11 in-person submissions, 5 virtual submissions, 2 emailed comments, and 1 website comment were received. The following list provides a high-level overview of the concerns:

- 6 traffic concerns – expressed concern for congestion surrounding the intersection, and traffic displacement to surrounding areas.
- 5 signal location concerns – requests to clarify locations of new/moving traffic signals, suggesting proposed signal locations.
- 3 plaza access concerns – expressed concerns regarding the location of access to Springs Plaza and Center of Bonita Springs.
- 9 Partial DLT Alternative supporters – expressed support for the Partial Displaced Left Turn.
- 3 pedestrian and bicycle concerns – expressed concern for time crossing the intersection and availability of pedestrian and bicycle accommodations.

- 3 speed concerns – expressed concerns regarding the current and proposed speed limits.
- 10 specific concerns – these comments were lengthy and requested specific items that cannot be grouped into any of the previous categories, such as noise, stormwater runoff, impact to nature, flyover alternative, public transportation, using AI for changing signals, Angler's Paradise access and specific property concerns.

Generally the comments were in support of the project and alternatives to alleviate congestion and improve safety. Details of the specific public comments and responses to those are available in the *Comments and Coordination Report*.

6.3 Public Hearing

6.3.1 Public Hearing Announcements

To announce the March 26, 2024 virtual and in-person Public Hearing and solicit participation, the following notifications were sent to potential attendees or published on the following dates:

1. Email to Elected Officials – Distributed on February 28, 2024
2. Email to Appointed Officials – Distributed on February 28, 2024
3. Email to Interested Parties – Distributed on February 28, 2024
4. Email to ETAT Members – Distributed on February 28, 2024
5. Newsletter to Property Owners – Mailed on February 28, 2024
6. Florida Administrative Register – Published on March 15, 2024
7. FDOT Public Notice Website – Published on March 5, 2024
8. Press Release – Distributed on March 18, 2024
9. Legal Advertisements – Published in The News-Press on March 8, 2024, and March 19, 2024

A package of the announcements is contained in the project's *Comments and Coordination Report.*

6.3.2 Public Hearing

FDOT conducted a hybrid public hearing to provide interested persons with information on the preferred alternative selected by FDOT, and to allow the public the opportunity to comment. The hearing was held on Tuesday, March 26, 2024, at the Bonita Springs Recreation Center, and the formal hearing portion was live-streamed online through GoToWebinar. The in-person venue was chosen because of its proximity to the project limits, the availability of a larger space, the location of the previous public meeting, and its familiarity with the locals. Meeting materials were posted to the project webpage (https://www.swflroads.com/project/444321-1) on March 19, 2024.

As attendees entered the hearing, they were provided with a handout and the project team explained the comment process. At the in-person event, an open house was held from 5 – 6 PM. Members of the study team were available to answer questions and discuss the project during

this time. A separate table for noise, right-of-way, draft project documents, and transportation development process information was available to the public.

A total of 67 people attended the in-person meeting which included 9 FDOT and consultant staff plus 3 elected officials. The online meeting was attended by 52 people.

The following project-related information was on display:

- Project Location Map
- Typical Sections of US 41
- Typical Sections of Bonita Beach Road
- Preferred Alternative Map
- Welcome and Thank You Boards
- Schedule and Funding
- Evaluation Matrix
- Comment Board
- Title VI
- Federal & State Requirements
- Floodplain Map

At 6 PM the formal portion of the hearing began for both the in-person and online attendees. A project presentation was played, and the public had the opportunity to provide verbal comments. Two attendees provided verbal testimony at the in-person event, one attendee provided verbal comment through the online event, and one attendee provided a comment that was read aloud by the moderator through the online event.

A total of 16 comments were received during the comment period between March 26 and April 5, 2024. The 16 comments came in the form of three speakers during the Hearing, one comment via the virtual Hearing "chat" feature, eight emails (two before the Hearing and six after the Hearing), three written comment forms obtained at the Hearing, and one comment submitted via the project website.

The following list provides a high-level overview of the concerns:

- 4 traffic concerns - expressed concern for congestion surrounding the intersection in relation to new development, and traffic displacement to surrounding areas.
- 5 signal location and operation concerns - request to understand signal operations during a hurricane, installation of intersection safety cameras, concerns about the surrounding traffic signal's coordination with the US 41 and Bonita Beach Road intersection, concerns about signal timing to accommodate traffic higher volumes, and median modification to allow for an additional turning lane going US 41 northbound.
- 1 Gas station access concern – expressed concerns regarding the exit location on US 41 closest to the US 41 and Bonita Beach Road intersection.

- 1 Pedestrian and bicycle concern - expressed interest to understand how the future Bonita Estero Rail Trail (BERT) will connect to the area's pedestrian and bicycle infrastructure.
- 1 Speed concern - expressed concerns regarding the current speed limits in relation to safety.
- 1 Property acquisition concern – surrounding business concerned about the impact the roadway project will have on their property.
- 4 specific concerns - these comments requested specific items that cannot be grouped into any of the previous categories, such as compensation for negative impacts related to the proposed roadway project, noise, stormwater runoff, flooding, diminution of property values, and flyover alternative.

During the Open House portion of the Public Hearing, public conversations with the Study Team were generally supportive of the project and the Preferred Alternative to alleviate congestion and improve safety in the Study Area. However, the written/on-the-record spoken comments were related to concerns about increased congestion in the surrounding areas and how the Preferred Alternative signalized intersection would operate.

In response to the area-wide traffic concerns, the Study Team noted the extensive traffic analysis that was performed and how adjacent roadways/intersections are being improved as part of the Preferred Alternative to help alleviate congestion in the surrounding roadway network. In response to the signal location/operation concerns, the Study Team explained how the signal could operate under different circumstances (e.g. lost power due to a hurricane) and how the signal coordination will operate to facilitate the higher traffic volumes in the area.

Details of the specific public comments and responses, the public hearing notifications (including emails, advertisements, newsletter invite, and mailing list), the sign-in sheets, all hearing materials, and comment sheets from the meeting (as well as those received in the 10 days following), can be found in the *Comments and Coordination Report* located in the project files. The Public Hearing Transcript is in the project file.

7.0 PREFERRED ALTERNATIVE

This section includes a description of design features of the PDLT preferred alternative. The concept plans for the preferred alternative are located in **Appendix H**. The typical section package is located in **Appendix I**.

7.1 Roadway Characteristics of Preferred Alternative

The preferred alternative at the US 41 and Bonita Beach Road intersection is the PDLT. The following describes the PDLT's roadway characteristics:

- Northbound and southbound left turn movements are relocated to the outside of the opposing traffic flow, allowing the northbound and southbound left turning movements to operate in the same signal phase as the northbound and southbound through movements.
- Two new signalized "crossover" intersections are proposed along US 41 approximately 675' south and 460' north of Bonita Beach Road to allow left turning vehicles to cross to the other side of the opposing flow.
- The southbound and eastbound left turn movements are proposed to have three lanes each.
- The eastbound and westbound right turn movements are proposed to have two lanes each.
- US 41 is proposed to remain at six total through lanes, three in each direction.

The preferred alternative's limits spanned from Sta. 221+19 to Sta. 271+81 along US 41 and from Sta. 254+57 to Sta. 300+33 along Bonita Beach Road, where they then tie into the existing roadway. The following describes additional improvements along US 41 outside of the main PDLT intersection:

- Signalization and turn lane additions at the US 41 and Foley Road intersection.
- At the north crossover intersection, the US 41 northbound lanes will become four lanes and the fourth lane is dropped prior to the Imperial River bridge.
- Converting the US 41 at the Center of Bonita Springs intersection from a traditional signalized intersection to a thru-cut intersection, restricting eastbound/westbound through movements. This intersection would be the tie-in points for the Northwest and Northeast Quadrant Roadways.
- Access management refinements along US 41.

A new Northwest Quadrant Roadway from Bonita Beach Road (east-west Sta. 259+91) to US 41 (north-south Sta. 260+00) will be constructed by the City of Bonita Springs and is included in the preferred alternative. Also included is a new Northeast Quadrant Roadway from US 41 to Arroyal Road that ties-in at the new thru-cut signal noted above.

As previously discussed in **Section 5.4.2**, Bonita Beach Road is planned to be widened from a four-lane basic roadway to a six-lane basic roadway from Sta. 267+00 to Sta. 286+00 (three lanes will extend eastbound to Sta. 300+33). Turn lane improvements are also proposed at the existing signalized intersections of the Center of Bonita Springs driveway and Arroyal Road with Bonita Beach Road.

The following sections discuss the specific roadway characteristics of the preferred alternative along US 41, Bonita Beach Road, and the quadrant roadway system.

7.1.1 US 41 Roadway Characteristics

The southern end of US 41 between Foley Road (Sta. 222+75) and the Springs Plaza/Access Road (Sta. 232+50) (**Figure 67**) serves to transition between the existing conditions to the south and the PDLT improvements to the north. The following describes the specific roadway characteristics in this segment:

- 25′ wide median, including Type E curb and gutter;
- Three 11′ travel lanes in each direction;
- 7′ wide on-street buffered bicycle lanes;
- Type F curb and gutter outside of the bicycle lanes;
- Varies 4′ to 7′ grass strip between the back of curb and sidewalk;
- 6′ wide sidewalks on both sides of US 41; and
- Varies 29′ to 39′ landscape area between the back of sidewalk and right-of-way line.

Moving north along US 41, the pedestrian/bicycle facilities transition from sidewalk and on-street bicycle lanes to 12-foot wide shared-use paths on both sides of US 41. The following roadway characteristics are present from Springs Plaza/Access Road (Sta. 232+50) to the Southern "Crossover" Intersection (Sta. 239+00) (**Figure 68**):

- 28′ wide median, including Type E curb and gutter;
- Three 11′ travel lanes in each direction;
- Type F curb and gutter outside of the travel lanes;
- Varies 15′ to 28′ grass strip between the back of curb and shared-use paths;
- 12′ wide shared-use paths on both sides of US 41;
    - Northbound shared-use path begins at Springs Plaza (Sta. 232+50); and
    - Southbound shared-use path ends just south of Access Road (Sta. 237+00).
- Varies 15′ to 20′ landscape area between the back of shared-use paths and right-of-way line.

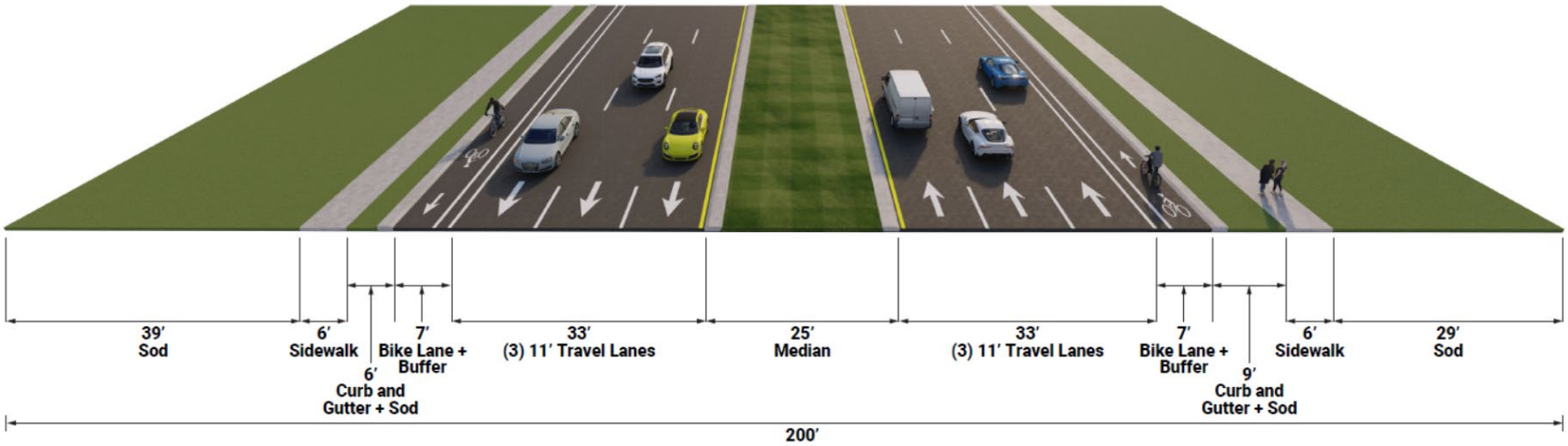


Figure 67: US 41 – Foley Road to Springs Plaza/Access Road

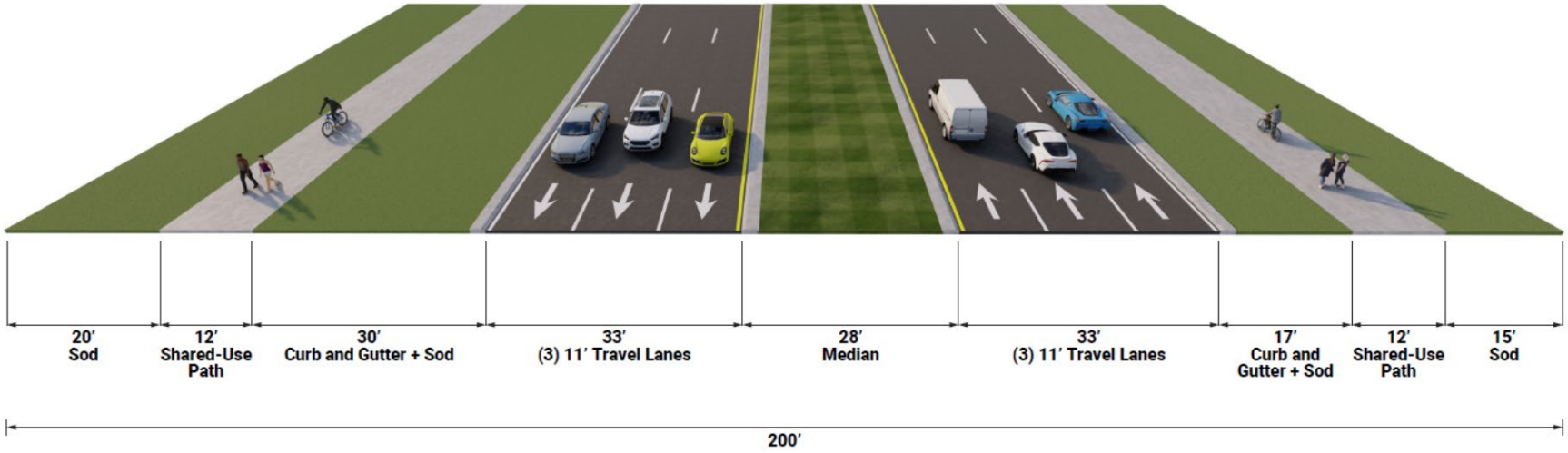


Figure 68: US 41 – Springs Plaza/Access Road to Southern "Crossover" Intersection

Between the Southern "Crossover" Intersection (Sta. 239+00) and the US 41 and Bonita Beach Road intersection (Sta. 246+00) (**Figure 69**), the shared-use paths on both roadway sides are maintained and travel lanes associated with the PDLT are added:

- 15.5′ wide median, including Type E curb and gutter;
- Three 11′ travel lanes in each direction;
- Exclusive 11′ northbound right turn lane;
- Dual 11′ northbound exclusive left turn lanes positioned to the west of the southbound through lanes, with a 6′ traffic separator in between;
- Dual 11′ eastbound to southbound exclusive right turn lanes positioned to the west of the northbound left turn lanes, with a 6′ traffic separator in between;
- Type F curb and gutter outside of the travel lanes;
- 4′ grass buffer on both sides between back of curb and the shared-use paths;
- 12′ wide shared-use paths on both sides of US 41;
- A 17.5′ landscape area between the back of the east side shared-use path and right-of-way line;
- A 6′ tie-back area between the back of the west side shared-use path and proposed right-of-way line; and
- An additional 8′ of right-of-way will be needed on the west side of US 41 to accommodate this cross section.

The north leg of the US 41 and Bonita Beach Road intersection (Sta. 246+00), up to the Northern "Crossover" Intersection (Sta. 251+00) (**Figure 70**), maintains roadway characteristics similar to the south leg of the intersection:

- 26.5′ wide median, including Type E curb and gutter;
- Three 11′ travel lanes in each direction;
- Exclusive 11′ southbound right turn lane;
- Triple 11′ southbound exclusive left turn lanes positioned to the east of the northbound through lanes, with a 6′ traffic separator in between;
- Dual 11′ westbound to northbound exclusive right turn lanes positioned to the east of the southbound left turn lanes, with a 6′ traffic separator in between;
- Type F curb and gutter outside of the travel lanes;
- 4′ grass buffer on both sides between back of curb and the shared-use paths;
- 12′ wide shared-use paths on both sides of US 41;
- A 32.5′ landscape area between the back of the west side shared-use path and right-of-way line;
- A 6′ tie-back area between the back of the east side shared-use path and proposed right-of-way line; and

- Due to the alignment of the northbound and southbound lanes through the intersection, the southbound approach is shifted to the east. With this shift, an additional 45 feet of right-of-way will be needed on the east side of US 41 and the existing drainage canal in the northeast corner of the intersection will be boxed in a 500′ long 10′x7′ CBC.

The northern portion of US 41 between the Northern "Crossover" Intersection (Sta. 251+00) and the Imperial River Boat Ramp (Sta. 270+00) includes the following roadway characteristics (**Figure 71**):

- 28′ wide median, including Type E curb and gutter;
- Four 11′ northbound through lanes (outside lane drops at the Imperial River Boat Ramp);
- Four 11′ southbound through lanes;
    - The inside lane is an "auxiliary" lane beginning at Sta. 265+00 which then drops into the triple southbound left turn lanes.
- Continuous southbound right turn lane from Bonita Beach Road (Sta. 247+00) to south of Northwest Quadrant Roadway signalized intersection (Sta 259+00).
- Type F curb and gutter outside of the travel lanes;
- Varies 4′ to 10′ grass buffer on both sides between back of curb and shared-use paths;
- 12′ wide shared-use paths on both sides of US 41 beginning and ending just north of the Imperial River Boat Ramp (Sta. 271+00); and
- Varies 25′ to 30′ landscape area between the back of shared-use paths and right-of-way line.

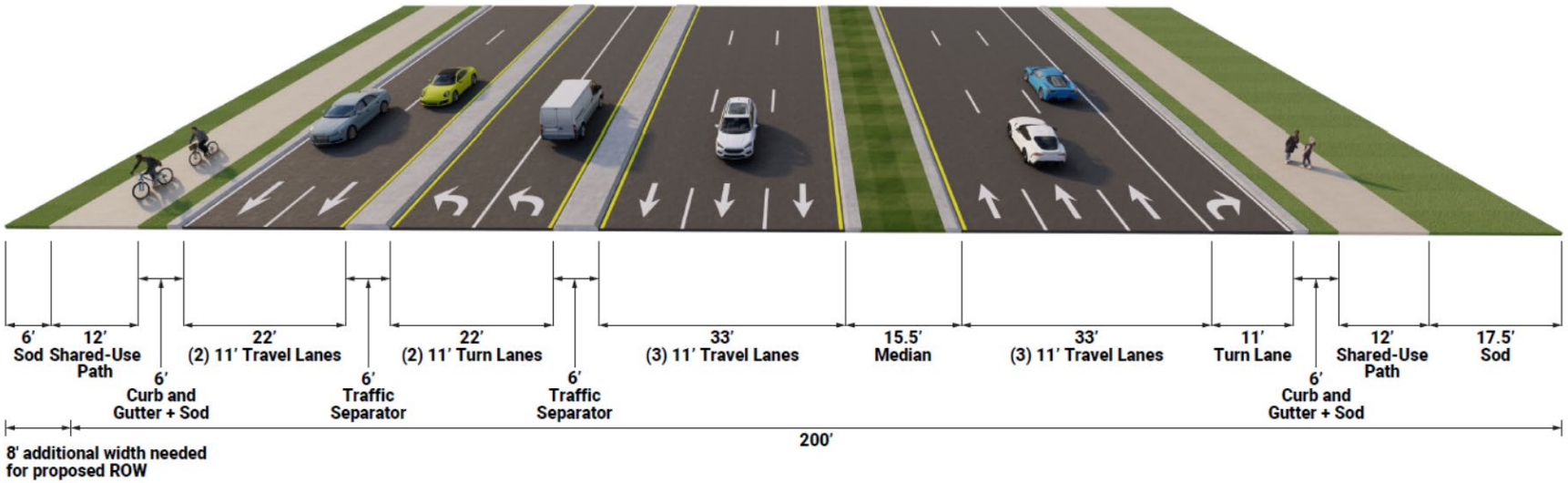


Figure 69: South Leg of US 41 and Bonita Beach Road Intersection

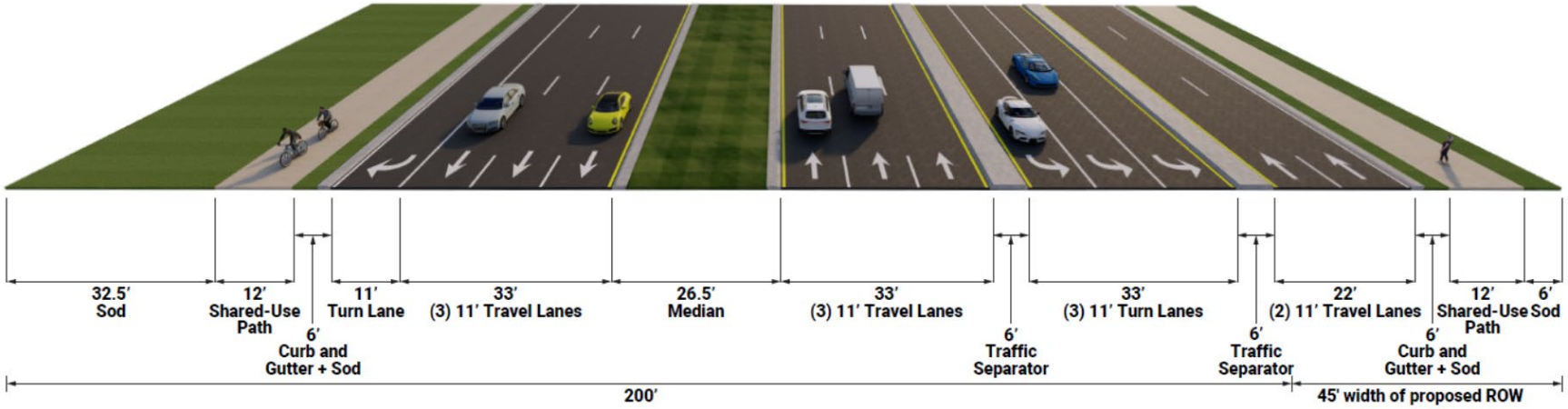


Figure 70: North Leg of US 41 and Bonita Beach Road Intersection

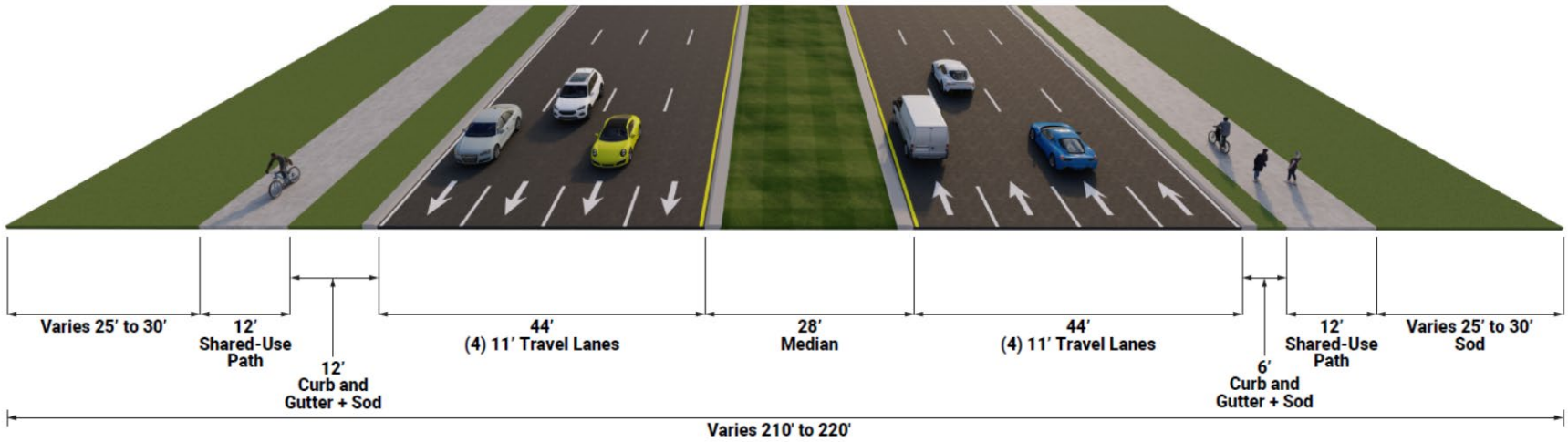


Figure 71: US 41 between Center of Bonita Springs and Imperial River Boat Ramp

7.1.2 Bonita Beach Road Roadway Characteristics

Bonita Beach Road has three unique cross sections through the study area: west of US 41, from US 41 to Arroyal Road, and from Arroyal Road to Spanish Wells Boulevard. The preferred alternative cross sections include the following roadway characteristics:

- West of US 41 (**Figure 72**) –
  - 6′ wide traffic separator;
  - Three 11′ travel lanes in each direction;
  - Three 11′ eastbound left turn lanes;
  - Two 11′ eastbound right turn lanes;
  - Type F curb and gutter outside of the travel lanes;
  - 4′ grass strip between the back of curb and shared-use paths;
  - 12′ wide shared-use paths on both sides of Bonita Beach Road;
    - Shared-use paths begin and end just east of the Center of Bonita Springs driveway (Sta. 267+00) and continue eastward to US 41.
  - 6′ landscape area between the back of the shared-use path and right-of-way line; and
  - An additional 30′ of right-of-way will be needed on Bonita Beach Road's south side to accommodate this cross section.
- East of US 41 (**Figure 73**) –
  - 7′ wide traffic separator;
  - Three 11′ travel lanes in each direction;
  - Two 11′ westbound left turn lanes;
  - Two 11′ westbound right turn lanes;
  - Type F curb and gutter outside of the travel lanes;
  - 4′ grass strip between the back of curb and shared-use paths; and
  - 12′ wide shared-use paths on both sides of Bonita Beach Road;
    - Shared-use paths are between US 41 and begin/end at Arroyal Road (Sta. 286+10);
  - Varies 4′ to 6′ landscape area between the back of sidewalk and right-of-way line; and
  - An additional 11′ of right-of-way will be needed on the north side and an additional 12′ of right-of-way will be needed on Bonita Beach Road's south side to accommodate this cross section.
- From Arroyal Road (Sta. 286+40) to Spanish Wells Boulevard (Sta. 301+00) (**Figure 74**) –
  - Varies 30′ to 40′ wide median with Type E curb and gutter;
  - Two 12′ travel lanes in the westbound direction;
  - Three 12′ travel lanes in the eastbound direction;

- Type F curb and gutter outside of the travel lanes;
- Varies 2′ to 30′ grass strip between the back of curb and sidewalk;
- 5′ wide sidewalk on both sides of Bonita Beach Road; and
- Varies 0′ to 20′ landscape area between the back of sidewalk and right-of-way line.

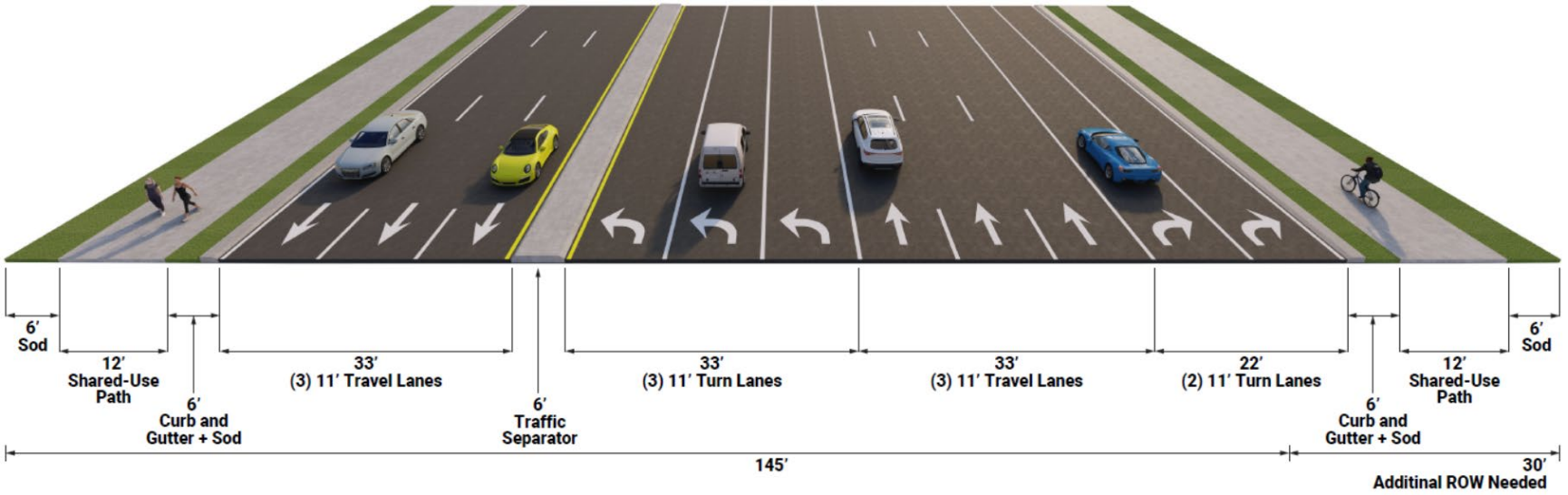


Figure 72: Bonita Beach Road – West of US 41

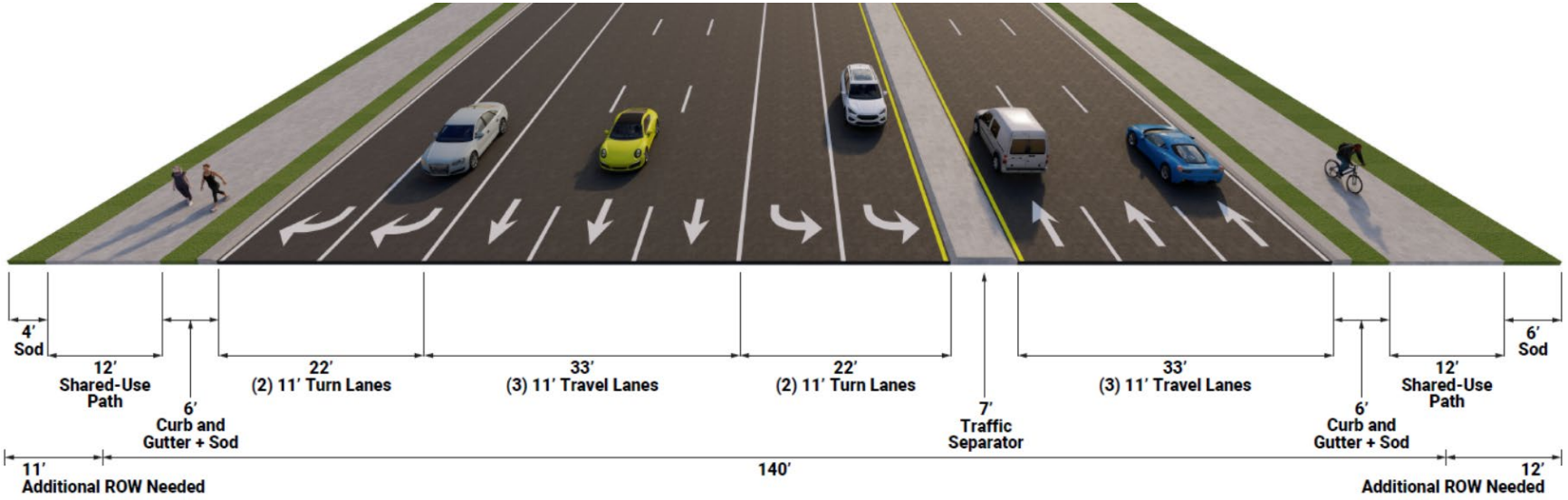


Figure 73: Bonita Beach Road – East of US 41

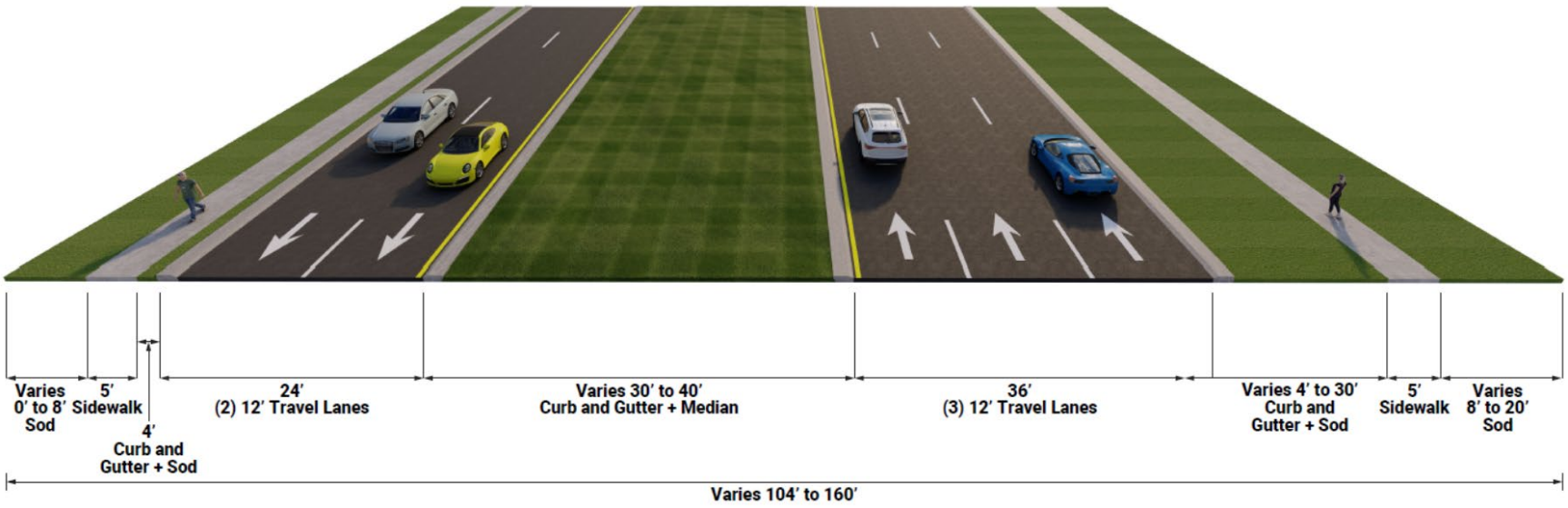


Figure 74: Bonita Beach Road from Arroyal Road to Spanish Wells Boulevard

7.1.3 Quadrant Roadway System

A new Northwest Quadrant Roadway from Bonita Beach Road at Windsor Road (Bonita Beach Road Sta. 260+00) to US 41 at the Center of Bonita Springs (US 41 Sta. 260+00) will be constructed by the City of Bonita Springs before the preferred alternative is planned to be constructed. The City's Northwest Quadrant Roadway design concept ties in at the existing US 41/Center of Bonita Springs intersection (US 41 Sta. 260+00) and is not making any improvements to this intersection. In the future condition, this intersection will not have enough capacity to accommodate the forecasted traffic demand, necessitating additional turn lane improvements on the intersection's west leg. As part of the preferred alternative, the Northwest Quadrant Roadway is being modified from the northwest corner of the Center of Bonita Springs Shopping Plaza to US 41. The roadway characteristics for this change is discussed below:

- Northwest Corner of the Center of Bonita Springs Shopping Plaza to US 41 (**Figure 75**):
  - Roadway is widened to develop a center median with varying width;
  - One 11' travel lane in each direction;
  - 6' sidewalk on the north side of the roadway;
  - 12' shared-use path on the south side of the roadway; and
  - New 11' westbound left turn lane into Center of Bonita Springs behind the Old Time Pottery building.
- West Leg at US 41 Intersection (**Figure 76**):
  - 4' concrete traffic separator;
  - One 11' eastbound right turn lane;
  - Three 11' eastbound left turn lanes;
  - One 11' westbound receiving lane;
  - Type F curb and gutter outside of the travel lanes;
  - Varies 0' to 4' grass strip between the back of curb and sidewalk/shared-use path;
  - 12' wide shared-use path on the south side;
  - 6' wide sidewalk on the north side; and
  - Varies 4' to 6' tie-back area between the back of sidewalk/shared-use path and proposed right-of-way line.

Tying into the east leg of this intersection is a new Northeast Quadrant Roadway proposed between US 41 and Arroyal Road, intersecting at Arroyal Road and Carolina Street. This will be a new three-lane roadway with two lanes eastbound and one lane westbound, as shown in **Figure 77**. The lane configuration at the US 41 intersection is discussed below:

- 4' concrete traffic separator (approximately 300' in length);
- One 11' westbound left turn lane;
- One 11' westbound right turn lane;
- Two 11' eastbound receiving lanes;

- 7′ buffered bicycle lanes in each direction;
- Type F curb and gutter outside of the buffered bicycle lanes;
- 3′ grass strip between the back of curb and sidewalk;
- 6′ wide sidewalks on both sides; and
- 2′ tie-back area between the back of sidewalk and proposed right-of-way line.

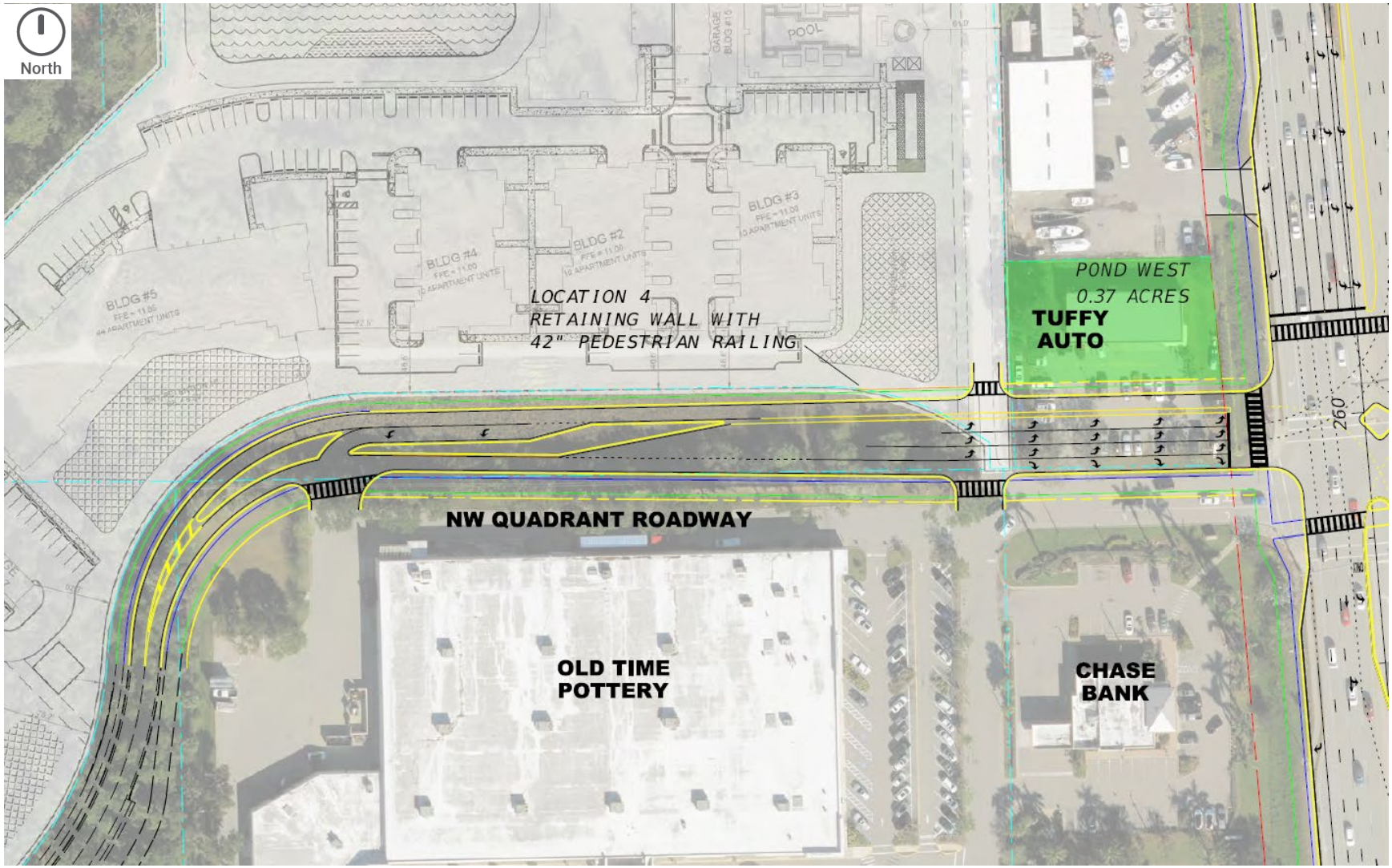


Figure 75: Northwest Quadrant Roadway Changes

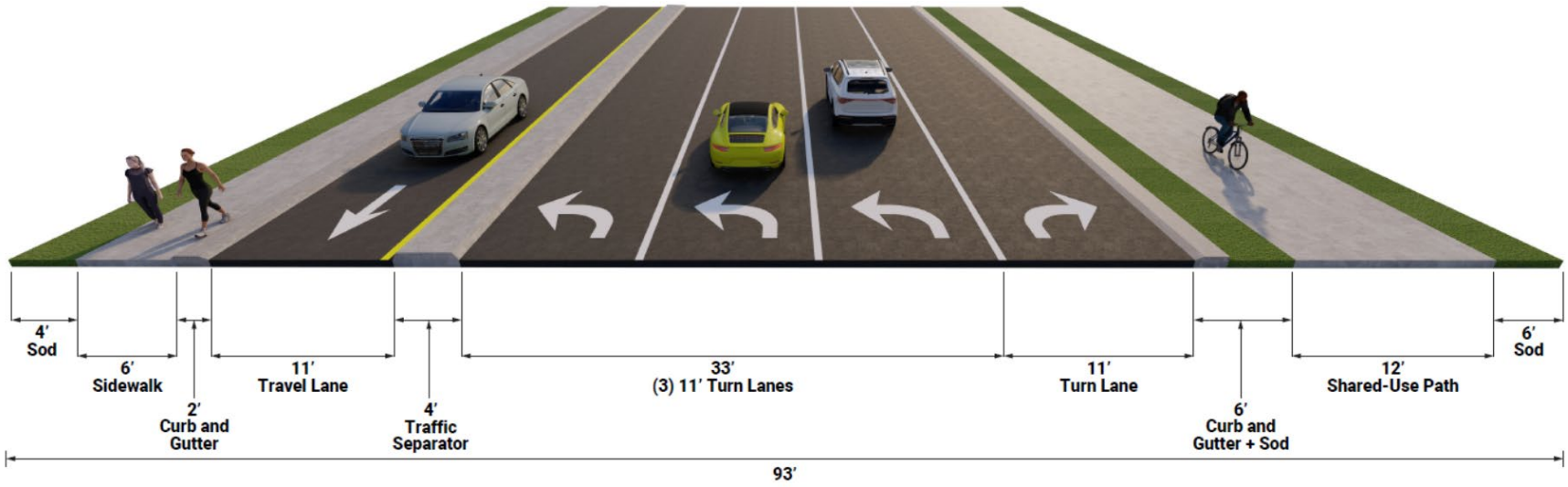


Figure 76: Northwest Quadrant Roadway – West Leg at US 41

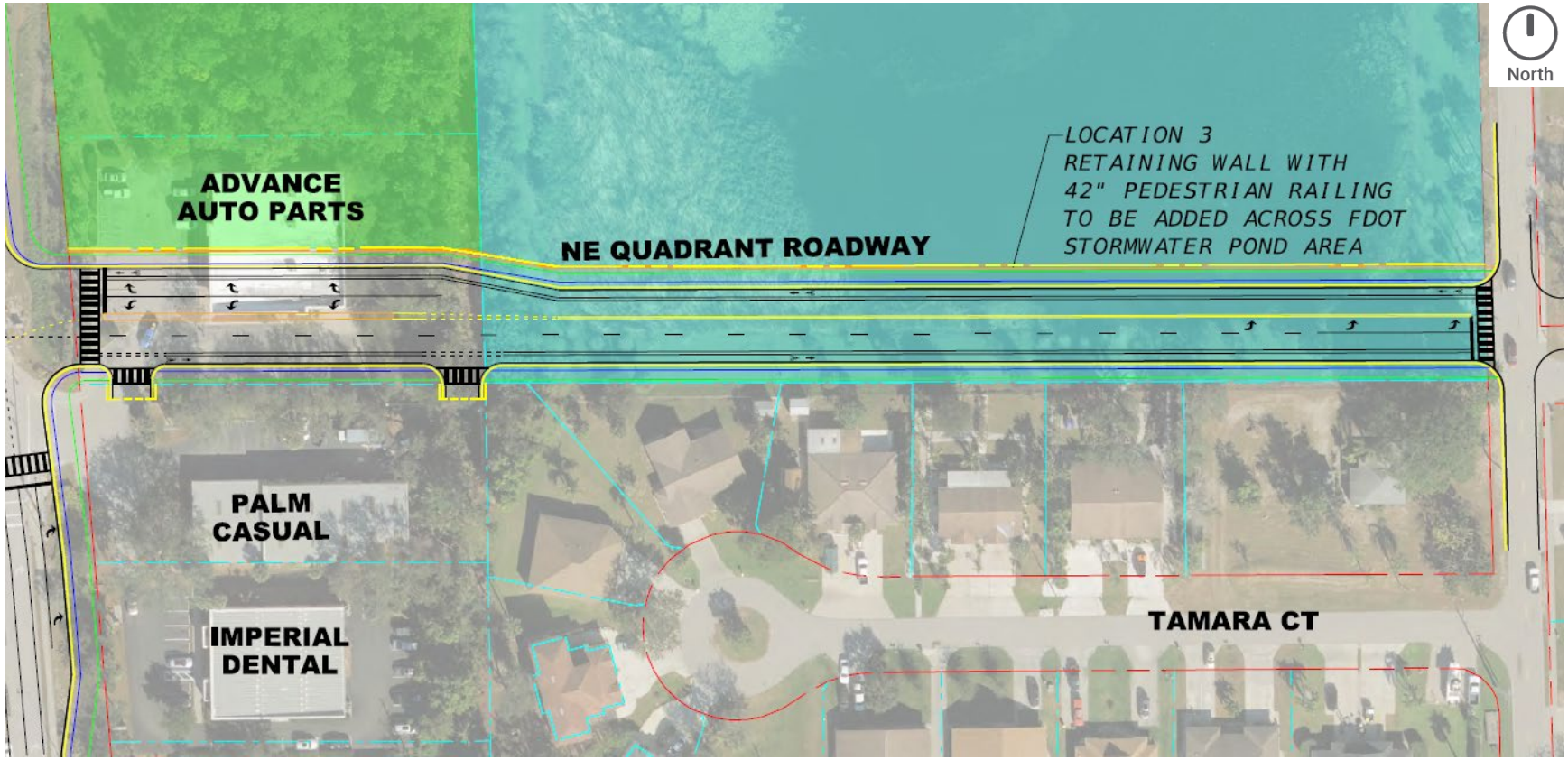


Figure 77: New Northeast Quadrant Roadway

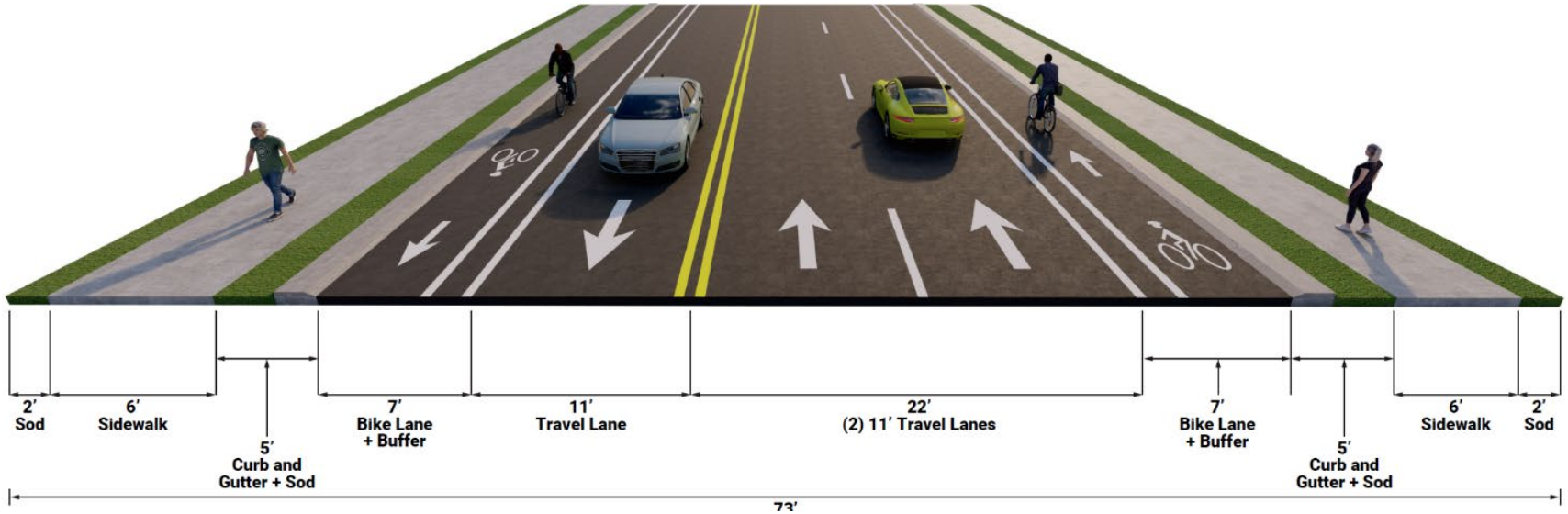


Figure 78: Northeast Quadrant Roadway Typical Section

7.2 Access Management

As noted in **Section 2.2.3**, the existing access management classification for US 41 is an Access Class 5 (Restrictive) facility (per Table 201.4.2 of the FDM) with an existing 50-mph posted speed limit. In the preferred alternative, US 41 is proposed to remain an Access Class 5 facility but the posted speed limit is proposed to be lowered to 45 mph, as discussed in **Section 0**. The following discusses the modifications to access along US 41 as part of the preferred alternative improvements:

- Foley Road (Sta. 222+75) being converted from a full median opening to a signalized intersection when signal warrants are met (discussed further in **Section 7.8**).
- Existing directional median opening at Sportsman's Wholesale Bonita Springs/Springs Plaza driveway (Sta. 233+00):
    - Northbound left turn access to Sportsman's Wholesale Bonita Springs will remain open but southbound left turn access to Springs Plaza will be removed, thus only right-in/right-out access will be provided.
- New signalized intersection at Southern "Crossover" Intersection (Sta. 239+00) (discussed further in **Section 7.8**).
- Existing driveway for the Aspen Dental (Sta. 241+00) will remain but be shifted to the west and connect to the relocated eastbound to southbound right turn lanes.
- New signalized intersection at Northern "Crossover" Intersection (Sta. 251+00) (discussed further in **Section 7.8**).
- Access for the Palm Casual/Imperial Dental properties will be moved from the original signalized intersection at the Center of Bonita Springs (Sta. 260+00) to a driveway connection along the Northeast Quadrant Roadway approximately 350' east of the US 41 signalized intersection.
- Existing driveway at The Lockup Self Storage (Sta. 266+50):
    - Proposed northbound directional median opening to provide left turn access to the planned Angler's Paradise driveway.

While Bonita Beach Road is a local roadway, the existing access management classification also most closely resembles an Access Class 5 (Restrictive) facility. No proposed changes to access or driveways are proposed along Bonita Beach Road as part of the preferred alternative.

7.3 Right-of-Way

The preferred alternative is anticipated to impact 18 parcels and requires approximately 3.5 acres of right-of-way for the roadway impacts. Stormwater impacts associated with the preferred alternative is anticipated to impact an additional six parcels for approximately 4.9 acres, as shown in **Table 32**. Of the 24 total parcel impacts, two are anticipated to require business relocations: The Tuffy Auto in the northwest corner and the AutoZone in the northeast corner of the US 41

intersection with the new proposed Northwest/Northeast Quadrant Roadway. The total right-of-way cost for the project (roadway and stormwater ponds) is estimated at $22,100,000.

Table 32: ROW Needs and Cost Estimates

Limits	Parcels Impacted	ROW Acreage	Pond + FPCA Acreage	Total ROW Acreage	Total ROW Cost Estimate
Displaced Left Turn Lane (Roadway Only)	18	3.5	0.0	3.5	$13,600,000
Displaced Left Turn Lane (Pond Sites)	6	0.0	4.9	4.9	$8,500,000
Totals	**24**	**3.5**	**4.9**	**8.4**	**$22,100,000**

The Conceptual Stage Relocation Plan (CSRP), located on the project file, provided a search for available commercial property within a 5 mile radius of the two business relocations. This search found a low supply of commercial property when focused on automotive repair shop and automotive parts store within the project area. The CSRP concluded finding comparable relocation sites may require increased assistance and coordination with business owners throughout the relocation process to provide profitable business operations after the relocation.

7.4 Design and Posted Speeds

As noted in **Section 4.2**, the preferred alternative concept was developed following the design criteria for a 45 mph roadway. While the existing design/posted speed along US 41 in the study area is 50 mph, the design/posted speed limit is proposed to be reduced to 45 mph to facilitate travel through the new PDLT intersection. The 45 mph posted speed is proposed for the following limits:

- Northbound from just south of Foley Road (Sta. 222+75) to just north of Riverview Center Boulevard, approximately ¼ mile north of the Imperial River Bridge.
- Southbound from just north of Riverview Center Boulevard to just south of Foley Road (Sta. 222+75).

7.5 Horizontal and Vertical Geometry

7.5.1 Horizontal Alignment

Ten horizontal curves are present along US 41 for the preferred alternative. The existing horizontal alignments and curves along Bonita Beach Road are recommended to be maintained. The horizontal curves along US 41 are associated with right turn movements at the intersection with Bonita Beach Road and the Southern/Northern "Crossover" Intersections. Data for the preferred

alternative curves can be seen in **Table 33** and are noted in the preferred alternative plan sheets provided in **Appendix H**.

Table 33: US 41 PDLT Horizontal Curves

Location	Length (FT)	Radius (FT)
Southern "Crossover" Intersection (NB Approach)	65′	160′
Southern "Crossover" Intersection (NB Receiving)	46′	140′
Southern "Crossover" Intersection (SB Approach)	80′	167′
US 41 and Bonita Beach Road Eastbound Right-Turn	90′	135′
US 41 and Bonita Beach Road Westbound Right-Turn	108′	143′
US 41 and Bonita Beach Road Northbound Right-Turn	164′	100′
US 41 and Bonita Beach Road Southbound Right-Turn	168′	100′
Northern "Crossover" Intersection (SB Approach)	50′	150′
Northern "Crossover" Intersection (SB Receiving)	66′	200′
Northern "Crossover" Intersection (NB Approach)	48′	164′

7.5.2 Vertical Alignment

As discussed in **Section 2.2.9**, as-built plans for both US 41 and Bonita Beach Road were reviewed and there is one 328 foot (100 meter) vertical curve present along US 41 as it approaches the Imperial River bridge. This vertical curve begins with an elevation of approximately 11.7 feet (3.6 meters) at Sta. 267+37 and ends with an elevation of approximately 14.7 feet (4.5 meters) at Sta. 270+65, for a total elevation change of 3 feet (0.9 meters). It is recommended the proposed vertical alignment matches the existing vertical alignment where possible. However, profile adjustments may be needed to maintain positive drainage where existing grades fall below 0.30 percent, which is the minimum allowed grade on 45 mph curbed roadways according to FDM Section 210.10.1.1. In areas where profile adjustments may be necessary, it is recommended to "rock" the grade as needed to facilitate the drainage patterns.

7.6 Design Variations and Design Exceptions

No design variations or exceptions are proposed for this project.

7.7 Multi-Modal Accommodations

7.7.1 Bicycle and Pedestrian Accommodations

As discussed in **Section 7.1**, the following pedestrian/bicycle facilities are proposed as part of the Preferred Alternative:

- 6′ sidewalks are proposed on the south end of the corridor:
  - In the northbound direction from Foley Road (Sta. 222+75) to Springs Plaza (Sta. 232+50); and
  - In the southbound direction from just south of Access Road (Sta. 237+00) to Foley Road (Sta. 222+75).
- 7′ on-street buffered bicycle lanes are proposed on the south end of the corridor:
  - In the northbound direction from Foley Road (Sta. 222+75) to just north of Springs Plaza (Sta. 234+50).
  - In the southbound direction from just south of Access Road (Sta. 237+00) to Foley Road (Sta. 222+75).
- 12′ shared-use paths are proposed on both sides of US 41:
  - In the northbound direction from Springs Plaza (Sta. 232+50) to just north of the Imperial River Boat Ramp (Sta. 271+00).
  - In the southbound direction from just north of the Imperial River Boat Ramp (Sta. 271+00) to just south of Access Road (Sta. 237+00).
- 12′ shared-use paths are proposed on both sides of Bonita Beach Road between the east side of the Center of Bonita Springs signalized intersection (Sta. 267+00) and the west side of the Arroyal Road signalized intersection (Sta. 286+00).

7.7.2 Trail Accommodations

The OGT and the Lee County MPO have identified trail opportunities in the vicinity of the US 41 and Bonita Beach Road study intersection. The Coastal Loop Trail is a spur loop from the Southwest Coastal Regional Trail, which is part of the larger Shared-Use Nonmotorized (SUN) Trail Program. This is a planned loop trail that begins at the Southwest Coastal Regional Trail in Bonita Springs, travels along Bonita Beach Road to the barrier islands, then travels through Fort Myers Beach and southern Fort Myers before connecting back to the Southwest Coastal Regional Trail east of US 41 in Fort Myers. Through discussions with Lee County MPO, no future funding has been dedicated for Coastal Loop Trail improvements in the vicinity of the US 41 and Bonita Beach Road intersection as per the date of this report.

7.7.3 Transit Accommodations

As discussed in **Section 6.1.5** and shown in **Appendix G**, LeeTran reviewed the bus stops within the study area in relation to the preferred alternative PDLT concept. Based on this review, the following transit accommodations are proposed and shown on the PDLT concept in **Appendix H**:

- US 41 – shown in **Figure 79**:
  - Relocate the southbound bus stop in front of the Wendy's approximately 550' south to be in front of the Kentucky Fried Chicken (KFC) so it is outside of the Southern "Crossover" Intersection influence area.
  - Add a new northbound bus stop in front of the McDonald's creating a complimentary bus stop to the southbound bus stop.
  - Install a mid-block crossing with a Pedestrian Hybrid Beacon (PHB) to connect the relocated southbound bus stop and new northbound bus stop.
  - No bus stops are located north of Bonita Beach Road in the study area.
- Bonita Beach Road:
  - The two eastbound bus stops east of US 41 are being shifted approximately 20' south to accommodate the third eastbound through lane.
  - The one westbound bus stop east of US 41 will remain in the same location.
  - No bus stops are located west of US 41 within the study area.

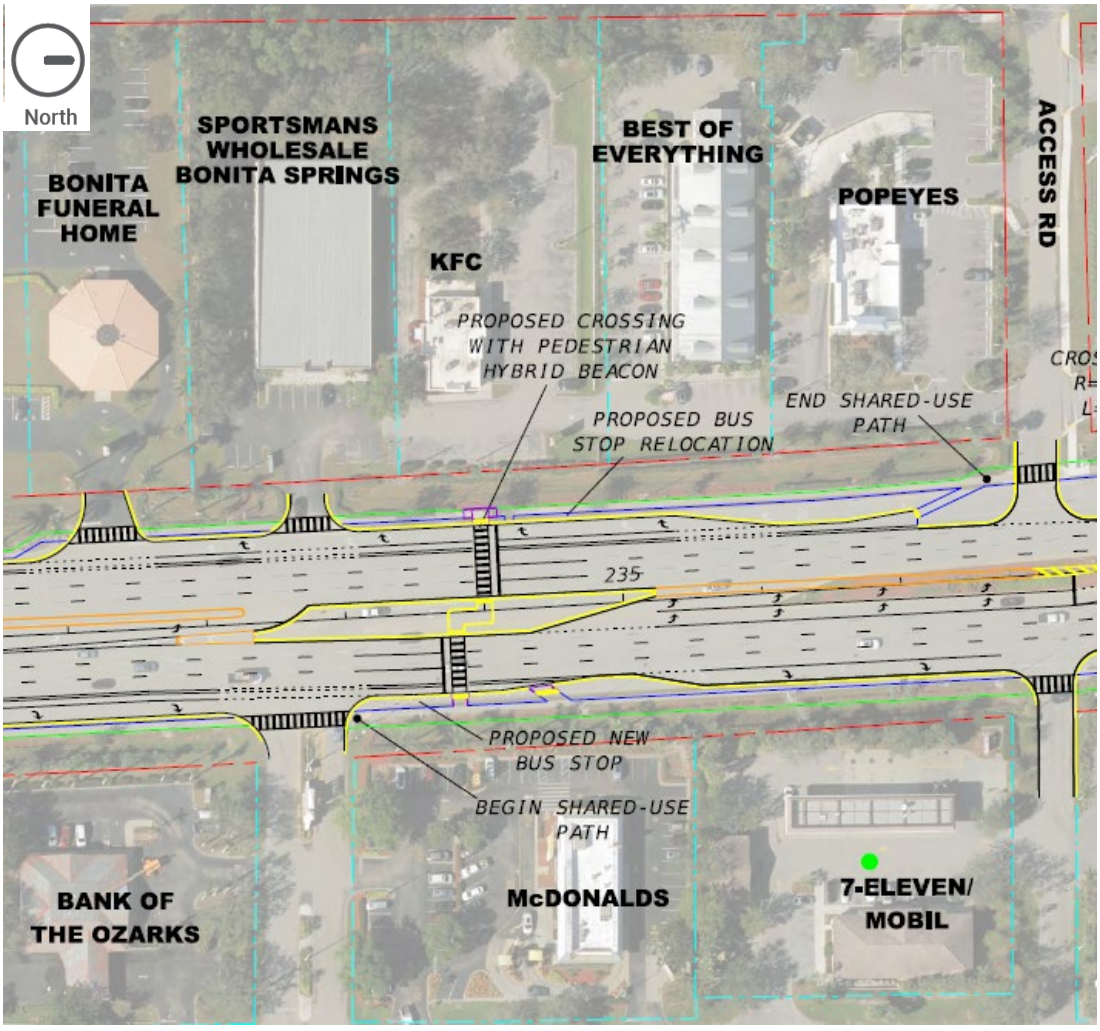


Figure 79: US 41 New Transit Stop Locations and Crossing with PHB

7.8 Intersection Concepts and Signal Analysis

Outside of the main US 41/Bonita Beach Road intersection and "Crossover" intersections (discussed in detail in **Section 7.1**), additional intersection improvements throughout the study area are proposed as part of the preferred alternative:

- US 41 and Foley Road (Sta. 222+75) – *Sheet 2 in* ***Appendix H***
  - Signalization (when signal warrants are met);
  - Change eastbound approach from a shared through-left turn lane and exclusive right turn lane to an exclusive left-turn lane and shared through-right turn lane; and
  - Formalize westbound approach to include an exclusive left-turn lane and shared through-right turn lane.
- US 41 and Center of Bonita Springs (Sta. 260+00) – *Sheet 5 in* ***Appendix H***
  - Converting the signalized intersection to a "thru-cut" signal. A thru-cut intersection restricts through movements from the minor street typically due to operational conditions (e.g., low number of through movements) and/or geometric constraints. In this case, the west leg is being widened from two lanes to five lanes (four eastbound approach lanes and one westbound receiving lane) and the east leg is being widened from two lanes to four lanes (two westbound approach lanes and two eastbound receiving lanes);
  - A fourth lane is being added in the northbound/southbound directions along US 41 through the intersection; and
  - Additional southbound left turn lane.
- Bonita Beach Road and Center of Bonita Springs (Sta. 266+40) – *Sheet 7 in* ***Appendix H***
  - Additional eastbound receiving lane (three receiving lanes total).
- Bonita Beach Road and Arroyal Road (Sta. 286+40) – *Sheet 9 in* ***Appendix H***
  - Additional exclusive westbound right turn lane;
  - Additional eastbound through lane (three lanes total); and
  - Change southbound approach from an exclusive left/through/right turn lane configuration to dual left turn lanes and a shared through-right turn lane.

Using the existing and relocated fiber optic cable along both US 41 and Bonita Beach Road, the aforementioned signals should be interconnected with the signals associated with the US 41 and Bonita Beach Road intersection.

7.9 Tolled Projects

No tolling facilities are proposed as part of this project.

7.10 Intelligent Transportation System and TSM&O Strategies

The PDLT preferred alternative is a type of TSM&O strategy requiring complex intersection coordination/signal operations to move vehicles efficiently and effectively. The primary feature of a PDLT intersection is displacing left turn movements on an approach to the other side of the opposing traffic flow, also known as a "crossover" movement. With this "crossover" intersection comes a different type of signal coordination that is needed for the three signals associated with these intersections. The various signal phases of the PDLT are discussed in this section and shown in **Figure 80**.

In the initial PDLT phase, the Bonita Beach Road left turn movements receive the green light while also getting the green light as a through movement at the adjacent "crossover" intersections. During the second phase, the "crossover" intersections left and right turn movements are green to allow queueing for the northbound and southbound left turn lanes at the main intersection. This phase also accommodates the Bonita Beach Road through movements. The third and final phase, US 41's through and left turn movements are given the green light and are able to operate simultaneously. The northbound/southbound through movements for the "crossover" intersections are also green during this phase.

The existing mid-day peak hour cycle length at US 41 and Bonita Beach Road (180 seconds) was maintained in the future No-Build and Build conditions. The existing PM peak hour cycle length at US 41 and Bonita Beach Road was adjusted from 200 to 210 seconds for the future conditions. Cycle lengths at all signalized study intersections were adjusted as needed to align with the cycle length used at the US 41 and Bonita Beach Road intersection. Signal timings were optimized at all study intersections for future No-Build and Build conditions based on 2050 volume conditions. The 2050 optimized timings were applied to the 2030 timings to maintain consistency in the analysis. Split timings were optimized to reduce volume to capacity (V/C) ratios and maintain V/Cs below 1.0 where possible. The US 41 and Bonita Beach Road Displaced Left-Turn signal timings included the adjacent crossover intersections on US 41 when optimizing. Also, the northbound and southbound left turn movements operate concurrently with the northbound and southbound through movements, thus these left turn movements do not have separate signal timings. The signal timing output sheets are provided in **Appendix J**.

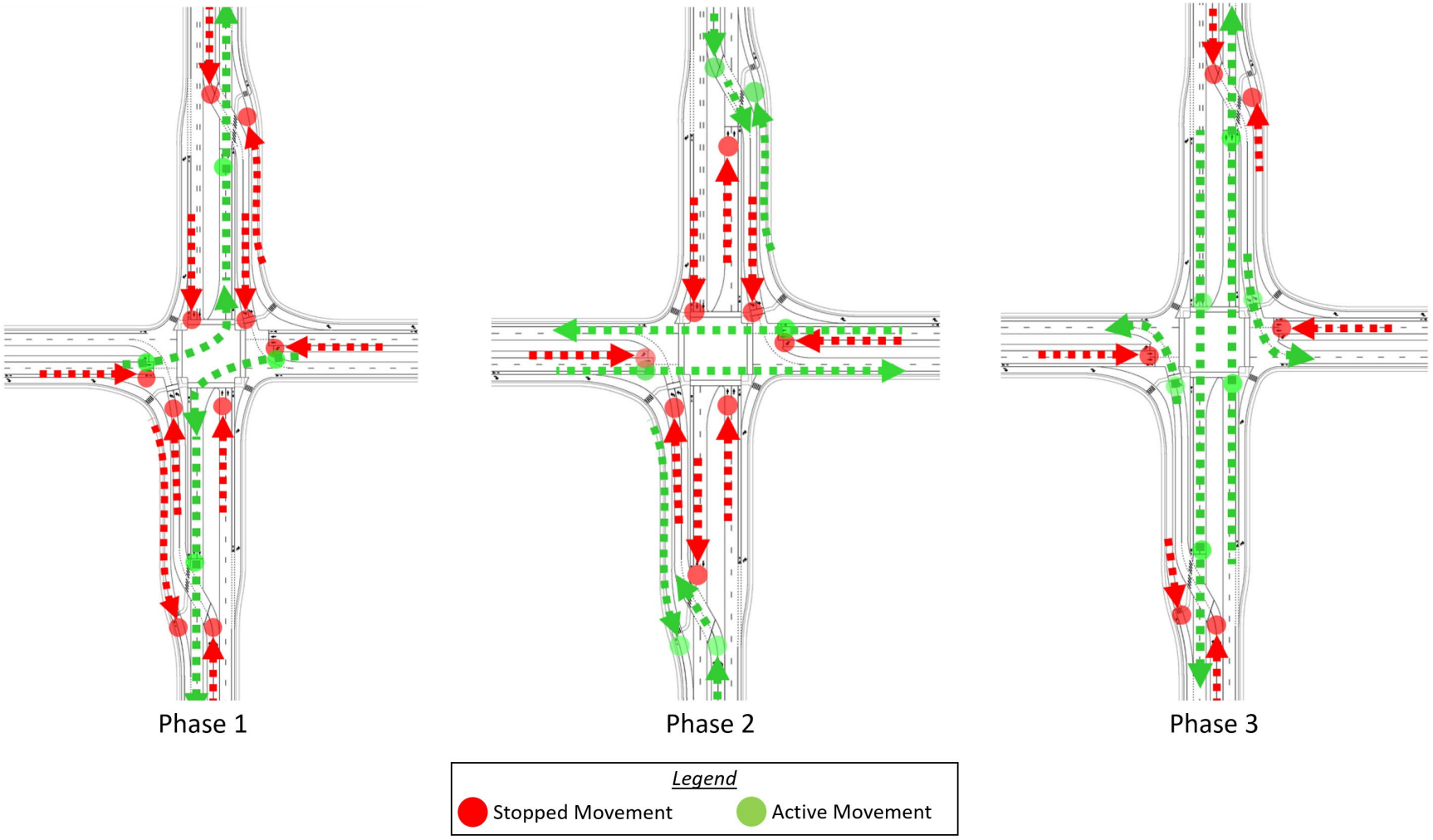


Figure 80: PDLT – PDLT Signal Phases

7.11 Landscape

No specific landscape features are proposed as part of this project. The project is anticipated to impact the existing landscaping within FDOT's right of way. Currently there is landscaping including royal palms and shrubbery beds within all four quadrants of the intersection, as well as trees within the existing medians along US 41. The project is anticipated to remove a portion of this landscaping to accommodate the preferred alternative.

7.12 Lighting

As noted in **Section 2.2.19**, decorative roadway lighting is present along US 41 and intersection lighting is provided along Bonita Beach Road. As part of the preferred alternative, the decorative lighting should be enhanced to provide intersection level lighting at all signalized intersections and the new pedestrian crossing location on US 41 south of the southern PDLT "Crossover" intersection. This is to improve night-time safety within the study area by following the guidance in FDM Section 231.3.2.1 and Table 231.2.1.

A lighting study based on the preferred alternative should be performed where existing roadway lighting is present to assess whether existing lighting placement is acceptable or if lighting needs to be relocated. Potentially relocating lighting along US 41 to focus on the PDLT will help drivers and pedestrians navigate the intersection's unfamiliar maneuvers during nighttime conditions.

7.13 Wildlife Crossings

No wildlife crossings are proposed as part of this project.

7.14 Permits

Permit applications are reviewed by regulatory agencies for their consistency with regulatory criteria and/or the project's effect on resources (e.g., wetland function, protected species, and their habitats). During the permit application process, the lead regulatory agencies may request input from other agencies to review that the project will not adversely impact a regulated or protected resource under their purview. For protected species, a species-specific permit may be required prior to issuance of the environmental permit. The following is a list of anticipated permits needed from state and federal agencies for the proposed project:

- General State 404 Permit (62-331.248);
- National Pollutant Discharge Elimination System Permit;
- Individual Environmental Resource Permit; and
- Gopher Tortoise Relocation Permit.

7.15 Drainage and Stormwater Management Facilities

7.15.1 Preferred Pond Alternatives

The stormwater runoff from the project limits will be collected and conveyed via curb and gutter to the recommended pond alternative for each basin. The various pond alternatives consist of dry retention ponds, wet detention ponds, and dry linear swales. The ponds will discharge at or near the same locations carrying the existing condition roadway runoff, or directly into canals where appropriate. The proposed ponds have been sized to achieve the required water quality treatment and water quantity attenuation and serve as a budget tool for the project's right-of-way estimation. The following offsite pond sites are preferred and are shown on the preferred alternative concept plans in **Appendix H**:

- Windsor Road/Northwest Quadrant Basin:
    - Pond West – Pond West will serve as pre-treatment for the Basin North improvements. Portions of the improvements to the Northwest Quadrant Roadway proposed by this study and to Basin North will be routed to Pond West to assist in meeting nutrient loading requirements. Pond West is located west of US 41 at approximately Sta. 261+00 (LT.). The pond will encompass a total of 0.37 acres of the impacted parcel's remnant area.
- Basin West:
    - Stormwater runoff from Basin West will maintain the existing outfall to Beaumont Drive's ditch to the south. Additional proposed areas will be collected within the storm sewer system along US 41 and conveyed and accounted for within the proposed Pond North expansion as part of Basin North.
- Basin East:
    - Pond East Alternative 1 (Dry Retention Swale) – Pond East Alternative 1 would serve as the treatment and attenuation for Basin East. Alternative 1 is located south of Bonita Beach Road from approximately Sta. 286+50 (RT.) to Sta. 293+10. This swale is located within the existing roadway right-of-way. Preliminary sizing calculations indicate that the right-of-way can accommodate a 30-foot-wide swale and requires a length of approximately 660'. The swale will outfall to the concrete box culvert underneath Bonita Beach Road at the same location as the basin's existing condition outfall.
- Basin North:
    - Pond North – Pond North will serve as Basin North's primary treatment and attenuation pond. The pond's southern end will be impacted by the proposed Northeast Quadrant Roadway, thus it will be expanded west. Preliminary pond sizing calculations indicate this pond will need to be expanded approximately 3.66 acres. This pond will maintain the existing outfall to the Imperial River.

For more information on the preferred stormwater ponds, please refer to the *SR 45 (US 41) at Bonita Beach Road PD&E Study Pond Siting Report*.

7.15.2 Arroyal Mall Pond

The proposed improvements to the US 41 and Bonita Beach Road intersection will have impacts to the existing Arroyal Mall Pond, permitted under SFWMD Permit No. 36-00863-S. The canal running adjacent to US 41 from the concrete box culvert crossing at Bonita Beach Road north to the Arroyal Mall Pond would need to be enclosed to accommodate the PDLT. Volumetric impacts to the Arroyal Mall Pond from the addition of the PDLT are anticipated to be approximately 0.25 ac-ft. These impacts can be offset by re-grading the southern and western pond berms, which will provide approximately 0.33 ac-ft of added volume.

7.15.3 Box Culvert Analysis

Preliminary box culverts' analysis was performed in HY-8 using available permit information. The proposed extensions, including the enclosure of the canal north of Bonita Beach Road, found minimal impacts to the canal's upstream stages. The canal's flows, stage data, and culvert information were obtained from the existing Arroyal Mall permit. The maximum stage increases determined from the proposed culvert extensions and enclosure were 0.01 ft (50-year storm), 0.02 ft (100-year storm), and 0.04 ft (500-year storm). The hydraulic analysis compares the double 8'x4' CBC going from 165' in the existing condition to 220' in the preferred alternative and the single 10'x7' CBC going from 130' in the existing condition to 500' in the preferred alternative.

7.16 Floodplain Analysis

According to the FEMA FIRMs, northern portions of the proposed quadrant roadway lie within Zone AE of the 100-year floodplain. The Base Flood Elevation (BFE) of the site has been determined to be at the elevation of 9.0 feet NAVD upstream of the bridge over the Imperial River and 10.0 feet NAVD downstream of the bridge.

It was concluded that the project will impact approximately 8.20 ac-ft of floodplain based on the proposed intersection and quadrant roadway improvements. According to the Lee County Flood Insurance Study (FIS), the floodplain within the limits of this study are under tidal influence. Per coordination with SFWMD, floodplain compensation is not required for impacts to floodplains within tidal limits. Although not required to provide floodplain compensation in the stormwater pond, the expansion of the existing FDOT stormwater pond (Pond North) to meet treatment and attenuation requirements for the project, has the added benefit to also provide floodplain compensation. The expansion of the pond was not to provide floodplain compensation, but to meet the stormwater requirements for the project.

It was determined that the floodplain encroachment is classified as "minimal." Minimal encroachments on a floodplain occur when there is a floodplain involvement but impacts on

human life, transportation facilities, and natural and beneficial floodplain values are not significant and can be resolved with minimal efforts.

In conclusion, the following floodplain statement is a slightly modified version of statement Number 4 in the FDOT PD&E Manual (Part 2, Chapter 13 "Floodplains") tailored for this project:

"The proposed structures and stormwater management systems will perform hydraulically in a manner equal to or greater than the existing condition, and backwater surface elevations are not expected to significantly increase. As a result, there will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or in emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant."

Refer to the *SR 45 (US 41) at Bonita Beach Road PD&E Study Location Hydraulics Report* for more information.

7.17 Bridge and Structure Analysis

7.17.1 Box Culvert Extensions

There are two existing concrete box culverts within the project limits, one underneath US 41 and another underneath Bonita Beach Road, both serving the same canal system. The 8'x4' double barrel culvert located underneath US 41 approximately 570' south of Bonita Beach Road is proposed to be extended by approximately 45' for a total length of 220'. The 10'x7' single barrel culvert located underneath Bonita Beach Road approximately 120' east of US 41 is proposed to be extended by approximately 370' for a total length of 500'. Each of these box culvert extensions are identified in the preferred alternative concept plans in **Appendix H**.

7.17.2 Proposed Retaining Walls

Retaining walls will be required at multiple locations where the proposed roadway improvements impact existing stormwater ponds and canals. These locations include:

- Location 1 – Along existing drainage canal along east side of US 41 just south of Bonita Beach Road.
- Location 2 – Along existing Arroyal Mall Treatment Pond east of US 41 just south of the US 41 and Crown Lake Boulevard intersection.
- Location 3 – Along the proposed Northeast Quadrant Roadway between Arroyal Road and US 41 adjacent to existing FDOT stormwater pond and proposed pond extension.
- Location 4 – Along the Northwest Quadrant Roadway adjacent to stormwater pond on Angler's Paradise development approximately 400' west of US 41.

Each of the retaining walls would be directly adjacent to pedestrian/bicycle facilities thus 42" pedestrian bullet railing is proposed on top of each retaining wall. The locations of the proposed new retaining walls are shown in the preferred alternative concept plans in **Appendix H**.

7.17.2.1 Location 1

At the first location, the proposed shared-use path outside of the US 41 northbound right-turn lane at Bonita Beach Road encroaches into the existing canal right-of-way. The encroachment places the edge of the proposed shared-use path within the western canal bank limiting access for canal maintenance and could impact the embankment's stability. To limit the impacts to the existing canal and required right-of-way, a 525' long wall is proposed along the east side of US 41 adjacent to the dual right-turn lanes. Based on the proximity of the canal to the proposed work, an anchored sheet pile retaining wall is assumed for the purposes of this report. The exact type of wall (e.g., cantilevered, anchored, soldier-pile) and material (e.g., steel or concrete) will be determined during the design phase since it is dependent on multiple factors including soil properties, exposed wall height, and existing/proposed subsurface utilities and drainage.

7.17.2.2 Location 2

At the second location, the proposed dual right-turn lanes from westbound Bonita Beach Road to northbound US 41 not only require the existing drainage canal to be enclosed in a proposed box culvert, but the turn lanes encroach into the existing Arroyal Mall Treatment Pond located southeast of the US 41 and Crown Lake Boulevard intersection. To limit the impacts to the existing pond and required right-of-way, a 300' long wall is proposed along the east side of US 41 adjacent to the dual right-turn lanes north of the extended 10'x7' box culvert. Since the wall will be partially submerged, a bulkhead or sheet pile wall is proposed to limit in-water work and potential dewatering activities. Similar to Location 1, an anchored steel sheet pile wall is assumed for the purposes of this report.

7.17.2.3 Location 3

At the third location, the proposed Northeast Quadrant Roadway encroaches into the existing FDOT stormwater pond. To limit the impacts to the existing pond and required right-of-way, a 1,000' long wall is proposed along the north side of the roadway. Since the wall will be partially submerged, a bulkhead or sheet pile wall is proposed to limit in-water work and potential dewatering activities. Similar to the other locations, an anchored steel sheet pile wall is assumed for the purposes of this report.

7.17.2.4 Location 4

The fourth location is a proposed 25' long toe berm gravity wall adjacent to a dry retention pond on the Angler's Paradise development, approximately 400' west of US 41 along the Northwest Quadrant Roadway. It is anticipated half of the wall will be buried and the other half will retain the side slope between the back of sidewalk and the dry retention pond.

7.17.3 Noise Barrier

Of the 57 analyzed sites, the noise level at one special land use (SLU) site is predicted to approach or exceed the noise abatement criteria (NAC) for the design year 2050 Build Alternative. All other sites were predicted to not meet or exceed applicable NAC because of the project. Noise barriers were analyzed and considered to abate project-related impacts to the playground affiliated with the Noah's Ark Academy located in the northeast corner of the US 41 and Bonita Beach Road intersection. The special use barrier analysis results indicate that a barrier could potentially provide reasonable and feasible noise abatement for the impacted receptor. The proposed noise barrier would be 8' in height and approximately 290' in length. This noise barrier is identified in the preferred alternative concept plans in **Appendix H**.

7.18 Transportation Management Plan

The US 41 and Bonita Beach Road proposed PDLT is going to be a complex construction project. This is due to the need to shift bicycle lane traffic off the roadway prior to constructing the right turn lanes and to shift the right turn lanes prior to building the PDLTs, especially near the northeast and southeast corners of the intersection. Also, existing medians need to be removed and paved, so traffic can be shifted as part of maintenance of traffic (MOT) activities. The existing number of traffic lanes will always be provided during construction (except for possible overnight lane closures) so no detours will be necessary. Access to driveways and businesses, as well as sidewalk access on at least one side of each roadway, will always be maintained during all phases. Pedestrian Longitudinal Channelizing Devices (PLCD) will be used for pedestrian rerouting and Plastic Drums will be used to delineate opposing traffic until permanent islands are installed in later phases.

7.19 Constructability

The general sequence of construction for the proposed alignment changes and widening is detailed below and illustrated in **Appendix K**:

Phase I: Install MOT devices. Remove medians and install pavement during overnight lane closures. Proposed medians and traffic separator to be constructed in later phases unless otherwise noted. Add temporary striping during overnight hours to all legs of traffic to allow shifting of traffic away from the southwest and northeast corners of the intersection. Prepare the northeast corner of the intersection for the construction of permanent elements by relocation existing utilities and building the box culvert in this quadrant. Construct proposed paths in southwest and northeast corners, one corner at a time to allow for rerouting of pedestrian travel. When existing sidewalks need to be closed, re-route pedestrians using FDOT standard plans index 102-660.

Phase II: Shift pedestrians and bicyclists to newly constructed paths. Adjust plastic drums and PLCDs. Construct ponds. Construct proposed right turn lanes and widening in southwest and northeast corners. Construct the new Northwest and Northeast Quadrant Roadways. Construct temporary traffic signals for the Southern and Northern "Crossover" locations.

Phase III: Adjust plastic drum devices, add temporary striping during overnight hours. Shift right turn traffic to newly constructed right turn lanes. Construct widening for DLT, concrete islands in the southwest and northeast corners and construct traffic separator (between DLT and northbound traffic lanes, section north of proposed crosswalk in the northeast corner).

Phase IV: Add temporary striping for new DLT lanes. Open DLTs to traffic. Construct proposed shared use path and curb and gutter in southeast corner of intersection, reroute pedestrians using FDOT standard plans index 102-660 as needed. Remove temporary traffic signals.

Phase V: Relocate plastic drum devices during overnight lane closures. Construct right turn lane in southeast corner and sidewalk/curb and gutter in the northwest corner.

Phase VI: During overnight lane closure, complete construction of remaining proposed curb and gutter/traffic separators. Mill and resurface remaining pavement and temporary restripe for final lane configurations.

Phase VII: Remove MOT devices. Place final striping.

7.20 Construction Impacts

Impacts resulting from the construction of the proposed project are discussed below:

- Based on the existing land use within the limits of this project, construction of the proposed roadway improvements may have temporary noise and vibration impacts. It is anticipated that the application of the ***FDOT Standard Specifications for Road and Bridge Construction*** will minimize or eliminate most of the potential construction noise and vibration impacts. However, should unanticipated noise or vibration issues arise during the construction process, the Project Manager, in concert with FDOT's Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.
- Construction activities may cause short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts will be minimized by adherence to applicable state regulations and to applicable ***FDOT Standard Specifications for Road and Bridge Construction***.

- Specific Best Management Practices (BMPs) during construction will follow the standard Stormwater Pollution Prevention Plan (SWPPP) and Erosion Control Plans to be developed by the contractor. BMPs will also follow guidelines established in the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (June 2007, updated July 2013).
    - BMPs will consist of both stabilization and structural practices to manage and control stormwater runoff during construction. Stabilization practices will include artificial covering such as turf or sod (temporary condition) and asphalt or concrete surface, and sod (permanent condition). Structural practices for temporary construction site BMPs include sediment barriers (such as perimeter silt fence and turbidity barriers), inlet protection systems and sediment containment systems. These BMPs are further discussed in Section V "Temporary Construction Site BMPs" in the Erosion and Sediment Control Manual.
- Construction activities near canals will require temporary erosion control measures such as staked and floating turbidity barriers (as appropriate). Temporary drainage shall be maintained during all aspects and phases of construction.
- Species and habitat protections are discussed in **Section 1.3**.
- Maintenance of traffic and access impacts are discussed in **Section 7.19**.
- Access to businesses along US 41 and Bonita Beach Road shall be maintained during normal business hours.
- Roadway lighting levels need to be maintained or enhanced at temporary and permanent pedestrian crosswalks.

7.21 Special Features

As discussed in **Section 7.17**, retaining walls are needed along multiple canals due to impacts from the PDLT. Detail on these retaining walls is provided in that section. The nearly 500' long box culvert is also a special feature that will need to be accounted for during construction. A noise wall is also proposed along Bonita Beach Road in the northeast corner of the US 41 intersection.

7.22 Utilities

Based on information provided by the UAOs, the existing utilities identified on the project were evaluated and potential utility impacts due to the preferred alternative were quantified.

Table 34 outlines the preferred alternative potential utility impacts. To minimize existing utility's impacts to the fullest extent possible, mitigation measures would be taken during the project's design phase. If impacts are unavoidable, design alternatives would be reviewed to allow for impacted facilities relocation in a manner minimizing cost to the UAO and minimizing customer disruption.

No utility companies have indicated that they have easements within the project limits at the time of the *Utility Assessment Package*. Accordingly, the utility relocations presented within the *Utility Assessment Package* would be at the expenses of the utility. Utility coordination should be performed during the design phase of the project to confirm there are no unknown utility easements or potential reimbursable relocations present on the project.

Table 34: Potential Utility Impacts and Relocation Costs

Utility Company	Utility Contact	Description
Bonita Springs Utilities, Inc.	Peter Rim; prim@bsu.us; 239-390-4973	• Existing 12″ water line along the north side of Bonita Beach Road • Existing 12″ sewer force main crossing Bonita Beach Road at Beaumont Road and Meadowlark Lane • Existing 12″ water Line going north along the east side of US 41 • Two out-of-service mains on the south side of Bonita Beach Road
CenturyLink/ Lumen	Zach Miller; zach.x.miller@lumen.com ; relocations@lumen.com; 239-281-5128	• BFO on the east and west side of US 41 and the north side of Bonita Beach Road • BT on the east side of US 41 and the south side of Bonita Beach Road • Conduit System on the east side of US 41 and both sides of Bonita Beach Road • Handholes, manholes, and PEDs on both sides of US 41 and Bonita Beach Road
City of Bonita Springs	Joel Langaney; joel.langaney@cityofbonitasprings.org; 239-949-6242	• Decorative Street Lighting on both sides of Bonita Beach Road • Irrigation along the median
Comcast	Xavier Medina; xavier_medina@comcast.com; 239-671-5713	• Existing COAX-BTV, FOC-BTV North and South of Bonita Beach Road • Existing OTV north of Bonita Beach Road
Crown Castle Fiber	Danny Haskett; danny.haskett@crowncastle.com; 786-246-7827	• Existing 1.5″ HDPE Conduits and handholes south of Bonita Beach Road • Existing 1.5″ HDPE Conduits and handholes west of US 41
Florida Power and Light	Michael Martinez; michael.martinez@fpl.com; 239-353-6047	• Existing 23 kV OE on west side of US 41 • Existing 23 kV BE on north and south side of Bonita Beach Road • Existing 23 kV OE on north side of Bonita Beach Road

Utility Company	Utility Contact	Description
Lee County – Traffic	James Fencil; jfencil@leegov.com; 239-707-4870	• Existing BFOC on the north side of Bonita Beach Road • Existing BFOC on the west side of US 41 south of Bonita Beach Road and on the east side north of Bonita Beach Road • Existing Traffic Signals at the intersection of Bonita Beach Road and Arroyal Road, Bonita Beach Road and US 41, and Bonita Beach Road and 620 LF E of Windsor Road
Summit Broadband Inc.	James Yeakey; james.yeakey@summitbb.com; 239-571-5910	• Existing buried FOC on the north and south side of Bonita Beach Road
TECO Peoples Gas	Alex McFarlane; amcfarlane@tecoenergy.com; 813-275-3783	• Existing 8" gas main on the east side of US 41 • Existing 4" PE Gas Main North of Bonita Beach Road

7.23 Cost Estimates

Table 35 displays the construction cost estimates for the preferred alternative PDLT. The maintenance of traffic (MOT) was calculated as 15 percent of the base construction cost and mobilization (MOB) was calculated as 10 percent of the base construction cost + MOT cost. The project unknowns were calculated as 5 percent of the base construction cost + MOT cost + MOB cost. A contingency of $150,000.00 was also included in the project unknowns. As displayed in the table, the project's total construction cost is approximately $41.7 million.

Table 35: US 41 at Bonita Beach Road Construction Cost Estimates

Base Const. Cost	MOT	MOB	Project Unknowns	Total Const. Cost
$31,280,000	$4,690,000	$3,600,000	$2,130,000	$41,700,000

The total estimated project cost, as shown in **Table 36**, displays the total construction cost, the wetland mitigation cost, the anticipated right-of-way cost, the design cost (funding set aside in the FDOT Work Program), and the CEI cost (calculated as 10 percent of the total construction cost) for the PDLT. The Long Range Estimates (LREs) for the preferred alternative are included in **Appendix L**.

Table 36: US 41 at Bonita Beach Road Total Project Cost Estimates

Cost Element	Cost
Total Construction Cost	$41,700,000
Wetland Mitigation Cost	$300,000
ROW Cost	$22,100,000
Design Cost	$3,500,000
CEI Cost	$4,170,000
Total Project Cost	**$71,770,000**

Appendix A – Transit Information

EVOLVE

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LeeTran – Lee County Transit

COMPREHENSIVE OPERATIONS ANALYSIS

November 2020

PREPARED BY

Tindale Oliver

Route 600 – Coconut Point / Immokalee Road

Route 600 is LeeTran's regional connection to Collier County. This route operates on weekdays, Saturday, and Sunday from the Creekside Transfer Center to Coconut Point Mall.

Segment Time Points

1	2	3	4	5	6
Coconut Point Mall	US-41 & Bernwood	Old 41 & Reynolds	US-41 & Bonita Beach	US-41 & Wiggins Pass	Creekside Transfer Center

Route 600 – Coconut Point / Immokalee Road



	Weekday	Saturday	Sunday
Span	6:00 AM – 7:19 PM	6:00 AM – 7:19 PM	7:35 AM – 4:25 PM
Headway	90 Minutes	90 Minutes	120 Minutes

Pros/Cons

- Route 600 is the only fixed route that provides service to Collier County, as well as the Creekside Transfer Center.
- Route 600 operates slightly below the LeeTran on-time performance system average on weekdays, Saturday, and Sunday.
- On-time performance is likely impacted by the length of the route and congestion near the Creekside Transfer Center.

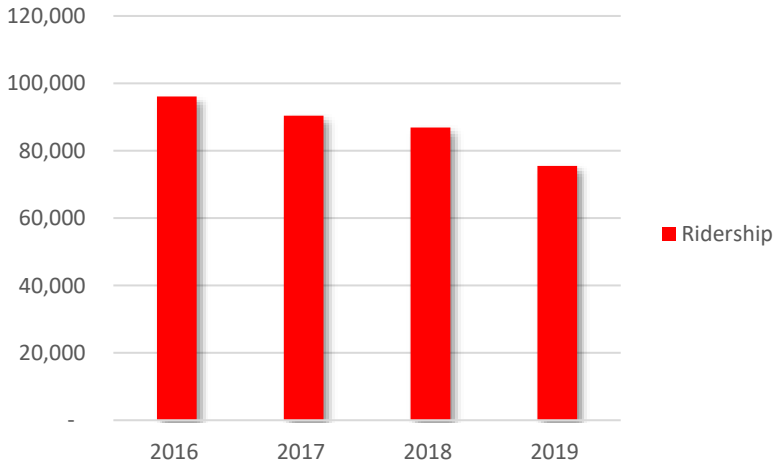
Activity Centers/Uses

- Coconut Point Mall, Creekside Transfer Center, Bonita Springs City Hall, Publix

FY 2019	Ridership	VOMS	Revenue Miles	Operating Expense
	75,473	1	79,065	$567,510

Ridership Trend

The following figure shows Route 600 ridership by year from 2016 to 2019.



Route 600
Rutas / Wout yo

Legend
Leyenda / Lejand

- Interline Locations
- Transfer Location
- Publix
- Shopping Center
- Library
- Place of Interest



ULTRA On Demand Transit

A service provided by **LeeTran**

With LeeTran's ULTRA On-Demand Transit service, a deluxe multi-person vehicle will take you anywhere within the service area. Available seven days a week from 7:00 am to 6:00 pm, LeeTran's new curb-to-curb ULTRA On-Demand service allows riders to request a ride as needed!

Con el servicio ULTRA On-Demand Transit de LeeTran, un vehículo de lujo para varias personas lo llevará a cualquier lugar dentro del área de servicio. Disponible los siete días de la semana a partir de las 7:00 a.m. a las 6:00 p.m., el nuevo servicio a pedido ULTRA de puerta a puerta de LeeTran permite a los pasajeros solicitar un viaje según sea necesario!

For more information visit

Leegov.com/leetran/ultra

4 WAYS TO PAY
4 MANERAS DE PAGAR / 4 FASON POU PEYE



The **TropiCard** is a durable card that can be purchased at LeeTran Headquarters, Rosa Parks Transportation Center or any LeeTran ticket vending machine. Manage your TropiCard account at **MyTropiCard.com**

La **TropiCard** es una tarjeta duradera que se puede comprar en la sede de LeeTran, el centro de transporte Rosa Parks o en cualquier maquina expendedora de boletos de LeeTran. Administre su cuenta de Tropicard en **MyTropiCard.com**

TropiCard la se yon kat ki dirab ou ka achte nan biwo jeneral LeeTran, Rosa Parks Transportation Center oswa nan nenpòt lòt distribitè otomatik tikè LeeTran. Ou ka jere kont TropiCard ou a nan **MyTropiCard.com**



The **LeeFare app** can be downloaded through the Apple or Android stores. The app is a standalone payment option that requires only a mobile device for use.

La aplicación **LeeFare** se puede descargar a través de las tiendas de Apple o Android. La aplicación es una opción de pago independiente que solo requiere un dispositivo móvil para su uso.

Ou ka telechaje **aplikasyon LeeFare** la nan app store Apple oswa Android. Aplikasyon an se yon opsyon pou pèman otonòm kote ou senpleman bezwen yon aparèy mobil pou itilize l.



Limited Use Passes are available in single or multi-trip/day options. They can be purchased at LeeTran Headquarters, Rosa Parks Transportation Center or any LeeTran ticket vending machine.

Limited Use Passes están disponibles en opciones de uno o varios viajes/día. Se pueden comprar en las oficinas centrales de LeeTran, en el centro de transporte de Rosa Parks o en cualquier máquina expendedora de boletos de LeeTran.

Limited Use Passes disponib nan opsyon vwayaj sen oswa plizyè vwayaj nan yon jounen. Ou ka achte yo nan biwo jeneral LeeTran, Rosa Parks Transportation Center oswa nan nenpòt lòt distribitè otomatik tikè LeeTran.



Cash is still accepted on all buses. Remember, the fare box does not provide change so make sure you have the exact fare amount.

Todavía se acepta **efectivo** en todos los autobuses. Recuerde, el cuadro de tarifa no proporciona cambio, así que asegúrese de tener el monto exacto de la tarifa.

Yo toujou aksepte **lajan kach** nan tout otobis yo. Sonje bwat kote w depoze lajan an apa bay monnen kidonk asire w ou gen montan egzat pou vwayaj la.

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Route 600
Rutas / Wout yo

- Coconut Point
- Creekside Transfer Center

Monday - Sunday
Lunes - Domingo

Serving the following areas
Sirviendo las areas siguientes

- Coconut Point
- Downtown Bonita
- Creekside Transfer Center
- Riverside Park
- Bonita City Hall

Transfer Points Puntos de Transferencia	Adjoining Routes Lineas Colindantes
Coconut Point Mall	240, 140 Sun. Only
Creekside	rideCAT COLLIER AREA TRANSIT 11, 12, 27

Connects to ULTRA Service Area



Suggested App
Planning your trip • Managing your fare account
Tracking buses in real-time

LeeFare

LeeTran

Route 600
Rutas / Wout yo



Transit Fares
Tarifas de Pasaje
Tarif tranzit

Adult Fare	$1.50
Discount Fare	$0.75
Children Ages 6 and Under	FREE

Monday - Saturday Service

SOUTHBOUND

Interlined Route & Times	1 Coconut Point Mall	2 US 41 & Bernwood	3 Old 41 Rd & Reynolds	4 US 41 & Bonita Beach	5 US 41 and Wiggins Pass	6 Immokalee & Creekside
240	5:45	5:54	6:01	6:09	6:11	6:26
240	6:55	7:05	7:12	7:20	7:22	7:38
240	7:55	8:05	8:12	8:20	8:22	8:38
240	8:55	9:06	9:14	9:23	9:25	9:41
240	9:55	10:05	10:11	10:20	10:22	10:38
240	10:55	11:05	11:11	11:20	11:22	11:38
240	11:55	**12:05**	**12:12**	**12:21**	**12:23**	**12:39**
240	**12:55**	**1:05**	**1:12**	**1:21**	**1:23**	**1:39**
240	**1:55**	**2:05**	**2:12**	**2:21**	**2:23**	**2:39**
240	**2:55**	**3:05**	**3:12**	**3:20**	**3:22**	**3:39**
240	**3:55**	**4:05**	**4:12**	**4:20**	**4:22**	**4:39**
240	**4:55**	**5:04**	**5:10**	**5:18**	**5:20**	**5:36**
240	**5:55**	**6:04**	**6:10**	**6:18**	**6:20**	**6:36**
240	**6:55**	**7:04**	**7:10**	**7:18**	**7:20**	**7:36**
240	**7:55**	**8:03**	**8:08**	**8:14**	**8:16**	**8:25**

NORTHBOUND

6 Immokalee & Creekside	5 US 41 and Wiggins Pass	4 US 41 & Bonita Beach	3 Old 41 Rd & Reynolds	2 US 41 & Bernwood	1 Coconut Point Mall	Interlined Route & Times
6:45	6:52	6:58	7:05	7:14	7:20	240
7:45	7:52	7:58	8:06	8:14	8:20	240
8:45	8:52	8:58	9:06	9:14	9:20	240
9:45	9:53	9:58	10:07	10:16	10:23	240
10:45	10:53	10:58	11:07	11:16	11:23	240
11:45	11:53	11:58	**12:07**	**12:16**	**12:23**	240
12:45	**12:53**	**12:58**	**1:06**	**1:16**	**1:22**	240
1:45	**1:53**	**1:58**	**2:07**	**2:18**	**2:24**	240
2:45	**2:53**	**2:58**	**3:07**	**3:18**	**3:24**	240
3:45	**3:53**	**3:57**	**4:06**	**4:16**	**4:23**	240
4:45	**4:52**	**4:57**	**5:05**	**5:14**	**5:20**	240
5:45	**5:52**	**5:57**	**6:05**	**6:14**	**6:20**	240
6:45	**6:52**	**6:57**	**7:05**	**7:13**	**7:19**	240
7:45	**7:52**	**7:57**	**8:05**	**8:13**	**8:19**	240
8:45	**8:52**	**8:57**	**9:05**	**9:13**	**9:19**	240

Sunday Service

SOUTHBOUND

1 Coconut Point Mall	2 US 41 & Bernwood	3 Old 41 Rd & Reynolds	4 US 41 & Bonita Beach	5 US 41 and Wiggins Pass	6 Immokalee & Creekside
7:26	7:39	7:46	7:54	7:56	8:13
8:58	9:10	9:17	9:25	9:27	9:41
10:30	10:41	10:48	10:56	10:58	11:10
12:00	**12:11**	**12:18**	**12:26**	**12:28**	**12:42**
1:30	**1:41**	**1:48**	**1:56**	**1:58**	**2:11**
3:05	**3:15**	**3:21**	**3:28**	**3:29**	**3:43**
4:32	**4:43**	**4:50**	**4:58**	**5:00**	**5:12**

NORTHBOUND

6 Immokalee & Creekside	5 US 41 and Wiggins Pass	4 US 41 & Bonita Beach	3 Old 41 Rd & Reynolds	2 US 41 & Bernwood	1 Coconut Point Mall
8:18	8:25	8:31	8:39	8:47	8:53
9:47	9:55	10:00	10:09	10:18	10:25
11:16	11:24	11:29	11:38	11:47	11:54
12:47	**12:55**	**1:00**	**1:08**	**1:18**	**1:24**
2:16	**2:24**	**2:29**	**2:38**	**2:49**	**2:55**
3:49	**3:57**	**4:01**	**4:10**	**4:20**	**4:27**
5:19	**5:26**	**5:31**	**5:39**	**5:48**	**5:54**

PM times are in **bold**. All times are approximate.

Interlined Routes

600 & 240 **NEW!**

Anyone taking the 240 to Immokalee Road will no longer have to get off the bus and transfer at Coconut Point. This route now becomes the 600, without the need to transfer buses at Coconut Point Mall, stop #11755. This is also true the opposite way. The 600 becomes the 240 at Coconut Point Mall, stop #11755.

Cualquiera que tome la ruta 240 hasta Immokalee Road ya no tendrá que bajarse del autobús y hacer transbordo en Coconut Point. Esta ruta ahora se convierte en la ruta 600, sin necesidad de transbordar autobuses en Coconut Point Mall, parada #11755. Esto también es cierto al revés. La ruta 600 se convierte en la ruta 240 en Coconut Point Mall, parada #11755.

CAT Fares

	Reduced Fare	Full Fare
Children 5 years and younger	FREE	FREE
One way fare	$1.00	$2.00
Transfer - Up to 90 minutes	FREE	FREE
Day pass	$1.50	$3.00
Marco Express one way fare	$1.50	$3.00

CAT Smart Card Passes

	Reduced Fare	Full Fare
Smart Card	$2.00	$2.00
15 Day pass	$10.00	$20.00
30 Day pass	$20.00	$40.00
Marco Express 30 Day pass	$35.00	$70.00

CAT Discount Passes

	Cost
Summer Paw Pass (All Students) June 1st-August 31st	$30.00
30 - Day Corporate Pass (300 + Employees)	$29.75/mo.

Reduced Fares are for members of Medicare, Disabled Community, those 65 years and older, Youth 17 and under, students and active/retired military personnel. ID required.

Discount Fares

Identificaciones de Transporte / Tarif rabè

LeeTran fare discount ID cards enable people 65 years of age or older, individuals with disabilities, and full-time students to ride at a reduced fare. Photo ID Tropi-Cards are made at the Rosa Parks Transportation Center, 2250 Widman Way, Fort Myers. Seniors must show proof of age; people with disabilities must show medical certification; and students must show proof of school enrollment.

Las tarjetas de identificación con descuento de tarifa de LeeTran permiten que las personas de 65 años o más, con discapacidades y estudiantes de tiempo completo viajen a una tarifa reducida. Las tarjetas TropiCards de identificación con foto se hacen en el Centro de Transporte de Rosa Parks, 2250 Widman Way, Fort Myers. Las personas mayores deben mostrar prueba de edad; las personas con discapacidades deben mostrar una certificación médica y los estudiantes deben mostrar un comprobante de inscripción escolar.

Kat idantifikasyon pou tarif rabè LeeTran nan pèmèt moun ki gen 65 an oswa plis, ki gen andikap, ak etidyan aplentan yo pou yo vwayaje avèk tarif ki redui. Yo fè idantifikasyon foto TropiCards yo nan Rosa Parks Transportation Center. 2250 Widman Way, Fort Myers. Moun aje yo dwe montre prèv laj yo; moun ki gen andikap yo dwe montre sètifikasyon medikal; epi elèv yo dwe montre prèv yo enskri nan lekòl.

Bus Passes

Pases de Autobús
Pas pou otobis yo

	Regular Adult	Senior/ Disabled Discount	Student Discount
31-Day Passes	$40	$23	$25
7-Day Passes	$15	$11	$12
12-Trip Passes	$13.50	$6.50	$6.75
All Day Pass	$4		
3-Day Trolley Pass	$4		



Holiday Service

Los Servicios en los Días Feriados
Sèvis nan jou ferye

There is no LeeTran service on the following holidays:

- **New Year's Day**
- **Labor Day**
- **Memorial Day**
- **Thanksgiving**
- **4th of July**
- **Christmas Day**

No hay servicio para los autobuses de LeeTran en los siguientes Días Feriados:

- Año Nuevo
- El Dia del Trabajo
- Dia Conmemorativo
- El Dia del Acción de Gracias
- El 4 de julio
- Navidad

Pa gen sèvis LeeTran nan jou ferye ki pral site la yo:

- Joudlan
- Jou Travay
- Jou Souvni
- Aksyondegras
- 4 Jiyè
- Nwèl

3 Ways to Pay



- **Uber App**
- **Call In Card Over The Phone**
- **Cash**

Comments or questions?

Call 239-533-8726 or go to Leegov.com/leetran/ultra



LT230310168

We have exciting news for Lee County transit users in the Bonita area!

ULTRA

On Demand Transit

A service provided by **LeeTran**



With LeeTran's ULTRA On-Demand Transit service, a deluxe mini-bus will take you anywhere within the service area. Available seven days a week from 7:00 am to 6:00 pm, LeeTran's new curb to curb ULTRA on-demand service allows riders to request a ride as needed! No more planning rides days or weeks in advance and no more waiting at busy bus stops in the Bonita service area. This new service is available to anyone and on a first-come, first-served basis. This service will utilize UBER's scheduling and tracking platform so you can see where your vehicle is in real-time!



Frequently Asked Questions:

What are the Ultra Hours of operation? 7:00 a.m. to 6:00 p.m. Monday through Sunday.

What is the latest I can make a trip request? The latest trip request is 5:30pm. Service for ULTRA ends at 6:00 pm.

Where can I ride with ULTRA service? Our ULTRA service zone map clarifies the area of available service where you can schedule curb-to-curb service at your convenience through the Ultra service.

How is Ultra service different from the standard LeeTran fixed-route service? Ultra is an on-demand transit service that allows riders to arrange pickups within the designated service zone. This service differs from traditional fixed-route service as riders no longer need to travel to a specific bus stop along a defined bus route at a particular time in order to catch a ride with public transit. Ultra service allows riders to request a ride at their convenience and track vehicles in their area.

How do I know when a driver will be picking me up? You will be able to track the vehicle using the Uber app. If you allow notifications through the Uber app, you will also receive updates as the driver nears your location.

Can I change my pick-up location after I have made my request? You cannot change your existing ride. However, you can cancel your ride and book a new ride that suits your pick-up location or destination. If the driver has already confirmed your pick up, you could incur a $2.00 cancellation fee.

How much does it cost to ride? Ultra fares are $1.50 each way.

How do I pay? There are a variety of ways to pay for your ULTRA ride! You can pay via the Uber app using the app's checkout features. You may also pay by phone while making a request through our customer service center at 239-533-8726 Option 7. You may also pay with cash after making your trip request by phone.

How many carryon possessions can I bring with me on my ULTRA ride? Each rider can carry up to two bags on to the bus.

Is the Ultra service intended to replace LeeTran fixed route or Passport service? Ultra will not replace Passport services as those services will still be available to those who qualify. Ultra is designed to support LeeTran's fixed route services by connecting Lehigh Acres area riders to the 515 route as well as the route 110.

How will I recognize my Ultra ride? The Ultra vehicles are recognizable with distinctive graphics and branding. The Uber app also allows you to track the location of the vehicle assigned to pick you up.

Is there a discount trip cost for students and seniors? All ULTRA rides are a standard $1.50. There are no discounts for this service at this time.

How do I request a ride? The quickest and easiest way to request a ride is through the Uber app. You can also contact customer support at 239-533-8726 option 7 if you are unable to access the app.

Do children need to be in a car seat when riding? Children under the age of 5 are required to ride in a child seat provided by an accompanying adult. Parents are responsible for the safety of accompanying children and are asked to ensure seat belts are securely fastened while riding on an ULTRA bus.

Do children need to pay to ride? Children 6 and under ride free on Ultra with the accompanying purchase of an adult fare. Each additional child must have an accompanying adult fare to receive a free fare. You must request children rides through customer service in order to receive free fares for them. The Uber app will not wave children's fares at this time. Per the Uber guidelines, to have an Uber account and be able to request rides, a rider has to be at least 18 years of age. Anyone under that age must be accompanied by an adult 18 years of age or older on all rides.

What if I don't have a smartphone? You can request a pickup through our call center at 239-533-8726 Option 7

What if my scheduled pickup is in a gated community? All pickups will be made outside of gated communities, where public and private roads intersect, or at the clubhouse if it is within a reasonable distance to the entrance of the community. ULTRA will not be granted gate access.

Comments, concerns, questions? Call 239-533-8726 Option 7 or go to Leegov.com/leetran/ultra

LT230310168

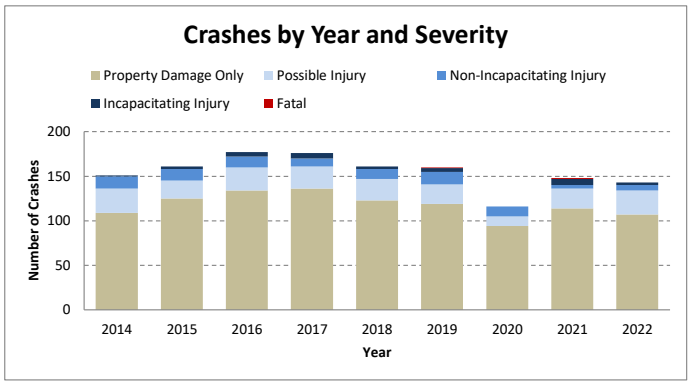
Appendix B – Crash Data

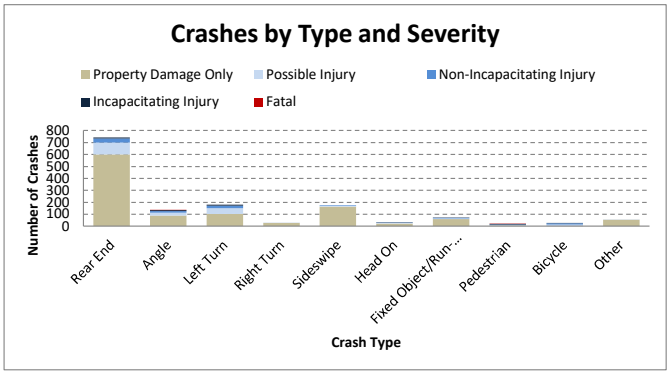
CRASH ANALYSIS - US 41 & Bonita Beach All Crashes in Study Area

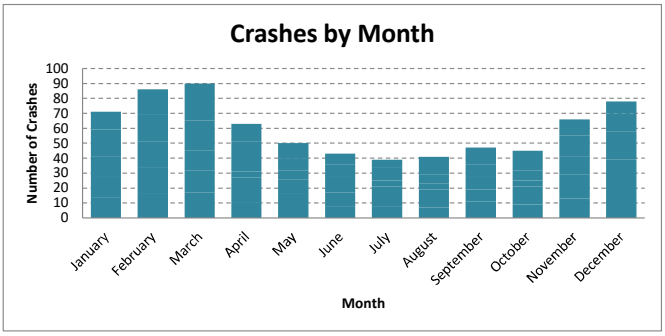
		Analysis Year*										Severity					Total	Annual Average*	Percent
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Property Damage Only	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal			
Type of Crash	Rear End	78	80	95	83	79	84	61	87	64	*33*	601	99	36	8	0	744	79.0	50.4%
	Angle	11	13	16	12	11	12	17	16	22	*7*	89	24	15	8	1	137	14.4	9.3%
	Left Turn	15	15	26	22	25	23	8	14	19	*14*	104	47	21	9	0	181	18.6	12.3%
	Right Turn	2	3	1	6	2	4	6	2	5	*0*	29	2	0	0	0	31	3.4	2.1%
	Sideswipe	16	24	10	20	20	14	17	19	19	*15*	163	8	3	0	0	174	17.7	11.8%
	Head On	10	2	4	3	2	3	0	1	2	*5*	22	8	1	1	0	32	3.0	2.2%
	Fixed Object/Run-Off Road	10	11	9	11	10	10	2	6	2	*3*	60	5	6	3	0	74	7.9	5.0%
	Pedestrian	1	4	2	3	3	5	0	0	2	*0*	5	5	5	4	1	20	2.2	1.4%
	Bicycle	1	1	3	4	6	3	1	1	2	*5*	2	13	11	1	0	27	2.4	1.8%
	Other	7	8	11	12	3	2	4	2	6	*1*	54	2	0	0	0	56	6.1	3.8%
	Total Crashes	**151**	**161**	**177**	**176**	**161**	**160**	**116**	**148**	**143**	*83*	**1,129**	**213**	**98**	**34**	**2**	**1,476**	**154.8**	**100.0%**
Crash Severity	Property Damage Only	109	125	134	136	123	119	94	114	107	*68*						1,129	117.9	76.5%
	Possible Injury	27	20	26	25	24	22	11	22	27	*9*						213	22.7	14.4%
	Non-Incapacitating Injury	14	13	12	9	11	14	11	4	6	*4*						98	10.4	6.6%
	Incapacitating Injury	1	3	5	6	3	4	0	7	3	*2*						34	3.6	2.3%
	Fatal	0	0	0	0	0	1	0	1	0	*0*						2	0.2	0.1%
Light Conditions	Daylight	104	122	135	141	122	127	98	110	121	*70*	892	159	75	23	1	1,150	120.0	77.9%
	Dusk	4	8	7	3	3	3	3	5	3	*2*	35	3	3	0	0	41	4.3	2.8%
	Dawn	3	1	4	1	1	3	2	2	0	*0*	15	1	1	0	0	17	1.9	1.2%
	Dark - Lighted	25	26	27	26	30	26	13	27	17	*8*	156	44	17	7	1	225	24.1	15.2%
	Dark - Not Lighted	2	4	4	4	4	1	0	3	2	*3*	17	4	2	4	0	27	2.7	1.8%
	Dark - Lighting Unknown	0	0	0	0	0	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Unknown	13	0	0	1	1	0	0	1	0	*0*	14	2	0	0	0	16	1.8	1.1%
Surface Condition	Dry	118	131	153	156	151	139	107	130	134	*79*	983	191	89	33	2	1,298	135.4	87.9%
	Wet	21	30	24	20	10	20	9	17	9	*4*	132	22	9	1	0	164	17.8	11.1%
	Other	12	0	0	0	0	1	0	1	0	*0*	14	0	0	0	0	14	1.6	0.9%
Month	January	14	14	19	25	22	14	13	18	12	*17*						168	16.8	11.4%
	February	16	18	16	24	19	19	17	18	17	*12*						176	18.2	11.9%
	March	17	15	23	22	19	24	13	20	25	*20*						198	19.8	13.4%
	April	10	17	21	16	13	11	4	20	12	*21*						145	13.8	9.8%
	May	16	10	15	10	7	9	6	8	10	*10*						101	10.1	6.8%
	June	8	9	10	10	4	13	11	8	7	*3*						83	8.9	5.6%
	July	8	13	12	7	11	8	4	9	5	*0*						77	8.6	5.2%
	August	7	12	17	6	9	10	4	6	12	*0*						83	9.2	5.6%
	September	11	8	6	11	11	10	9	8	11	*0*						85	9.4	5.8%
	October	9	12	9	9	17	12	4	7	13	*0*						92	10.2	6.2%
	November	13	16	14	22	11	17	12	14	11	*0*						130	14.4	8.8%
	December	22	17	15	14	18	13	19	12	8	*0*						138	15.3	9.3%
Day of Week	Monday	30	22	15	24	26	30	14	22	18	*13*	163	33	11	7	0	214	22.3	14.5%
	Tuesday	20	32	27	28	23	21	13	22	20	*16*	182	22	12	5	1	222	22.9	15.0%
	Wednesday	20	24	38	27	21	20	16	24	22	*13*	167	34	19	5	0	225	23.6	15.2%
	Thursday	28	22	33	30	25	30	19	27	24	*15*	200	31	17	5	0	253	26.4	17.1%
	Friday	24	29	25	29	34	20	24	25	26	*12*	192	38	12	6	0	248	26.2	16.8%
	Saturday	20	15	22	23	23	23	21	19	18	*10*	143	31	16	3	1	194	20.4	13.1%
	Sunday	9	17	17	15	9	16	9	9	15	*4*	82	24	11	3	0	120	12.9	8.1%
Hour of Day	0:00	0	1	1	2	2	1	0	3	0	*1*	4	5	1	1	0	11	1.1	0.7%
	1:00	2	0	0	1	0	0	0	1	1	*2*	4	2	1	0	0	7	0.6	0.5%
	2:00	1	1	0	1	0	0	0	0	0	*0*	1	1	1	0	0	3	0.3	0.2%
	3:00	0	0	0	0	0	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	4:00	0	0	0	2	0	0	0	0	0	*0*	1	0	1	0	0	2	0.2	0.1%
	5:00	1	1	0	0	1	0	0	0	1	*0*	1	2	0	1	0	4	0.4	0.3%
	6:00	3	2	4	3	1	3	4	0	2	*1*	12	7	3	1	0	23	2.4	1.6%
	7:00	6	2	5	3	5	10	4	6	1	*2*	31	7	5	0	1	44	4.7	3.0%
	8:00	4	5	5	4	10	2	2	8	8	*4*	41	5	4	2	0	52	5.3	3.5%
	9:00	8	8	11	10	7	8	3	6	8	*4*	53	15	4	1	0	73	7.7	4.9%
	10:00	11	14	4	10	9	7	11	6	9	*8*	64	11	13	1	0	89	9.0	6.0%
	11:00	11	9	10	11	12	7	15	12	9	*7*	86	12	2	3	0	103	10.7	7.0%
	12:00	18	15	13	18	15	16	12	12	16	*8*	112	21	5	5	0	143	15.0	9.7%
	13:00	13	12	13	24	12	13	12	15	16	*6*	113	16	5	2	0	136	14.4	9.2%
	14:00	11	13	13	19	14	19	8	14	18	*4*	110	13	8	2	0	133	14.3	9.0%
	15:00	5	14	15	12	16	14	13	11	11	*8*	97	12	7	3	0	119	12.3	8.1%
	16:00	10	15	21	13	12	17	6	16	9	*7*	95	19	11	1	0	126	13.2	8.5%
	17:00	14	11	17	12	11	13	7	7	14	*8*	87	18	8	1	0	114	11.8	7.7%
	18:00	9	13	13	9	9	7	5	5	6	*4*	62	15	1	2	0	80	8.4	5.4%
	19:00	3	8	12	8	7	4	4	7	9	*4*	48	9	7	1	1	66	6.9	4.5%
	20:00	10	8	9	4	2	6	6	8	3	*4*	48	10	1	1	0	60	6.2	4.1%
	21:00	6	4	6	4	7	4	1	3	2	*0*	29	3	3	2	0	37	4.1	2.5%
	22:00	4	1	3	6	6	4	3	5	0	*0*	18	8	4	2	0	32	3.6	2.2%
	23:00	1	4	2	0	3	5	0	3	0	*1*	12	2	3	2	0	19	2.0	1.3%
Time Period	12AM-6AM	4	3	1	6	3	1	0	4	2	*3*	11	10	4	2	0	27	2.7	1.8%
	6AM-12PM	43	40	39	41	44	37	39	38	37	*26*	287	57	31	8	1	384	39.8	26.0%
	12PM-6PM	71	80	92	98	80	92	58	75	84	*41*	614	99	44	14	0	771	81.1	52.2%
	6PM-12AM	33	38	45	31	34	30	19	31	20	*13*	217	47	19	10	1	294	31.2	19.9%
Alcohol & Drugs	None	139	157	168	173	157	151	114	145	140	*83*	1,100	204	89	32	2	1,427	149.3	96.7%
	Alcohol Involved	8	4	7	2	4	7	2	3	3	*0*	23	8	7	2	0	40	4.4	2.7%
	Drugs Involved	1	0	0	1	0	0	0	0	0	*0*	1	1	0	0	0	2	0.2	0.1%
	Alcohol and Drugs	3	0	2	0	0	2	0	0	0	*0*	5	0	2	0	0	7	0.8	0.5%
Distraction Related	Yes	23	24	22	33	18	10	10	19	13	*6*	126	23	22	7	0	178	19.1	12.1%
	No	128	137	155	143	143	150	106	129	130	*77*	1,003	190	76	27	2	1,298	135.7	87.9%

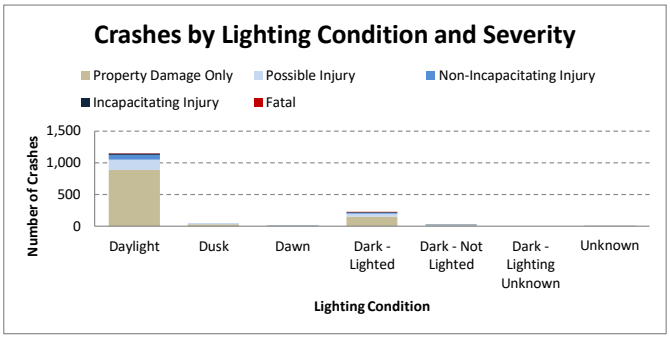
*Crash data for the current year (2023) is incomplete as it only includes data through June 30, 2023; therefore, it is not included in the average crashes per year calculation, but is included in the crash totals and percentage calculations.

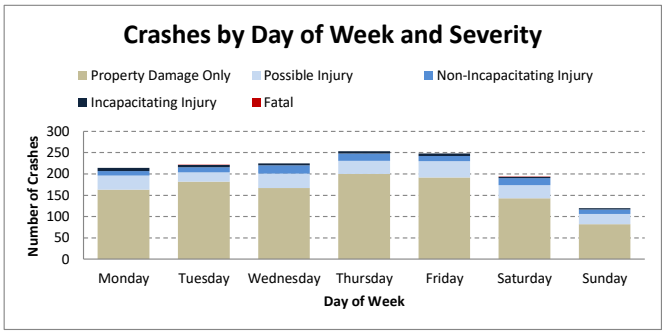
CRASH ANALYSIS - US 41 & Bonita Beach All Crashes in Study Area

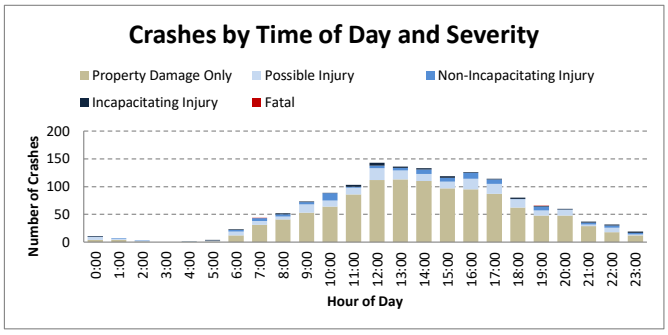








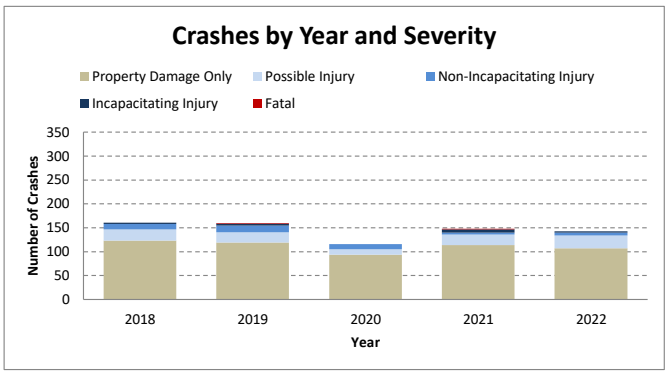


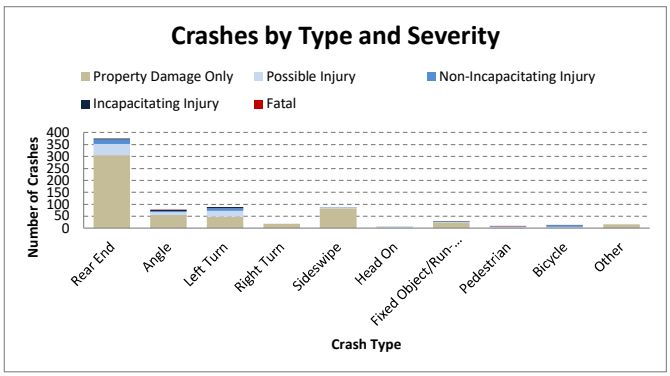


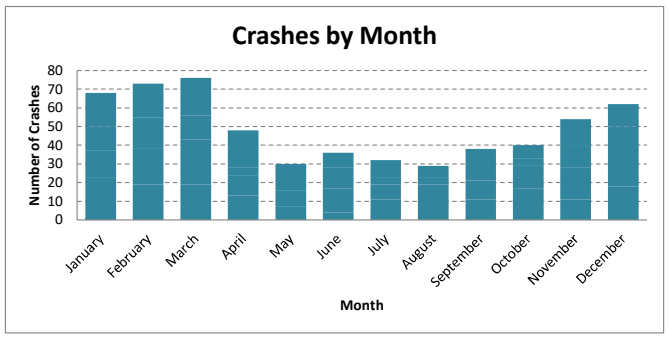
CRASH ANALYSIS - US 41 & Bonita Beach All Crashes in Study Area

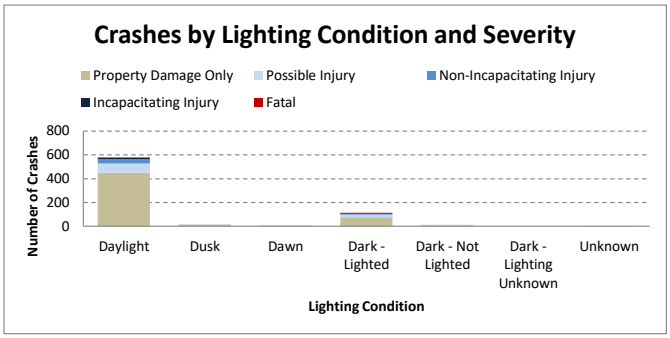
							Severity							
		2018	2019	2020	2021	2022	Property Damage Only	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal	Total	Annual Average*	Percent
Type of Crash	Rear End	79	84	61	87	*64*	306	47	18	4	0	375	77.8	51.5%
	Angle	11	12	17	16	*22*	55	13	4	5	1	78	14.0	10.7%
	Left Turn	25	23	8	14	*19*	49	24	11	5	0	89	17.5	12.2%
	Right Turn	2	4	6	2	*5*	18	1	0	0	0	19	3.5	2.6%
	Sideswipe	20	14	17	19	*19*	83	4	2	0	0	89	17.5	12.2%
	Head On	2	3	0	1	*2*	3	5	0	0	0	8	1.5	1.1%
	Fixed Object/Run-Off Road	10	10	2	6	*2*	25	1	2	2	0	30	7.0	4.1%
	Pedestrian	3	5	0	0	*2*	2	4	3	0	1	10	2.0	1.4%
	Bicycle	6	3	1	1	*2*	0	6	6	1	0	13	2.8	1.8%
	Other	3	2	4	2	*6*	16	1	0	0	0	17	2.8	2.3%
	Total Crashes	**161**	**160**	**116**	**148**	*143*	**557**	**106**	**46**	**17**	**2**	**728**	**146.3**	**100.0%**
Crash Severity	Property Damage Only	123	119	94	114	*107*						557	112.5	76.5%
	Possible Injury	24	22	11	22	*27*						106	19.8	14.6%
	Non-Incapacitating Injury	11	14	11	4	*6*						46	10.0	6.3%
	Incapacitating Injury	3	4	0	7	*3*						17	3.5	2.3%
	Fatal	0	1	0	1	*0*						2	0.5	0.3%
Light Conditions	Daylight	122	127	98	110	*121*	450	77	38	12	1	578	114.3	79.4%
	Dusk	3	3	3	5	*3*	15	2	0	0	0	17	3.5	2.3%
	Dawn	1	3	2	2	*0*	8	0	0	0	0	8	2.0	1.1%
	Dark - Lighted	30	26	13	27	*17*	76	24	7	5	1	113	24.0	15.5%
	Dark - Not Lighted	4	1	0	3	*2*	6	3	1	0	0	10	2.0	1.4%
	Dark - Lighting Unknown	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Unknown	1	0	0	1	*0*	2	0	0	0	0	2	0.5	0.3%
Surface Condition	Dry	151	139	107	130	*134*	500	98	44	17	2	661	131.8	90.8%
	Wet	10	20	9	17	*9*	55	8	2	0	0	65	14.0	8.9%
	Other	0	1	0	1	*0*	2	0	0	0	0	2	0.5	0.3%
Month	January	22	14	13	18	*12*						79	16.8	10.9%
	February	19	19	17	18	*17*						90	18.3	12.4%
	March	19	24	13	20	*25*						101	19.0	13.9%
	April	13	11	4	20	*12*						60	12.0	8.2%
	May	7	9	6	8	*10*						40	7.5	5.5%
	June	4	13	11	8	*7*						43	9.0	5.9%
	July	11	8	4	9	*5*						37	8.0	5.1%
	August	9	10	4	6	*12*						41	7.3	5.6%
	September	11	10	9	8	*11*						49	9.5	6.7%
	October	17	12	4	7	*13*						53	10.0	7.3%
	November	11	17	12	14	*11*						65	13.5	8.9%
	December	18	13	19	12	*8*						70	15.5	9.6%
Day of Week	Monday	26	30	14	22	*18*	81	19	6	4	0	110	23.0	15.1%
	Tuesday	23	21	13	22	*20*	79	10	5	4	1	99	19.8	13.6%
	Wednesday	21	20	16	24	*22*	77	14	10	2	0	103	20.3	14.1%
	Thursday	25	30	19	27	*24*	102	12	9	2	0	125	25.3	17.2%
	Friday	34	20	24	25	*26*	101	19	7	2	0	129	25.8	17.7%
	Saturday	23	23	21	19	*18*	77	20	5	1	1	104	21.5	14.3%
	Sunday	9	16	9	9	*15*	40	12	4	2	0	58	10.8	8.0%
Hour of Day	0:00	2	1	0	3	*0*	2	3	0	1	0	6	1.5	0.8%
	1:00	0	0	0	1	*1*	1	1	0	0	0	2	0.3	0.3%
	2:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	3:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	4:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	5:00	1	0	0	0	*1*	1	1	0	0	0	2	0.3	0.3%
	6:00	1	3	4	0	*2*	6	3	0	1	0	10	2.0	1.4%
	7:00	5	10	4	6	*1*	19	3	3	0	1	26	6.3	3.6%
	8:00	10	2	2	8	*8*	26	2	1	1	0	30	5.5	4.1%
	9:00	7	8	3	6	*8*	22	6	3	1	0	32	6.0	4.4%
	10:00	9	7	11	6	*9*	28	8	6	0	0	42	8.3	5.8%
	11:00	12	7	15	12	*9*	46	5	2	2	0	55	11.5	7.6%
	12:00	15	16	12	12	*16*	53	11	3	4	0	71	13.8	9.8%
	13:00	12	13	12	15	*16*	58	6	3	1	0	68	13.0	9.3%
	14:00	14	19	8	14	*18*	62	7	3	1	0	73	13.8	10.0%
	15:00	16	14	13	11	*11*	50	9	4	2	0	65	13.5	8.9%
	16:00	12	17	6	16	*9*	47	8	5	0	0	60	12.8	8.2%
	17:00	11	13	7	7	*14*	37	10	5	0	0	52	9.5	7.1%
	18:00	9	7	5	5	*6*	27	5	0	0	0	32	6.5	4.4%
	19:00	7	4	4	7	*9*	23	5	2	0	1	31	5.5	4.3%
	20:00	2	6	6	8	*3*	20	5	0	0	0	25	5.5	3.4%
	21:00	7	4	1	3	*2*	12	2	2	1	0	17	3.8	2.3%
	22:00	6	4	3	5	*0*	10	4	2	2	0	18	4.5	2.5%
	23:00	3	5	0	3	*0*	7	2	2	0	0	11	2.8	1.5%
Time Period	12AM-6AM	3	1	0	4	*2*	4	5	0	1	0	10	2.0	1.4%
	6AM-12PM	44	37	39	38	*37*	147	27	15	5	1	195	39.5	26.8%
	12PM-6PM	80	92	58	75	*84*	307	51	23	8	0	389	76.3	53.4%
	6PM-12AM	34	30	19	31	*20*	99	23	8	3	1	134	28.5	18.4%
Alcohol & Drugs	None	157	151	114	145	*140*	543	102	43	17	2	707	141.8	97.1%
	Alcohol Involved	4	7	2	3	*3*	12	4	3	0	0	19	4.0	2.6%
	Drugs Involved	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Alcohol and Drugs	0	2	0	0	*0*	2	0	0	0	0	2	0.5	0.3%
Distraction Related	Yes	18	10	10	19	*13*	52	11	5	2	0	70	14.3	9.6%
	No	143	150	106	129	*130*	505	95	41	15	2	658	132.0	90.4%

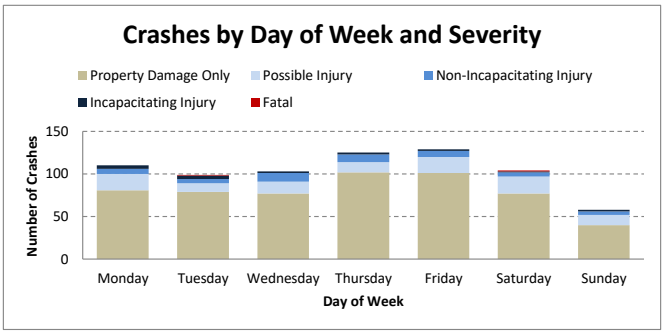
CRASH ANALYSIS - US 41 & Bonita Beach All Crashes in Study Area

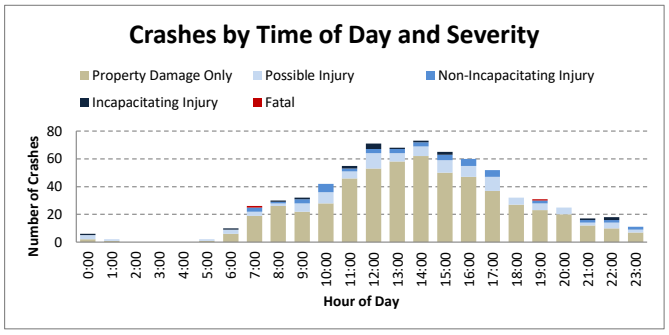








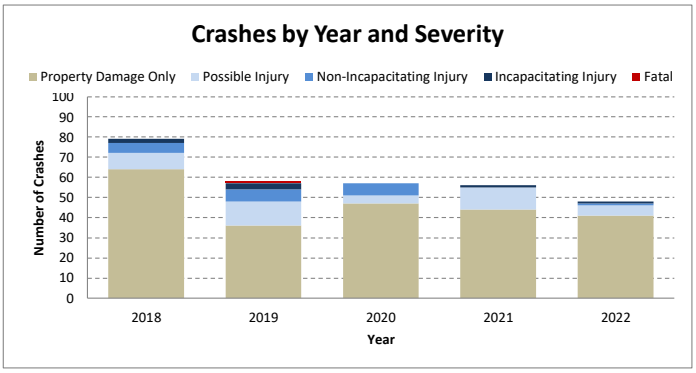


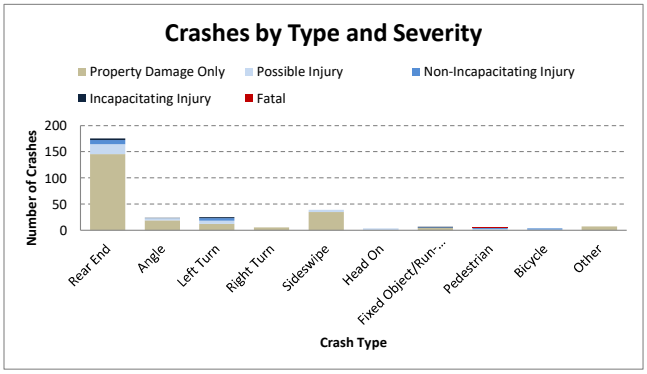


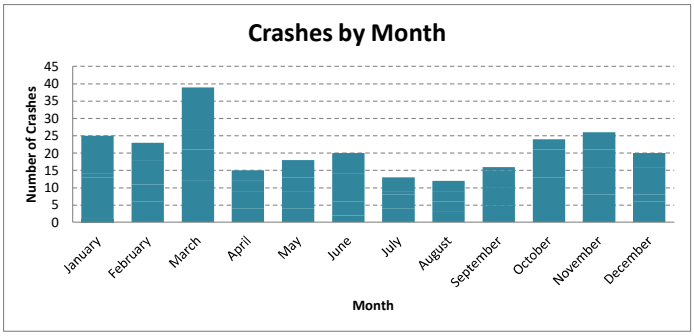
CRASH ANALYSIS - US 41 & Bonita Beach Intersection

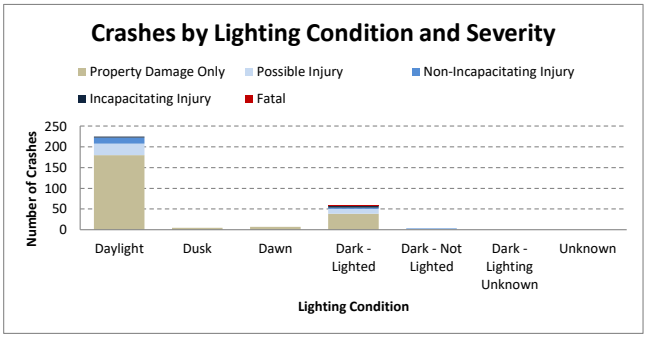
							Severity							
		2018	2019	2020	2021	2022	Property Damage Only	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal	Total	Annual Average*	Percent
Type of Crash	Rear End	43	36	35	38	*23*	145	19	8	3	0	175	38.0	58.7%
	Angle	5	2	6	4	*7*	19	4	0	1	0	24	4.3	8.1%
	Left Turn	9	7	5	2	*2*	12	6	5	2	0	25	5.8	8.4%
	Right Turn	2	0	1	0	*3*	6	0	0	0	0	6	0.8	2.0%
	Sideswipe	11	4	7	8	*9*	35	4	0	0	0	39	7.5	13.1%
	Head On	1	1	0	1	*1*	1	3	0	0	0	4	0.8	1.3%
	Fixed Object/Run-Off Road	2	2	1	2	*0*	5	0	1	1	0	7	1.8	2.3%
	Pedestrian	1	4	0	0	*1*	1	2	2	0	1	6	1.3	2.0%
	Bicycle	2	2	0	0	*0*	0	2	2	0	0	4	1.0	1.3%
	Other	3	0	2	1	*2*	8	0	0	0	0	8	1.5	2.7%
	Total Crashes	**79**	**58**	**57**	**56**	*48*	**232**	**40**	**18**	**7**	**1**	**298**	**62.5**	**100.0%**
Crash Severity	Property Damage Only	64	36	47	44	*41*						232	47.8	77.9%
	Possible Injury	8	12	4	11	*5*						40	8.8	13.4%
	Non-Incapacitating Injury	5	6	6	0	*1*						18	4.3	6.0%
	Incapacitating Injury	2	3	0	1	*1*						7	1.5	2.3%
	Fatal	0	1	0	0	*0*						1	0.3	0.3%
Light Conditions	Daylight	55	43	48	38	*41*	180	28	14	3	0	225	46.0	75.5%
	Dusk	2	1	2	0	*0*	5	0	0	0	0	5	1.3	1.7%
	Dawn	1	3	1	2	*0*	7	0	0	0	0	7	1.8	2.3%
	Dark - Lighted	19	11	6	16	*6*	39	11	3	4	1	58	13.0	19.5%
	Dark - Not Lighted	2	0	0	0	*1*	1	1	1	0	0	3	0.5	1.0%
	Dark - Lighting Unknown	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Unknown	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Surface Condition	Dry	75	53	52	51	*44*	213	36	18	7	1	275	57.8	92.3%
	Wet	4	5	5	5	*4*	19	4	0	0	0	23	4.8	7.7%
	Other	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Month	January	12	1	6	5	*6*						30	6.0	10.1%
	February	6	5	7	5	*5*						28	5.8	9.4%
	March	12	9	6	12	*6*						45	9.8	15.1%
	April	4	5	3	3	*2*						17	3.8	5.7%
	May	4	5	4	5	*4*						22	4.5	7.4%
	June	2	4	8	6	*2*						22	5.0	7.4%
	July	4	4	1	4	*1*						14	3.3	4.7%
	August	3	3	3	3	*6*						18	3.0	6.0%
	September	5	5	5	1	*3*						19	4.0	6.4%
	October	13	7	1	3	*4*						28	6.0	9.4%
	November	8	8	5	5	*7*						33	6.5	11.1%
	December	6	2	8	4	*2*						22	5.0	7.4%
Day of Week	Monday	12	10	4	7	*5*	25	7	3	3	0	38	8.3	12.8%
	Tuesday	8	4	8	6	*7*	31	1	1	0	0	33	6.5	11.1%
	Wednesday	7	7	9	7	*6*	29	5	1	1	0	36	7.5	12.1%
	Thursday	14	12	7	13	*6*	43	5	4	0	0	52	11.5	17.4%
	Friday	21	8	13	8	*8*	44	9	4	1	0	58	12.5	19.5%
	Saturday	13	9	11	11	*8*	40	8	2	1	1	52	11.0	17.4%
	Sunday	4	8	5	4	*8*	20	5	3	1	0	29	5.3	9.7%
Hour of Day	0:00	0	1	0	1	*0*	1	1	0	0	0	2	0.5	0.7%
	1:00	0	0	0	0	*1*	0	1	0	0	0	1	0.0	0.3%
	2:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	3:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	4:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	5:00	1	0	0	0	*0*	0	1	0	0	0	1	0.3	0.3%
	6:00	1	0	3	0	*1*	3	1	0	1	0	5	1.0	1.7%
	7:00	4	7	4	3	*0*	15	2	1	0	0	18	4.5	6.0%
	8:00	8	2	1	4	*1*	13	2	1	0	0	16	3.8	5.4%
	9:00	3	3	3	2	*1*	10	1	1	0	0	12	2.8	4.0%
	10:00	4	1	3	2	*6*	11	2	3	0	0	16	2.5	5.4%
	11:00	6	3	9	4	*5*	23	3	1	0	0	27	5.5	9.1%
	12:00	7	8	6	4	*5*	26	2	0	2	0	30	6.3	10.1%
	13:00	5	5	6	8	*4*	23	4	0	1	0	28	6.0	9.4%
	14:00	6	2	4	4	*10*	23	2	1	0	0	26	4.0	8.7%
	15:00	8	5	2	4	*3*	18	2	2	0	0	22	4.8	7.4%
	16:00	3	5	1	4	*1*	8	3	3	0	0	14	3.3	4.7%
	17:00	4	4	5	1	*3*	13	3	1	0	0	17	3.5	5.7%
	18:00	1	1	2	1	*2*	6	1	0	0	0	7	1.3	2.3%
	19:00	3	4	2	4	*1*	11	2	0	0	1	14	3.3	4.7%
	20:00	2	0	3	2	*3*	7	3	0	0	0	10	1.8	3.4%
	21:00	7	1	1	2	*1*	9	1	1	1	0	12	2.8	4.0%
	22:00	5	2	2	4	*0*	7	2	2	2	0	13	3.3	4.4%
	23:00	1	4	0	2	*0*	5	1	1	0	0	7	1.8	2.3%
Time Period	12AM-6AM	1	1	0	1	*1*	1	3	0	0	0	4	0.8	1.3%
	6AM-12PM	26	16	23	15	*14*	75	11	7	1	0	94	20.0	31.5%
	12PM-6PM	33	29	24	25	*26*	111	16	7	3	0	137	27.8	46.0%
	6PM-12AM	19	12	10	15	*7*	45	10	4	3	1	63	14.0	21.1%
Alcohol & Drugs	None	77	54	56	54	*46*	226	37	16	7	1	287	60.3	96.3%
	Alcohol Involved	2	3	1	2	*2*	5	3	2	0	0	10	2.0	3.4%
	Drugs Involved	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Alcohol and Drugs	0	1	0	0	*0*	1	0	0	0	0	1	0.3	0.3%
Distraction Related	Yes	10	6	3	10	*4*	24	5	3	1	0	33	7.3	11.1%
	No	69	52	54	46	*44*	208	35	15	6	1	265	55.3	88.9%

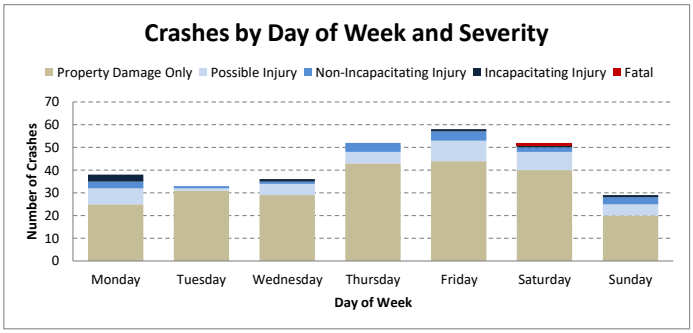
CRASH ANALYSIS - US 41 & Bonita Beach Intersection

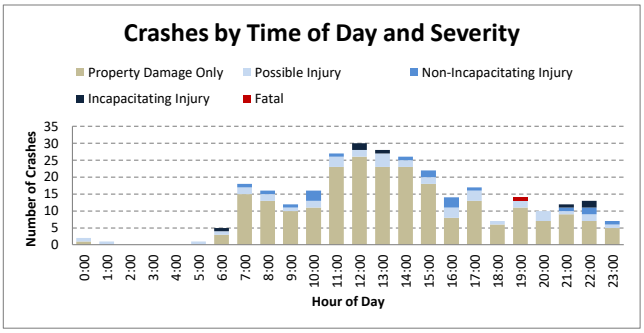








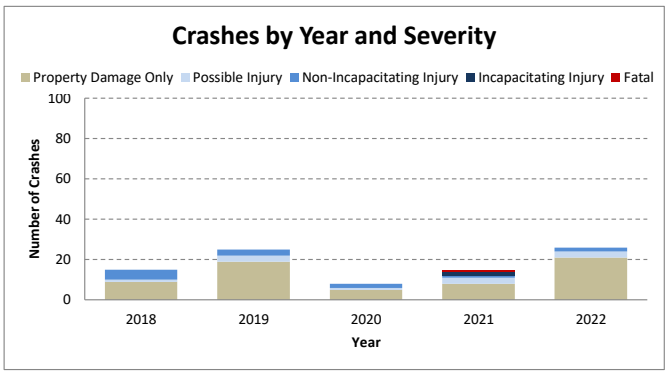


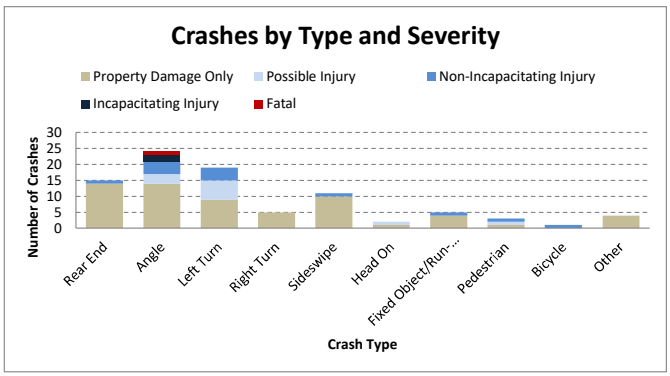


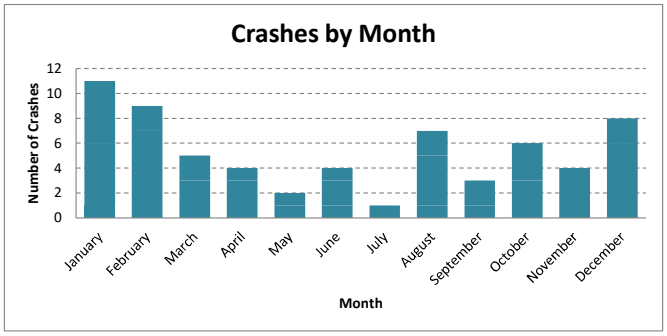
CRASH ANALYSIS - US 41 South of Bonita Beach Road

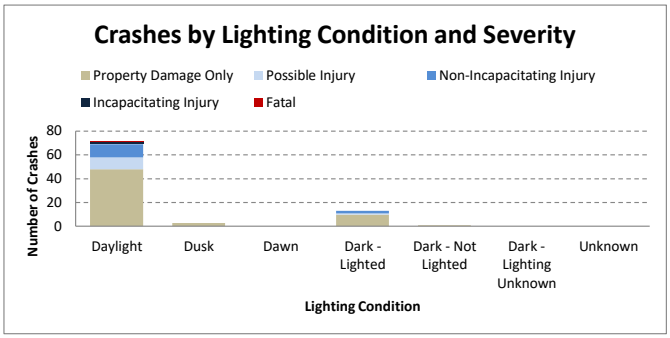
							Severity							
		2018	2019	2020	2021	2022	Property Damage Only	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal	Total	Annual Average*	Percent
Type of Crash	Rear End	1	8	0	3	*3*	14	0	1	0	0	15	3.0	16.9%
	Angle	4	4	4	6	*6*	14	3	4	2	1	24	4.5	27.0%
	Left Turn	5	5	2	2	*5*	9	6	4	0	0	19	3.5	21.3%
	Right Turn	0	2	1	1	*1*	5	0	0	0	0	5	1.0	5.6%
	Sideswipe	1	2	1	2	*5*	10	0	1	0	0	11	1.5	12.4%
	Head On	1	1	0	0	*0*	1	1	0	0	0	2	0.5	2.2%
	Fixed Object/Run-Off Road	1	2	0	0	*2*	4	0	1	0	0	5	0.8	5.6%
	Pedestrian	1	1	0	0	*1*	1	1	1	0	0	3	0.5	3.4%
	Bicycle	1	0	0	0	*0*	0	0	1	0	0	1	0.3	1.1%
	Other	0	0	0	1	*3*	4	0	0	0	0	4	0.3	4.5%
	Total Crashes	**15**	**25**	**8**	**15**	*26*	**62**	**11**	**13**	**2**	**1**	**89**	**15.8**	**100.0%**
Crash Severity	Property Damage Only	9	19	5	8	*21*						62	10.3	69.7%
	Possible Injury	1	3	1	3	*3*						11	2.0	12.4%
	Non-Incapacitating Injury	5	3	2	1	*2*						13	2.8	14.6%
	Incapacitating Injury	0	0	0	2	*0*						2	0.5	2.2%
	Fatal	0	0	0	1	*0*						1	0.3	1.1%
Light Conditions	Daylight	12	22	6	11	*21*	48	10	11	2	1	72	12.8	80.9%
	Dusk	1	0	0	0	*2*	3	0	0	0	0	3	0.3	3.4%
	Dawn	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Dark - Lighted	2	3	2	3	*3*	10	1	2	0	0	13	2.5	14.6%
	Dark - Not Lighted	0	0	0	1	*0*	1	0	0	0	0	1	0.3	1.1%
	Dark - Lighting Unknown	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Unknown	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Surface Condition	Dry	14	23	8	15	*25*	59	11	12	2	1	85	15.0	95.5%
	Wet	1	2	0	0	*1*	3	0	1	0	0	4	0.8	4.5%
	Other	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Month	January	3	2	3	2	*1*						11	2.5	12.4%
	February	4	3	0	2	*2*						11	2.3	12.4%
	March	0	2	1	2	*7*						12	1.3	13.5%
	April	0	3	0	1	*4*						8	1.0	9.0%
	May	1	0	0	1	*1*						3	0.5	3.4%
	June	1	1	1	1	*0*						4	1.0	4.5%
	July	0	1	0	0	*0*						1	0.3	1.1%
	August	1	4	0	2	*2*						9	1.8	10.1%
	September	1	2	0	0	*2*						5	0.8	5.6%
	October	2	1	1	2	*2*						8	1.5	9.0%
	November	0	2	0	2	*3*						7	1.0	7.9%
	December	2	4	2	0	*2*						10	2.0	11.2%
Day of Week	Monday	2	3	2	0	*4*	8	1	2	0	0	11	1.8	12.4%
	Tuesday	1	6	2	4	*4*	11	2	2	1	1	17	3.3	19.1%
	Wednesday	6	4	1	4	*2*	9	2	6	0	0	17	3.8	19.1%
	Thursday	2	7	1	3	*7*	16	1	2	1	0	20	3.3	22.5%
	Friday	3	3	1	2	*8*	12	4	1	0	0	17	2.3	19.1%
	Saturday	1	1	1	1	*1*	4	1	0	0	0	5	1.0	5.6%
	Sunday	0	1	0	1	*0*	2	0	0	0	0	2	0.5	2.2%
Hour of Day	0:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	1:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	2:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	3:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	4:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	5:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	6:00	0	1	0	0	*0*	1	0	0	0	0	1	0.3	1.1%
	7:00	0	2	0	2	*0*	2	0	1	0	1	4	1.0	4.5%
	8:00	0	0	0	0	*3*	3	0	0	0	0	3	0.0	3.4%
	9:00	0	0	0	0	*2*	1	1	0	0	0	2	0.0	2.2%
	10:00	1	3	2	2	*0*	5	1	2	0	0	8	2.0	9.0%
	11:00	1	0	0	1	*0*	1	0	0	1	0	2	0.5	2.2%
	12:00	2	2	0	0	*1*	4	1	0	0	0	5	1.0	5.6%
	13:00	1	4	0	2	*3*	9	0	1	0	0	10	1.8	11.2%
	14:00	1	4	0	1	*1*	5	1	0	1	0	7	1.5	7.9%
	15:00	0	2	2	0	*4*	4	2	2	0	0	8	1.0	9.0%
	16:00	4	2	1	1	*6*	10	2	2	0	0	14	2.0	15.7%
	17:00	3	2	1	2	*3*	6	2	3	0	0	11	2.0	12.4%
	18:00	0	1	0	1	*1*	3	0	0	0	0	3	0.5	3.4%
	19:00	1	0	1	1	*2*	4	0	1	0	0	5	0.8	5.6%
	20:00	0	0	1	0	*0*	1	0	0	0	0	1	0.3	1.1%
	21:00	0	0	0	1	*0*	1	0	0	0	0	1	0.3	1.1%
	22:00	0	1	0	0	*0*	0	1	0	0	0	1	0.3	1.1%
	23:00	1	1	0	1	*0*	2	0	1	0	0	3	0.8	3.4%
Time Period	12AM-6AM	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	6AM-12PM	2	6	2	5	*5*	13	2	3	1	1	20	3.8	22.5%
	12PM-6PM	11	16	4	6	*18*	38	8	8	1	0	55	9.3	61.8%
	6PM-12AM	2	3	2	4	*3*	11	1	2	0	0	14	2.8	15.7%
Alcohol & Drugs	None	15	24	8	15	*25*	60	11	13	2	1	87	15.5	97.8%
	Alcohol Involved	0	1	0	0	*1*	2	0	0	0	0	2	0.3	2.2%
	Drugs Involved	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Alcohol and Drugs	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Distraction Related	Yes	1	1	0	0	*1*	3	0	0	0	0	3	0.5	3.4%
	No	14	24	8	15	*25*	59	11	13	2	1	86	15.3	96.6%

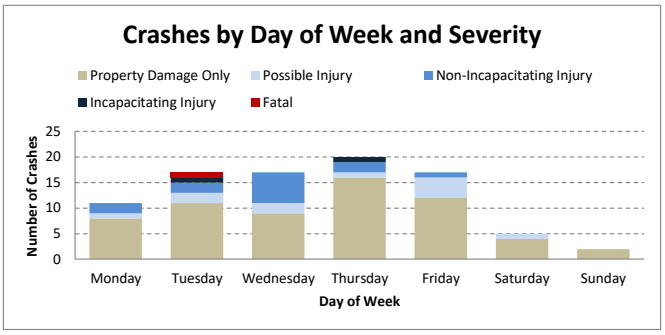
CRASH ANALYSIS - US 41 South of Bonita Beach Road

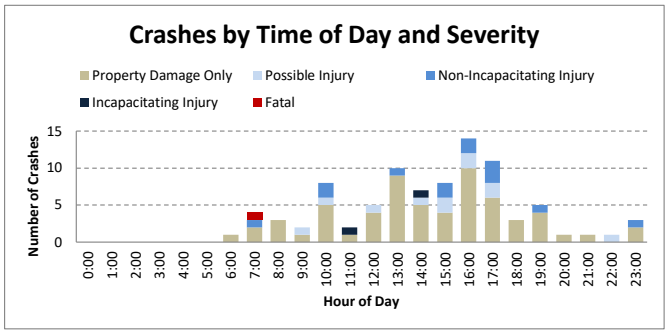








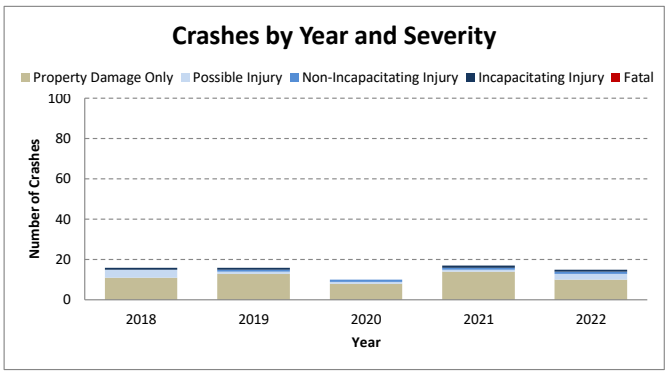


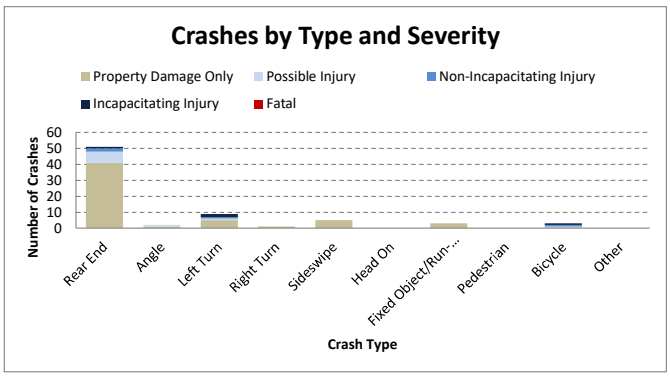


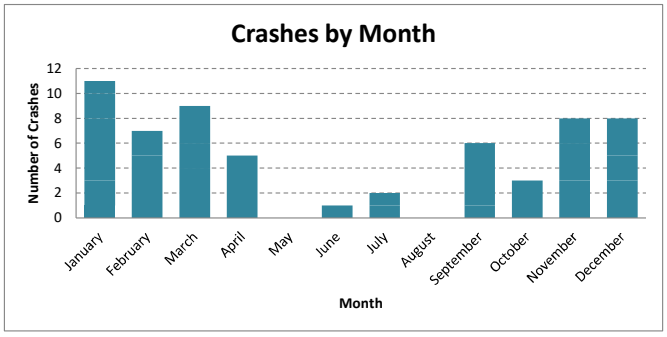
CRASH ANALYSIS - US 41 North of Bonita Beach Road

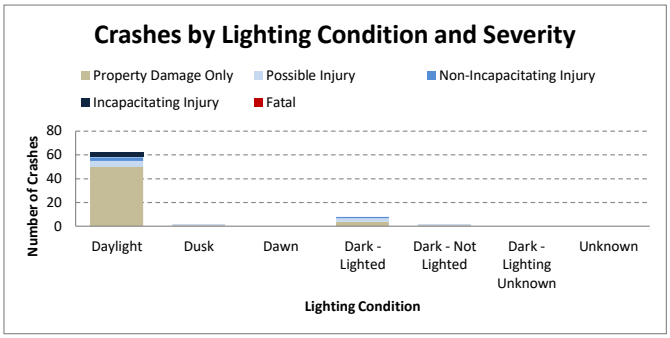
							Severity							
		2018	2019	2020	2021	2022	Property Damage Only	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal	Total	Annual Average*	Percent
Type of Crash	Rear End	12	10	6	11	*12*	41	7	2	1	0	51	9.8	68.9%
	Angle	0	0	1	0	*1*	1	1	0	0	0	2	0.3	2.7%
	Left Turn	1	3	0	3	*2*	5	1	1	2	0	9	1.8	12.2%
	Right Turn	0	0	1	0	*0*	1	0	0	0	0	1	0.3	1.4%
	Sideswipe	1	0	2	2	*0*	5	0	0	0	0	5	1.3	6.8%
	Head On	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Fixed Object/Run-Off Road	0	2	0	1	*0*	3	0	0	0	0	3	0.8	4.1%
	Pedestrian	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Bicycle	2	1	0	0	*0*	0	1	1	1	0	3	0.8	4.1%
	Other	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Total Crashes	**16**	**16**	**10**	**17**	*15*	**56**	**10**	**4**	**4**	**0**	**74**	**14.8**	**100.0%**
Crash Severity	Property Damage Only	11	13	8	14	*10*						56	11.5	75.7%
	Possible Injury	4	1	1	1	*3*						10	1.8	13.5%
	Non-Incapacitating Injury	0	1	1	1	*1*						4	0.8	5.4%
	Incapacitating Injury	1	1	0	1	*1*						4	0.8	5.4%
	Fatal	0	0	0	0	*0*						0	0.0	0.0%
Light Conditions	Daylight	14	13	8	14	*13*	50	5	3	4	0	62	12.3	83.8%
	Dusk	0	1	0	1	*0*	1	1	0	0	0	2	0.5	2.7%
	Dawn	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Dark - Lighted	2	1	2	1	*2*	4	3	1	0	0	8	1.5	10.8%
	Dark - Not Lighted	0	1	0	1	*0*	1	1	0	0	0	2	0.5	2.7%
	Dark - Lighting Unknown	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Unknown	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Surface Condition	Dry	16	14	9	15	*14*	50	10	4	4	0	68	13.5	91.9%
	Wet	0	1	1	2	*1*	5	0	0	0	0	5	1.0	6.8%
	Other	0	1	0	0	*0*	1	0	0	0	0	1	0.3	1.4%
Month	January	2	5	2	1	*2*						12	2.5	16.2%
	February	2	3	0	2	*1*						8	1.8	10.8%
	March	2	2	2	3	*4*						13	2.3	17.6%
	April	5	0	0	0	*1*						6	1.3	8.1%
	May	0	0	0	0	*0*						0	0.0	0.0%
	June	0	1	0	0	*0*						1	0.3	1.4%
	July	1	0	0	1	*1*						3	0.5	4.1%
	August	0	0	0	0	*0*						0	0.0	0.0%
	September	0	1	1	4	*1*						7	1.5	9.5%
	October	0	2	0	1	*1*						4	0.8	5.4%
	November	2	1	3	2	*1*						9	2.0	12.2%
	December	2	1	2	3	*3*						11	2.0	14.9%
Day of Week	Monday	2	5	3	3	*1*	11	3	0	0	0	14	3.3	18.9%
	Tuesday	3	4	1	5	*3*	11	1	2	2	0	16	3.3	21.6%
	Wednesday	3	2	1	3	*5*	12	1	0	1	0	14	2.3	18.9%
	Thursday	3	3	3	2	*2*	10	1	2	0	0	13	2.8	17.6%
	Friday	3	2	1	3	*1*	8	1	0	1	0	10	2.3	13.5%
	Saturday	1	0	1	0	*3*	2	3	0	0	0	5	0.5	6.8%
	Sunday	1	0	0	1	*0*	2	0	0	0	0	2	0.5	2.7%
Hour of Day	0:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	1:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	2:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	3:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	4:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	5:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	6:00	0	1	0	0	*1*	1	1	0	0	0	2	0.3	2.7%
	7:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	8:00	2	0	0	0	*2*	4	0	0	0	0	4	0.5	5.4%
	9:00	0	0	0	1	*2*	2	0	0	1	0	3	0.3	4.1%
	10:00	2	0	1	1	*1*	3	2	0	0	0	5	1.0	6.8%
	11:00	2	2	0	0	*0*	2	0	1	1	0	4	1.0	5.4%
	12:00	1	1	1	2	*1*	4	0	1	1	0	6	1.3	8.1%
	13:00	2	0	1	2	*4*	7	1	1	0	0	9	1.3	12.2%
	14:00	0	1	2	1	*1*	5	0	0	0	0	5	1.0	6.8%
	15:00	0	3	1	3	*1*	6	1	0	1	0	8	1.8	10.8%
	16:00	2	1	2	4	*0*	9	0	0	0	0	9	2.3	12.2%
	17:00	3	5	0	0	*1*	7	2	0	0	0	9	2.0	12.2%
	18:00	1	1	1	1	*0*	3	1	0	0	0	4	1.0	5.4%
	19:00	1	0	0	0	*1*	0	1	1	0	0	2	0.3	2.7%
	20:00	0	1	0	2	*0*	2	1	0	0	0	3	0.8	4.1%
	21:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	22:00	0	0	1	0	*0*	1	0	0	0	0	1	0.3	1.4%
	23:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Time Period	12AM-6AM	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	6AM-12PM	6	3	1	2	*6*	12	3	1	2	0	18	3.0	24.3%
	12PM-6PM	8	11	7	12	*8*	38	4	2	2	0	46	9.5	62.2%
	6PM-12AM	2	2	2	3	*1*	6	3	1	0	0	10	2.3	13.5%
Alcohol & Drugs	None	16	16	9	16	*15*	54	10	4	4	0	72	14.3	97.3%
	Alcohol Involved	0	0	1	1	*0*	2	0	0	0	0	2	0.5	2.7%
	Drugs Involved	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Alcohol and Drugs	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Distraction Related	Yes	2	0	2	3	*0*	5	2	0	0	0	7	1.8	9.5%
	No	14	16	8	14	*15*	51	8	4	4	0	67	13.0	90.5%

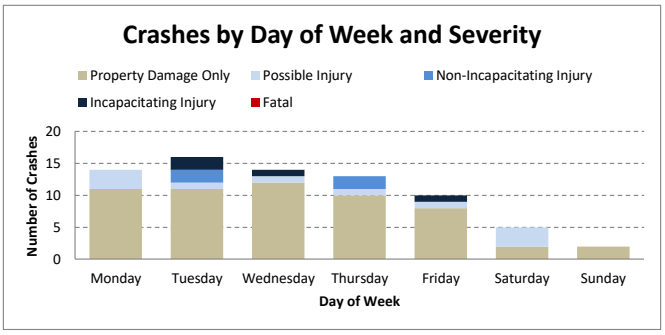
CRASH ANALYSIS - US 41 North of Bonita Beach Road

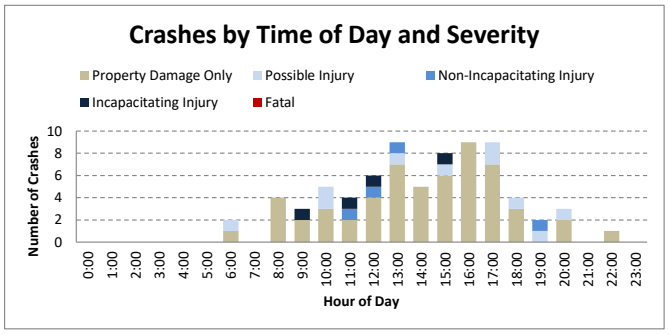








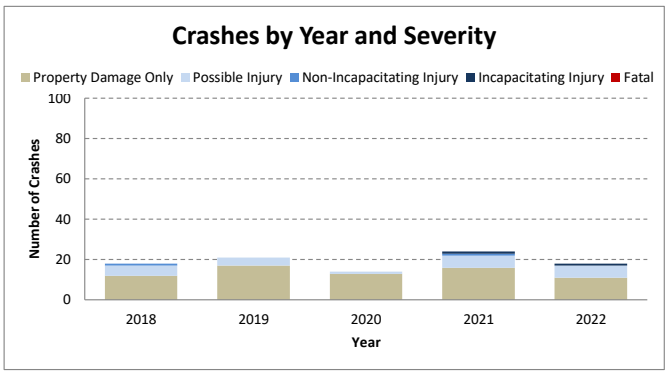


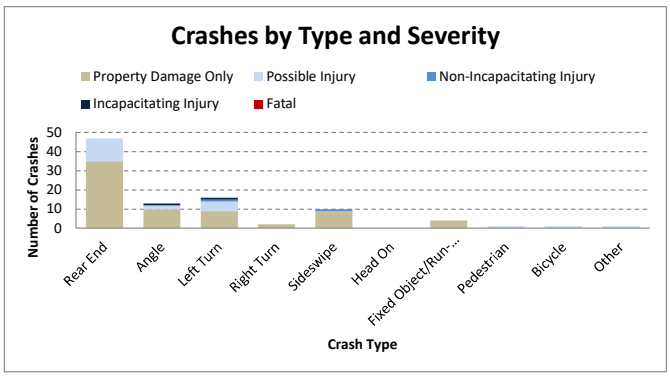


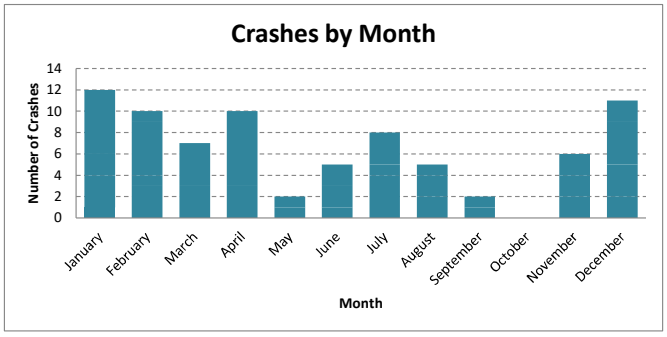
CRASH ANALYSIS - Bonita Beach Road West of US 41

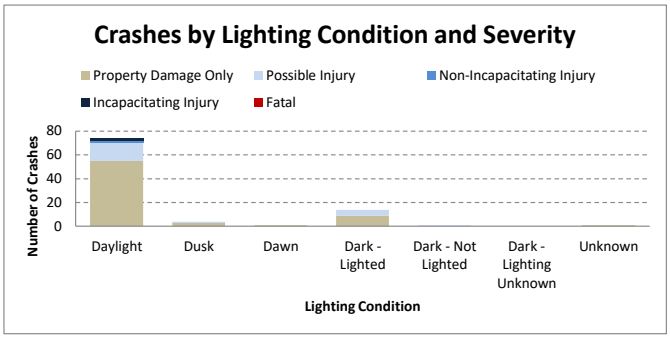
							Severity							
		2018	2019	2020	2021	2022	Property Damage Only	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal	Total	Annual Average*	Percent
Type of Crash	Rear End	8	11	5	14	*9*	35	12	0	0	0	47	9.5	49.5%
	Angle	1	2	3	2	*5*	10	2	0	1	0	13	2.0	13.7%
	Left Turn	5	2	1	5	*3*	9	5	1	1	0	16	3.3	16.8%
	Right Turn	0	0	2	0	*0*	2	0	0	0	0	2	0.5	2.1%
	Sideswipe	0	5	2	2	*1*	9	0	1	0	0	10	2.3	10.5%
	Head On	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Fixed Object/Run-Off Road	3	1	0	0	*0*	4	0	0	0	0	4	1.0	4.2%
	Pedestrian	1	0	0	0	*0*	0	1	0	0	0	1	0.3	1.1%
	Bicycle	0	0	0	1	*0*	0	1	0	0	0	1	0.3	1.1%
	Other	0	0	1	0	*0*	0	1	0	0	0	1	0.3	1.1%
	Total Crashes	**18**	**21**	**14**	**24**	*18*	**69**	**22**	**2**	**2**	**0**	**95**	**19.3**	**100.0%**
Crash Severity	Property Damage Only	12	17	13	16	*11*						69	14.5	72.6%
	Possible Injury	5	4	1	6	*6*						22	4.0	23.2%
	Non-Incapacitating Injury	1	0	0	1	*0*						2	0.5	2.1%
	Incapacitating Injury	0	0	0	1	*1*						2	0.3	2.1%
	Fatal	0	0	0	0	*0*						0	0.0	0.0%
Light Conditions	Daylight	15	16	11	16	*16*	55	15	2	2	0	74	14.5	77.9%
	Dusk	0	1	0	3	*0*	3	1	0	0	0	4	1.0	4.2%
	Dawn	0	0	1	0	*0*	1	0	0	0	0	1	0.3	1.1%
	Dark - Lighted	2	4	2	4	*2*	9	5	0	0	0	14	3.0	14.7%
	Dark - Not Lighted	0	0	0	1	*0*	0	1	0	0	0	1	0.3	1.1%
	Dark - Lighting Unknown	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Unknown	1	0	0	0	*0*	1	0	0	0	0	1	0.3	1.1%
Surface Condition	Dry	16	15	13	19	*16*	54	21	2	2	0	79	15.8	83.2%
	Wet	2	6	1	5	*2*	15	1	0	0	0	16	3.5	16.8%
	Other	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Month	January	3	2	0	6	*1*						12	2.8	12.6%
	February	3	1	5	1	*3*						13	2.5	13.7%
	March	3	4	0	0	*2*						9	1.8	9.5%
	April	0	3	0	7	*2*						12	2.5	12.6%
	May	0	1	0	1	*4*						6	0.5	6.3%
	June	1	2	2	0	*2*						7	1.3	7.4%
	July	4	0	1	3	*1*						9	2.0	9.5%
	August	2	2	0	1	*1*						6	1.3	6.3%
	September	0	1	0	1	*0*						2	0.5	2.1%
	October	0	0	0	0	*2*						2	0.0	2.1%
	November	0	2	2	2	*0*						6	1.5	6.3%
	December	2	3	4	2	*0*						11	2.8	11.6%
Day of Week	Monday	2	4	3	5	*0*	11	2	0	1	0	14	3.5	14.7%
	Tuesday	6	2	0	3	*2*	9	4	0	0	0	13	2.8	13.7%
	Wednesday	2	2	2	2	*2*	7	3	0	0	0	10	2.0	10.5%
	Thursday	2	0	3	4	*3*	8	3	0	1	0	12	2.3	12.6%
	Friday	2	4	4	3	*3*	14	1	1	0	0	16	3.3	16.8%
	Saturday	4	5	1	6	*3*	14	4	1	0	0	19	4.0	20.0%
	Sunday	0	4	1	1	*5*	6	5	0	0	0	11	1.5	11.6%
Hour of Day	0:00	0	0	0	1	*0*	0	1	0	0	0	1	0.3	1.1%
	1:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	2:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	3:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	4:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	5:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	6:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	7:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	8:00	0	0	0	0	*2*	2	0	0	0	0	2	0.0	2.1%
	9:00	1	0	0	1	*0*	0	0	2	0	0	2	0.5	2.1%
	10:00	2	1	1	0	*0*	3	1	0	0	0	4	1.0	4.2%
	11:00	2	0	1	3	*0*	5	1	0	0	0	6	1.5	6.3%
	12:00	0	1	1	3	*3*	4	3	0	1	0	8	1.3	8.4%
	13:00	0	0	1	0	*2*	3	0	0	0	0	3	0.3	3.2%
	14:00	3	3	1	4	*3*	10	4	0	0	0	14	2.8	14.7%
	15:00	4	3	5	1	*2*	12	2	0	1	0	15	3.3	15.8%
	16:00	3	7	1	2	*1*	12	2	0	0	0	14	3.3	14.7%
	17:00	0	2	0	2	*2*	4	2	0	0	0	6	1.0	6.3%
	18:00	2	1	1	2	*0*	4	2	0	0	0	6	1.5	6.3%
	19:00	1	0	1	1	*3*	4	2	0	0	0	6	0.8	6.3%
	20:00	0	3	1	3	*0*	6	1	0	0	0	7	1.8	7.4%
	21:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	22:00	0	0	0	1	*0*	0	1	0	0	0	1	0.3	1.1%
	23:00	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Time Period	12AM-6AM	0	0	0	1	*0*	0	1	0	0	0	1	0.3	1.1%
	6AM-12PM	5	1	2	4	*2*	10	2	2	0	0	14	3.0	14.7%
	12PM-6PM	10	16	9	12	*13*	45	13	0	2	0	60	11.8	63.2%
	6PM-12AM	3	4	3	7	*3*	14	6	0	0	0	20	4.3	21.1%
Alcohol & Drugs	None	18	20	14	24	*18*	68	22	2	2	0	94	19.0	98.9%
	Alcohol Involved	0	1	0	0	*0*	1	0	0	0	0	1	0.3	1.1%
	Drugs Involved	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
	Alcohol and Drugs	0	0	0	0	*0*	0	0	0	0	0	0	0.0	0.0%
Distraction Related	Yes	1	1	1	2	*2*	4	2	0	1	0	7	1.3	7.4%
	No	17	20	13	22	*16*	65	20	2	1	0	88	18.0	92.6%

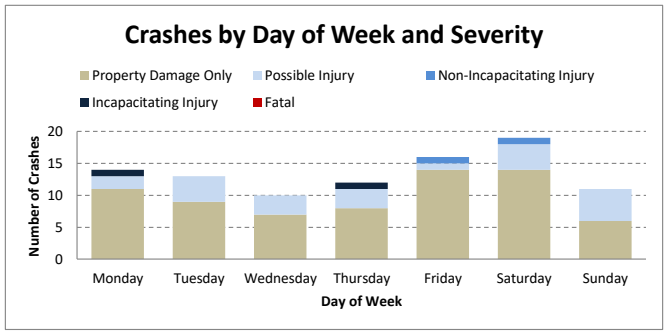
CRASH ANALYSIS - Bonita Beach Road West of US 41

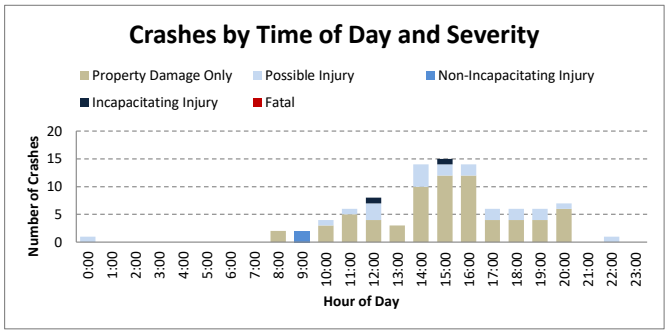








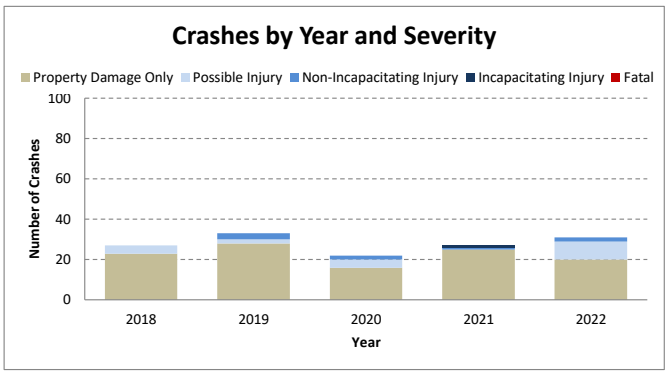


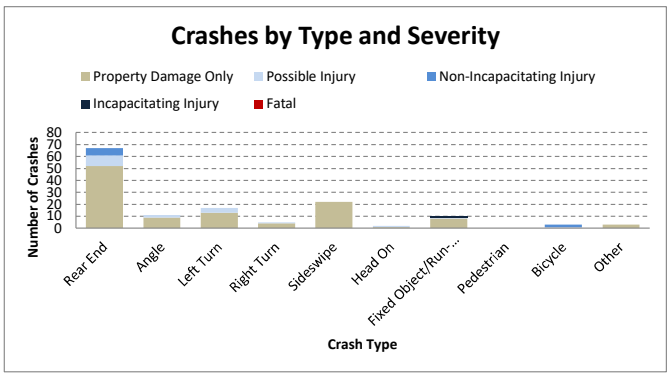


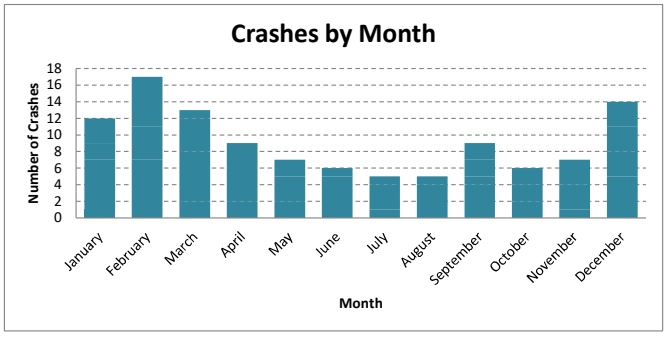
CRASH ANALYSIS - Bonita Beach Road East of US 41

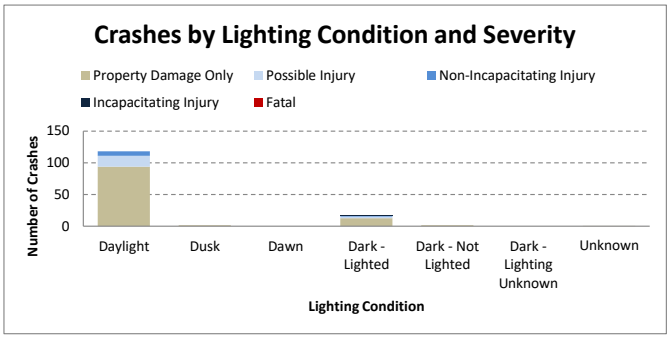
							Severity							
		2018	2019	2020	2021	2022	Property Damage Only	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal	Total	Annual Average*	Percent
Type of Crash	Rear End	12	15	12	15	13	52	9	6	0	0	67	13.5	47.9%
	Angle	1	2	3	2	3	9	2	0	0	0	11	2.0	7.9%
	Left Turn	4	6	0	1	6	13	4	0	0	0	17	2.8	12.1%
	Right Turn	0	2	1	1	1	4	1	0	0	0	5	1.0	3.6%
	Sideswipe	6	3	4	5	4	22	0	0	0	0	22	4.5	15.7%
	Head On	0	1	0	0	1	1	1	0	0	0	2	0.3	1.4%
	Fixed Object/Run-Off Road	4	3	0	3	0	8	1	0	1	0	10	2.5	7.1%
	Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Bicycle	0	0	1	0	2	0	1	2	0	0	3	0.3	2.1%
	Other	0	1	1	0	1	3	0	0	0	0	3	0.5	2.1%
	Total Crashes	**27**	**33**	**22**	**27**	**31**	**112**	**19**	**8**	**1**	**0**	**140**	**27.3**	**100.0%**
Crash Severity	Property Damage Only	23	28	16	25	20						112	23.0	80.0%
	Possible Injury	4	2	4	0	9						19	2.5	13.6%
	Non-Incapacitating Injury	0	3	2	1	2						8	1.5	5.7%
	Incapacitating Injury	0	0	0	1	0						1	0.3	0.7%
	Fatal	0	0	0	0	0						0	0.0	0.0%
Light Conditions	Daylight	24	26	20	23	25	94	17	7	0	0	118	23.3	84.3%
	Dusk	0	0	1	0	1	2	0	0	0	0	2	0.3	1.4%
	Dawn	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Dark - Lighted	2	7	1	3	4	13	2	1	1	0	17	3.3	12.1%
	Dark - Not Lighted	1	0	0	0	1	2	0	0	0	0	2	0.3	1.4%
	Dark - Lighting Unknown	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Unknown	0	0	0	1	0	1	0	0	0	0	1	0.3	0.7%
Surface Condition	Dry	24	27	20	21	30	98	16	7	1	0	122	23.0	87.1%
	Wet	3	6	2	5	1	13	3	1	0	0	17	4.0	12.1%
	Other	0	0	0	1	0	1	0	0	0	0	1	0.3	0.7%
Month	January	2	4	2	3	2						13	2.8	9.3%
	February	3	4	4	6	6						23	4.3	16.4%
	March	2	6	4	1	6						19	3.3	13.6%
	April	2	0	1	6	3						12	2.3	8.6%
	May	2	3	1	1	0						7	1.8	5.0%
	June	0	5	0	1	3						9	1.5	6.4%
	July	1	2	1	1	1						6	1.3	4.3%
	August	3	1	1	0	2						7	1.3	5.0%
	September	4	1	2	2	4						13	2.3	9.3%
	October	2	2	2	0	3						9	1.5	6.4%
	November	1	2	1	3	0						7	1.8	5.0%
	December	5	3	3	3	1						15	3.5	10.7%
Day of Week	Monday	5	7	2	6	8	22	5	1	0	0	28	5.0	20.0%
	Tuesday	5	5	1	3	3	15	2	0	0	0	17	3.5	12.1%
	Wednesday	3	4	3	5	6	16	2	3	0	0	21	3.8	15.0%
	Thursday	3	5	5	3	6	19	2	1	0	0	22	4.0	15.7%
	Friday	4	3	4	7	5	18	4	1	0	0	23	4.5	16.4%
	Saturday	4	7	4	1	1	12	3	2	0	0	17	4.0	12.1%
	Sunday	3	2	3	2	2	10	1	0	1	0	12	2.5	8.6%
Hour of Day	0:00	0	0	0	1	0	0	0	0	1	0	1	0.3	0.7%
	1:00	0	0	0	1	0	1	0	0	0	0	1	0.3	0.7%
	2:00	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	3:00	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	4:00	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	5:00	0	0	0	0	1	1	0	0	0	0	1	0.0	0.7%
	6:00	0	1	1	0	0	1	1	0	0	0	2	0.5	1.4%
	7:00	1	1	0	1	1	2	1	1	0	0	4	0.8	2.9%
	8:00	0	0	0	3	0	3	0	0	0	0	3	0.8	2.1%
	9:00	3	4	0	2	3	8	4	0	0	0	12	2.3	8.6%
	10:00	0	1	4	0	2	4	2	1	0	0	7	1.3	5.0%
	11:00	1	2	5	4	3	14	1	0	0	0	15	3.0	10.7%
	12:00	4	4	4	2	5	13	4	2	0	0	19	3.5	13.6%
	13:00	4	2	1	3	3	11	1	1	0	0	13	2.5	9.3%
	14:00	4	8	1	4	2	18	0	1	0	0	19	4.3	13.6%
	15:00	4	0	3	3	1	9	2	0	0	0	11	2.5	7.9%
	16:00	0	1	0	1	0	2	0	0	0	0	2	0.5	1.4%
	17:00	1	0	1	1	5	6	1	1	0	0	8	0.8	5.7%
	18:00	4	3	1	0	2	9	1	0	0	0	10	2.0	7.1%
	19:00	0	0	0	0	2	2	0	0	0	0	2	0.0	1.4%
	20:00	0	2	1	1	0	4	0	0	0	0	4	1.0	2.9%
	21:00	0	3	0	0	1	2	1	1	0	0	4	0.8	2.9%
	22:00	1	1	0	0	0	2	0	0	0	0	2	0.5	1.4%
	23:00	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
Time Period	12AM-6AM	0	0	0	2	1	2	0	0	1	0	3	0.5	2.1%
	6AM-12PM	5	9	10	10	9	32	9	2	0	0	43	8.5	30.7%
	12PM-6PM	17	15	10	14	16	59	8	5	0	0	72	14.0	51.4%
	6PM-12AM	5	9	2	1	5	19	2	1	0	0	22	4.3	15.7%
Alcohol & Drugs	None	26	30	22	27	31	109	19	7	1	0	136	26.3	97.1%
	Alcohol Involved	1	2	0	0	0	2	0	1	0	0	3	0.8	2.1%
	Drugs Involved	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Alcohol and Drugs	0	1	0	0	0	1	0	0	0	0	1	0.3	0.7%
Distraction Related	Yes	2	0	2	2	2	6	1	1	0	0	8	1.5	5.7%
	No	25	33	20	25	29	106	18	7	1	0	132	25.8	94.3%

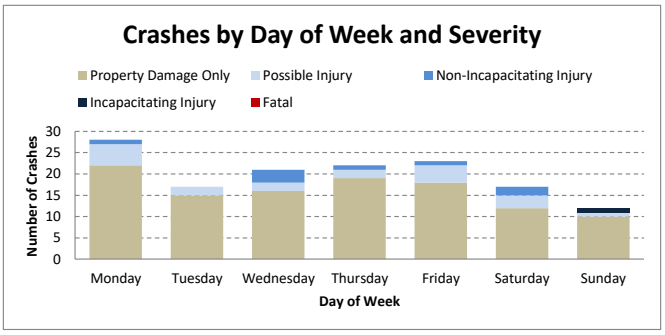
CRASH ANALYSIS - Bonita Beach Road East of US 41

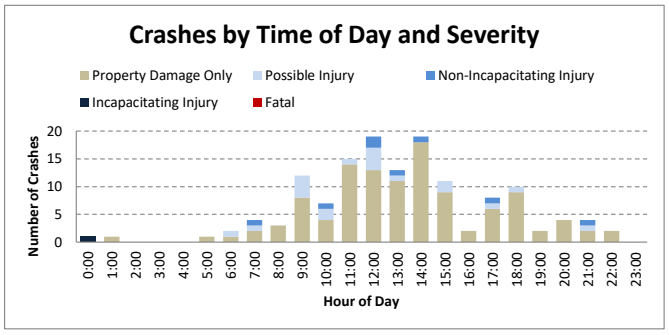








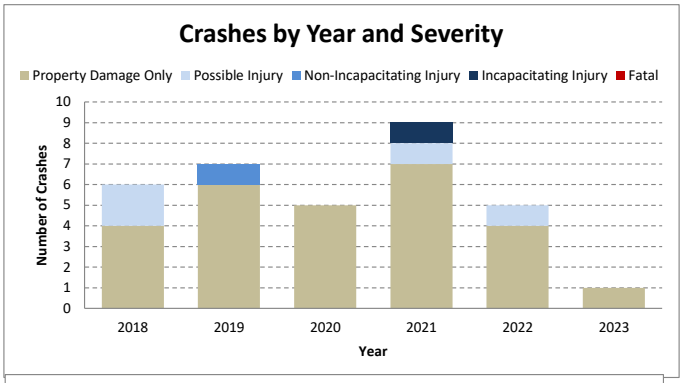


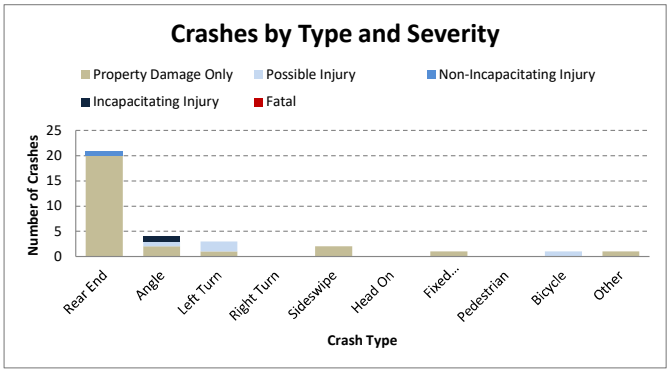


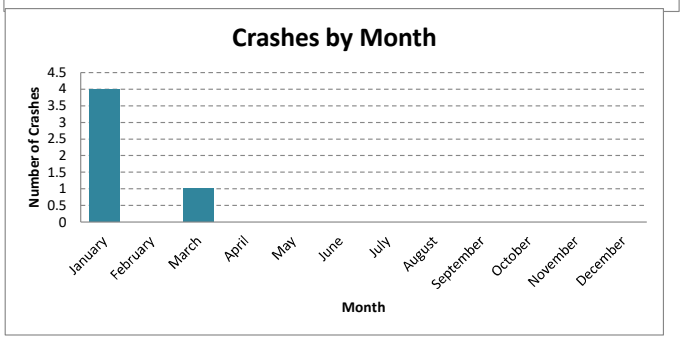
CRASH ANALYSIS - Bonita Beach Rd & Vanderbilt Dr Intersection

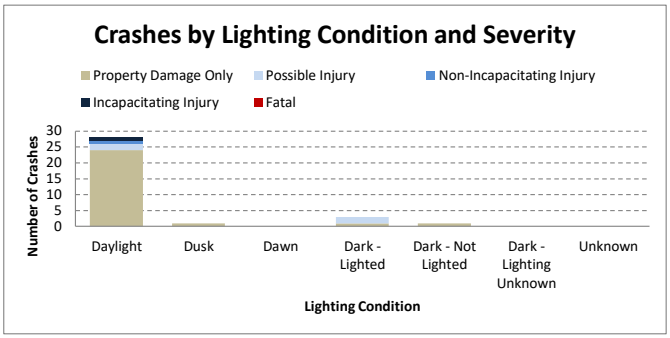
								Severity							
		2018	2019	2020	2021	2022	2023	Property Damage Only	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal	Total	Annual Average	Percent
Type of Crash	Rear End	3	4	3	6	4	1	20	0	1	0	0	21	3.5	63.6%
	Angle	0	2	0	2	0	0	2	1	0	1	0	4	0.7	12.1%
	Left Turn	1	0	0	1	1	0	1	2	0	0	0	3	0.5	9.1%
	Right Turn	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Sideswipe	1	0	1	0	0	0	2	0	0	0	0	2	0.3	6.1%
	Head On	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Fixed Object/Run-Off Road	0	0	1	0	0	0	1	0	0	0	0	1	0.2	3.0%
	Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Bicycle	1	0	0	0	0	0	0	1	0	0	0	1	0.2	3.0%
	Other	0	1	0	0	0	0	1	0	0	0	0	1	0.2	3.0%
	Total Crashes	**6**	**7**	**5**	**9**	**5**	**1**	**27**	**4**	**1**	**1**	**0**	**33**	**5.5**	**100.0%**
Crash Severity	Property Damage Only	4	6	5	7	4	1						27	4.5	81.8%
	Possible Injury	2	0	0	1	1	0						4	0.7	12.1%
	Non-Incapacitating Injury	0	1	0	0	0	0						1	0.2	3.0%
	Incapacitating Injury	0	0	0	1	0	0						1	0.2	3.0%
	Fatal	0	0	0	0	0	0						0	0.0	0.0%
Light Conditions	Daylight	2	7	5	8	5	1	24	2	1	1	0	28	4.7	84.8%
	Dusk	0	0	0	1	0	0	1	0	0	0	0	1	0.2	3.0%
	Dawn	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Dark - Lighted	3	0	0	0	0	0	1	2	0	0	0	3	0.5	9.1%
	Dark - Not Lighted	1	0	0	0	0	0	1	0	0	0	0	1	0.2	3.0%
	Dark - Lighting Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
Surface Condition	Dry	6	7	5	9	5	1	27	4	1	1	0	33	5.5	100.0%
	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Other	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
Month	January	0	0	0	1	0	0						1	0.2	3.0%
	February	1	3	1	2	0	0						7	1.2	21.2%
	March	0	1	0	2	0	1						4	0.7	12.1%
	April	2	0	0	3	0	0						5	0.8	15.2%
	May	0	0	1	0	1	0						2	0.3	6.1%
	June	0	0	0	0	0	0						0	0.0	0.0%
	July	1	1	1	0	1	0						4	0.7	12.1%
	August	0	0	0	0	1	0						1	0.2	3.0%
	September	1	0	1	0	1	0						3	0.5	9.1%
	October	0	0	0	1	1	0						2	0.3	6.1%
	November	0	2	1	0	0	0						3	0.5	9.1%
	December	1	0	0	0	0	0						1	0.2	3.0%
Day of Week	Monday	3	1	0	1	0	0	4	1	0	0	0	5	0.8	15.2%
	Tuesday	0	0	1	1	1	0	2	0	0	1	0	3	0.5	9.1%
	Wednesday	0	1	0	3	1	0	4	1	0	0	0	5	0.8	15.2%
	Thursday	1	3	0	2	0	0	6	0	0	0	0	6	1.0	18.2%
	Friday	1	0	1	2	1	1	6	0	0	0	0	6	1.0	18.2%
	Saturday	0	1	3	0	2	0	5	1	0	0	0	6	1.0	18.2%
	Sunday	1	1	0	0	0	0	0	1	1	0	0	2	0.3	6.1%
Hour of Day	0:00	2	0	0	0	0	0	1	1	0	0	0	2	0.3	6.1%
	1:00	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	2:00	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	3:00	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	4:00	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	5:00	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	6:00	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	7:00	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	8:00	0	0	1	1	0	0	1	0	0	1	0	2	0.3	6.1%
	9:00	0	1	0	0	0	0	1	0	0	0	0	1	0.2	3.0%
	10:00	0	1	0	1	0	0	2	0	0	0	0	2	0.3	6.1%
	11:00	0	0	0	0	1	0	1	0	0	0	0	1	0.2	3.0%
	12:00	1	0	0	1	1	0	2	1	0	0	0	3	0.5	9.1%
	13:00	0	2	3	0	0	0	5	0	0	0	0	5	0.8	15.2%
	14:00	0	1	0	0	1	0	1	0	1	0	0	2	0.3	6.1%
	15:00	0	1	0	0	0	1	2	0	0	0	0	2	0.3	6.1%
	16:00	0	1	1	4	1	0	6	1	0	0	0	7	1.2	21.2%
	17:00	0	0	0	1	0	0	1	0	0	0	0	1	0.2	3.0%
	18:00	1	0	0	0	1	0	2	0	0	0	0	2	0.3	6.1%
	19:00	1	0	0	1	0	0	2	0	0	0	0	2	0.3	6.1%
	20:00	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	21:00	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	22:00	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	23:00	1	0	0	0	0	0	0	1	0	0	0	1	0.2	3.0%
Time Period	12AM-6AM	2	0	0	0	0	0	1	1	0	0	0	2	0.3	6.1%
	6AM-12PM	0	2	1	2	1	0	5	0	0	1	0	6	1.0	18.2%
	12PM-6PM	1	5	4	6	3	1	17	2	1	0	0	20	3.3	60.6%
	6PM-12AM	3	0	0	1	1	0	4	1	0	0	0	5	0.8	15.2%
Alcohol & Drugs	None	5	7	5	9	5	1	27	3	1	1	0	32	5.3	97.0%
	Alcohol Involved	1	0	0	0	0	0	0	1	0	0	0	1	0.2	3.0%
	Drugs Involved	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
	Alcohol and Drugs	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%
Distraction Related	Yes	2	2	2	2	4	0	10	1	1	0	0	12	2.0	36.4%
	No	4	5	3	7	1	1	17	3	0	1	0	21	3.5	63.6%

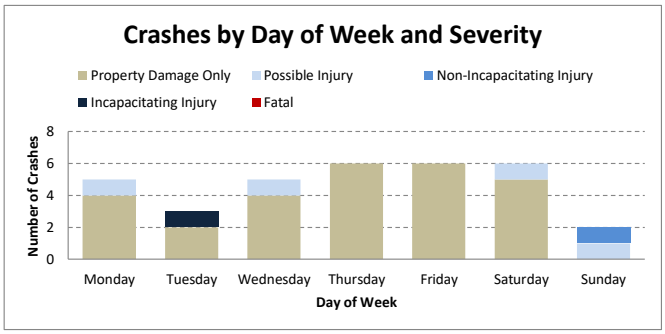
CRASH ANALYSIS - Bonita Beach Rd & Vanderbilt Dr Intersection

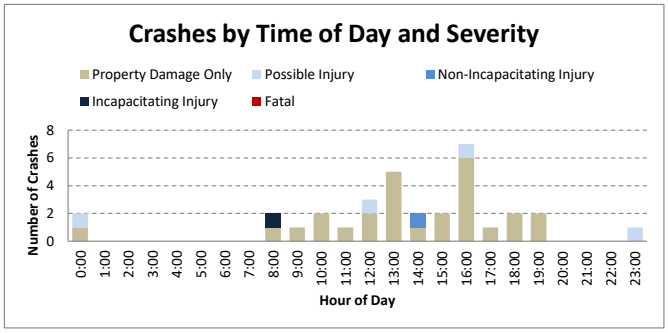












Intersection or Segment:	Intersection
Intersection:	US 41 & Bonita Beach Road Intersection
Crash Rate Comparison Area:	District-wide
Intersection Area Type:	Urban
Segment Length (mi) (1 if Intersection):	1.000

District-wide Crash Rates	
Urban Intersection, 3+ lane per direction, Divided state highway system roads	
Year	Average Crash Rate
2018	1.168
2019	1.177
2020	1.105
2021	1.419
2022	1.206
Average	1.215

Traffic Volumes

Count Station	Lee County Site 7	Lee County Site 131	FDOT 126023	Lee County Site 92	FDOT Site 120041	Lee County Site 23	FDOT Site 126023
Direction	West Leg	East Leg	East Leg	North Leg	North Leg	South Leg	South Leg
2018	25,000	-	38,000	46,600	51,000	32,600	33,153
2019	25,100	-	38,500	49,100	59,000	37,300	33,000
2020	22,500	24,700	-	41,500	44,000	31,800	31,500
2021	26,000	31,800	-	*48,000*	47,000	36,600	32,000
2022	23,900	32,200	-	54,500	58,500	37,300	32,000
Average	**24,500**	**29,567**	**38,250**	**47,940**	**51,900**	**35,120**	**32,331**

US 41 & Bonita Beach Road Intersection: District-wide Crash Rate Analysis

Year	Number of Crashes	Daily Entering Vehicles (DEV)	Million Entering Vehicles (MEV)	Actual Crash Rate (ACTUAL)	District-wide Average Crash Rate (AVERAGE)	Critical Crash Rate (CRITICAL)	Safety Ratio	Calculated K	Confidence Level (CONLV)
2018	79	72,338	26.403	2.992	1.168	1.880	1.592	8.759	99.99%
2019	58	76,400	27.886	2.080	1.177	1.871	1.112	4.483	99.99%
2020	57	60,800	22.192	2.568	1.105	1.862	1.379	6.658	99.99%
2021	56	69,800	25.477	2.198	1.419	2.215	0.992	3.386	99.95%
2022	48	73,625	26.873	1.786	1.206	1.921	0.930	2.828	99.75%
Average	60	70,593	25.766	2.329	1.215	1.949	1.195	5.218	99.99%

L = Not applicable

DEV – Daily Entering Vehicles

MEV – Million Entering Vehicles = (DEV * 365) / 1,000,000

ACTUAL – Actual Crash Rate = No. of crashes in a year / MEV

AVERAGE – District-wide Average Crash Rate for similar intersections

CRITICAL – Critical Crash Rate = AVERAGE + K * SQRT(AVERAGE/MEV) + 1/(2 * MEV)

Area type is Urban; therefore, K = 3.291

Safety Ratio = ACTUAL/CRITICAL

Calculated K = (ACTUAL - AVERAGE + 1/(2 * MEV))/SQRT(AVERAGE/MEV)

CONLV - Confidence Level: Percent probability that the crash rate is abnormally high for the study intersection using the District-wide average as a basis

0.6740	50%
0.8416	75%
1.0360	80%
1.2816	85%
1.6449	90%
1.9600	95%
2.3263	97.5%
2.5758	99%
2.8070	99.5%
3.0902	99.75%
3.2905	99.9%
3.7190	99.95%
	99.99%

Intersection or Segment:	Intersection
Intersection:	US 41 & Bonita Beach Road Intersection
Crash Rate Comparison Area:	Statewide
Intersection Area Type:	Urban
Segment Length (mi) (1 if Intersection):	1.000

Statewide Crash Rates	
Urban Intersection, 3+ lane per direction, Divided state highway system roads	
Year	Average Crash Rate
2018	1.562
2019	1.564
2020	1.224
2021	1.499
2022	1.305
Average	1.431

Traffic Volumes

Count Station	Lee County Site 7	Lee County Site 131	FDOT 126023	Lee County Site 92	FDOT Site 120041	Lee County Site 23	FDOT Site 126023
Direction	West Leg	East Leg	East Leg	North Leg	North Leg	South Leg	South Leg
2018	25,000	-	38,000	46,600	51,000	32,600	33,153
2019	25,100	-	38,500	49,100	59,000	37,300	33,000
2020	22,500	24,700	-	41,500	44,000	31,800	31,500
2021	26,000	31,800	-	*48,000*	47,000	36,600	32,000
2022	23,900	32,200	-	54,500	58,500	37,300	32,000
Average	**24,500**	**29,567**	**38,250**	**47,940**	**51,900**	**35,120**	**32,331**

US 41 & Bonita Beach Road Intersection: Statewide Crash Rate Analysis

Year	Number of Crashes	Daily Entering Vehicles (DEV)	Million Entering Vehicles (MEV)	Actual Crash Rate (ACTUAL)	Statewide Average Crash Rate (AVERAGE)	Critical Crash Rate (CRITICAL)	Safety Ratio	Calculated K	Confidence Level (CONLV)
2018	79	72,338	26.403	2.992	1.562	2.381	1.257	5.959	99.99%
2019	58	76,400	27.886	2.080	1.564	2.361	0.881	2.254	97.50%
2020	57	60,800	22.192	2.568	1.224	2.020	1.272	5.820	99.99%
2021	56	69,800	25.477	2.198	1.499	2.317	0.949	2.964	99.75%
2022	48	73,625	26.873	1.786	1.305	2.049	0.872	2.268	97.50%
Average	60	70,593	25.766	2.329	1.431	2.226	1.046	3.891	99.99%

L = Not applicable

DEV – Daily Entering Vehicles

MEV – Million Entering Vehicles = (DEV * 365) / 1,000,000

ACTUAL – Actual Crash Rate = No. of crashes in a year / MEV

AVERAGE – Statewide Average Crash Rate for similar intersections

CRITICAL – Critical Crash Rate = AVERAGE + K * SQRT(AVERAGE/MEV) + 1/(2 * MEV)

Area type is Urban; therefore, K = 3.291

Safety Ratio = ACTUAL/CRITICAL

Calculated K = (ACTUAL - AVERAGE + 1/(2 * MEV))/SQRT(AVERAGE/MEV)

CONLV - Confidence Level: Percent probability that the crash rate is abnormally high for the study intersection using the Statewide average as a basis

0.6740	50%
0.8416	75%
1.0360	80%
1.2816	85%
1.6449	90%
1.9600	95%
2.3263	97.5%
2.5758	99%
2.8070	99.5%
3.0902	99.75%
3.2905	99.9%
3.7190	99.95%
	99.99%

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2023 HISTORICAL AADT REPORT

COUNTY: 12 - LEE

SITE: 0041 - SR 45/US41, N OF BONITA BEACH ROAD

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2023	52500 C	N 27000	S 25500	9.00	53.80	4.30
2022	58500 C	N 29500	S 29000	9.00	53.70	4.20
2021	47000 C	N 24000	S 23000	9.00	53.10	4.30
2020	44000 C	N 22000	S 22000	9.00	52.80	4.90
2019	59000 C	N 30000	S 29000	9.00	53.30	3.20
2018	51000 C	N 25000	S 26000	9.00	53.30	4.10
2017	52500 C	N 26500	S 26000	9.00	53.20	2.10
2016	57500 C	N 28500	S 29000	9.00	56.20	2.10
2015	56500 C	N 28500	S 28000	9.00	54.50	2.10
2014	47000 C	N 23500	S 23500	9.00	54.60	2.80
2013	43000 C	N 21500	S 21500	9.00	59.70	3.10
2012	42500 C	N 21500	S 21000	9.00	54.30	2.40
2011	48500 C	N 24500	S 24000	9.00	55.00	2.40
2010	47000 C	N 23500	S 23500	10.32	57.60	2.20
2009	44000 C	N 21500	S 22500	10.24	54.47	2.60
2008	53500 C	N 26000	S 27500	10.37	58.94	2.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2023 HISTORICAL AADT REPORT

COUNTY: 12 - LEE

SITE: 4226 - BONITA BEACH RD/CR 865, E OF OLD 41 RD/CR 887 LC 226

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2023	39000 C	E 19500	W 19500	9.00	55.40	5.00
2022	43000 X	0	0	9.00	53.90	4.10
2021	41000 X	0	0	9.00	53.50	4.20
2020	38500 E	0	0	9.00	53.40	3.40
2019	38500 C	E 0	W 0	9.00	53.80	3.70
2018	38000 C	E 19000	W 19000	9.00	53.30	4.10
2017	38000 S	E	W	9.00	55.20	6.30
2016	38000 F	E 19000	W 19000	9.00	58.80	6.30
2015	37000 C	E 18500	W 18500	9.00	57.80	6.30
2014	35500 C	E 17500	W 18000	9.00	57.70	5.00
2013	34000 S	E 17000	W 17000	9.00	57.10	7.00
2012	34000 F	E 17000	W 17000	9.00	56.50	7.00
2011	34000 C	E 17000	W 17000	9.00	55.90	7.00
2010	33000 S	E 16500	W 16500	12.13	57.28	5.40
2009	33000 F	E 16500	W 16500	11.80	57.01	5.40
2008	33000 C	E 16500	W 16500	11.72	57.80	5.40

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2023 HISTORICAL AADT REPORT

COUNTY: 12 - LEE

SITE: 6023 - US 41, 0.25 MI N OF COLLIER CO/L, PTMS 42, LCPR 23

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2023	33500 X	0	0	9.00	53.80	4.20
2022	32000 X	0	0	9.00	53.70	4.00
2021	32000 T	0	0	9.00	53.10	4.30
2020	31500 S	0	0	9.00	52.80	4.90
2019	33000 F	0	0	9.00	53.30	3.20
2018	33153 C	0	0	9.00	57.80	4.10
2017	37500 F	0	0	9.00	57.80	4.20
2016	36468 C	N 18979	S 17489	9.00	57.80	4.00
2015	34903 C	N 18097	S 16806	9.00	54.40	2.50
2014	34105 C	N 17713	S 16392	9.00	54.40	2.90
2013	32993 C	N 17065	S 15928	9.00	53.50	2.80
2012	32441 C	N 16710	S 15731	9.00	54.50	2.90
2011	33235 C	N 17049	S 16186	9.00	56.50	2.80
2010	33789 C	N 17367	S 16422	11.41	52.73	2.80
2009	33379 C	N 17079	S 16300	10.80	54.93	3.20
2008	34722 C	N 17731	S 16991	11.04	57.00	2.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Bonita Beach Road – West of US 41 (Lee County Site 7)

LEE COUNTY **Traffic Count (TCDS)**

Home | Locate | Locate All | Email This | Auto-Locate:

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	7	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	No
LRS ID		LRS Loc Pt.	
SF Group	6 (2023)	Route Type	
AF Group		Route	
GF Group		Active	Yes
Class Dist Grp		Category	HPMS
Seas Clss Grp			
WIM Group			
QC Group	Default		
Fnct'l Class	Permanent Counter, Loops	Milepost	
Located On	BONITA BEACH RD		
Loc On Alias			
EAST OF	VANDERBILT RD		
More Detail			

STATION DATA

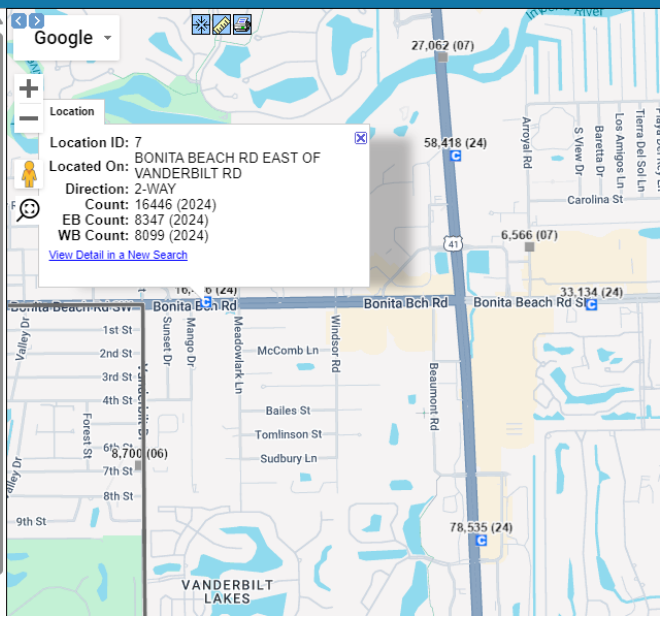
Directions: 2-WAY | EB | WB

1 2 1 2

AADT

	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2023	21,400	2,307	11	51			
	2022	23,900	2,838	12	56			
	2021	26,000	2,847	11	59			
	2020	22,500	2,901	13	58			
	2019	25,100	2,982	12	57			

1-5 of 18



LEE COUNTY **Traffic Count (TCDS)**

Home | Locate | Locate All | Email This | Auto-Locate:

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	7	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	No
LRS ID		LRS Loc Pt.	
SF Group	6 (2023)	Route Type	
AF Group		Route	
GF Group		Active	Yes
Class Dist Grp		Category	HPMS
Seas Clss Grp			
WIM Group			
QC Group	Default		
Fnct'l Class	Permanent Counter, Loops	Milepost	
Located On	BONITA BEACH RD		
Loc On Alias			
EAST OF	VANDERBILT RD		
More Detail			

STATION DATA

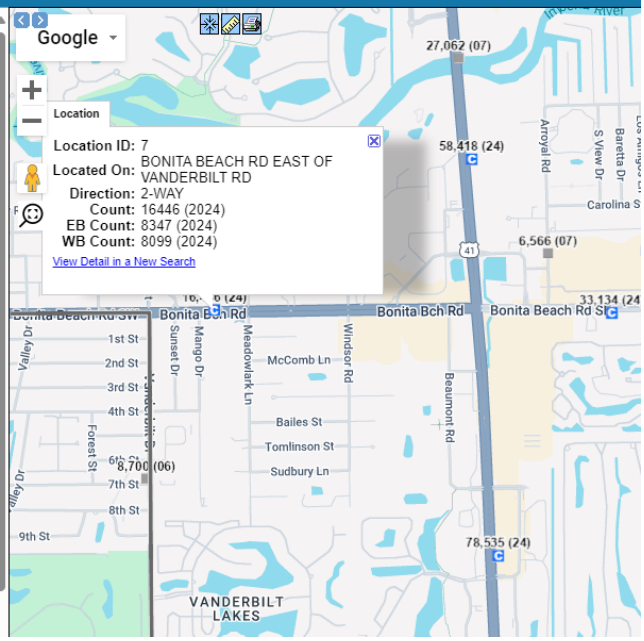
Directions: 2-WAY | EB | WB

1 2 1 2

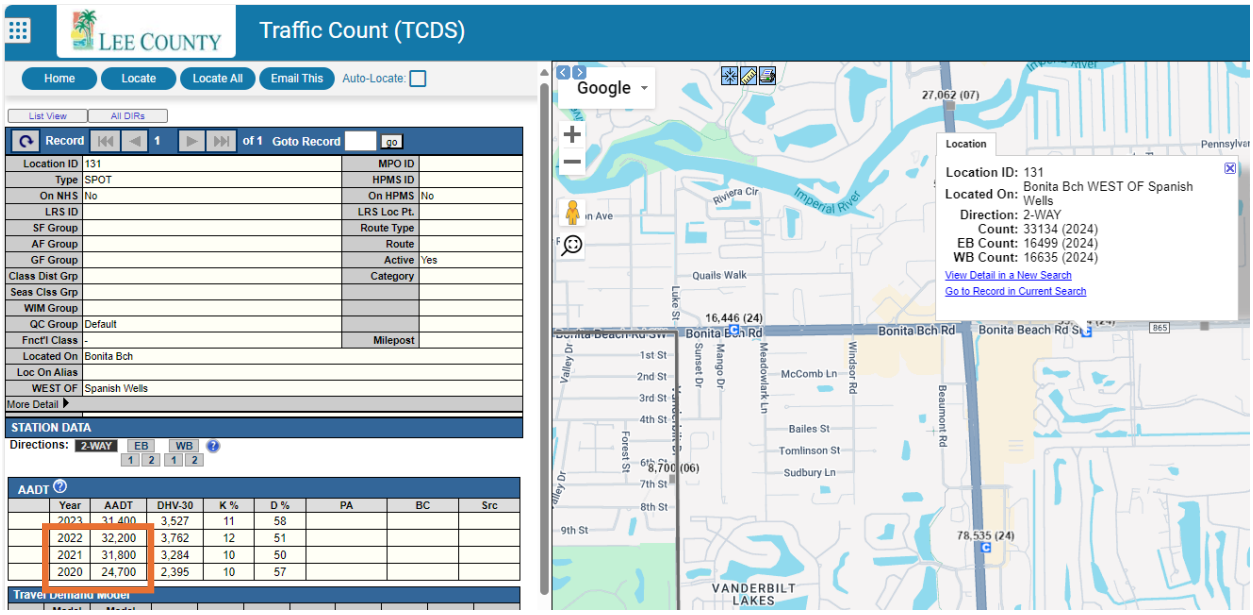
AADT

	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2018	25,000	3,029	12	54			
	2017	25,600						
	2016	25,900	3,071	12	55			
	2015	25,700	3,077	12	54			
	2014	24,600	2,996	12	54			

|<< < > >>| 6-10 of 18



Bonita Beach Road – East of US 41 (Lee County Site 131)



LEE COUNTY

Traffic Count (TCDS)

Home | Locate | Locate All | Email This | Auto-Locate:

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	131	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	No
LRS ID		LRS Loc Pt.	
SF Group		Route Type	
AF Group		Route	
GF Group		Active	Yes
Class Dist Grp		Category	
Seas Clss Grp			
WIM Group			
QC Group	Default		
Fnct'l Class	-	Milepost	
Located On	Bonita Bch		
Loc On Alias			
WEST OF	Spanish Wells		

More Detail

STATION DATA

Directions: 2-WAY | EB (1 2) | WB (1 2)

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2023	31,400	3,527	11	58			
2022	32,200	3,762	12	51			
2021	31,800	3,284	10	50			
2020	24,700	2,395	10	57			

Travel Demand Model

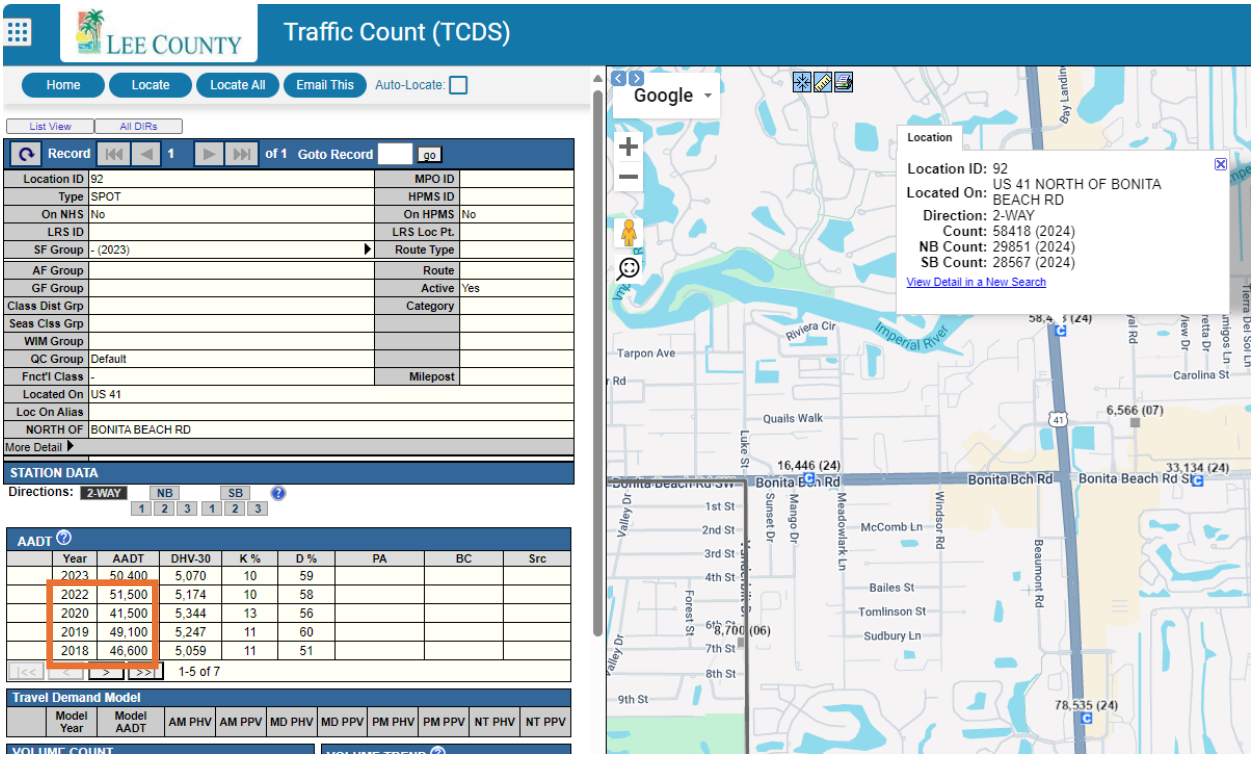
Google

Location

Location ID: 131
Located On: Bonita Bch WEST OF Spanish Wells
Direction: 2-WAY
Count: 33134 (2024)
EB Count: 16499 (2024)
WB Count: 16635 (2024)
View Detail in a New Search
Go to Record in Current Search

27,062 (07)
16,446 (24)
8,700 (06)
78,535 (24)
Riviera Cir
Imperial River
Quails Walk
Bonita Bch Rd
Bonita Beach Rd SW
Bonita Beach Rd SE
865
1st St
2nd St
3rd St
4th St
6th St
7th St
8th St
9th St
Luke St
Valley Dr
Sunset Dr
Mango Dr
Meadowlark Ln
Windsor Rd
McComb Ln
Bailes St
Tomlinson St
Sudbury Ln
Forest St
Beaumont Rd
VANDERBILT LAKES

US 41 – North of Bonita Beach Road – (Lee County Site 92)



LEE COUNTY Traffic Count (TCDS)

Home | Locate | Locate All | Email This | Auto-Locate:

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	92	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	No
LRS ID		LRS Loc Pt.	
SF Group	- (2023)	Route Type	
AF Group		Route	
GF Group		Active	Yes
Class Dist Grp		Category	
Seas Clss Grp			
WIM Group			
QC Group	Default		
Fnct'l Class	-	Milepost	
Located On	US 41		
Loc On Alias			
NORTH OF	BONITA BEACH RD		
More Detail			

STATION DATA

Directions: 2-WAY NB 1 2 3 SB 1 2 3

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2023	50,400	5,070	10	59			
2022	51,500	5,174	10	58			
2020	41,500	5,344	13	56			
2019	49,100	5,247	11	60			
2018	46,600	5,059	11	51			

1-5 of 7

Travel Demand Model

Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV

Google

Location

Location ID: 92
Located On: US 41 NORTH OF BONITA BEACH RD
Direction: 2-WAY
Count: 58418 (2024)
NB Count: 29851 (2024)
SB Count: 28567 (2024)
View Detail in a New Search

Riviera Cir | Imperial River | Tarpon Ave | Carolina St | Quails Walk | 6,566 (07) | 16,446 (24) | 33,134 (24) | Bonita Bch Rd | Bonita Beach Rd SE | 1st St | 2nd St | 3rd St | 4th St | McComb Ln | Bailes St | Tomlinson St | Sudbury Ln | 7th St | 8th St | 9th St | 78,535 (24)

The 2021 AADT of 48,000 was calculated through linear interpolation based on the 2020 and 2022 AADT data.

US 41 – South of Bonita Beach Road – (Lee County Site 92)

LEE COUNTY **Traffic Count (TCDS)**

Home | Locate | Locate All | Email This | Auto-Locate:

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	23	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	No
LRS ID		LRS Loc Pt.	
SF Group	6 (2023)	Route Type	
AF Group		Route	
GF Group		Active	Yes
Class Dist Grp		Category	HPMS
Seas Clss Grp			
WIM Group			
QC Group	Default		
Fnct'l Class	-	Milepost	
Located On	US-41 (SR 45)		
Loc On Alias			
NORTH OF	COLLIER CO LINE		

More Detail

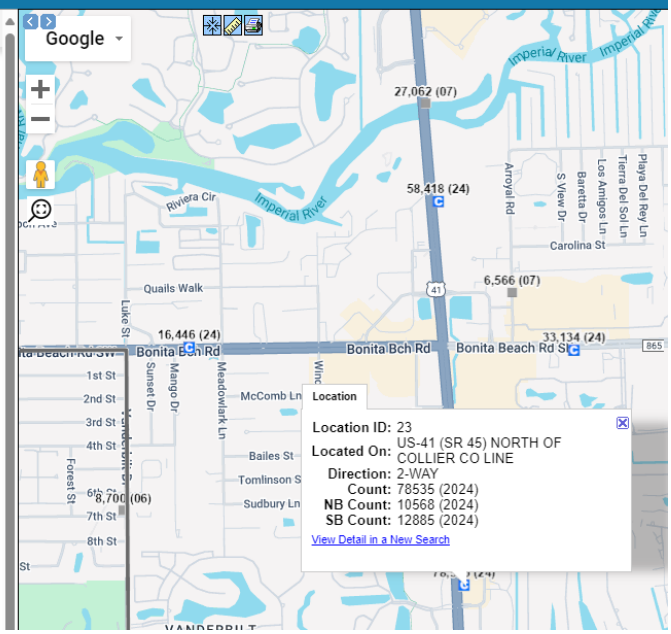
STATION DATA

Directions: 2-WAY | NB 1 2 3 | SB 1 2 3

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2023	37,700	3,825	10	56			
2022	37,300	3,729	10	59			
2021	36,600	3,721	10	65			
2020	31,800	3,814	12	60			
2019	37,300	4,142	11	63			

|<< < > >>| 1-5 of 19



LEE COUNTY **Traffic Count (TCDS)**

Home | Locate | Locate All | Email This | Auto-Locate:

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	23	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	No
LRS ID		LRS Loc Pt.	
SF Group	6 (2023)	Route Type	
AF Group		Route	
GF Group		Active	Yes
Class Dist Grp		Category	HPMS
Seas Clss Grp			
WIM Group			
QC Group	Default		
Fnct'l Class	-	Milepost	
Located On	US-41 (SR 45)		
Loc On Alias			
NORTH OF	COLLIER CO LINE		

More Detail

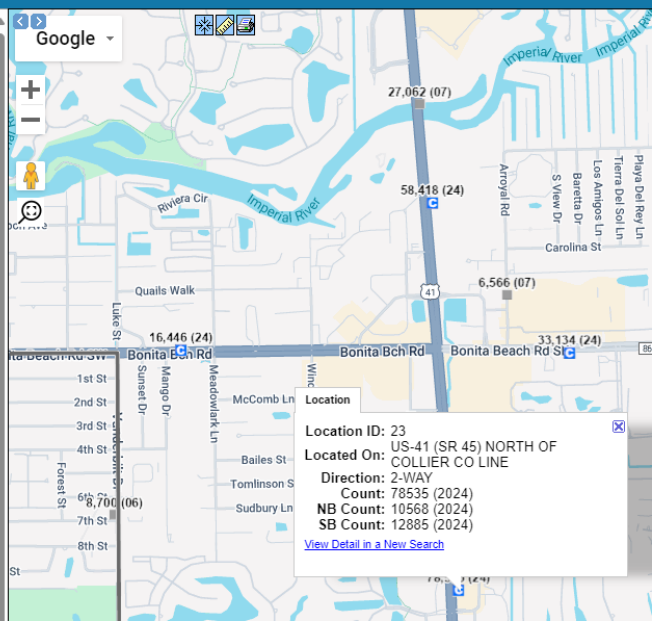
STATION DATA

Directions: 2-WAY | NB 1 2 3 | SB 1 2 3

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2018	32,600	3,451	11	61			
2017	36,900						
2016	36,100	3,810	11	57			
2015	34,800	3,731	11	52			
2014	33,900	3,695	11	60			

|<< < > >>| 6-10 of 19



Appendix C – Existing Environmental Information

Table C-1: Protected Species with Potential to Occur in the US 41 and Bonita Beach Road Study Area

Scientific Name	Common Name	USFWS	FWC	FDACS	Potential Occurrence
Birds					
Aphelocoma coerulescens	Florida scrub-jay	T	T		No
Athene cunicularia floridana	Florida burrowing owl		T		Low
Calidris canutus rufa	Rufa Red Knot	T	T		No
Egretta caerulea	Little blue heron		T		Observed
Egretta rufescens	Reddish egret		T		Moderate
Egretta tricolor	Tricolored heron		T		Observed
Grus canadensis	Florida sandhill crane		T		Moderate
Haliaeetus leucocephalus	Bald eagle	BGEPA/MBTA	M		Observed
Mycteria americana	Wood stork	T	T		High
Laterallus jamaicensis jamaicensis	Eastern black rail	T	T		No
Platalea ajaja	Roseate Spoonbill		T		Moderate
Sternula antillarum	Least tern		T		No
Insects					
Danaus plexippus	Monarch butterfly	C			Moderate
Mammals					
Eumops floridanus	Florida bonneted bat	E	E		Moderate
Perimyotis subflavus	Tricolored bat	C			Moderate
Puma concolor coryi	Florida Panther	E	E		Low
Sciurus niger avicennia	Big Cypress fox squirrel		T		Low
Trichechus manatus	West Indian manatee	T	T		No
Ursus americanus floridanus	Florida black bear		M		High
Reptiles					
Crocodylus acutus	American crocodile	T	T		No
Drymarchon couperi	Eastern indigo snake	T	T		Moderate
Gopherus polyphemus	Gopher tortoise		T		Burrows Observed
Pituophis melanoleucus mugitus	Florida pine snake		T		Moderate
Plants					
Andropogon arctatus	Pinewoods bluestem			T	Low
Calopogon multiflorus	Many-flowered grass-pink			T	Low
Chamaesyce cumulicola	Sand-dune spurge			E	Low
Deeringothamnus pulchellus	Beautiful pawpaw	E			Low

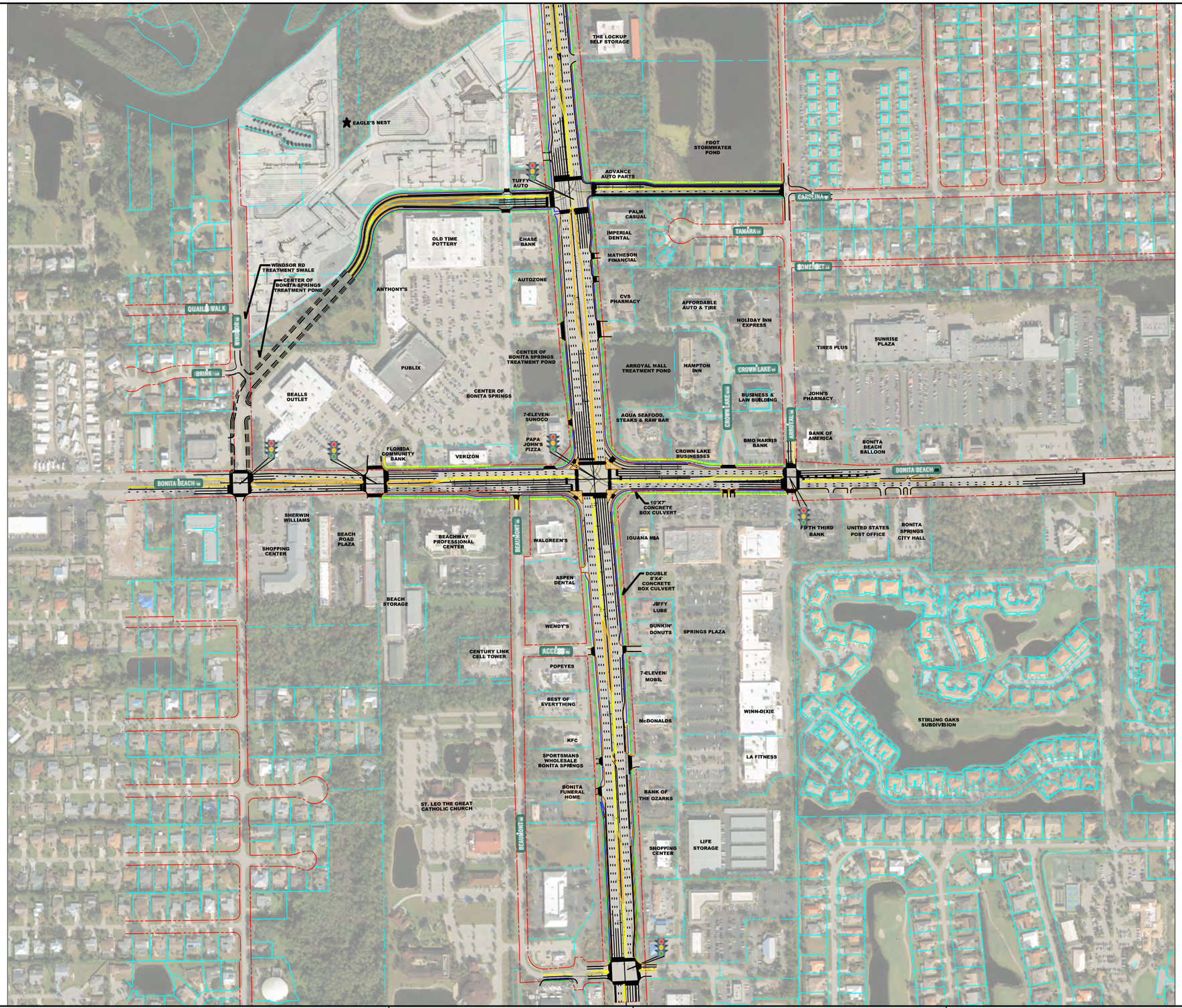
Scientific Name	Common Name	USFWS	FWC	FDACS	Potential Occurrence
Harrisia aboriginum	Aboriginal prickly-apple	E			Low
Lechea cernua	Nodding pinweed			T	Low
Lechea divaricata	Pine pinweed			E	Low
Linum carteri var. smallii	Small's flax			E	Low
Nemastylis floridana	Celestial lily			E	Low
Nolina atopocarpa	Florida beargrass			T	Low
Pteroglossaspis ecristata	Giant orchid			T	Low
Stylisma abdita	Scrub stylisma			E	Low

E = Endangered
T = Threatened
C = Candidate
M = Managed
T/S = Threatened due to Similarity of Appearance

BGEPA = Bald and Golden Eagle Protection Act
MBTA = Migratory Bird Treaty Act
FDACS = Florida Department of Agriculture and Consumer Services
FWC = Florida Fish and Wildlife Conservation Commission
USFWS = United States Fish and Wildlife Service

Appendix D – Alternatives A and B Concept Plans

Alternative A Concept Plan



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 at Bonita Beach Road
PD&E Study
Alternative A - Traffic Signal

SHEET NO. 1

dtorre 1/9/2024 3:15:03 PM Sheet 1 H:\23\23707 - US 41 & Bonita Beach Road PD&E Study\Engineering\design\Preferred Alternative\roadway\Alt A_2023-12-18_Plan View.dgn



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

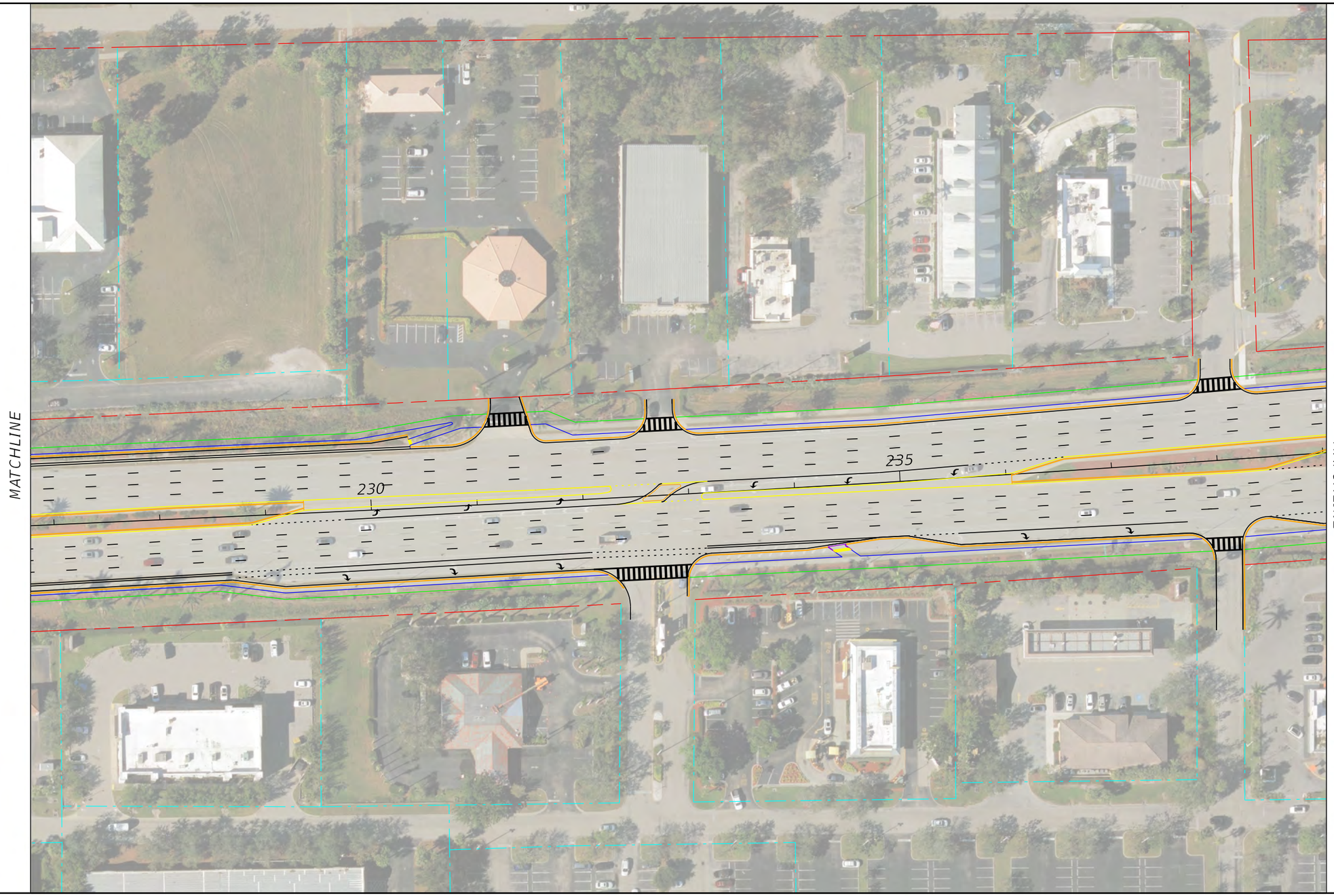
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE A - TRAFFIC SIGNAL

SHEET NO. 2



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE A - TRAFFIC SIGNAL

SHEET NO. 3

MATCHLINE

MATCHLINE

N 88° 45' 42" E

275

240

245

250

280

NEW RETAINING WALL WITH 42" PEDESTRIAN RAILING

0 20 100

Feet

PARCEL LINE

PROPERTY LINE

PROPOSED ROW

TRAFFIC SEPARATOR

FRONT OF SIDEWALK

BACK OF SIDEWALK

CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

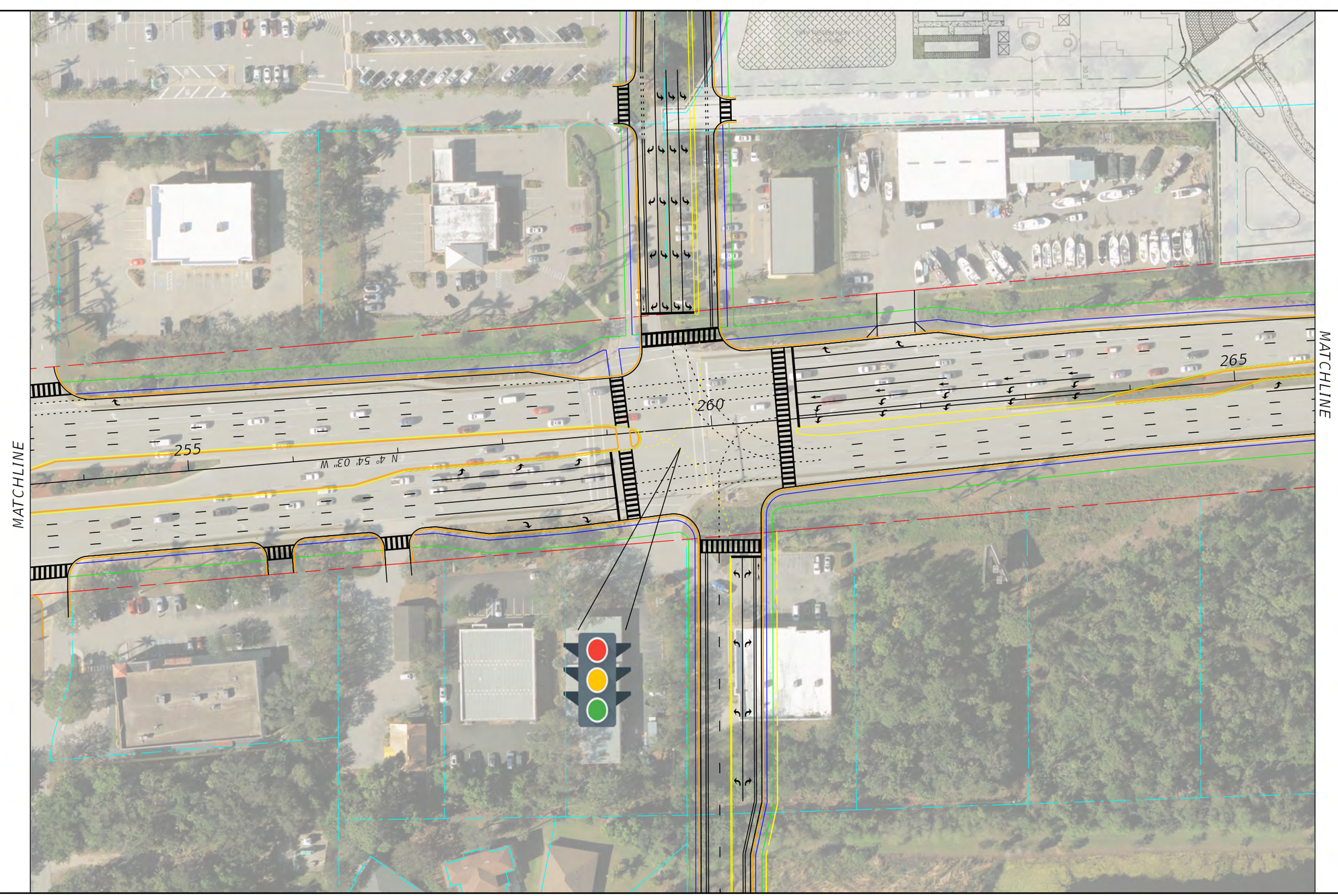
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE A - TRAFFIC SIGNAL

SHEET NO. 4



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

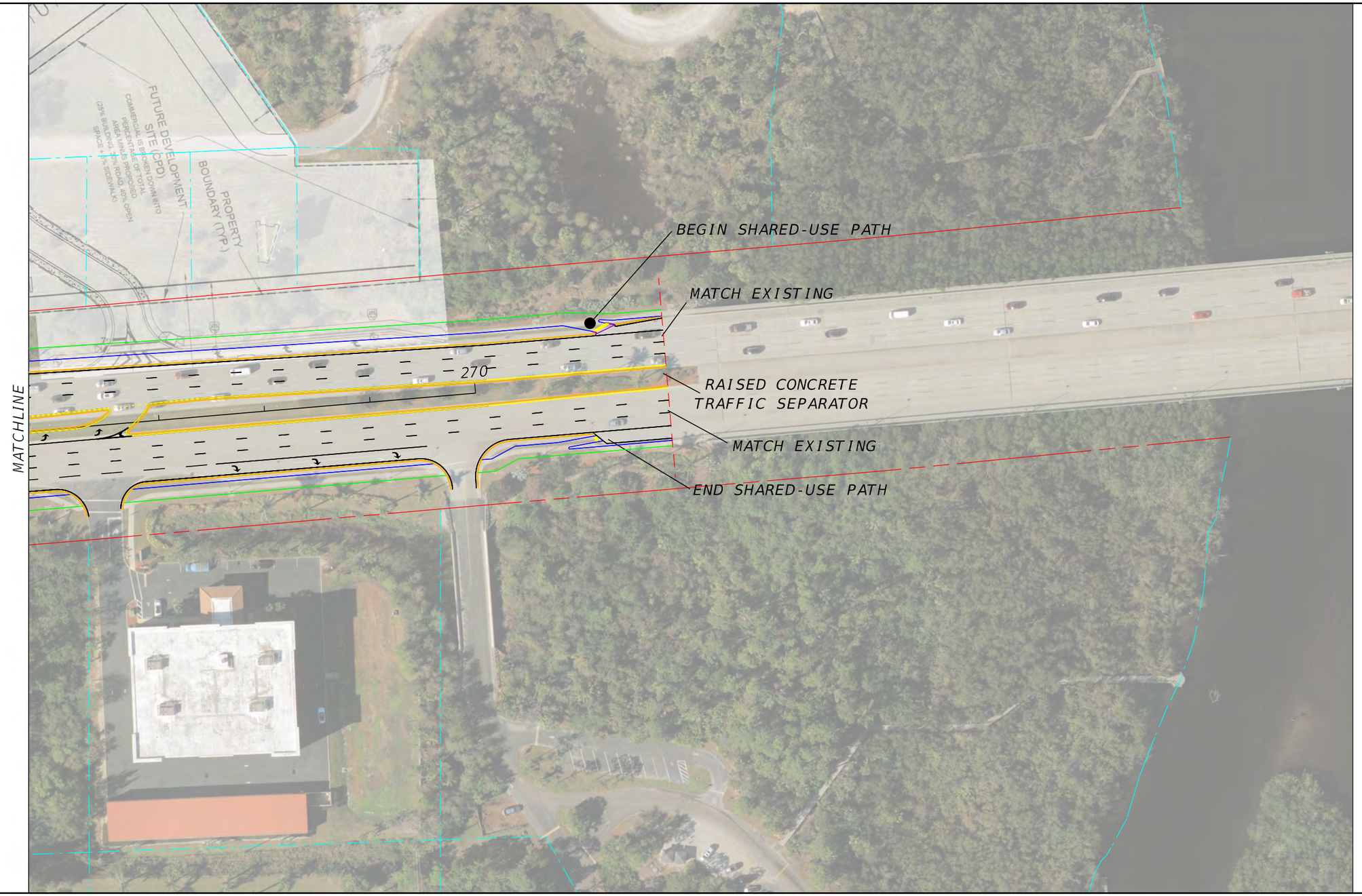
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 at Bonita Beach Road
PD&E Study
Alternative A - Traffic Signal

SHEET NO. 5



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

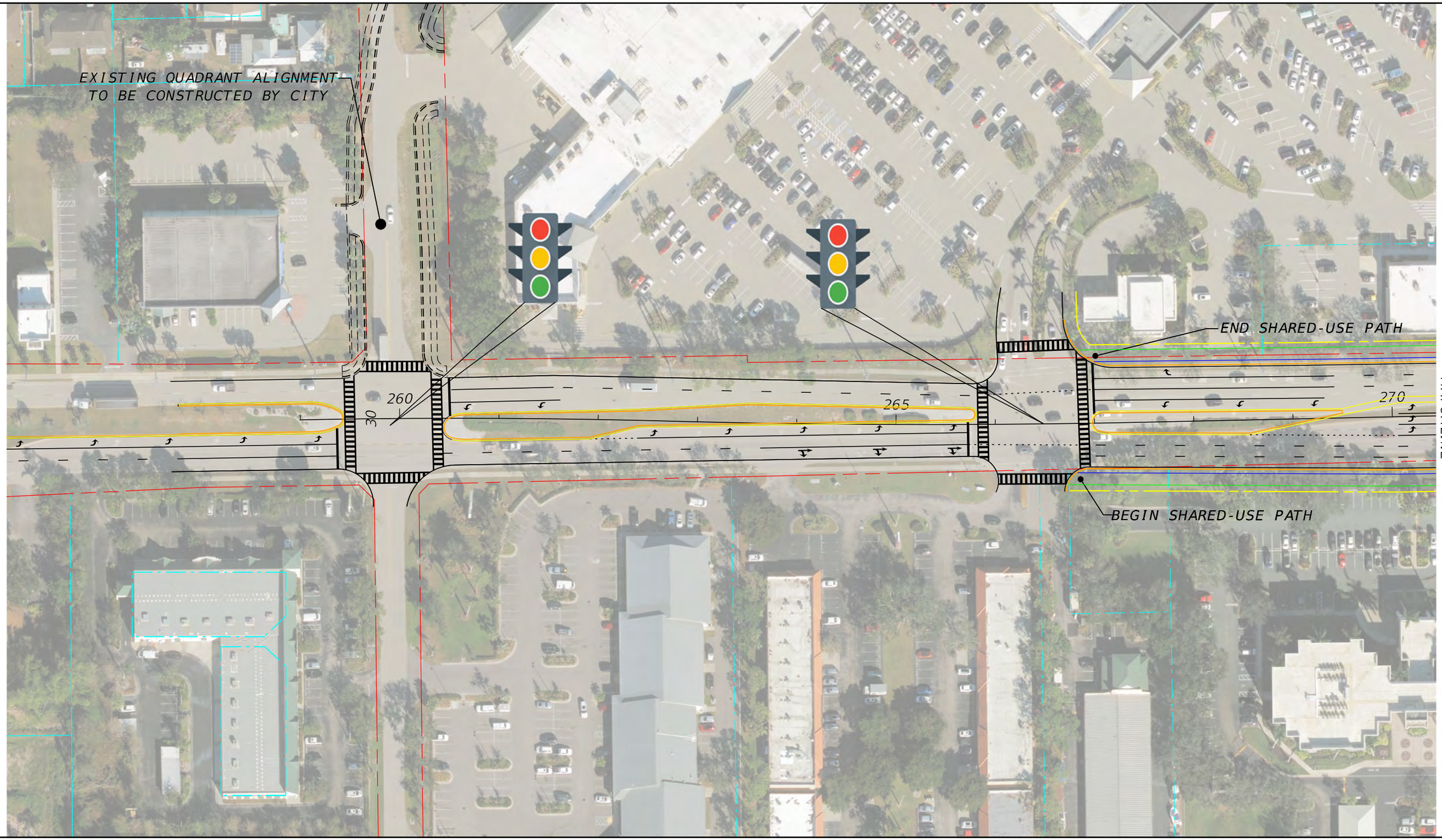
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 at Bonita Beach Road
PD&E Study
Alternative A - Traffic Signal

SHEET NO. 6



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

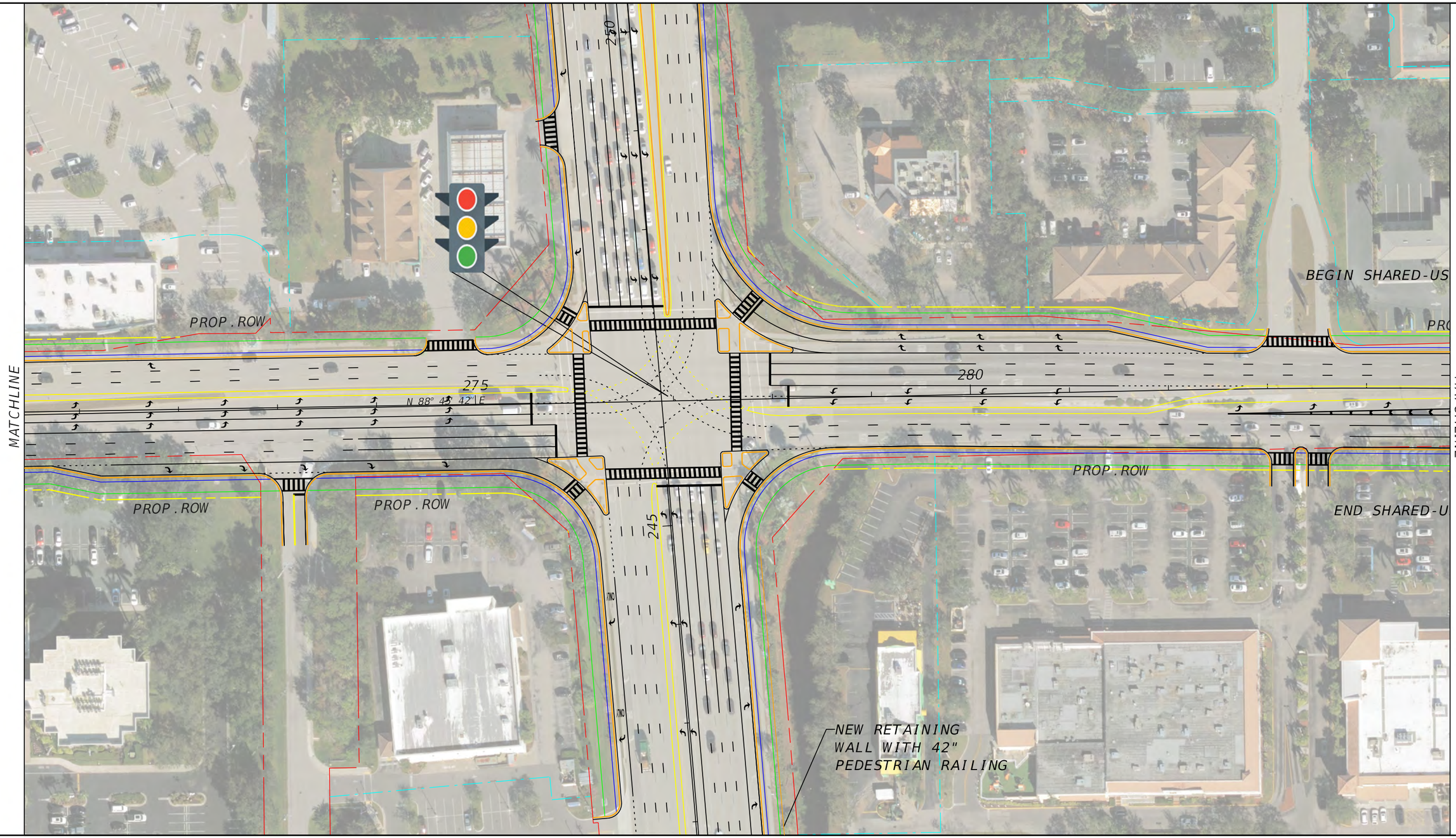
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE A - TRAFFIC SIGNAL

SHEET NO. 7



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE A - TRAFFIC SIGNAL

SHEET NO. 8

PI STA. = 290+53.27
DELTA = 3° 41' 55" (LT)
D = 0° 34' 11"
T = 324.70
L = 649.18
R = 10,056.50
PC STA. = 287+28.57
PT STA. = 293+77.75

BEGIN SHARED-USE PATH

MATCHLINE

285

290

295

END SHARED-USE PATH

0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

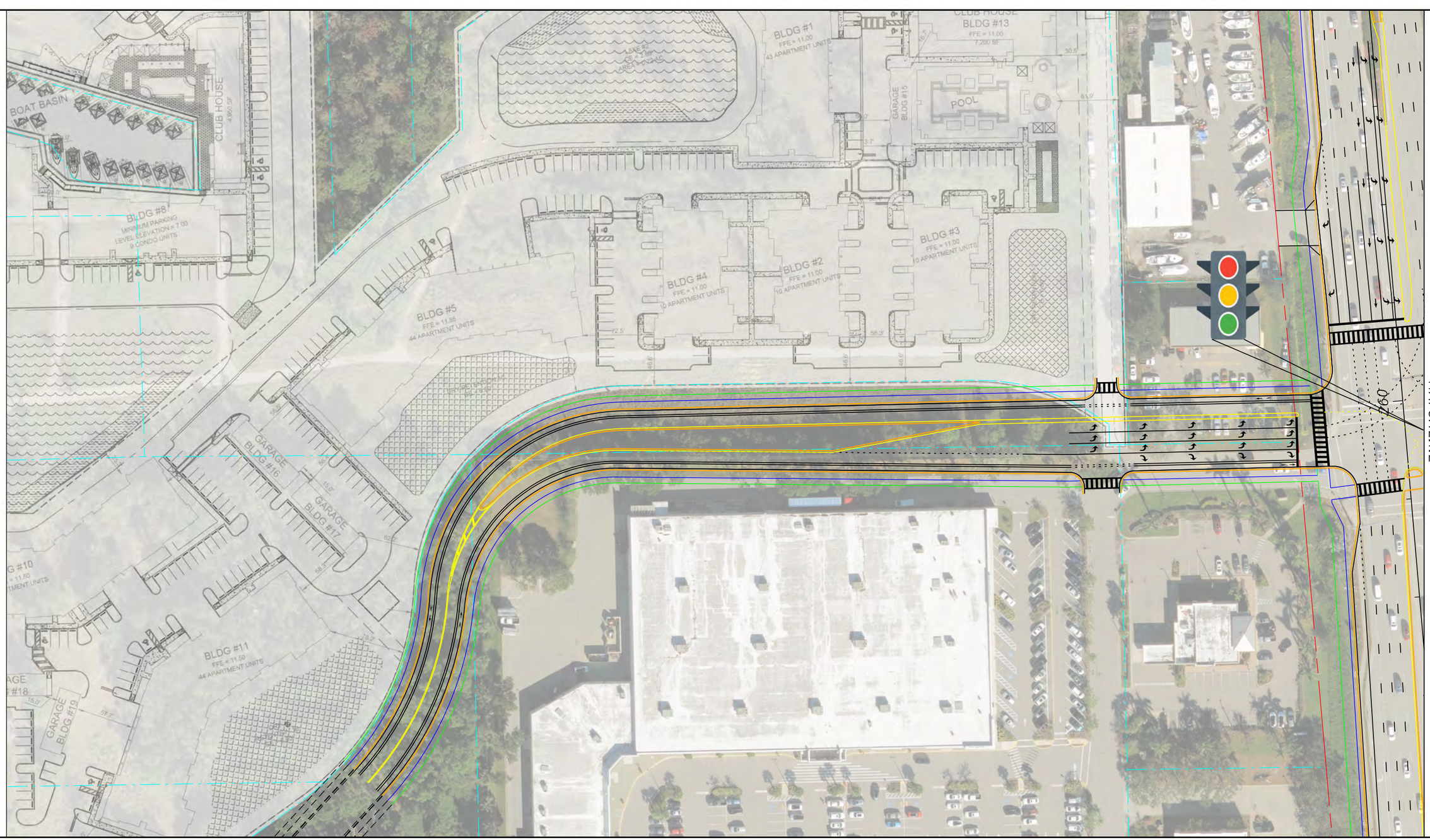
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE A - TRAFFIC SIGNAL

SHEET NO. 9



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE A - TRAFFIC SIGNAL

SHEET NO. 10



N

0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

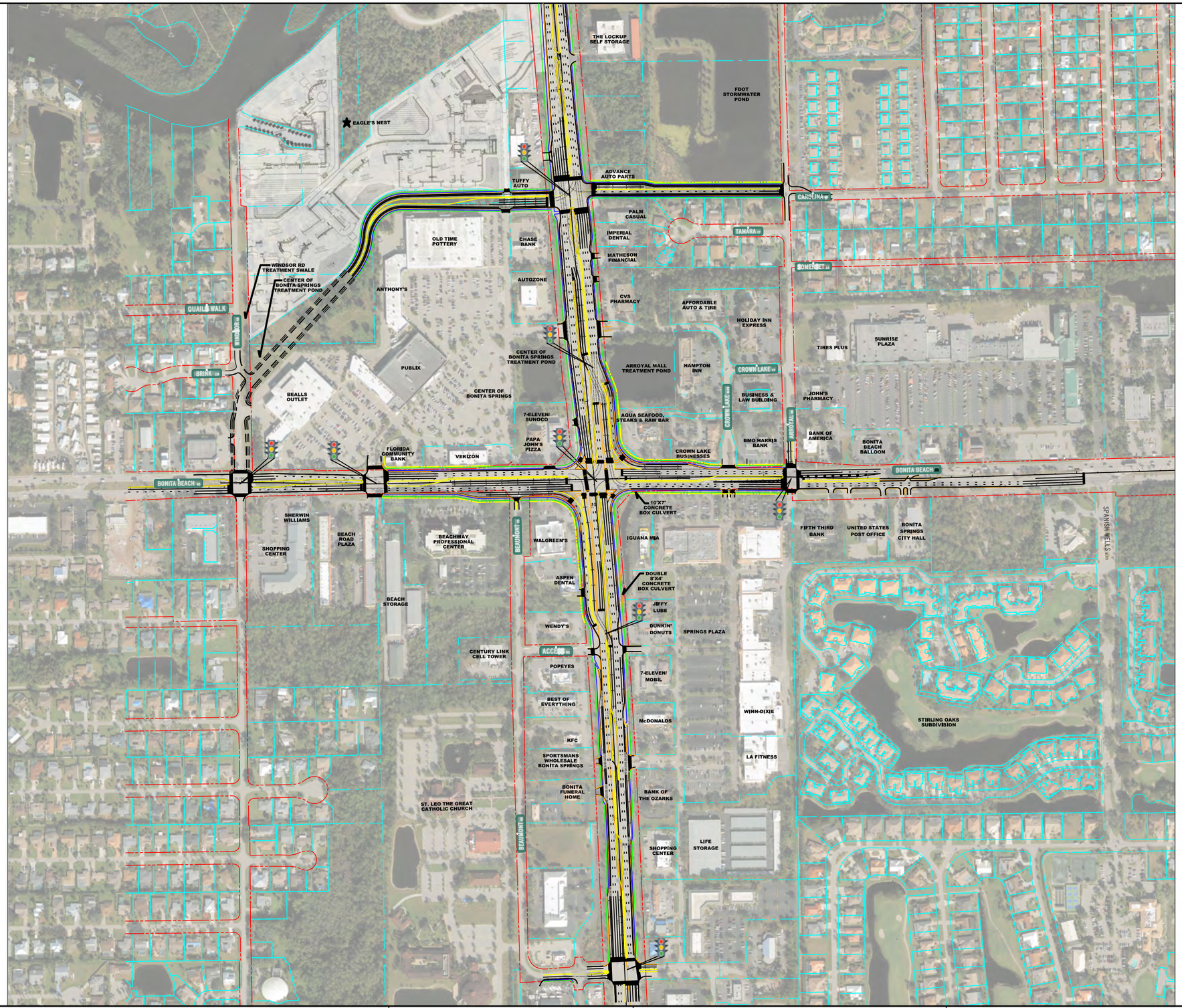
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE A - TRAFFIC SIGNAL

SHEET NO.
11

Alternative B Concept Plan



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE B - PDLT

SHEET NO. 1

dtorre 12/20/2023 9:18:32 AM Sheet 1 H:\23\23707 - US 41 & Bonita Beach Road PD&E Study\Engineering\design\Preferred Alternative\roadway\Alt B_2023-12-18_Plan View.dgn



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

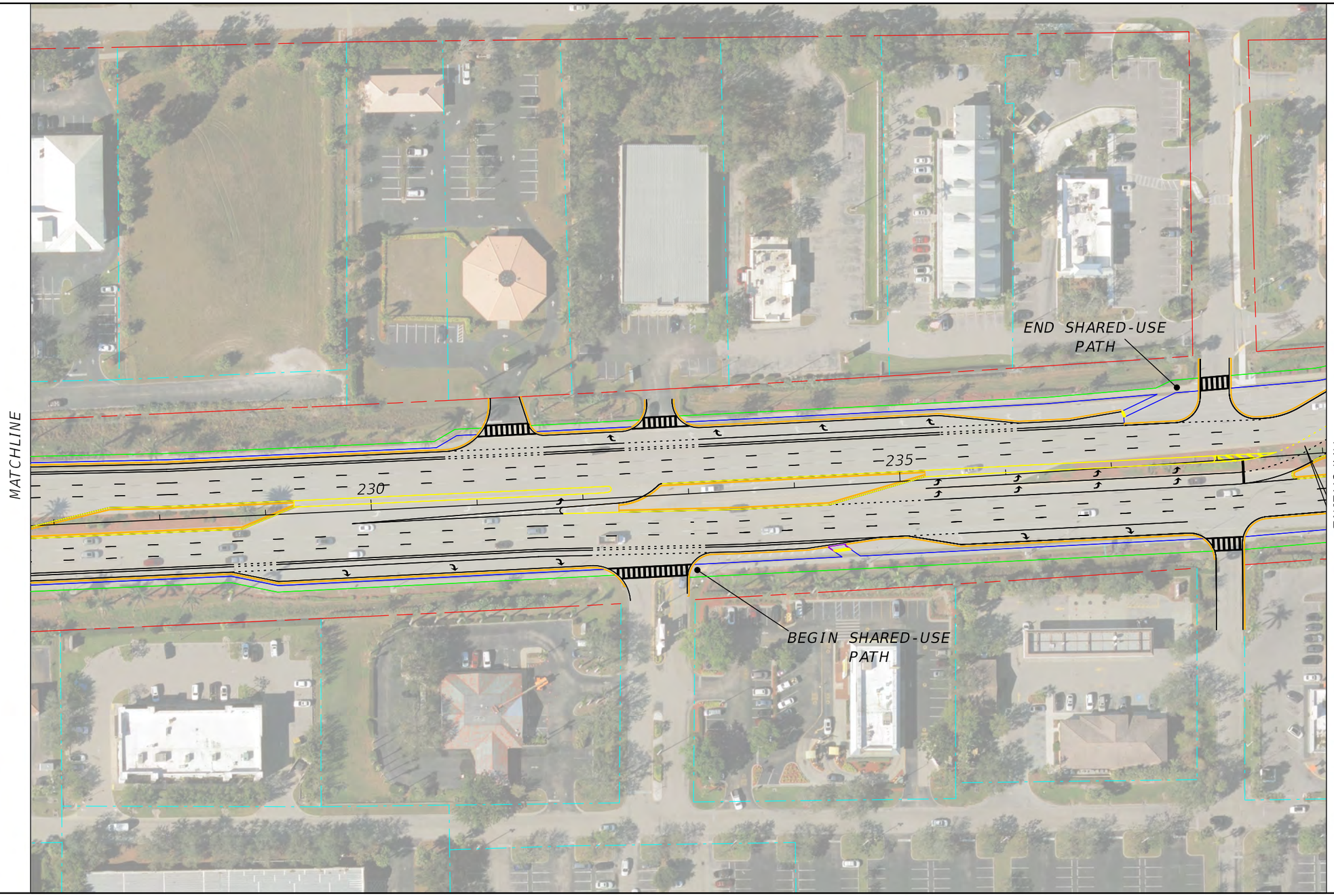
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE B - PDLT

SHEET NO. 2



N

0 20 100

Feet

PARCEL LINE

PROPERTY LINE

PROPOSED ROW

TRAFFIC SEPARATOR

FRONT OF SIDEWALK

BACK OF SIDEWALK

CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE B - PDLT

SHEET NO. 3

MATCHLINE

6' TRAFFIC SEPARATORS

N 88° 45' 42"E

275

245

240

250

NEW RETAINING WALL WITH 42" PEDESTRIAN RAILING

280

EXIST. DITCH/CANAL TO BE REPLACED WITH BOX CULVERT

6' TRAFFIC SEPARATORS

END NEW BOX CULVERT

MATCHLINE

N

0 20 100

Feet

PARCEL LINE

PROPERTY LINE

PROPOSED ROW

TRAFFIC SEPARATOR

FRONT OF SIDEWALK

BACK OF SIDEWALK

CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

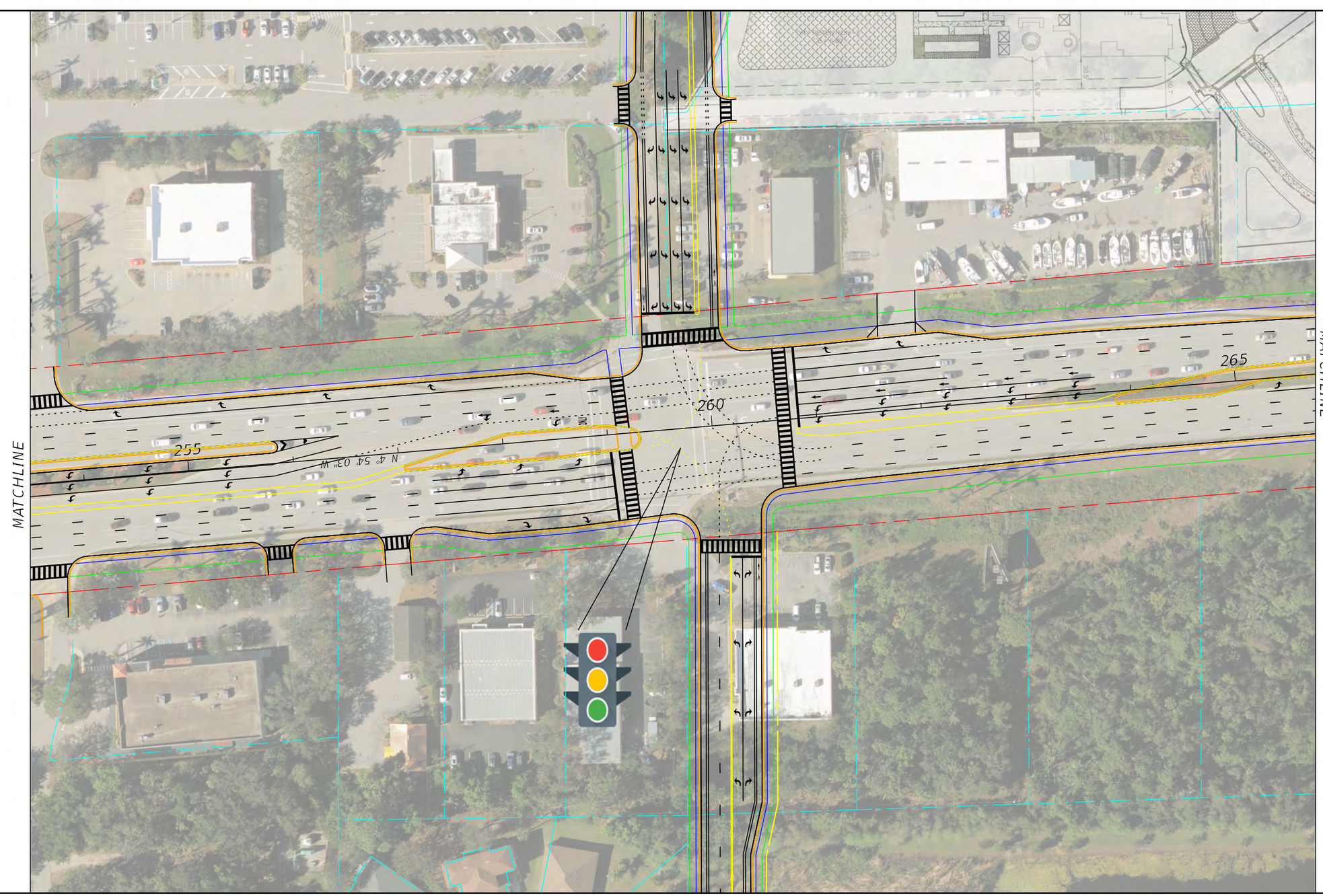
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE B - PDLT

SHEET NO. 4



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

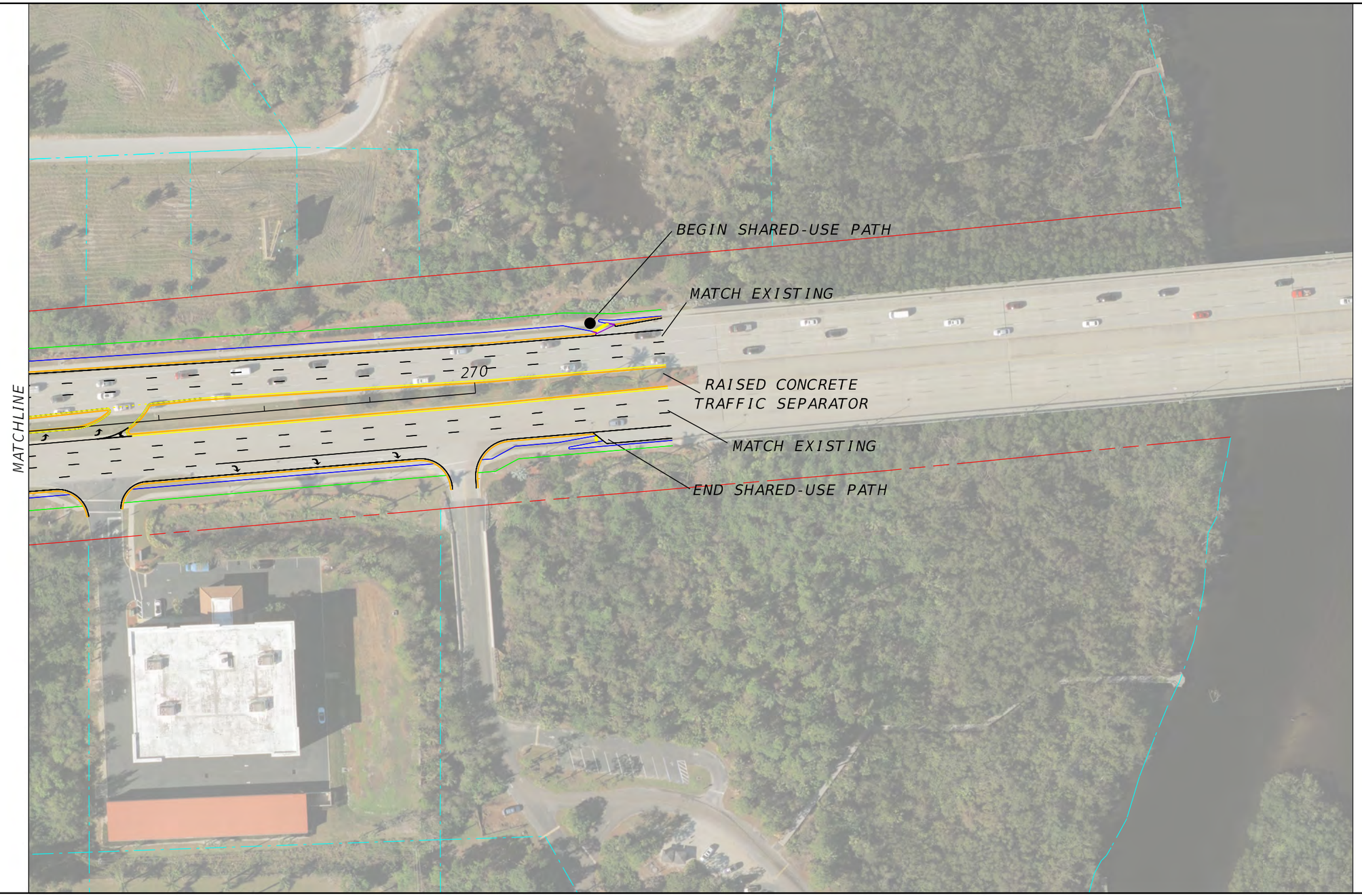
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE B - PDLT

SHEET NO. 5



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 at Bonita Beach Road
PD&E Study
Alternative B - PDLT

SHEET NO. 6



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

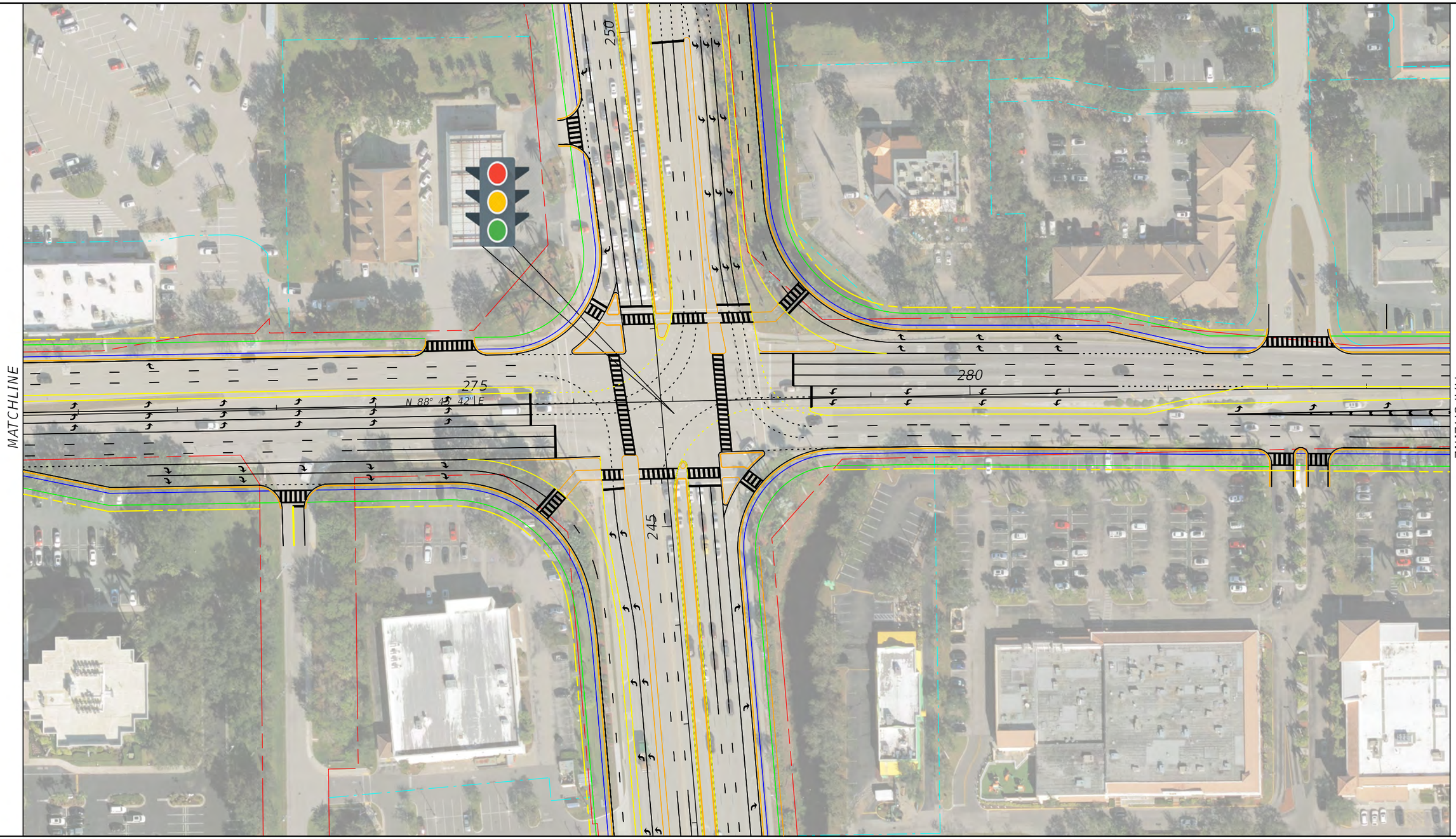
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE B - PDLT

SHEET NO. 7



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE B - PDLT

SHEET NO. 8

PI STA. = 290+53.27
DELTA = 3° 41' 55" (LT)
D = 0° 34' 11"
T = 324.70
L = 649.18
R = 10,056.50
PC STA. = 287+28.57
PT STA. = 293+77.75

BEGIN SHARED-USE PATH

END SHARED-USE PATH

MATCHLINE

285

290

295

0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

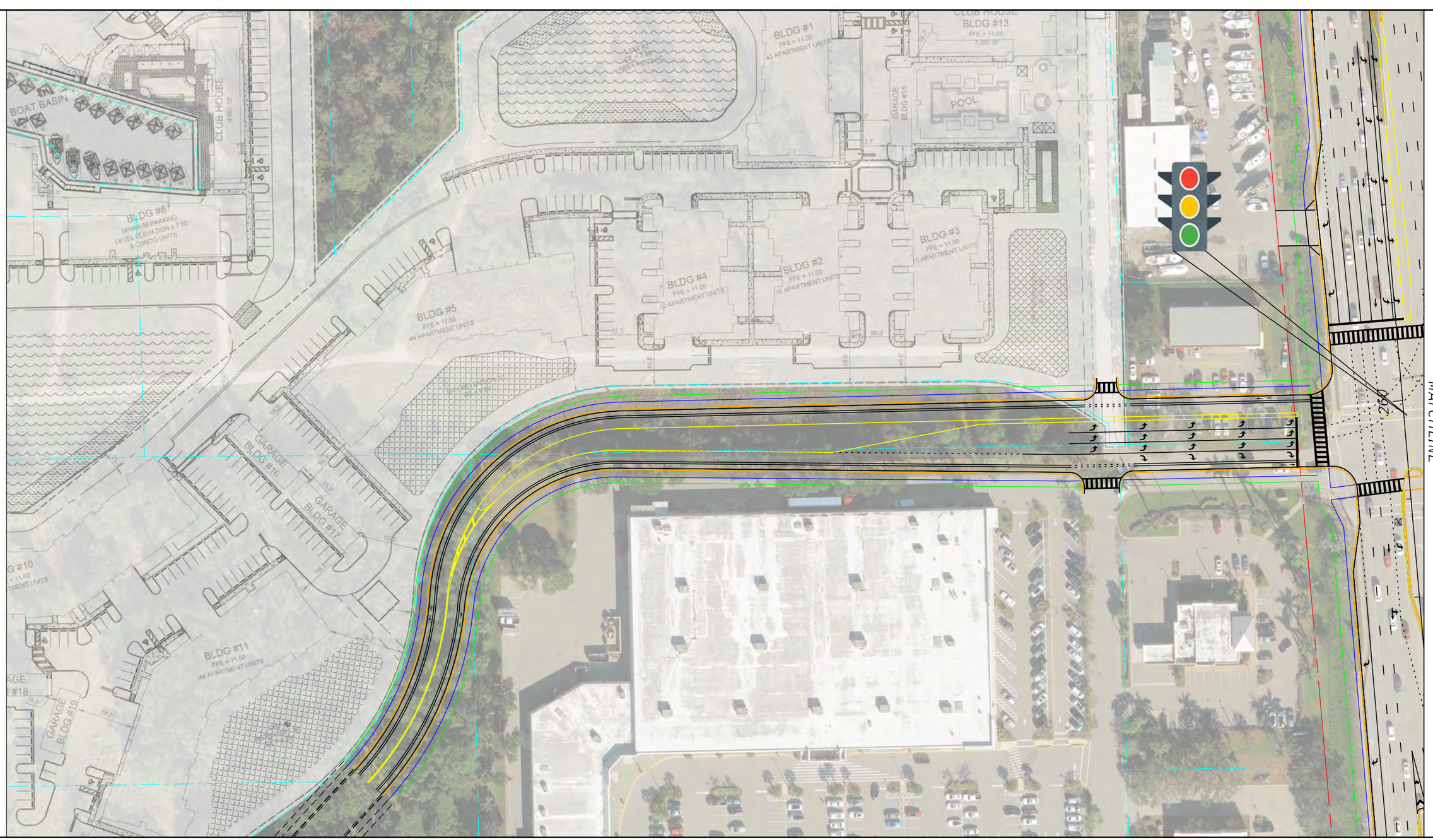
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
ALTERNATIVE B - PDLT

SHEET NO. 9



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 10



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 11

Appendix E – SPICE/ICE Output Sheets

Outputs

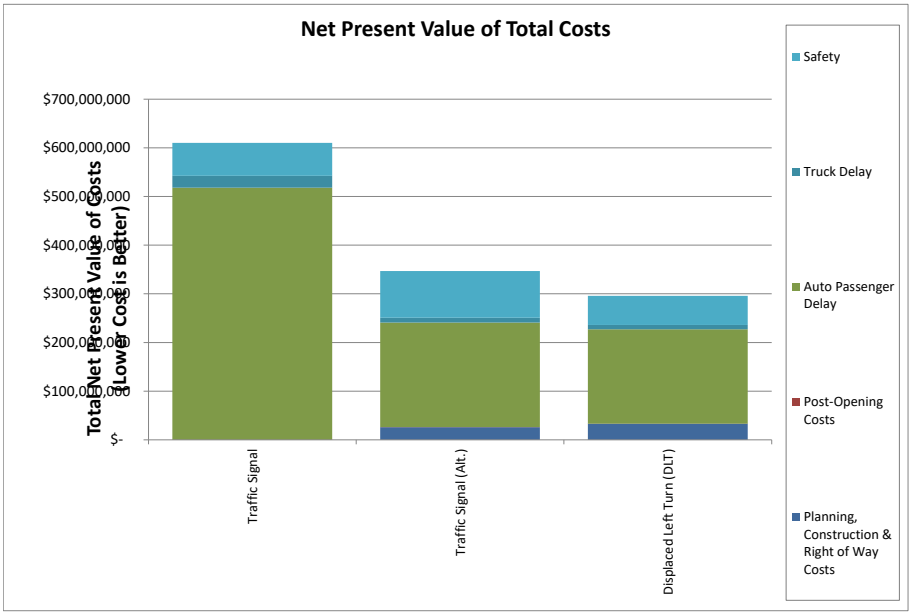
This sheet compiles the data from summary tables in individual alternatives sheets. To populate the output sheet press the "Setup Worksheets" button in the Alternatives_MasterList tab.

Agency:		FDOT District 1
Project Name:		US 41 at Bonita Beach Road PD&E Study
Project Reference:		437210-1
Intersection:		US 41 at Bonita Beach Road
City:		Bonita Springs
State:		FL
Performing Department or Organization:		Kittelson & Associates, Inc.
Date:		3/14/2023
Analyst:		TAH
Analysis Type		At-Grade Intersection

Analysis Summary

Cost Categories	Net Present Value of Costs			
	Base Case - Traffic Signal	Traffic Signal	Traffic Signal (Alt.)	Displaced Left Turn (DLT)
Planning, Construction & Right of Way Costs	$ -	$ -	$ 26,130,000	$ 33,110,000
Post-Opening Costs	$ 98,229	$ 98,229	$ 98,229	$ 238,276
Auto Passenger Delay	$ 518,057,346	$ 518,057,346	$ 214,690,192	$ 193,769,624
Truck Delay	$ 24,327,189	$ 24,327,189	$ 10,083,158	$ 9,099,847
Safety	$ 67,707,714	$ 67,707,714	$ 95,826,837	$ 59,592,328
Total cost	**$610,190,479**	**$610,190,479**	**$346,828,415**	**$295,810,075**

Select Base Case for Benefit-Cost Comparison: (Choose from list)	Traffic Signal			
Benefit Categories	**Net Present Value of Benefits Relative to Base Case**			
		Traffic Signal	**Traffic Signal (Alt.)**	**Displaced Left Turn (DLT)**
Auto Passenger Delay			$ 303,367,155	$ 324,287,722
Truck Delay			$ 14,244,031	$ 15,227,342
Safety			$ (28,119,123)	$ 8,115,387
Net Present Value of Benefits			**$ 289,492,064**	**$ 347,630,451**
Net Present Value of Costs			**$ 26,130,000**	**$ 33,250,048**
Net Present Value of Improvement			**$ 263,362,064**	**$ 314,380,404**
Benefit-Cost (B/C) Ratio			**11.08**	**10.46**
Delay B/C			**12.16**	**10.21**
Safety B/C			**preferred. Benefits are less than base case and cost is greater than base**	**0.24**



Florida Department of Transportation
Safety Performance for Intersection Control Evaluation Tool

Results

Summary of crash prediction results for each alternative

Project Information

Project Name:	US 41 at Bonita Beach Road PD&E Study	**Intersection Type**	At-Grade Intersection
Intersection:	US 41 at Bonita Beach Road	**Opening Year**	2030
Agency:	FDOT District 1	**Design Year**	2050
Project Reference:	437210-1	**Facility Type**	On Urban and Suburban Arterial
City:	Bonita Springs	**Number of Legs**	4-leg
State:	FL	**1-Way/2-Way**	2-way Intersecting 2-way
Date:	3/14/2023	**# of Major Street Lanes (both directions)**	6 or more
Analyst:	TAH	**Major Street Approach Speed**	Less than 55 mph

Crash Prediction Summary

Control Strategy	Crash Type	Opening Year	Design Year	Total Project Life Cycle	Crash Prediction Rank	AADT Within SPF Prediction Range?	Source of Prediction	SSI Score: Opening Year	SSI Score: Design Year	SSI Score: Rank
Traffic Signal	Total	25.08	28.46	562.70	2	Yes	Uncalibrated SPF	6	1	1
	Fatal & Injury	13.68	15.69	308.68						
Displaced Left Turn (DLT)	Total	22.07	25.05	495.18	1	N/A	CMF	2	0	2
	Fatal & Injury	12.04	13.81	271.64						

Florida Department of Transportation
Safety Performance for Intersection Control Evaluation Tool

Results

Summary of crash prediction results for each alternative

Project Information

Project Name:	US 41 at Bonita Beach Road PD&E Study	**Intersection Type**	At-Grade Intersection
Intersection:	US 41 at Bonita Beach Road	**Opening Year**	2030
Agency:	FDOT District 1	**Design Year**	2050
Project Reference:	437210-1	**Facility Type**	On Urban and Suburban Arterial
City:	Bonita Springs	**Number of Legs**	4-leg
State:	FL	**1-Way/2-Way**	2-way Intersecting 2-way
Date:	3/14/2023	**# of Major Street Lanes (both directions)**	6 or more
Analyst:	TAH	**Major Street Approach Speed**	Less than 55 mph

Crash Prediction Summary

Control Strategy	Crash Type	Opening Year	Design Year	Total Project Life Cycle	Crash Prediction Rank	AADT Within SPF Prediction Range?	Source of Prediction	SSI Score: Opening Year	SSI Score: Design Year	SSI Score: Rank
Traffic Signal	Total	35.47	40.53	798.83	1	Yes	Uncalibrated SPF	6	1	1
	Fatal & Injury	19.30	22.29	437.16						

Appendix F – ETDM Summary Report

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT
SECRETARY

ETDM Summary Report

Project #6291 - US 41 at CR 865 (Bonita Beach Road) Intersection Improvement

Preliminary Programming Screen - Published on 01/18/2020

Generated by Lauren Brooks (on behalf of FDOT District 1)

Printed on: 1/18/2020

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Introduction to Programming Screen Summary Report

The Programming Screen Summary Report shown below is a read-only version of information contained in the Programming Screen Summary Report generated by the ETDM Coordinator for the selected project after completion of the ETAT Programming Screen review. The purpose of the Programming Screen Summary Report is to summarize the results of the ETAT Programming Screen review of the project; provide details concerning agency comments about potential effects to natural, cultural, and community resources; and provide additional documentation of activities related to the Programming Phase for the project. Available information for a Programming Screen Summary Report includes:

- Screening Summary Report chart
- Project Description information (including a summary description of the project, a summary of public comments on the project, and community-desired features identified during public involvement activities)
- Purpose and Need information (including the Purpose and Need Statement and the results of agency reviews of the project Purpose and Need)
- Specific information regarding the potential transportation improvement such as alternatives or road segments that were reviewed; an overview of ETAT Programming Screen reviews; and agency comments concerning potential effects and degree of effect, by issue, to natural, cultural, and community resources
- Project Scope information, consisting of general project recommendations resulting from the ETAT Programming Screen review, permits, and technical studies required (if any)
- Class of Action determined for the project
- Dispute Resolution Activity Log (if any)

The legend for the Degree of Effect chart is provided in an appendix to the report.

For complete documentation of the project record, also see the GIS Analysis Results Report published on the same date as the Programming Screen Summary Report.

The Florida Department of Transportation may adopt this planning product into the environmental review process, pursuant to Title 23 Sec. USC 168(4)(d) or the state project development process.

#6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement

District: District 1
County: Lee
Planning Organization: FDOT District 1
Plan ID: Not Available
Federal Involvement: FHWA Funding

Phase: Programming Screen
From:
To:
Financial Management No.: 444321-1-22-01

Contact Information: Gwen G. Pipkin (863) 519-2375 x2375 gwen.pipkin@dot.state.fl.us
Snapshot Data From: Programming Screen Summary Report Published on 01/18/2020 by Lauren Brooks
Issues and Categories are reflective of what was in place at the time of the screening event.

	Social and Economic							Cultural			Natural					Physical					
	Land Use Changes	Social	Relocation Potential	Farmlands	Aesthetic Effects	Economic	Mobility	Section 4(f) Potential	Historic and Archaeological Sites	Recreation Areas	Wetlands and Surface Waters	Water Quality and Quantity	Floodplains	Wildlife and Habitat	Coastal and Marine	Noise	Air Quality	Contamination	Infrastructure	Navigation	Special Designations
Alternative #1 From: To: *Published: 01/18/2020 Reviewed from 09/27/2019 to 11/11/2019)*	2	2	3	0	2	2	1	2	2	2	2	2	2	2	2	2	2	2	3	N/A	2

Purpose and Need

Purpose and Need

The purpose of this project is to address the deficient operational capacity of the US 41 and CR 865 (Bonita Beach Road) intersection to relieve existing congestion and accommodate projected area travel demand. Other goals of the project are to 1) enhance regional and local mobility, 2) enhance safety conditions, and 3) improve multi-modal access. The need for the project is based on the following criteria:

CAPACITY/TRANSPORTATION DEMAND: Improve Operational Conditions

According to Appendix G: Congestion Management Process of the Lee County Metropolitan Planning Organization's (MPO) 2040 Long Range Transportation Plan (LRTP) [Lee County 2040 Transportation Plan], the intersection of US 41 at CR 865 (Bonita Beach Road) experiences chronic congestion. As population and employment growth are expected to continue within this area of Lee County, congestion at the intersection is anticipated to increase.

Based on the Florida Department of Transportation (FDOT) District One Regional Planning Model, the population within the traffic analysis zones (TAZs) encompassing the intersection is expected to increase by 77% between 2010 and 2040; employment is expected to grow by 40% during the same time period. Per the Lee County 2040 Transportation Plan, comparable growth is expected countywide with a 69% increase in residents and a 72% increase in jobs. In addition, the intersection of US 41 and CR 865 (Bonita Beach Road) is identified within the Lee County 2040 Transportation Plan as a "Redevelopment Corridor Intensification Area".

As depicted through Figure 34: 2030 Volume to Capacity Ratio of the Lee County 2040 Transportation Plan, both US 41 and CR 865 (Bonita Beach Road) are expected to be severely congested as each will have a volume to capacity (V/C) ratio of over 1.20. Specific 2040 V/C ratios for each roadway, as reported in the Lee County 2040 Transportation Plan, are as follows: US 41 south of Bonita Beach Road = 1.50, US 41 north of Bonita Beach Road = 1.70, CR 865 (Bonita Beach Road) west of US 41 = 1.29, and CR 865 (Bonita Beach Road) east of US 41 = 1.52. Based on Federal Highway Administration guidance, a V/C ratio less than 0.85 generally indicates that adequate roadway capacity is available and vehicles are not expected to experience significant queues and delays. As the V/C ratio approaches 1.0, traffic flow may become unstable, and delay and queuing conditions may occur. Once the demand exceeds the capacity [a V/C ratio greater than 1.0], traffic flow is unstable and excessive delay and queuing is expected; the roadway is deemed deficient as it has surpassed its designated service volume and Level of Service (LOS) standard.

The existing and future traffic conditions for the roadways composing the intersection are as follows:

-Existing Conditions-

Roadway Segment / 2018 AADT *(1)* / 2018 AADTT Percentage *(1)* / 2018 LOS *(2)*

US 41 south of Bonita Beach Road [6 Lanes] / 33,153 / 4.1% / C

US 41 north of Bonita Beach Road [6 Lanes] / 51,000 / 4.1% / C

CR 865 (Bonita Beach Road) west of US 41 [4 Lanes] / 25,080 / 2.6% / C

CR 865 (Bonita Beach Road) east of US 41 [4 Lanes] / 38,000 / 4.1% / E

-Future Conditions (No-Build)-

Roadway Segment / 2040 AADT *(3)* / 2040 LOS *(2)*

US 41 south of Bonita Beach Road [6 Lanes] / 66,800 / E

US 41 north of Bonita Beach Road [6 Lanes] / 70,400 / E

CR 865 (Bonita Beach Road) west of US 41 [4 Lanes] / 43,000 / E

CR 865 (Bonita Beach Road) east of US 41 [4 Lanes] / 43,500 / E

Sources:
(1) 2018 Annual Average Daily Traffic (AADT) and 2018 Annual Average Daily Truck Traffic (AADTT) volumes derived from FDOT Florida Traffic Online, 2018; 2018 AADTT Percentage is derived from 2018 AADTT volume divided by 2018 AADT volume.
(2) LOS based on FDOT Generalized Annual Average Daily Volumes, 2012.
For CR 865 (Bonita Beach Road), LOS Generalized Volumes were adjusted -10% (e.g. non-State signalized roadway).
(3) 2040 AADT without improvement (No-Build) derived from 2040 FDOT District One Regional Planning Model.

The existing intersection is operationally deficient and is not able to accommodate the multiple transportation modes [vehicles (including trucks), bicyclists, and pedestrians] that presently use the two corridors composing the intersection. The segment of CR 865 (Bonita Beach Road) east of US 41 currently operates at LOS E. Conditions along both roadways are anticipated to be exacerbated if no improvements occur as the intersection lacks the operational capacity to accommodate future travel demand; both roadways are projected to operate at LOS E by year 2040. An analysis conducted specifically for the intersection further indicated that under the 2040 No-Build condition, the intersection will operate at LOS F as vehicles will experience a 169.8-second delay [a delay of over 80 seconds is considered LOS F].

This project is intended to improve traffic operations at the intersection of US 41 and CR 865 (Bonita Beach Road) by increasing the operational capacity to address existing congestion and projected travel demand.

AREA WIDE NETWORK/SYSTEM LINKAGE: Improve Traffic Mobility and Transportation Network Access

US 41 serves as a critical arterial in facilitating the north-south movement of regional and local traffic [including truck traffic] as it runs parallel to I-75 along the west coast of the State of Florida. Similarly, CR 865 (Bonita Beach Road) serves as a major east-west local roadway within Lee County, linking US 41 and I-75 and providing access [as one of two connections] between the mainland of Lee County and coastal communities/tourist destinations to the west [i.e., barrier islands and beaches]. The intersection enhancement is anticipated to:
-Improve the viability of US 41 as a regional alternative facility to I-75 by reducing travel delay,
-Enhance east-west access between two primary north-south transportation corridors [US 41 and I-75] as well as between the mainland of Lee County and coastal communities/tourist destinations to the west, and
-Enhance freight mobility and access within the area as both US 41 and CR 865 (Bonita Beach Road) are designated as regional freight facilities [Tier 1 Regional Freight Corridor and Tier 2 Regional Freight Connector, respectively] in the Lee County 2040 Transportation Plan.

SAFETY CONDITIONS: Enhance Emergency Evacuation and Response Times

US 41 and CR 865 (Bonita Beach Road) are designated emergency evacuation routes of both the Florida Division of Emergency Management and Lee County. Providing parallel service to I-75, US 41 plays an important role in facilitating north-south traffic during incidences and emergency evacuation periods [particularly within southwest Florida]. CR 865 (Bonita Beach Road) also serves a critical role during emergency evacuation periods as it connects US 41 and I-75 [facilities of the state evacuation route network] and provides one of two connections for residents and tourists between the barrier islands/tourist destinations to the west and mainland of Lee County. The intersection improvement is anticipated to:
-Increase the volume of residents and tourists from coastal communities that can be evacuated during an emergency event by eliminating a point of delay at the intersection of two major evacuation routes;

-Enhance access to facilities of the state evacuation route network, and
-Improve response times [due to enhanced access] to emergency events and incidences.

MODAL INTERRELATIONSHIPS: Enhance Mobility Options and Multi-Modal Access

While sidewalks are present on both sides of US 41 and CR 865 (Bonita Beach Road), marked bicycle lanes only exist on US 41 [both sides]. Two LeeTran bus routes [Routes 150 and 600] additionally operate along US 41 and CR 865 (Bonita Beach Road). Due to the presence of these facilities/services and the surrounding urban environment, heavy pedestrian and bicycle traffic exists in the area [as observed during three separate field reviews conducted for the project]. Multi-modal facilities are to be considered as part of the project as the need for and performance of these facilities/travel options at the intersection are critical with growth in the area creating a latent demand for continued, increased bicycle and pedestrian activity. The intersection enhancement is anticipated to:
-Improve pedestrian/bicycle access and circulation by modifying/limiting opportunities for conflicts between automobiles and pedestrians/bicyclists and
-Enhance the performance and reliability of transit service operating along US 41 and CR 865 (Bonita Beach Road) by reducing delays at the intersection.

PROJECT STATUS

The project is identified in FDOT's FY 2020 - FY 2024 Five-Year Work Program and Lee County MPO's FY 2019/2020 - FY 2023/2024 Transportation Improvement Program with $1,183,060 and $1,110,000 programmed for the PD&E Study, respectively. Additionally, the Lee County Comprehensive Plan's Appendix illustrates the project on Map 3A: 2030 Financially Feasible Highway Plan; Map 3A also notes that there is partial funding for an interchange at the intersection. The intersection improvement is not identified in the State transportation Improvement Plan (STIP) or the Lee County 2040 Transportation Plan.

Project Description

This project entails improving the operations of the at-grade intersection of US 41 and CR 865 (Bonita Beach Road) in the City of Bonita Springs, Lee County to address existing congestion and projected travel demand. US 41 extends the length of Lee County and is classified as a six-lane 'Urban Principal Arterial'. CR 865 (Bonita Beach Road) operates as an east-west, four-lane 'Urban Minor Arterial' in the southern section of Lee County, near the Collier County Line, connecting coastal communities/tourist attractions [i.e., barrier islands and beaches] to the mainland of Lee County. Sidewalks are present on both sides of US 41 and CR 865 (Bonita Beach Road); however, marked bicycle lanes only exist on US 41 [both sides]. Two LeeTran bus routes [Routes 150 and 600] additionally operate along US 41 and CR 865 (Bonita Beach Road).

A range of alternatives [including "No-Build", at-grade enhancements, a roundabout, and new overpass] will be evaluated for the intersection improvement as part of the Project Development and Environment (PD&E) Study. Bicycle and pedestrian facilities/facility enhancements will also be considered. As such, specific right-of-way requirements will be determined during the PD&E Study; additional right-of-way may be required depending on the selected alternative.

Summary of Public Comments

Project No: #6291
Project Name: US 41 Interchange at CR 865 (Bonita Beach Road)
Project Description: Intersection Improvements
ETDM Phase: Programming

Synopsis of Public Comments

The Lee County and Collier Metropolitan Planning Organizations invited the FDOT District One ETDM Coordinator to present the above-referenced project at the meetings described below. Input received through public outreach indicated mixed support for this project in the community. While congestion, bicycle/pedestrian circulation and overall safety at the intersection were identified as primary reasons to implement the improvement, potential adverse impacts to local businesses and pedestrian/transit access from a possible above-grade road crossing were noted concerns. Public commentary also suggested that the project should address transit, population and employment growth, regional/statewide connectivity and emergency evacuation. A brief overview of public outreach conducted for the project is provided below.

Public Outreach Activities

Forum: Joint Technical Advisory Committee Meeting of the Lee County and Collier Metropolitan Planning Organizations

Location: Estero Community Park & Recreation Center9200 Corkscrew Palms Boulevard, Room 103AEstero, Florida 33928

Date/Time: Thursday, March 7, 2013, 9:30 a.m.

FDOT District One representatives provided a summary of the project including the project description, purpose and need, summary of initial project issues and scheduled project activities to follow. Comment cards were provided to members of the Technical Advisory Committees and meeting attendees to complete and return for inclusion in the Environmental Screening Tool (EST) Project Diary. Completed comment cards may be found as an attachment (6291 Public Comment Cards) in the EST under Reports > Project Diary > Supplemental Project Documents.
The meeting attendees expressed support for the project but also concern about the potential for adverse impacts to local businesses and pedestrian/transit access. Future evaluation of project solutions should include at-grade alternatives in addition to above-grade and no build.
Forum: Joint Citizen Advisory Committee Meeting of the Lee County and Collier Metropolitan Planning Organizations

Location: Estero Community Park & Recreation Center9200 Corkscrew Palms Boulevard, Room 103AEstero, Florida 33928

Date/Time: Thursday, March 7, 2013, 1:30 p.m.

While the meeting attendees generally agreed with the project purpose and need, some questioned how the project would benefit transit (e.g., reduced pedestrian access). One committee member suggested examining a six-lane US 41 overpass. Another indicated that since highway overpasses are not visually pleasing, an additional 8-10 feet of right-of-way on either side would be required to mitigate for aesthetic impacts. Others noted that some communities have decided to remove flyovers due to the adverse economic impacts on local businesses.

Planning Consistency Status

Are the limits consistent with the plans?	Yes	
Currently Adopted CFP-LRTP?	Yes	
Attachments	LRTP Pages -	https://www.fla-etat.org/est/servlet/blobViewer?blobID=14147
	TIP Pages -	https://www.fla-etat.org/est/servlet/blobViewer?blobID=28298

Federal Consistency Determination

Date of Determination: 11/22/2019 by Chris Stahl
FDEP Clearinghouse Determination: CONSISTENT with Coastal Zone Management Program.

Potential Lead Agencies

- FDOT Office of Environmental Management

Exempted Agencies

Agency Name	Justification	Date
Federal Transit Administration	FTA has requested to be exempt from reviewing any non-transit projects.	03/27/2013

Community Desired Features

No desired features have been entered into the database. This does not necessarily imply that none have been identified.

User Defined Communities Within 500 Feet

No user defined communities were found within a 500 ft. buffer distance for this project.

Census Places Within 500 Feet

No census places were found within a 500 ft. buffer distance for this project.

Purpose and Need Reviews

FDOT Office of Environmental Management

Acknowledgment	Date Reviewed	Reviewer	Comments
Accepted	10/16/2019	Matthew Marino (Matthew.Marino@dot.state.fl.us)	No Purpose and Need comments found.

FL Department of Economic Opportunity

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	11/01/2019	Matt Preston (matt.preston@deo.myflorida.com)	No Purpose and Need comments found.

FL Department of Environmental Protection

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	11/08/2019	Chris Stahl (Chris.Stahl@FloridaDEP.gov)	No Purpose and Need comments found.

FL Department of State

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	10/04/2019	Lindsay Rothrock (lindsay.rothrock@dos.myflorida.com)	No Purpose and Need comments found.

FL Fish and Wildlife Conservation Commission

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	11/01/2019	Jennifer Goff (jennifer.goff@MyFWC.com)	No Purpose and Need comments found.

National Marine Fisheries Service

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	10/02/2019	David Rydene (David.Rydene@noaa.gov)	No Purpose and Need comments found.

National Park Service

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	11/01/2019	Anita Barnett (anita_barnett@nps.gov)	No Purpose and Need comments found.

Seminole Tribe of Florida

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	10/21/2019	Victoria Menchaca (victoriamenchaca@semtribe.com)	No Purpose and Need comments found.

South Florida Water Management District

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	11/01/2019	Trisha Stone (tstone@sfwmd.gov)	No Purpose and Need comments found.

US Army Corps of Engineers

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	11/18/2019	Mark Tamblyn (Mark.M.Tamblyn@usace.army.mil)	No Purpose and Need comments found.

US Coast Guard

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	10/02/2019	Randall Overton (randall.d.overton@uscg.mil)	No further involvement from the USCG is required unless the proposed project changes to include additional, unassessed bridges or the project scope changes.

US Environmental Protection Agency

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	11/11/2019	Roshanna White (White.Roshanna@epa.gov)	No Purpose and Need comments found.

US Fish and Wildlife Service

Acknowledgment	Date Reviewed	Reviewer	Comments
Understood	10/10/2019	John Wrublik (john_wrublik@fws.gov)	no further comments provided

The following organizations were notified but did not submit a review of the Purpose and Need:

Alternative #1

Description

Name	From	To	Type	Status	Total Length	Cost	Modes	SIS
Unnamed			Traffic Operation Enhancement	ETAT Review Complete	? mi.		Roadway Bicycle Pedestrian	N

Project Effects Overview for Alternative #1

Issue	Degree of Effect	Organization	Date Reviewed
Social and Economic			
Relocation Potential	3 Moderate	FDOT District 1	11/11/2019
Aesthetic Effects	2 Minimal	FDOT District 1	11/11/2019
Land Use Changes	2 Minimal	FDOT District 1	11/11/2019
Land Use Changes	1 Enhanced	FL Department of Economic Opportunity	11/01/2019
Economic	2 Minimal	FDOT District 1	11/11/2019
Economic	1 Enhanced	FL Department of Economic Opportunity	11/01/2019
Social	2 Minimal	US Environmental Protection Agency	11/11/2019
Social	2 Minimal	FDOT District 1	11/11/2019
Mobility	1 Enhanced	FDOT District 1	11/11/2019
Cultural			
Recreation Areas	0 None	FL Department of Environmental Protection	11/08/2019
Recreation Areas	0 None	South Florida Water Management District	11/01/2019
Recreation Areas	N/A N/A / No Involvement	National Park Service	10/03/2019
Historic and Archaeological Sites	N/A N/A / No Involvement	Seminole Tribe of Florida	10/21/2019
Historic and Archaeological Sites	2 Minimal	FL Department of State	10/04/2019
Natural			
Wetlands and Surface Waters	2 Minimal	US Army Corps of Engineers	11/19/2019
Wetlands and Surface Waters	2 Minimal	US Environmental Protection Agency	11/11/2019
Wetlands and Surface Waters	2 Minimal	FL Department of Environmental Protection	11/08/2019
Wetlands and Surface Waters	2 Minimal	South Florida Water Management District	11/01/2019
Wetlands and Surface Waters	2 Minimal	National Marine Fisheries Service	10/02/2019
Wetlands and Surface Waters	2 Minimal	US Fish and Wildlife Service	09/30/2019
Wildlife and Habitat	2 Minimal	FL Fish and Wildlife Conservation Commission	11/01/2019
Wildlife and Habitat	2 Minimal	South Florida Water Management District	11/01/2019
Wildlife and Habitat	2 Minimal	US Fish and Wildlife Service	09/30/2019
Floodplains	2 Minimal	South Florida Water Management District	11/01/2019

Coastal and Marine	2 Minimal	South Florida Water Management District	11/01/2019
Coastal and Marine	2 Minimal	National Marine Fisheries Service	10/02/2019
Water Quality and Quantity	2 Minimal	US Environmental Protection Agency	11/11/2019
Water Quality and Quantity	2 Minimal	FL Department of Environmental Protection	11/08/2019
Water Quality and Quantity	2 Minimal	South Florida Water Management District	11/01/2019
Physical			
Navigation	N/A N/A / No Involvement	US Army Corps of Engineers	11/18/2019
Navigation	N/A N/A / No Involvement	US Coast Guard	10/02/2019
Contamination	2 Minimal	US Environmental Protection Agency	11/11/2019
Contamination	0 None	FL Department of Environmental Protection	11/08/2019
Contamination	2 Minimal	South Florida Water Management District	11/01/2019
Air Quality	2 Minimal	US Environmental Protection Agency	11/11/2019
Special Designations			
Special Designations	2 Minimal	US Environmental Protection Agency	11/11/2019
Special Designations	2 Minimal	South Florida Water Management District	11/01/2019

ETAT Reviews and Coordinator Summary: Social and Economic

Relocation Potential

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 01/18/2020 by FDOT District 1

Comments:
FDOT District One reported that the project area primarily consists of commercial/retail/office and residential uses and noted that the residential uses sit behind the commercial/retail/office activities along the two roadways. FDOT stated that vegetated swales and surface parking lots buffer most of the businesses on each corridor; however, some structures on CR 865 (Bonita Beach Road) are located closer to the roadway. FDOT noted that depending on the type of improvement proposed [i.e., whether an elevated structure is recommended], additional right-of-way may be required. **Coordination Document:** PD&E Support Document as per PD&E Manual.

Access to proximate businesses and residences may temporarily be affected and/or modified as a result of the project. Encroachment into surrounding parcels, if necessary, will be coordinated with the appropriate property owners. The proposed project improvements will be designed to minimize right-of-way acquisition. Specific right-of-way requirements will be determined during the Project Development and Environment Study. Due to the fact that additional right-of-way may be required as a result of the project, a Summary Degree of Effect of Moderate has been assigned to the Relocation Potential issue.

Next Steps: During the Project Development phase, FDOT will conduct public outreach in coordination with the Lee County Metropolitan Planning Organization, Lee County, and the City of Bonita Springs to solicit input on potential project effects to adjacent properties and identify alternatives that may minimize impacts. Further assessment of relocation effects will be conducted during the Project Development phase as more detailed and finalized project information regarding right-of-way needs becomes available. A Conceptual Stage Relocation Plan [conducted and prepared in accordance with Part 2, Chapter 4 of the FDOT PD&E Manual] will be included in the Project Development and Environment Study scoping recommendations for this project.

Technical Study: *Conceptual Stage Relocation Plan.*

Degree of Effect: 3 *Moderate* assigned 11/11/2019 by Lauren Brooks, FDOT District 1

Coordination Document:

Direct Effects

Identified Resources and Level of Importance:

500-Foot Buffer:

Planned Unit Development (1)

- Crown Lake Shoppes CPD

Homeowner and Condominium Associations (4)

- Waterford I, A Condo
- Waterford II, A Condo
- Waterford III, A Condo
- Wedgewood I, A Condo

Office of Greenways and Trails (OGT): Hiking Trail Priorities (1)

- Estero - Bonita Corridor

Office of Greenways and Trails (OGT): Multi-Use Trail Opportunities (1)

- Estero - Bonita Corridor

Shared-Use Nonmotorized (SUN) Trail Network (1)

- Estero - Bonita Corridor

Comments on Effects to Resources:

The project area primarily consists of commercial/retail/office and residential uses. The noted commercial/retail/office uses line both US 41 and CR 865 (Bonita Beach Road); the residential uses sit behind the commercial/retail/office activities along the two roadways. Vegetated swales and surface parking lots buffer most of the businesses on each corridor; however, some structures on CR 865 (Bonita Beach Road) are located closer to the roadway. Existing right-of-way surrounding the intersection ranges from 135 feet to 150 feet along CR 865 (Bonita Beach Road) and is 215 feet along US 41. Depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended], additional right-of-way may be required.

Access to proximate businesses and residences may also temporarily be affected and/or modified as a result of the project. Encroachment into surrounding parcels, if necessary, will be coordinated with the appropriate property owners. Further, the proposed project improvements will be designed to minimize right-of-way acquisition. Specific right-of-way requirements will be determined during the Project Development and Environment Study. Based on the foregoing, moderate involvement regarding relocation potential is anticipated.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

During the Project Development phase, FDOT District One will conduct public outreach in coordination with the Lee County Metropolitan Planning Organization, Lee County, and the City of Bonita Springs to solicit input on potential project effects to adjacent properties and identify alternatives that may minimize impacts. Further assessment of relocation effects will be conducted during the Project Development phase as more detailed and finalized project information regarding right-of-way needs becomes available.

Indirect Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Aesthetic Effects

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:

F - 12

FDOT District One noted features associated with aesthetics that occur within the project vicinity. FDOT indicated that proximate land uses along the corridor are consistent with existing land uses as well as the future land use vision and aesthetic character of the corridor. FDOT further stated that while the project will consider bicycle and pedestrian facilities/facility enhancements in order to improve safety conditions and multi-modal access/mobility, views from/of the surrounding area could be affected depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended].

A Summary Degree of Effect of Minimal has been assigned to the Aesthetic Effects issue given the heavy commercial character of each corridor and the fact that the project appears to be consistent with the future land use vision and aesthetic character of the intersection. **Coordination Document:** PD&E Support Document as per PD&E Manual.

Next Steps: During the Project Development phase, FDOT will engage residents and business owners in coordination with the Lee County Metropolitan Planning Organization, Lee County, and the City of Bonita Springs to solicit input on potential project effects as well as opinions and preferences regarding general design concepts related to corridor aesthetics.

Technical Study: *None.*

Degree of Effect: 2 *Minimal* assigned 11/11/2019 by Lauren Brooks, FDOT District 1

Coordination Document:
PD&E Support Document As Per PD&E Manual

Direct Effects
Identified Resources and Level of Importance:
500-Foot Buffer:
Homeowner and Condominium Associations (4)
- Waterford I, A Condo
- Waterford II, A Condo
- Waterford III, A Condo
- Wedgewood I, A Condo

Office of Greenways and Trails (OGT): Hiking Trail Priorities (1)
- Estero - Bonita Corridor

Office of Greenways and Trails (OGT): Multi-Use Trail Opportunities (1)
- Estero - Bonita Corridor

Shared-Use Nonmotorized (SUN) Trail Network (1)
- Estero - Bonita Corridor

1,320-Foot (Quarter-Mile) Buffer:
Homeowner and Condominium Associations (4)
- Waterford I, A Condo
- Waterford II, A Condo
- Waterford III, A Condo
- Wedgewood I, A Condo

Golf Courses (1)
- Spanish Wells Golf and Country Club

Office of Greenways and Trails (OGT): Hiking Trails Priorities (1)
- Estero - Bonita Corridor

Office of Greenways and Trails (OGT): Multi-Use Trails Opportunities (1)
- Estero - Bonita Corridor

Shared-Use Nonmotorized (SUN) Trail Network (1)
- Estero - Bonita Corridor

SFWMD Residential Areas \ Acres \ Percent
- Fixed Single Family Units \ 0.15 \ 0.12%
- Multiple Dwelling Units, Low Rise \ 4.22 \ 3.36%

Comments on Effects to Resources:
The project is located within the City of Bonita Springs, a U.S. Census Designated Place of Lee County. Commercial/retail/office uses line both US 41 and CR 865 (Bonita Beach Road); residential uses sit behind the commercial/retail/office activities along the two roadways.

According to the City of Bonita Springs Future Land Use Map, the area surrounding the intersection will continue to support these identified uses. It is important to note that while the project will consider bicycle and pedestrian facilities/facility enhancements in order to improve safety conditions and multi-modal access/mobility, views from/of the surrounding area could be affected depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended]. However, given the heavy commercial character of each corridor and the fact that the project appears to be consistent with the future land use vision and aesthetic character of the intersection, minimal involvement regarding aesthetic effects is anticipated.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:
During the Project Development phase, the FDOT District One will engage residents and business owners in coordination with the Lee County Metropolitan Planning Organization, Lee County, and the City of Bonita Springs to solicit input on potential project effects as well as opinions and preferences regarding general design concepts related to aesthetics.

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Farmlands

Project Effects

Coordinator Summary Degree of Effect: 0 *None* assigned 01/18/2020 by FDOT District 1

Comments:
No ETAT members provided comments for this issue.

The 500-foot project buffer consists of 15.81 acres [87.69%] of soils classified as Farmland of Unique Importance. Based on recent aerial imagery and field observations, land containing these soils has been developed. Also, no agricultural land is present within the 500-foot project buffer. According to the City of Bonita Springs Future Land Use Map, the area is expected to continue to support commercial/retail/office and residential uses. In addition, the intersection is located entirely within the Bonita Springs Urbanized Area. For these reasons, no impacts to farmlands are anticipated as a result of the project. No further coordination with NRCS is needed as land within the project buffer does not meet the definition of farmland as defined in 7 CFR 658 and the provisions of the Farmland Protection Policy Act of 1981. Based on the foregoing, a Summary Degree of Effect of None has been assigned to the Farmlands issue.

Next Steps: None.

Technical Study: *None.*

None found

Land Use Changes

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
FDEO stated that the project is compatible with the City of Bonita Springs Comprehensive Plan and local community development goals as it is anticipated to support population and economic growth and development through enhanced mobility/access and enhance emergency evacuations and response times. FDEO additionally identified future land uses surrounding the project and

noted that the project is not in an Area of Critical State Concern, a Coastal High Hazard Area, within proximity to any parks, or near any military bases. Furthermore, FDEO recommended that the City of Bonita Spring update its Future Transportation Map series to include the project. **Coordination Document:** No Involvement.

FDOT District One commented that the area primarily consists of commercial/retail/office and residential uses; most of the commercial/retail/office uses are concentrated in strip shopping centers located in the northwest and southeast quadrants of the intersection; residential uses are located behind the commercial/retail/office activities along the two roadways. FDOT stated that according to the City of Bonita Springs Future Land Use Map, the area surrounding the intersection will continue to support the aforementioned uses. FDOT commented that while the project is identified in the FDOT FY 2020 - FY 2024 Five-Year Work Program, the FDOT's State Transportation Improvement Program (STIP),and the Lee County Metropolitan Planning Organization's (MPO) FY 2019/2020 - FY 2023/2024 Transportation Improvement Program, it is not identified in the Lee County MPO's Long Range Transportation Plan (LRTP) [Lee County 2040 Transportation Plan]. FDOT added that the Lee County Comprehensive Plan's Appendix illustrates the project on Map 3A: 2030 Financially Feasible Highway Plan. **Coordination Document:** PD&E Support Document as per PD&E Manual.

Overall, the project is consistent with the land use vision for the project area. Therefore, a Summary Degree of Effect of Minimal has been assigned to the Land Use Changes issue.

Next Steps: During the Project Development phase, FDOT will conduct public outreach with the Lee County MPO, Lee County, and the City of Bonita Springs to obtain feedback from residents and business owners that may be affected by the project. FDOT will also coordinate with the noted agencies to ensure that required project funding is identified in the LRTP, TIP, Work Program, and STIP, and that the project is consistent with the local comprehensive plans.

Technical Study: *None.*

Degree of Effect: 2 *Minimal* assigned 11/11/2019 by Lauren Brooks, FDOT District 1

Coordination Document:
PD&E Support Document As Per PD&E Manual

Direct Effects
Identified Resources and Level of Importance:
Lee County Comprehensive Plan

500-Foot Buffer:
2010 Census Designated Places (1)
- Bonita Springs
Planned Unit Developments (1)
- Crown Lake Shoppes CPD

Generalized Land Uses \ Acres \ Percent
- Retail/Office \ 8.92 \ 49.47%
- Vacant Nonresidential \ 1.18 \ 6.56%

1,320-Foot (Quarter-Mile) Buffer:
2010 Census Designated Places (1)
- Bonita Springs
Planned Unit Developments (8)
- Robert Lawhorn CPD (Lawhon Trust)
- Mobile Service Station 11257
- Windsor Road GBM
- Anglers Paradise RPD/CPD
- Anglers Paradise
- Las Brisas RPD
- Crown Lake Shoppes CPD
- Holiday Inn Express/Arroyal Mall CPD
Golf Courses (1)
- Spanish Wells Golf and Country Club
Generalized Land Uses \ Acres \ Percent

- Industrial \ 3.71 \ 2.96%
- Institutional \ 1.80 \ 1.44%
- Public/Semi-Public \ 1.93 \ 1.54%
- Recreation \ < 0.1 \ 0.06%
- Residential \ 3.65 \ 2.91%
- Retail/Office \ 82.11 \ 65.34%
- Vacant Nonresidential \ 8.53 \ 6.79%
- Vacant Residential \ 0.56 \ 0.45%

Comments on Effects to Resources:
The project is located within the City of Bonita Springs, a U.S. Census Designated Place of Lee County. The project area primarily consists of commercial/retail/office and residential uses. The identified commercial/retail/office uses line both US 41 and CR 865 (Bonita Beach Road); most of the uses are concentrated in strip shopping centers respectively located in the northwest and southeast quadrants of the intersection. Large tenants of these strip-centers include Publix, Winn-Dixie, and Crunch Fitness. The identified residential uses sit behind the commercial/retail/office activities along the two roadways.

One Planned Unit Development [Crown Lake Shoppes CPD] is present within the 500-foot project buffer; seven additional Planned Unit Developments are present within the 1,320-foot project buffer. A golf course [Spanish Wells Golf and Country Club] also exists within the southeast quadrant of the intersection, east of the present strip center. According to the City of Bonita Springs Future Land Use Map, the area surrounding the intersection will continue to support the noted uses. Therefore, the project is anticipated to accommodate existing and proposed development within the area. For these reasons, minimal impacts or changes to proximate land uses are anticipated as a result of the project.

Transportation Plan Consistency
The project is identified in the FDOT's FY 2020 - FY 2024 Five-Year Work Program with $1,183,060 programmed for the PD&E Study. Additionally, the project is identified in the FDOT's State Transportation Improvement Program (STIP) and the Lee County Metropolitan Planning Organization's (MPO) FY 2019/2020 - FY 2023/2024 Transportation Improvement Program with $1,110,000 allocated for the PD&E Study. The Lee County Comprehensive Plan's Appendix illustrates the project on Map 3A: 2030 Financially Feasible Highway Plan; Map 3A also notes that there is partial funding for an interchange at the intersection. The intersection improvement is not identified in the Lee County MPO's Long Range Transportation Plan (LRTP) [Lee County 2040 Transportation Plan].

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:
During the Project Development phase, the FDOT District One will conduct public outreach in coordination with the Lee County MPO, Lee County, and the City of Bonita Springs to obtain feedback from residents and business owners that may be affected by the project. FDOT will also coordinate with the listed agencies to ensure that required project funding is identified in the LRTP, TIP, Work Program, and STIP and that the project is consistent with the local government comprehensive plans.

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 1 *Enhanced* assigned 11/01/2019 by Matt Preston, FL Department of Economic Opportunity

Coordination Document:
No Involvement

Direct Effects
Identified Resources and Level of Importance:
Comprehensive Plan(s) Reviewed:
City of Bonita Springs Comprehensive Plan (adopted in 2002 by Ordinance No. 02-16; as amended through Ordinance No. 18-09;

adopted on June 20, 2018).

Comments on Effects to Resources:
Compatibility with Community Development Goals and Comprehensive Plan:
The project is compatible with local community development goals to the extent that the project intends to support local population and economic growth and development through enhancing multi-modal mobility/access.

The project is compatible with the *City of Bonita Springs Comprehensive Plan* with regard to the following: (1) the project intends to enhance local and regional mobility; (2) the project intends to support population and economic growth and development; and (3) the project is anticipated to enhance emergency evacuation and response times to emergency events and incidences.

Future Transportation Map:
The City of Bonita Springs Comprehensive Plan Future Transportation Map series does not identify the project. DEO staff recommends that the City update its map(s) to include the project.
Land Uses:
The future land use designation surrounding the proposed project is General Commercial.

Parks:
The project is not located in close proximity to any City parks.

Area of Critical State Concern (ACSC), Coastal High Hazard Area (CHHA), and Military Bases:
The project is not located within an Area of Critical State Concern or the CHHA, nor does it encroach on any military installation.
Other Planning-Related Items:
N/A.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Economic

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
FDEO indicated that the project is not located within a Rural Area of Opportunity. FDEO stated that the project has the potential to attract new development, business activity, and jobs due to improved access/mobility. **Coordination Document:** No Involvement.

FDOT District One commented that both US 41 and CR 865 (Bonita Beach Road) are important in facilitating regional and local traffic [including truck traffic] in the area, particularly in providing access to other major transportation corridors and coastal communities/tourist destinations to the west of the Lee County mainland. FDOT identified specific economic features and businesses within the project area and noted that the area surrounding the project will experience a large increase in residential units and population and employment growth between 2010 and 2040. FDOT stated that the purpose of this project is to address the deficient operational capacity of the US 41 and CR 865 (Bonita Beach Road) intersection to relieve existing congestion and accommodate projected area travel demand. **Coordination Document:** PD&E Support Document as per PD&E Manual.

In the long term, the proposed project is expected to enhance economic conditions of the area by: 1) addressing the deficient capacity of the intersection in the existing and future condition in order to serve the mobility demands of the area, thereby

supporting increased growth; 2) better facilitating the movement of local and regional freight; and 3) accommodating multimodal activity through bicycle and pedestrian facilities/facility enhancements and reliable transit. However, a Summary Degree of Effect of Minimal has been assigned to the Economic issue due to the fact that access to the noted businesses may be modified depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended] or temporarily affected during project construction as a result of the project.

Next Steps: During the Project Development phase, FDOT will engage residents and business owners in coordination with the Lee County Metropolitan Planning Organization, Lee County, and the City of Bonita Springs to solicit input on potential economic enhancements/impacts as a result of the project as well as potential solutions.

Technical Study: *None.*

Degree of Effect: 2 *Minimal* assigned 11/11/2019 by Lauren Brooks, FDOT District 1

Coordination Document:
PD&E Support Document As Per PD&E Manual

Direct Effects
Identified Resources and Level of Importance:
1,320-Foot (Quarter-Mile) Buffer:
2010 Census Designated Places (1)
- Bonita Springs

Planned Unit Developments (8)
- Robert Lawhorn CPD (Lawhon Trust)
- Mobile Service Station 11257
- Windsor Road GBM
- Anglers Paradise RPD/CPD
- Anglers Paradise
- Las Brisas RPD
- Crown Lake Shoppes CPD
- Holiday Inn Express/Arroyal Mall CPD

Generalized Land Uses \ Acres \ Percent
- Industrial \ 3.71 \ 2.96%
- Institutional \ 1.80 \ 1.44%
- Public/Semi-Public \ 1.93 \ 1.54%
- Recreation \ < 0.1 \ 0.06%
- Residential \ 3.65 \ 2.91%
- Retail/Office \ 82.11 \ 65.34%
- Vacant Nonresidential \ 8.53 \ 6.79%
- Vacant Residential \ 0.56 \ 0.45%

Comments on Effects to Resources:
Both US 41 and CR 865 (Bonita Beach Road) are important in facilitating regional and local traffic [including truck traffic] in the area, particularly with their access to other major transportation corridors and coastal communities/tourist destinations [i.e., Fort Meyers Beach and Little Hickory Island] to the west of the Lee County mainland.

The purpose of this project is to address the deficient operational capacity of the US 41 and CR 865 (Bonita Beach Road) intersection to relieve existing congestion and accommodate projected area travel demand. As population and employment are expected to continue to grow within this area of Lee County, congestion at the intersection is anticipated to increase. According to the Lee County Metropolitan Planning Organization's (MPO) 2040 Long Range Transportation Plan (LRTP), the county is expected to grow from 618,800 residents in 2010 to 1,044,000 residents in 2040 [69% increase] and employment is expected to increase by 72% from 285,000 jobs in 2010 to 490,200 jobs in 2040. To accommodate the rise in population, 305,200 new homes are expected to be built within the county by 2040 [the difference between 354,600 homes in 2010 and 659,800 homes projected in 2040]. Based on the Florida Department of Transportation (FDOT) District One Regional Planning Model, the population specifically within the traffic analysis zones (TAZs) encompassing the intersection is expected to increase by 77% between 2010 and 2040, and employment is expected to grow by 40% during the same time period.

Commercial/retail/office uses line both US 41 and CR 865 (Bonita Beach Road); residential uses sit behind the commercial/retail/office activities along the two roadways. Two strip shopping centers are respectively located in the northwest and

southeast quadrants of the intersection; large tenants of these strip-centers include Publix, Winn-Dixie, and Crunch Fitness. Numerous banking, clothing, and retail establishments surround the intersection such as Bank of America, Wells Fargo, Goodwill, and Walgreens.

In the long term, the proposed project is expected to enhance economic conditions of the area by 1) addressing the deficient capacity of the intersection in the existing and future condition in order to serve the mobility demands of the area, thereby supporting increased growth; 2) better facilitating the movement of local and regional freight; and 3) accommodating multimodal activity through bicycle and pedestrian facilities/facility enhancements and reliable transit. However, depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended], minimal economic impacts are anticipated due to the fact that access to the noted businesses may be modified or temporarily affected during project construction as a result of the project.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:
During the Project Development phase, FDOT District One will conduct public outreach in coordination with the Lee County MPO, Lee County, and the City of Bonita Springs to solicit input from proximate residents and business owners regarding potential economic enhancements/impacts as a result of the project as well as potential solutions.

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 1 *Enhanced* assigned 11/01/2019 by Matt Preston, FL Department of Economic Opportunity

Coordination Document:
No Involvement

Direct Effects
Identified Resources and Level of Importance:
Comprehensive Plan(s) Reviewed:
City of Bonita Springs Comprehensive Plan (adopted in 2002 by Ordinance No. 02-16; as amended through Ordinance No. 18-09; adopted on June 20, 2018).

Comments on Effects to Resources:
The project *is not* located within a Rural Area of Opportunity.

The project has the potential to attract new development as a result of improved access/mobility, and to potentially generate new jobs associated with new business activity that could result from improved access/mobility.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Social

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
FDOT District One stated that the project is located within the City of Bonita Springs, a U.S. Census Designated Place of Lee County. FDOT commented that the project area primarily consists of commercial/retail/office and residential uses; the residential uses sit behind the commercial/retail/office activities along the two roadways. FDOT indicated that several community features are present within the area given its urban nature. FDOT added that compared to the demographic characteristics of Lee County, the 500-foot project buffer contains significantly higher percentages of individuals who identify themselves as White and who are age 65 and older, a comparable Other Race population percentage, significantly lower population percentages of African Americans and Hispanics, drastically lower percentages of individuals age 18 and under and housing units with no vehicle available, a slightly higher median family income [$889 more], and a comparable percentage of individuals who speak English less than very well indicating that Limited English Proficiency (LEP) accommodations will likely be required as the project advances. FDOT commented that no census blocks within the 500-foot project buffer contain a minority population greater than 40%. FDOT reported that the purpose of this project is to address the deficient operational capacity of the US 41 and CR 865 (Bonita Beach Road) intersection to relieve existing congestion and accommodate projected area travel demand [including truck, visitor, and evacuation traffic]; other goals of the project are to 1) enhance regional and local mobility, 2) enhance safety conditions, and 3) improve multi-modal access. **Coordination Document:** PD&E Support Document as per PD&E Manual.

USEPA stated that no environmental justice communities were identified within the 500-foot project buffer. USEPA noted that should communities be identified as the project continues, impacts of the project on minority and low-income populations will need to be identified. USEPA recommended implementation of meaningful public involvement to develop systems, services, and solutions that meet the needs of the community and vulnerable populations. **Coordination Document:** To Be Determined: Further Coordination Required.

In the long term, the proposed project is anticipated to have positive effects on the social environment and cohesion of surrounding communities by enhancing multi-modal access to residences, job opportunities, essential services, and tourist destinations; improving transit reliability; and enhancing safety conditions. Depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended], the project could affect community cohesion and the area's visual character/aesthetic quality. However, a Summary Degree of Effect of Minimal has been assigned to the Social issue due to the heavy commercial character of each corridor composing the intersection and the fact that the intersection improvement is anticipated to enhance pedestrian/bicycle access and circulation [by reducing opportunities for conflicts between automobiles and pedestrians/bicyclists] and the performance and reliability of transit service operating in the area [by reducing delays at the intersection].

Next Steps: During the Project Development phase, FDOT will conduct public outreach in coordination with the Lee County Metropolitan Planning Organization, Lee County, and the City of Bonita Springs to solicit input from the general public [targeting special population groups] to ensure that the social and transportation needs of the affected community are not negatively impacted by the project. Public outreach activities will consider/potentially include LEP accommodations. A Public Involvement Plan [prepared in accordance with Part 1, Chapter 11 of the FDOT PD&E Manual] will be included in the Project Development and Environment Study scoping recommendations for this project.

Technical Study: *Public Involvement Plan.*

Degree of Effect: 2 *Minimal* assigned 11/11/2019 by Roshanna White, US Environmental Protection Agency

Coordination Document:
To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:
Social GIS analysis and the Sociocultural Data Report for the Current Project Alternatives did not identify potential EJ communities within a 500-ft buffer of the project. Therefore, the EPA assigns a Minimal Degree of Effect for Social.

Comments on Effects to Resources:

If potential EJ communities are identified as the project continue identify the impacts of the project that appear to fall disproportionately on minority and low-income populations in accordance with EO 12898.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
Consider meaningful public involvement that enables transportation professionals to develop systems, services, and solutions that meet the needs of the community and the vulnerable populations that potentially will be temporarily or permanently impacted by the project.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 11/11/2019 by Lauren Brooks, FDOT District 1

Coordination Document:
PD&E Support Document As Per PD&E Manual

Direct Effects
Identified Resources and Level of Importance:
500-Foot Buffer:
2010 Census Designated Places (1)
- Bonita Springs
Planned Unit Developments (1)
- Crown Lake Shoppes CPD
Homeowner and Condominium Associations (4)
- Waterford I, A Condo
- Waterford II, A Condo
- Waterford III, A Condo
- Wedgewood I, A Condo
Office of Greenways and Trails (OGT): Hiking Trail Priorities (1)
- Estero - Bonita Corridor
Office of Greenways and Trails (OGT): Multi-Use Trail Opportunities (1)
- Estero - Bonita Corridor
Shared-Use Nonmotorized (SUN) Trail Network (1)
- Estero - Bonita Corridor
Florida Site File Field Survey Project Boundaries (2)

1,320-Foot (Quarter-Mile) Buffer:
2010 Census Designated Places (1)
- Bonita Springs
Planned Unit Developments (8)
- Robert Lawhorn CPD (Lawhon Trust)
- Mobile Service Station 11257
- Windsor Road GBM
- Anglers Paradise RPD/CPD
- Anglers Paradise
- Las Brisas RPD
- Crown Lake Shoppes CPD
- Holiday Inn Express/Arroyal Mall CPD
Homeowner and Condominium Associations (4)
- Waterford I, A Condo

- Waterford II, A Condo
- Waterford III, A Condo
- Wedgewood I, A Condo

Community and Fraternal Centers (1)
- Knights of Columbus 8877 - Saint Leo

Healthcare Facilities (6)
- NCH Immediate Care
- NCH Family Medicine - Bonita Springs
- Omar Al-Ani
- Bonita Wellness Center
- NeoWaves
- Elina Kendall MDPA

Laser Facilities (1)

Law Enforcement Facilities
- Lee County Sheriff's Office - South District (Delta)

Religious Centers (1)
- Saint Leo Catholic Church

Golf Courses (1)
- Spanish Wells Golf and Country Club

Office of Greenways and Trails (OGT): Hiking Trail Priorities (1)
- Estero - Bonita Corridor

Office of Greenways and Trails (OGT): Multi-Use Trail Opportunities (1)
- Estero - Bonita Corridor

Shared-Use Nonmotorized (SUN) Trail Network (1)
- Estero - Bonita Corridor

Florida Site File Field Survey Project Boundaries (4)

Generalized Land Uses \ Acres \ Percent
- Industrial \ 3.71 \ 2.96%
- Institutional \ 1.80 \ 1.44%
- Public/Semi-Public \ 1.93 \ 1.54%
- Recreation \ < 0.1 \ 0.06%
- Residential \ 3.65 \ 2.91%
- Retail/Office \ 82.11 \ 65.34%
- Vacant Nonresidential \ 8.53 \ 6.79%
- Vacant Residential \ 0.56 \ 0.45%

Comments on Effects to Resources:
The US 41 at Bonita Beach Road intersection is located within the City of Bonita Springs, a U.S. Census Designated Place of Lee County. The project area primarily consists of commercial/retail/office and residential uses; two strip shopping centers are respectively located in the northwest and southeast quadrants of the intersection. The noted commercial/retail/office uses line both US 41 and CR 865 (Bonita Beach Road). The residential uses sit behind the commercial/retail/office activities along the two roadways. Vegetated swales and surface parking lots buffer most of the businesses on each corridor; however, some structures on CR 865 (Bonita Beach Road) are located closer to the roadway.

Community features reported within the 1,320-foot project buffer include: eight Planned Unit Developments, four homeowner and condominium associations [Waterford I, II, and III and Wedgewood I], six healthcare facilities, one community center/religious center, one laser facility, one law enforcement facility, a private golf course, and one Office of Greenways and Trails (OGT) multi-use trail opportunity/hiking trail priority [Estero - Bonita Corridor] - also part of the Shared-Use Nonmotorized (SUN) Trail Network.

Compared to the demographic characteristics for Lee County, the 500-foot project buffer contains significantly higher percentages of individuals who identify themselves as White and who are age 65 and older, a comparable Other Race population percentage, significantly lower population percentages of African Americans and Hispanics, drastically lower percentages of individuals age 18 and under and housing units with no vehicle available, and a slightly higher median family income [$889 more].

The table below presents the demographic data for both the 500-foot project buffer and Lee County.

Demographic / 500-Foot Buffer / Lee County
White (Race)* / 92.3 % / 83.0%
African-American (Race)* / 0.7% / 8.3%

"Other" *** (Race)* / 7.0% / 8.8%
Hispanic (Ethnic Group)* / 12.7% / 18.3%
Age 65+** / 33.0% / 23.5%
Under Age 18** / 11.5% / 19.5%
HH w/o car** / 1.8% / 4.7%
Med. Family Income** $59,950 / $58,950
* Source: US Census Bureau (2010 US Census)
** Source: US Census Bureau (2010 American Community Survey)
*** "Other" includes Asian, Native American, Native Hawaiian & Other Pacific Islander Alone, & Other Race.

Minority Population Greater than 40%:
Out of the 13 census blocks within the 500-foot project buffer, none contain a minority population greater than 40%.

Limited English Proficiency (LEP) Accommodations:
Limited English Proficiency (LEP) accommodations will likely be required during public involvement efforts of the Project Development phase as 11.37% or 623 persons within the census block groups containing the project corridor "speak English less than very well" compared to 10.35% of Lee County's population.

It should be noted that US 41 and CR 865 (Bonita Beach Road) are designated emergency evacuation routes of both the Florida Division of Emergency Management and Lee County as well as designated regional freight facilities according to the Lee County Metropolitan Planning Organization's (MPO's) 2040 Long Range Transportation Plan (LRTP). As such, US 41 facilitates critical north-south regional and local traffic [including truck traffic and evacuation traffic] and connects employment and population centers throughout the west coast of Florida. In addition, CR 865 (Bonita Beach Road) provides east-west access between major north-south transportation corridors of the area [US 41 and I-75] as well as serves as one of two connections between the coastal communities/tourist destinations to the west and the mainland of Lee County. Further, LeeTran bus routes [Routes 150 and 600] operate along CR 865 (Bonita Beach Road) and US 41, respectively.

The purpose of this project is to address the deficient operational capacity of the US 41 and CR 865 (Bonita Beach Road) intersection to relieve existing congestion and accommodate projected area travel demand. Other goals of the project are to 1) enhance regional and local mobility, 2) enhance safety conditions, and 3) improve multi-modal access.

In the long term, the proposed project is anticipated to have positive effects on the social environment and cohesion of surrounding communities by enhancing multi-modal access to residences, job opportunities, essential services, and tourist destinations; improving transit reliability; and enhancing safety conditions. Depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended], the project could affect community cohesion and the area's visual character/aesthetic quality. However, due to the heavy commercial character of each corridor composing the intersection and the fact that the intersection improvement is anticipated to enhance pedestrian/bicycle access and circulation [by reducing opportunities for conflicts between automobiles and pedestrians/bicyclists] and the performance and reliability of transit service operating in the area [by reducing delays at the intersection], impacts on the social environment and community cohesion as a result of the project are anticipated to be minimal.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:
During the Project Development phase, the FDOT District One will conduct public outreach in coordination with the Lee County MPO, Lee County, and the City of Bonita Springs to solicit input from the general public (targeting special population groups) on potential project effects related to community cohesion and social interaction as well as potential solutions to ensure that both the social and transportation needs of the surrounding communities are addressed through the project. Public outreach activities will consider/include LEP accommodations.

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Mobility

Project Effects

Coordinator Summary Degree of Effect: 1 *Enhanced* assigned 01/18/2020 by FDOT District 1

Comments:
FDOT District One stated that the US 41 and CR 865 (Bonita Beach Road) intersection is at-grade. FDOT reported that US 41 facilitates the north-south movement of regional and local traffic [including truck traffic] as it runs parallel to I-75 along the west coast of the State of Florida; it additionally connects employment and population centers throughout the west coast of Florida. FDOT noted that CR 865 (Bonita Beach Road) provides east-west access between major north-south transportation corridors of the area [US 41 and I-75] as well as serves as one of two connections between the coastal communities/tourist destinations to the west and the mainland of Lee County. FDOT added that US 41 and CR 865 (Bonita Beach Road) are designated state and county emergency/evacuation routes as well as designated regional freight facilities. FDOT commented that sidewalks are present on both sides of the roadways; however, marked bicycle lanes only occur along US 41. FDOT listed mobility features within the project area. FDOT commented that the project is intended to address the deficient operational capacity of the US 41 and CR 865 (Bonita Beach Road) intersection to relieve existing congestion and accommodate projected area travel demand. FDOT stated that the improvement will reduce delays at the intersection, enhancing overall mobility by: 1) improving the viability of US 41 as a regional alternative facility to I-75; 2) enhancing east-west access between two primary north-south transportation corridors [US 41 and I-75] as well as between the mainland of Lee County and coastal communities/tourist destinations to the west; 3) improving freight mobility and access within the area; 4) increasing the volume of residents and tourists from coastal communities that can be evacuated, enhancing access to facilities of the state evacuation route network, and improving response times to emergency events and incidences; 5) perfecting the performance and reliability of transit service in the area; and 6) improving pedestrian/bicycle access and circulation by modifying/limiting opportunities for conflicts between automobiles and pedestrians/bicyclists.
Coordination Document: PD&E Support Document as per PD&E Manual.

Based on the foregoing a Summary Degree of Effect of Enhanced has been assigned to the Mobility issue.

Next Steps: During the Project Development phase, FDOT will conduct public outreach in coordination with the Lee County Metropolitan Planning Organization, Lee County, and the City of Bonita Springs to solicit community opinions and preferences on potential project-related effects and enhancements regarding area mobility and measures to avoid or minimize possible adverse effects.

Technical Study: *None.*

Degree of Effect: 1 *Enhanced* assigned 11/11/2019 by Lauren Brooks, FDOT District 1

Coordination Document:
PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:
500-Foot Buffer:
Bus Transit Routes (2)
- Route 150
- Route 600

Office of Greenways and Trails (OGT): Hiking Trail Priorities (1)
- Estero - Bonita Corridor

Office of Greenways and Trails (OGT): Multi-Use Trail Opportunities (1)
- Estero - Bonita Corridor

Shared-Use Nonmotorized (SUN) Trail Network (1)
- Estero - Bonita Corridor

Transportation Disadvantaged Service Provider Areas (TDSP) in Florida (1)
- Good Wheels, Inc.

Housing Units with No Vehicle Available (Total / Percentage)
- 51 / 1.8%

Comments on Effects to Resources:
The US 41 and CR 865 (Bonita Beach Road) intersection is at-grade with double left turn lanes at all approaches to the intersection.

US 41 is classified as a six-lane 'Urban Principal Arterial' with a raised median and right turn lanes that run the length of the project limits. CR 865 (Bonita Beach Road) is classified as a four-lane 'Urban Minor Arterial' with a raised median and turn and merge lanes at various points.

US 41 facilitates the north-south movement of regional and local traffic [including truck traffic] as it runs parallel to I-75 along the west coast of the State of Florida; it additionally connects employment and population centers throughout the west coast of Florida. CR 865 (Bonita Beach Road) provides east-west access between major north-south transportation corridors of the area [US 41 and I -75] as well as serves as one of two connections between the coastal communities/tourist destinations to the west and the mainland of Lee County.

US 41 and CR 865 (Bonita Beach Road) are designated emergency/evacuation routes of both the Florida Division of Emergency Management and Lee County as well as designated regional freight facilities [US 41 - Tier 1 Regional Freight Corridor and CR 865 (Bonita Beach Road) - Tier 2 Regional Freight Connector] according to the Lee County Metropolitan Planning Organization's (MPO's) 2040 Long Range Transportation Plan (LRTP). It should be noted that sidewalks are present on both sides of US 41 and CR 865 (Bonita Beach Road); however, marked bicycle lanes only occur along US 41. Two LeeTran bus routes [Routes 150 and 600], one transportation disadvantaged service provider area [Good Wheels Inc.], and a future trail exist within the 500-foot project buffer.

This project is intended to address the deficient operational capacity of the US 41 and CR 865 (Bonita Beach Road) intersection to relieve existing congestion and accommodate projected area travel demand. In turn, through reduced delays at the intersection, the improvement is anticipated to enhance overall mobility in the area by 1) improving the viability of US 41 as a regional alternative facility to I-75; 2) enhancing east-west access between two primary north-south transportation corridors [US 41 and I-75] as well as between the mainland of Lee County and coastal communities/tourist destinations to the west; 3) enhancing freight mobility and access within the area; 4) increasing the volume of residents and tourists from coastal communities that can be evacuated, enhancing access to facilities of the state evacuation route network, and improving response times to emergency events and incidences; 5) enhancing the performance and reliability of transit service in the area; and 6) improving pedestrian/bicycle access and circulation by modifying/limiting opportunities for conflicts between automobiles and pedestrians/bicyclists.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:
During the Project Development phase, the FDOT District One will conduct public outreach in coordination with the Lee County Metropolitan Planning Organization, Lee County, and the City of Bonita Springs to solicit community opinions and preferences on potential project-related effects and enhancements regarding mobility within the area and measures to avoid or minimize possible adverse effects.

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

ETAT Reviews and Coordinator Summary: Cultural
Recreation Areas
Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
FDEP, NPS, and SFWMD did not identify any issues or potential project effects related to recreational features. **Coordination Document:** PD&E Support Document as per PD&E Manual (FDEP). \ **Coordination Document:** No Involvement (NPS and SFWMD).

Recreational features located in the project vicinity include: one Office of Greenways and Trails (OGT) multi-use trail opportunity/hiking trail priority [Estero-Bonita Corridor] within the 500-foot project buffer and one private golf course within the

1,320-foot project buffer. Due to the limited number of recreational features within the project vicinity, a Summary Degree of Effect of Minimal has been assigned to the Recreation Areas issue.

Next Steps:Refer to Section 4(f) Potential issue.

Technical Study: *Refer to Section 4(f) Potential issue.*

Degree of Effect: 0 *None* assigned 11/08/2019 by Chris Stahl, FL Department of Environmental Protection

Coordination Document:
PD&E Support Document As Per PD&E Manual

Direct Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 0 *None* assigned 11/01/2019 by Trisha Stone, South Florida Water Management District

Coordination Document:
No Involvement

Direct Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: N/A *N/A / No Involvement* assigned 10/03/2019 by Anita Barnett, National Park Service

Coordination Document:
No Involvement

Direct Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Section 4(f) Potential

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
No ETAT members provided comments for this issue.

One potential Section 4(f) resource, an Office of Greenways and Trails (OGT) multi-use trail opportunity/hiking trail priority [Estero-Bonita Corridor], exists within the 500-foot project buffer. While no comprehensive Cultural Resource Assessment Survey has been conducted for either US 41 or CR 865 (Bonita Beach Road), no previously recorded resources exist within 500 feet of the intersection; in addition, there is low potential for unrecorded historic resources to exist given the developed nature of the project area. For these reasons, a Summary Degree of Effect of Minimal has been assigned to the Section 4(f) Potential issue.

Next Steps:A Section 4(f) Determination of Applicability Form [Form No. 650-050-45], prepared in accordance with Part 2, Chapter 7 of the FDOT PD&E Manual, will be included in the Project Development and Environment Study scoping recommendations for this project.

Technical Study: *Section 4(f) Determination of Applicability Form [Form No. 650-050-45].*

None found

Historic and Archaeological Sites

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
FDOS reported that the project area has not been comprehensively surveyed and that a survey should be conducted for this project. FDOS stated that all cultural resources, including potential historic districts, within the area of potential effect should be documented and assessed for National Register of Historic Places (NRHP) eligibility. FDOS added that consultation with the project sponsor will take place to avoid, minimize, or mitigate any adverse effects to significant cultural resources. FDOS requested review of the completed survey. **Coordination Document:** PD&E Support Document as per PD&E Manual.

STOF did not identify any issues or potential project effects related to historic and archaeological sites. **Coordination Document:** No Involvement.

A review of the data indicates that the portion of the project along US 41 is within the boundaries of a previous Cultural Resource Assessment Survey (CRAS) conducted in 1997: The Cultural Resource Assessment Survey of US 41 from North of CR 887 to San Carlos Boulevard [Collier and Lee Counties, Florida]. No comprehensive survey has been conducted along CR 865 (Bonita Beach Road). No previously recorded cultural resources are located within 500 feet of the project corridors. Property appraiser data also identified no parcels with potential unrecorded historic resources. Although considered historic in other parts of the state, US 41

within the project area no longer retains any historic fabric or integrity. Based on the previous survey of US 41, the lack of previously recorded resources within 500 feet of the intersection, the absence of any potential unrecorded historic resources, and the developed nature of the project area, a Summary Degree of Effect of Minimal has been assigned to the Historic and Archaeological Sites issue.

Next Steps: A Cultural Resource Assessment Survey [conducted in accordance with applicable federal or state historic preservation laws and Part 2, Chapter 8 of the FDOT PD&E Manual] will be included in the Project Development and Environment Study scoping recommendations for this project.

Technical Study: *Cultural Resource Assessment Survey.*

Degree of Effect: N/A *N/A / No Involvement* assigned 10/21/2019 by Victoria Menchaca, Seminole Tribe of Florida

Coordination Document:
No Involvement

Direct Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 10/04/2019 by Lindsay S Rothrock, FL Department of State

Coordination Document:
PD&E Support Document As Per PD&E Manual

Coordination Document Comments:
Since the entire project area has not been comprehensively surveyed, a survey should be conducted for this project. All cultural resources, including potential historic districts, within the area of potential effect should be documented and assessed for NRHP eligibility. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46 Florida Administrative Code, FDOT PD&E Manual Part 2, Chapter 8 and will need to be forwarded to this agency (or the appropriate Federal Agency) for review and comment.

Direct Effects
Identified Resources and Level of Importance:
As reported.

Comments on Effects to Resources:
The project has minimal potential to impact cultural resources within and adjacent to the proposed project.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
This office will consult with the project sponsors to avoid, minimize, or mitigate any adverse effects to significant cultural resources.

Additional Comments (optional):
Since the entire project area has not been comprehensively surveyed, a survey should be conducted for this project. All cultural resources, including potential historic districts, within the area of potential effect should be documented and assessed for NRHP

eligibility. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46 Florida Administrative Code, FDOT PD&E Manual Part 2, Chapter 8 and will need to be forwarded to this agency (or the appropriate Federal Agency) for review and comment.

CLC Recommendations:

Indirect Effects

Identified Resources and Level of Importance:
As reported.

Comments on Effects to Resources:
The project has minimal potential to impact cultural resources within and adjacent to the proposed project.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
This office will consult with the project sponsors to avoid, minimize, or mitigate any adverse effects to significant cultural resources.

ETAT Reviews and Coordinator Summary: Natural

Wetlands and Surface Waters

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
FDEP noted that an Environmental Resource Permit (ERP) may be required for the minor impacts to adjacent wetlands and stormwater areas. **Coordination Document:** PD&E Support Document as Per PD&E Manual.

FWS commented that wetlands, which provide important habitat for fish and wildlife, may occur within the project area. FWS stated that the project should be designed to avoid impacts to wetlands and mitigation should be provided to fully compensate for unavoidable impacts. **Coordination Document:** To Be Determined: Further Coordination Required.

NMFS stated that it does not appear that the project will directly impact NMFS trust resources; however, the Imperial River [located within 2,000 feet of the project] drains into Little Hickory Bay and Fish Trap Bay, which contain estuarine habitats that are used by federally-managed fish species and their pray. NMFS noted that indirect impacts to the Imperial River and nearby estuarine habitats are anticipated to be minimal due to upgrades to the stormwater management systems and use of best management practices. **Coordination Document:** To Be Determined: Further Coordination Required.

SFWMD reported that the project may affect 1.36 acres of wetlands that are potentially associated with the existing stormwater ponds and a canal that flows along the east side of US 41; however, it is unclear if jurisdictional wetlands are present within the project area. SFWMD stated that a wetland determination and an offsite mitigation plan should be included in the ERP application if wetland impacts are proposed. **Coordination Document:** Permit or Technical Study Required.

USACE indicated that a Standard Individual Permit will likely be required; however, a Regional General Permit or a Nationwide Permit [3 or 14] may be appropriate depending upon how the project develops. USACE restated resources that were listed in the PED and noted that runoff into adjacent wetlands and surface waters is a concern for this project. USACE recommended that a wetland survey be conducted; avoidance and minimization should be incorporated into the design, and compensatory mitigation will be required for unavoidable wetland and surface water impacts. **Coordination Document:** To Be Determined: Further Coordination Required.

USEPA stated that while no major impacts to wetlands or surface waters are anticipated as a result of the project, the project will result in an increase in impervious surfaces thereby generating more stormwater runoff. USEPA recommended that stormwater runoff be treated before diverting it to waterbodies. **Coordination Document:** To Be Determined:Further Coordination Required.

While no wetlands are reported within the 500-foot project buffer based on the SFWMD Wetlands 2008-2015 database, the National Wetlands Inventory database identifies 1.36 acres [7.55%] of palustrine wetlands within the same designated buffer. These wetlands are primarily associated with two existing stormwater ponds located approximately 300 feet north of CR 865 (Bonita Beach

Road) and a canal that flows parallel to the east side of US 41 connecting to one of the stormwater ponds. It should be noted that estuarine wetlands associated with the Imperial River are located approximately 2,000 feet north of the project. Avoidance and minimization measures will be incorporated into the project's design, best management practices will be utilized during project activities, and compensatory mitigation will be provided for any adverse wetland impacts resulting from the proposed project improvements. Further, the proposed stormwater management system for the project will be developed to meet the design and performance criteria established in the SFWMD ERP Applicant's Handbook Volumes I and II for the treatment and attenuation of discharges to nearby waterbodies. As such, stormwater runoff from the proposed project will be treated to prevent water quality impacts to nearby wetlands. Due to the presence of the noted features, and the potential need for right of way acquisition to accommodate stormwater improvements, a Summary Degree of Effect of Minimal has been assigned to the Wetlands and Surface Waters issue.

Next Steps: A Natural Resources Evaluation [conducted in accordance with Part 2, Chapter 9 of the FDOT PD&E Manual] will be included in the Project Development and Environment Study scoping recommendations for this project.

Technical Study: *Natural Resources Evaluation.*

Degree of Effect: 2 *Minimal* assigned 11/19/2019 by Mark M Tamblyn, US Army Corps of Engineers

Coordination Document:
To Be Determined: Further Coordination Required

Coordination Document Comments:
The proposed project will more than likely have lo be permitted using a Standard lndlvldual Permit, but depending on the project development and planning process a different permit might be more applicable. There is a poss!bility that a Regional General Permit or a Nationwide 3 or 14 (maintenance-linear transportation project) could be used as the project develops and planning moves forward.

Direct Effects
Identified Resources and Level of Importance:
It appears that no wetlands *I* surface waters were reported within the 500-foot project buffer based on the SFWMD Wetlands 2008-2015 database, the National Wetlands Inventory database Identified 1.36 acres of palustrine wetlands within the 500 foot buffer. These wetlands / surface waters are primarily associated with the storm water ponds within and adjacent to the intersection and the Wide canal that flows along the east side of US 41 and crosses underneath CR 865 (Bonita Beach Road),

The !eve! of importance would be minimal for new road construction or improvements with the associated adjacent wetlands / surface waters within the 500 foot buffer. The wetlands *I* surface waters are isolated along this alternative. Avoidance and minimization measures should be rather easy to accomplish as long as the design and location stay the same. One area to be concerned about Is the potential from run-off which may become a problem within this new improvement *I* expansion and water quality. The best management practices should be utilized during project planning design activities so this project can proceed along the line of the review.

Comments on Effects to Resources:
Any wetlands or surface waters in the project area deemed to be jurisdictional along the existing roadway should be avoided and impacts minimized. This projects has wetlands(1.36 acres) within a 500 foot buffer, they appear to be avoidable with the present location and design of this review . Given the jurisdictional wetland resources along the proposed project, impacts to these resources should be easily avoided. A true concern is the potential for run-off into these adjacent wetlands / surface waters. This potential water quality problem should be reviewed and studied within the new improvement / expansion of this intersection. Additional studies should look at these types of impacts and attempt to avoid and minimize any and all. These types of impacts will need to be permitted and mitigated for as well.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
The Corps recommends a continued emphasis on wetland avoidance and minimization throughout the planning and design process . A wetland survey should be conducted within the study area to identify the wetlands and a jurisdictional determinallon should be completed. If needed mitigation options should be discussed for unavoidable impacts during the project development and planning phases. The proposed project will more than likely have to be permitted using a Standard Individual Permit. There !s a posslbl!ity that a Regional General Permlt might be applicable, or a Nationwide 3 or 14 (Maintenance-linear transportation) could be used as the project development and planning moves forward.

Additional Comments (optional):
The proposed project will more than likely have lo be permitted using a Standard lndlvldual Permit, but depending on the project development and planning process a different permit might be more applicable. There is a poss!bility that a Regional General Permit or a Nationwide 3 or 14 (maintenance-linear transportation project) could be used as the project develops and planning moves forward.

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:
See comments for direct effects.

Comments on Effects to Resources:
See comments for direct effects.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
See comments for direct effects.

Degree of Effect: 2 *Minimal* assigned 11/11/2019 by Roshanna White, US Environmental Protection Agency

Coordination Document:
To Be Determined: Further Coordination Required

Direct Effects
Identified Resources and Level of Importance:
Storm water runoff from urban sources, including roadways, carries pollutants such as volatile organics, petroleum hydrocarbons, heavy metals, and pesticides/herbicides. The EPA does not anticipate major impacts to wetlands and surface waters. Therefore, the EPA assigns a Minimal Degree of Effect for Wetlands and Surface Waters.

Comments on Effects to Resources:
With an increase in the impervious surface area, the project area is expected to experience an increase in storm water runoff.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
Treat storm water runoff before diverting it to water bodies

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:
Treat storm water runoff before diverting it to water bodies.

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 11/08/2019 by Chris Stahl, FL Department of Environmental Protection

Coordination Document:
PD&E Support Document As Per PD&E Manual

Direct Effects
Identified Resources and Level of Importance:

Local Wetlands

Comments on Effects to Resources:
An ERP may be required for the minor impacts to the minor adjacent wetlands and stormwater areas.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 11/01/2019 by Trisha Stone, South Florida Water Management District

Coordination Document:
Permit or Technical Study Required

Direct Effects
Identified Resources and Level of Importance:
Potentially 1.36 acres of wetlands that may be associated with the existing stormwater ponds (OSW) within proximity to the intersection and the wide canal that flows along the east side of US 41 and crosses underneath Bonita Beach Road.

Comments on Effects to Resources:
It is unclear if jurisdictional wetlands are located within the project area.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
A wetland determination should be included in the environmental resource permit review or could be done separately as either a formal or informal wetland jurisdictional determination. Due to the linear nature of this project, off site mitigation at a mitigation bank would be recommended if there are wetlands impacts within the project area.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 10/02/2019 by David A. Rydene, National Marine Fisheries Service

Coordination Document:
To Be Determined: Further Coordination Required

Direct Effects
Identified Resources and Level of Importance:
The resources of concern are located at the mouth of the Imperial River, and in Little Hickory Bay and Fish Trap Bay. These areas contain estuarine habitats used by federally-managed fish species and their prey.

Comments on Effects to Resources:
NOAA's National Marine Fisheries Service (NMFS) has reviewed the information contained in the Environmental Screening Tool (EST) for ETDM Project # 6291. The Florida Department of Transportation District 1 proposes intersection improvements at the existing US 41-CR 865 (Bonita Beach Road) at-grade interchange in Lee County, Florida. A range of alternatives will be considered during the PD&E phase, including "no build", at-grade enhancement, roundabout, and overpass options.

NMFS staff conducted a site inspection of the project area on May 1, 2013, to assess potential concerns related to living marine resources within the Imperial River, Little Hickory Bay, and Fish Trap Bay. The lands adjacent to the proposed project are principally commercial properties. It does not appear that the project will directly impact NMFS trust resources. However, the project's northern terminus (as shown in the EST maps) lies within 2000 feet of the Imperial River. The Imperial River drains to Little Hickory Bay and Fish Trap Bay. The mouth of the Imperial River, Little Hickory Bay, and Fish Trap Bay contain estuarine habitats (e.g. seagrass and mangrove) used by federally-managed fish species and their prey. However, with upgrades to stormwater management systems and use of Best Management Practices (as described in the project's Preliminary Environmental Discussion) any indirect impacts to nearby estuarine habitats should be minimal.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 09/30/2019 by John Wrublik, US Fish and Wildlife Service

Coordination Document:
To Be Determined: Further Coordination Required

Direct Effects
Identified Resources and Level of Importance:
Wetlands

Comments on Effects to Resources:
Wetlands provide important habitat for fish and wildlife. Data in the environmental screening tool indicate that wetlands may occur within the project area. We recommend that the project be designed to avoid and minimize impacts to wetland resources to the greatest extent practicable. If impacts to wetlands are unavoidable, we recommend that the FDOT provides mitigation that fully compensates for the loss of wetland resources.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Wildlife and Habitat

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
FWC noted that minimal impacts to wildlife resources are anticipated as a result of the project. **Coordination Document:** No Involvement.

FWS reported that the project is located within the geographic range of the endangered Florida bonneted bat. FWS recommended that surveys be conducted based on FWS guidance if suitable habitat is present within the project area. FWS also reported that the project occurs within the Core Foraging Area of an active nesting wood stork colony; therefore, any lost foraging habitat resulting from the project must be mitigated within the same Core Foraging Area as the affected nesting colony. FWS added that other federally listed species have the potential to occur in or near the project site, including Eastern indigo snake and federally-listed plants. FWS recommended that FDOT prepare a Biological Assessment during the Project Development and Environment phase of the project. **Coordination Document:** To Be Determined: Further Coordination Required.

SFWMD stated that the project is located within the ranges of several endangered and listed species and noted that least terns and wood storks have been observed within the project area. SFWMD indicated that the likelihood of listed or endangered species nesting or denning in the area is minimal and recommended avoidance and minimization measures for species protection.
Coordination Document: Permit or Technical Study Required.

The 500-foot project buffer occurs within the Southwest Coast Ecosystem Management Area; FWS Consultation Areas for the American crocodile, Florida bonneted bat, Florida scrub jay, and Southwest plants; Abundant Range for the Florida black bear; and Core Foraging Area of an active nesting wood stork colony. Least terns and wood storks have also been observed within the project area, and the canal located along the east side of US 41 serves as suitable foraging habitat for the wood stork. Based on the Florida Natural Areas Inventory (FNAI) database, the Eastern indigo snake and scrub stylisma have the potential to occur within the 500-foot project buffer; however, no suitable habitat is present for either species. Avoidance and minimization measures will be implemented to the greatest extent practicable, and agency coordination will take place to address potential project impacts to the noted listed species. For these reasons and due to the urban location of the project, a Summary Degree of Effect of Minimal has been assigned to the Wildlife and Habitat issue.
Next Steps: A Natural Resources Evaluation [conducted in accordance with Part 2, Chapter 16 of the FDOT PD&E Manual] will be included in the Project Development and Environment Study scoping recommendations for this project.

Technical Study: *Natural Resources Evaluation.*

Degree of Effect: 2 *Minimal* assigned 11/01/2019 by Jennifer Goff, FL Fish and Wildlife Conservation Commission

For the official list of fish and wildlife designated by the state of Florida as Endangered, Threatened or Species of Special Concern, please refer to sections 68A-27.003, .0031 and 005 in *Rules Relating to Endangered or Threatened Species*, Chapter 68A-27, Florida Administrative Code, https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68A-27.

For general information on Florida imperiled species and species conservation programs, go to https://myfwc.com/wildlifehabitats/wildlife/

Coordination Document:
No Involvement

Direct Effects

Identified Resources and Level of Importance:
No significant wildlife resources were identified in the project area.

Comments on Effects to Resources:
Minimal impacts to fish or wildlife resources are anticipated to result from this project.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
Minimal impacts to fish or wildlife resources are anticipated to result from this project.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 11/01/2019 by Trisha Stone, South Florida Water Management District

Coordination Document:
Permit or Technical Study Required

Direct Effects
Identified Resources and Level of Importance:
The project is located within the ranges of several endangered and listed species, and least terns and wood storks have been observed within the project area.

Comments on Effects to Resources:
This project is a modification to an existing, busy intersection. The likelihood of listed or endangered species nesting or denning in the area is minimal.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
Avoidance and minimization measures are proposed (e.g. protected species surveys and management plans as needed).

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 09/30/2019 by John Wrublik, US Fish and Wildlife Service

Coordination Document:
To Be Determined: Further Coordination Required

Direct Effects
Identified Resources and Level of Importance:
Federally listed species and fish and wildlife resources

Comments on Effects to Resources:
Federally Listed Species -

The Service has reviewed our Geographic Information Systems (GIS) database for recorded locations of federally listed threatened and endangered species on or adjacent to the project study area. The GIS database is a compilation of data received from several sources.
Florida bonneted bat

The project corridor is located in the geographic range of the endangered Florida bonneted bat (*Eumops floridanus*). If suitable

habitat occurs within the project footprint, then we recommend that surveys based on the Service's guidance be conducted to determine the status of this species.

Wood Stork

The project corridor is located in the Core Foraging Area (CFA; all lands within 18.6 miles) of an active nesting colony of the endangered wood stork (*Mycteria americana*). The Service believes that the loss of wetlands within a CFA due to an action could result in the loss of foraging habitat for the wood stork. To minimize adverse effects to the wood stork, we recommend that any lost foraging habitat resulting from the project be replaced within the CFA of the affected nesting colony. Moreover, wetlands provided as mitigation should adequately replace the wetland functions lost as a result of the action. The Service does not consider the preservation of wetlands, by itself, as adequate compensation for impacts to wood stork foraging habitat, because the habitat lost is not replaced. Accordingly, any wetland mitigation plan proposed should include a restoration, enhancement, or creation component. In some cases, the Service accepts wetlands compensation located outside the CFA of the affected wood stork nesting colony. Specifically, wetland credits purchased from a "Service Approved" mitigation bank located outside of the CFA would be acceptable to the Service, provided that the impacted wetlands occur within the permitted service area of the bank.

For projects that impact 5 or more acres of wood stork foraging habitat, the Service requires a functional assessment be conducted using our "Wood Stork Foraging Analysis Methodology" (Methodology) on the foraging habitat to be impacted and the foraging habitat provided as mitigation. The Methodology can be found at: https://www.fws.gov/verobeach/BirdsPDFs/20120712_WOST Forage Assessment Methodology_Appendix.pdf.

The Service believes that the following federally listed species have the potential to occur in or near the project site: Florida bonneted bat, wood stork, Eastern indigo snake (*Drymarchon corais couperi*) and Federally listed plants in Charlotte County at http://ecos.fws.gov/ ipac/. Accordingly, the Service recommends that the Florida Department of Transportation (FDOT) prepare a Biological Assessment for the project (as required by 50 CFR 402.12) during the FDOT's Project Development and Environment process.

Fish and Wildlife Resources -

Wetlands provide important habitat for fish and wildlife. Data in the environmental screening tool indicate that wetlands may occur within the project area. We recommend that the project be designed to avoid and minimize impacts to wetland resources to the greatest extent practicable. If impacts to wetlands are unavoidable, we recommend that the FDOT provides mitigation that fully compensates for the loss of wetland resources.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Floodplains

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
SFWMD stated that the project traverses Flood Zones X and HE and noted that floodplain compensation may be required per the

SFWMD Environmental Resource Permit (ERP) Applicant's Handbook Volumes I and II. **Coordination Document:** Permit or Technical Study Required.

According to the DFIRM (SFHA) 100 Year Flood Zone data, 2.92 acres [16.21%] of the project's 500-foot buffer occur within the 100 -year floodplain [Flood Zone AE]. The 100-year floodplain is concentrated in the southwest quadrant of the intersection. Floodplain compensation requirements will be addressed through necessary agency coordination. For these reasons, a Summary Degree of Effect of Minimal has been assigned to the Floodplains issue.

Next Steps: A Location Hydraulic Report [conducted in accordance with Part 2, Chapter 13 of the FDOT PD&E Manual] will be included in the Project Development and Environment Study scoping recommendations for this project.

Technical Study: *Location Hydraulic Report.*

Degree of Effect: 2 *Minimal* assigned 11/01/2019 by Trisha Stone, South Florida Water Management District

Coordination Document:
Permit or Technical Study Required

Direct Effects

Identified Resources and Level of Importance:
Based on the August 8, 2008 FEMA Map No. 12071C0658F, the project traverses floodzones X and HE with base flood elevation of 10.0.

Comments on Effects to Resources:
Floodplain compensation may need to be provided per the Applicant's Handbook but will be based on the proposed improvements.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
Due to the project's location, floodplain compensation may be required.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Coastal and Marine

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
NMFS restated comments provided for the Wetlands and Surface Waters issue. **Coordination Document:** To Be Determined: Further Coordination Required.

SFWMD noted that the project may discharge to the Estero Bay Tributaries, which are designated Outstanding Florida Waters (OFWs). **Coordination Document:** Permit or Technical Study Required.

No coastal or marine resources are reported within the 500-foot project buffer; however, estuarine wetlands associated with the Imperial River are located approximately 2,000 feet north of the project. Avoidance and minimization measures will be incorporated into the project's design, and best management practices will be utilized during project activities to prevent potential water quality impacts to nearby estuarine habitats. For these reasons, a Summary Degree of Effect of Minimal has been assigned to Coastal and Marine issue.

Next Steps:A Natural Resources Evaluation will be included in the Project Development and Environment Study scoping recommendations.

Technical Study: *Natural Resources Evaluation.*

Degree of Effect: 2 *Minimal* assigned 11/01/2019 by Trisha Stone, South Florida Water Management District

Coordination Document:
Permit or Technical Study Required

Direct Effects
Identified Resources and Level of Importance:
The project may discharge to one Outstanding Florida Water (OFW) which is the Estero Bay Tributaries in Lee County.

Comments on Effects to Resources:
See comment above.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 10/02/2019 by David A. Rydene, National Marine Fisheries Service

Coordination Document:
To Be Determined: Further Coordination Required

Direct Effects
Identified Resources and Level of Importance:
The resources of concern are located at the mouth of the Imperial River, and in Little Hickory Bay and Fish Trap Bay. These areas contain estuarine habitats used by federally-managed fish species and their prey.

Comments on Effects to Resources:
NOAA's National Marine Fisheries Service (NMFS) has reviewed the information contained in the Environmental Screening Tool (EST) for ETDM Project # 6291. The Florida Department of Transportation District 1 proposes intersection improvements at the existing US 41-CR 865 (Bonita Beach Road) at-grade interchange in Lee County, Florida. A range of alternatives will be considered during the PD&E phase, including "no build", at-grade enhancement, roundabout, and overpass options.

NMFS staff conducted a site inspection of the project area on May 1, 2013, to assess potential concerns related to living marine resources within the Imperial River, Little Hickory Bay, and Fish Trap Bay. The lands adjacent to the proposed project are principally commercial properties. It does not appear that the project will directly impact NMFS trust resources. However, the project's northern terminus (as shown in the EST maps) lies within 2000 feet of the Imperial River. The Imperial River drains to Little Hickory Bay and Fish Trap Bay. The mouth of the Imperial River, Little Hickory Bay, and Fish Trap Bay contain estuarine habitats (e.g. seagrass and mangrove) used by federally-managed fish species and their prey. However, with upgrades to stormwater management systems and use of Best Management Practices (as described in the project's Preliminary Environmental Discussion) any indirect impacts to nearby estuarine habitats should be minimal.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Water Quality and Quantity

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
FDEP commented that every effort should be made to maximize the treatment of stormwater runoff to prevent ground and surface water contamination. FDEP recommended that stormwater treatment be designed to maintain the natural predevelopment hydroperiod and water quality, as well as to protect the natural functions of adjacent wetlands. FDEP further recommended that the Project Development and Environment Study include existing stormwater treatment adequacy and details on future stormwater treatment facilities. FDEP noted that the retro-fitting of stormwater conveyance systems will help reduce water quality impacts. **Coordination Document:** PD&E Support Document as Per PD&E Manual.

SFWMD stated that the project will discharge into the Imperial River - Marine Segment [WBID 3258EB], which is impaired for fecal coliform, iron, dissolved oxygen, and mercury. SFWMD noted that project discharge will need to meet local basin rates determined by the appropriate agency and that the proposed project design should follow criteria stated in the SFWMD Environmental Resource Permit (ERP) Applicant's Handbook Volumes I and II. SFWMD further stated that the stormwater management system of the project must provide an additional 50% of water quality treatment volume prior to offsite discharge. **Coordination Document:** Permit or Technical Study Required.

USEPA noted that roadway pollutants increase turbidity and degrade waterbodies through stormwater runoff and suggested avoidance, minimization, and mitigation opportunities to maintain or improve water quality. USEPA stated that it does not anticipate major impacts to water quality and quantity as a result of the project. **Coordination Document:** To Be Determined: Further Coordination Required.

Stormwater runoff within the project area is currently collected via curb and gutter and a network of vegetated roadside swales. Stormwater ponds are currently located along both sides of US 41, approximately 300 feet north of CR 865 (Bonita Beach Road). An outfall canal also extends south along US 41 for approximately 900 feet, from the east stormwater pond to an existing culvert, where it flows west beneath CR 865 (Bonita Beach Road). The 500-foot project buffer occurs within the watershed of one impaired waterbody [Imperial River - Marine Segment (WBID 3258EB)]. Other features located within the 500-foot project buffer include the Surficial Aquifer System [a principal aquifer of the State of Florida], a recharge area of the Floridian Aquifer, and one NPDES stormwater permit. The Imperial River, a designated Outstanding Florida Water (OFW), is located approximately 2,000 feet north of the project. The proposed stormwater management system will be developed to meet the design and performance criteria established in the SFWMD ERP Applicant's Handbook Volumes I and II for the treatment and attenuation of discharges to impaired waters and OFWs; the design will make every effort to maximize the treatment of stormwater runoff from the proposed intersection improvements. A Storm Water Pollution Prevention Program (SWPPP) will also be implemented [as required by the NPDES permit] to control the effects of stormwater runoff during construction. For these reasons, a Summary Degree of Effect of Minimal has been assigned to the Water Quality and Quantity issue.

Next Steps: A Water Quality Impact Evaluation and potentially a Pond Siting Report [conducted and prepared in accordance with Part 2, Chapter 11 of the FDOT PD&E Manual] will be included in the Project Development and Environment Study scoping recommendations for this project.

Technical Studies: *Water Quality Impact Evaluation. / Pond Siting Report (potentially).*

Degree of Effect: 2 *Minimal* assigned 11/11/2019 by Roshanna White, US Environmental Protection Agency

Coordination Document:
To Be Determined: Further Coordination Required

Direct Effects
Identified Resources and Level of Importance:
Common roadway pollutants such as heavy metals, volatile organic chemicals, petroleum hydrocarbons, and suspended solids degrade near-by water bodies through storm water runoff. The EPA does not anticipate major impacts to water quality and quantity. Therefore, the EPA assigns a Minimal Degree of Effect for Water Quality and Quantity

Comments on Effects to Resources:
Roadway contaminants can increase the turbidity of a water body and degradation of water.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
Maximize the collection and treatment of storm water, reduce the impact of pollution runoff from construction activities and stabilize soils to reduce the effects of erosion, sedimentation, and runoff to maintain or improve water quality.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 11/08/2019 by Chris Stahl, FL Department of Environmental Protection

Coordination Document:
PD&E Support Document As Per PD&E Manual

Direct Effects
Identified Resources and Level of Importance:
Local surface waters

Comments on Effects to Resources:
Every effort should be made to maximize the treatment of stormwater runoff from the proposed pathway/road widening project to prevent ground and surface water contamination. If an ERP permit is required to construct the project, stormwater treatment should be designed to maintain the natural predevelopment hydroperiod and water quality, as well as to protect the natural functions of adjacent wetlands. We recommend that the PD&E study include details on possible future stormwater treatment facilities. We recommend that the PD&E study include an evaluation of existing stormwater treatment adequacy and details on the future stormwater treatment facilities. Retro-fitting of stormwater conveyance systems would help reduce impacts to water quality.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 11/01/2019 by Trisha Stone, South Florida Water Management District

Coordination Document:
Permit or Technical Study Required
Permits

Environmental Resource Permit
Technical Studies

Wetlands Evaluation Report

Direct Effects
Identified Resources and Level of Importance:
The project will discharge to WBID 3258EB Imperial River (Marine Segment) which is impaired for fecal coliform, iron, dissolved oxygen, and mercury. The project will also need to meet local basin rates determined by the appropriate agency.

Comments on Effects to Resources:
To avoid degradation of water quality during construction and operation of the project, the design will need to meet the criteria in ERP Applicant's Handbook Volume I and II. The stormwater management facilities will also need to be designed to attenuate the discharge in accordance with the Applicant's Handbooks and local basin discharge rates.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
The proposed stormwater management system must provide an additional 50% of water quality treatment volume prior to discharging offsite.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

ETAT Reviews and Coordinator Summary: Physical

Noise

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
No ETAT members provided comments for this issue.

While commercial uses abut the project intersection, residential subdivisions are present behind the commercial activities. Specific community features within the 500-foot project buffer that may be sensitive to noise and vibration effects include four homeowner and condominium associations [Waterford I, II, and III and Wedgewood I], a dentist office, and one Office of Greenways and Trails (OGT) multi-use trail opportunity/hiking trail priority [Estero-Bonita Corridor]. An additional dentist office, one religious center, healthcare facilities, one laser facility, and additional recreational facilities are reported within the 1,320-foot project buffer. Increased noise levels during construction and presumable noise level increases from higher traffic volumes as a result of improved operational conditions at the US 41 and CR 865 (Bonita Beach Road) intersection could have impacts on nearby residences and other identified sensitive receptors. However, given that the proposed improvements are anticipated to be constructed primarily within the existing right-of-way and abatement criteria will be considered to offset any potential unavoidable adverse effects, a Summary Degree of Effect of Minimal has been assigned to the Noise issue.

Next Steps:A Noise Study Report [conducted in accordance with Part 2, Chapter 18 of the FDOT PD&E Manual] will be included in the Project Development and Environment Study scoping recommendations for this project.
Technical Study: *Noise Study Report.*

None found

Navigation

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 01/18/2020 by FDOT District 1

Comments:
USACE noted that the project has no impacts to navigation; however, USACE indicated that further review would be necessary for changes to the project's current design or location to determine potential involvement and permitting needs. **Coordination Document:** To Be Determined: Further Coordination Required.

USCG indicated no further involvement with the project unless the project scope changes or design changes are proposed that include additional, unassessed bridges. **Coordination Document:** No Involvement.

The project does not cross any navigable waterways and will not affect navigation; therefore, a Summary Degree of Effect of N/A / No Involvement has been assigned to the Navigation issue.

Next Steps:None.

Technical Study: *None.*

Degree of Effect: N/A *N/A / No Involvement* assigned 11/18/2019 by Mark M Tamblyn, US Army Corps of Engineers

Coordination Document:
To Be Determined: Further Coordination Required

Coordination Document Comments:
The present alternative reviewed has no impacts to navigation at all within a Mile. If anything was to change with design or location further review would be needed to determine involvement and potential permitting.

Direct Effects

Identified Resources and Level of Importance:
This project alternative has no proposed impacts to any navigation at all.

Comments on Effects to Resources:
There will be no effects to any resources related to navigation.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
See comments for direct effects.

Additional Comments (optional):
The present alternative reviewed has no impacts to navigation at all within a Mile. If anything was to change with design or location further review would be needed to determine involvement and potential permitting.

CLC Recommendations:

Indirect Effects

Identified Resources and Level of Importance:
See comments for direct effects.

Comments on Effects to Resources:
See comments for direct effects.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
There will be no effects to any resources related to navigation.

Degree of Effect: N/A *N/A / No Involvement* assigned 10/02/2019 by Randall D Overton, US Coast Guard

Coordination Document:
No Involvement

Direct Effects
Identified Resources and Level of Importance:
No further involvement from the USCG is required unless the proposed project changes to include additional, unassessed bridges or the project scope changes.

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Contamination

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
FDEP did not identify any issues or potential project effects related to contamination. **Coordination Document:** PD&E Support Document as Per PD&E Manual.

SFWMD commented that construction methodologies, such as dewatering, must be designed to minimize movement of contaminant plumes. SFWMD stated that projects that do not qualify for a SFWMD General Permit will require a SFWMD Water Use Permit if dewatering is necessary. **Coordination Document:** To Be Determined: Further Coordination Required.

USEPA noted that contamination of groundwater can result in poor drinking water quality and loss of water supply. USEPA added that the potential sources of sub-surface contamination reported in the PED have not been investigated to determine their potential risk. USEPA recommended that corrective action be completed before commencement of project activities, if applicable. **Coordination Document:** To Be Determined: Further Coordination Required.

Potential sources of sub-surface contamination reported within the 500-foot project buffer include two hazardous waste facilities/USEPA Resource Conservation and Recovery Act (RCRA) regulated facilities [one of which is also a closed waste cleanup

responsible party site], one additional USEPA RCRA regulated facility, two petroleum contamination monitoring sites/storage tank contamination monitoring sites, one additional storage tank contamination monitoring site, and two Super Act risk sources. The noted sites will be investigated to determine their potential contamination risk during the Project Development and Environment Study. Proper mitigation will take place if medium to high risk sites are identified. For these reasons and given the relatively low presence of such sites within proximity to the project, a Summary Degree of Effect of Minimal has been assigned to the Contamination issue.

Next Steps: Preparation of a Contamination Screening Evaluation Report [in accordance with Part 2, Chapter 20 of the FDOT PD&E Manual] will be included in the Project Development and Environment Study scoping recommendations for this project.
Technical Study: *Contamination Screening Evaluation Report.*

Degree of Effect: 2 *Minimal* assigned 11/11/2019 by Roshanna White, US Environmental Protection Agency

Coordination Document:
To Be Determined: Further Coordination Required

Direct Effects
Identified Resources and Level of Importance:
Potential sources of sub-surface contamination that can adversely effect water quality and quantity. The EPA does not anticipate major impacts from potential pollutants. Therefore, the EPA assigns a Minimal Degree of Effect for Contamination.

Comments on Effects to Resources:
Contamination of ground water can result in poor drinking water quality and loss of water supply. The potential sources of contamination reported in the PED have not been investigated to determine their potential risk.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
The EPA recommends corrective action is completed before commencement of project activities, if applicable.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 0 *None* assigned 11/08/2019 by Chris Stahl, FL Department of Environmental Protection

Coordination Document:
PD&E Support Document As Per PD&E Manual

Direct Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 11/01/2019 by Trisha Stone, South Florida Water Management District

Coordination Document:
To Be Determined: Further Coordination Required

Direct Effects
Identified Resources and Level of Importance:
Surface water and ground water

Comments on Effects to Resources:
Construction methodologies, such as dewatering, must be designed to minimize movement of contaminant plumes.

If dewatering is necessary, a water use permit may be required. A general permit is available in rule 40E-2.061(2), FAC. Projects that do not qualify for the general permit will require a water use permit from SFWMD.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Air Quality

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
USEPA stated that the project is within an Air Quality Attainment Area so criteria pollutants under National Ambient Air Quality Standards are considered to be at acceptable levels. USEPA indicated that air quality can possibly be affected by airborne dust and other ambient air pollutants from project construction. USEPA listed several strategies that should be employed during project activities to reduce emissions, such as the use of diesel controls, cleaner fuel, and cleaner construction practices for equipment.
Coordination Document: To Be Determined: Further Coordination Required.

The project is not located within a USEPA-designated Air Quality Maintenance Area or Non-Attainment Area for any of the six pollutants [ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and small particulate matter] specified by the USEPA in National Ambient Air Quality Standards; therefore, the Clean Air Act conformity requirements do not currently apply to this project. Minimal, localized impacts to air quality could occur as a result of fugitive dust and exhaust emissions generated from equipment during project construction; no permanent effects to air quality are anticipated. Therefore, a Summary Degree of Effect of Minimal has been assigned to the Air Quality issue.
Next Steps:None.

Technical Study: *None.*

Degree of Effect: 2 *Minimal* assigned 11/11/2019 by Roshanna White, US Environmental Protection Agency

Coordination Document:

To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

A wide variety of air pollutants can be emitted from stationary and mobile sources. The EPA establishes the National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and regulates emissions of hazardous air pollutants. The proposed project is in an attainment area, so criteria pollutants under NAAQS are considered to be an acceptable level. Therefore, EPA expects the project to have Minimal impact on air quality.

Comments on Effects to Resources:

The project area air quality can possibly be affected by airborne dust, and other ambient air pollutants from project construction.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

To maintain healthy air quality consider the use of diesel controls, cleaner fuel and cleaner construction practices for on-road and off -road equipment used for transportation, soil movement, or other project activities

Additional Comments (optional):

CLC Recommendations:

Indirect Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Infrastructure

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 01/18/2020 by FDOT District 1

Comments:

No ETAT members provided comments for this issue.

Extensive utilities exist around the project intersection, including traffic lights, pedestrian signals, cable markers, and utility cabinet boxes. Power lines run along the north side of CR 865 (Bonita Beach Road) and on the west side of US 41 south of CR 865 (Bonita Beach Road). In addition, street lights line both sides of US 41 and are present along CR 865 (Bonita Beach Road) as mounted on the power lines. Parking lot lights also exist on abutting private properties. A Summary Degree of Effect of Moderate has been assigned to the Infrastructure issue given the potential conflicts with extensive utilities present and the likelihood of relocations taking place as a result of additional right-of-way being required.

Next Steps:A Utility Assessment Package [conducted in accordance with Part 2, Chapter 21 of the FDOT PD&E Manual] will be included in the Project Development and Environment Study scoping recommendations for this project.

Technical Study: *Utility Assessment Package.*

None found

ETAT Reviews and Coordinator Summary: Special Designations

Special Designations

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 01/18/2020 by FDOT District 1

Comments:
SFWMD restated comments provided for the Coastal and Marine issue. **Coordination Document:** Permit or Technical Study Required.

USEPA noted that the project could increase degradation of water quality in the Imperial River through subsurface contamination and stormwater runoff. USEPA recommended avoidance and minimization activities. **Coordination Document:** To Be Determined: Further Coordination Required.

The Imperial River, a tributary of Estero Bay [a designated Aquatic Preserve], is located approximately 2,000 feet north of the project; the Estero Bay tributaries are designated Outstanding Florida Waters (OFWs). The project, including the proposed stormwater management system, will be developed to meet the design and performance criteria established in the SFWMD Environmental Resource Permit Applicant's Handbook Volumes I and II for the treatment and attenuation of discharges to OFWs. Best management practices will also be utilized during project activities to prevent impacts [primarily siltation] to nearby estuarine habitats. For these reasons, a Summary Degree of Effect of Minimal has been assigned to the Special Designations issue.

Next Steps: None.

Technical Study: *None.*

Degree of Effect: 2 *Minimal* assigned 11/11/2019 by Roshanna White, US Environmental Protection Agency

Coordination Document:
To Be Determined: Further Coordination Required

Direct Effects
Identified Resources and Level of Importance:
Further degradation of Imperial River from storm water and potential sub-surface contamination. The EPA does not anticipate major impacts from potential pollutants. Therefore, the EPA assigns a Minimal Degree of Effect for Special Designations.

Comments on Effects to Resources:
The loss of quality water.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
Maximize the collection and treatment of storm water, reduce the impact of pollution runoff from construction activities, and corrective action of potentially contaminated sites.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Degree of Effect: 2 *Minimal* assigned 11/01/2019 by Trisha Stone, South Florida Water Management District

Coordination Document:
Permit or Technical Study Required

Direct Effects
Identified Resources and Level of Importance:
The project may discharge to one Outstanding Florida Water (OFW) which is the Estero Bay Tributaries in Lee County.

Comments on Effects to Resources:

See comment above.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Eliminated Alternatives

There are no eliminated alternatives for this project.

Project Scope

General Project Recommendations

There are no general project recommendations identified for this project in the EST.

Anticipated Permits

Permit	Type	Comments	Assigned By	Date
Section 404 - Individual or General	USACE	(potentially Regional General Permit or Nationwide 3 or 14 (Maintenance))	FDOT District 1	01/18/20
National Pollutant Discharge Eliminated System	FDEP		FDOT District 1	09/18/19
Environmental Resource Permit	Water	SFWMD Consumptive Water Use Permit (potentially)	FDOT District 1	01/18/20

Permitting Timetable

Federal Permitting Agencies identified are also Co-operating Agencies for the development of this project. Permit application occurs when design plans are developed with sufficient engineering detail to support a complete permit application. This is expected to occur within one year FEIS/ROD approval and Location Design Concept Approval for the selected alternative, unless otherwise agreed upon during project development.

Anticipated Technical Studies

Technical Study Name	Type	Comments	Assigned By	Date
Location Hydraulics Report	ENGINEERING		FDOT District 1	09/18/2019
Public Involvement Plan	ENVIRONMENTAL		FDOT District 1	09/18/2019
Noise Study Report	ENVIRONMENTAL		FDOT District 1	07/10/2013
Contamination Screening Evaluation Report	ENVIRONMENTAL		FDOT District 1	07/10/2013
Conceptual Stage Relocation Plan	ENVIRONMENTAL		FDOT District 1	09/18/2019
Water Quality Impact Evaluation	Other		FDOT District 1	09/18/2019
Cultural Resource Assessment Survey	ENVIRONMENTAL		FDOT District 1	07/10/2013
Utility Assessment Package	ENGINEERING		FDOT District 1	09/18/2019
Pond Siting Report	ENGINEERING	(potentially)	FDOT District 1	09/18/2019
Section 4(f) Determination of Applicability	ENVIRONMENTAL	[Form No. 650-050-45]	FDOT District 1	09/18/2019
Natural Resources Evaluation (NRE)	ENVIRONMENTAL		FDOT District 1	09/18/2019

Dispute Resolution Activity Log

There are no dispute actions identified for this project in the EST.

Appendices

Preliminary Environmental Discussion Comments

Social and Economic

Land Use Changes

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

The project is located in the City of Bonita Springs, a U.S. Census Designated Place within Lee County. The project area primarily consists of commercial/retail/office and residential uses. Specifically, two extensive strip shopping centers are respectively located in the northwest and southeast quadrants of the intersection. One Planned Unit Development [Crown Lake Shoppes CPD] is present within the 500-foot project buffer; eight additional Planned Unit Developments are present within the 1,320-foot project buffer. According to the City of Bonita Springs Future Land Use Map, the area surrounding the intersection will continue to support the noted uses. Therefore, the project is anticipated to accommodate existing and proposed development within the area. For these reasons, minimal impacts or changes to proximate land uses are anticipated as a result of the project. Positive and negative impacts to sociocultural resources will be assessed further as part of the Project Development phase; however, a standalone Sociocultural Effects Evaluation Technical Memorandum will not be prepared as part of the Project Development and Environment Study.

Social

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

The project is located in the City of Bonita Springs, a U.S. Census Designated Place within Lee County. The project area primarily consists of commercial/retail/office and residential uses; two strip shopping centers are respectively located in the northwest and southeast quadrants of the intersection. Community features reported within the 500-foot project buffer include: four homeowner and condominium associations [Waterford I, II, and III and Wedgewood I] and one Office of Greenways and Trails (OGT) multi-use trail opportunity/hiking trail priority [Estero - Bonita Corridor]. Community features within the 1,320-foot project buffer include: one community center/religious center, healthcare facilities, and one laser facility; additional community facilities [such as city hall, a post office, a fire station, and recreational features] are within the 5,280-foot project buffer. Compared to the demographic characteristics for Lee County, the 500-foot project buffer contains significantly higher percentages of individuals who identify themselves as White and who are age 65 and older, a comparable Other Race population percentage, a lower percentage of housing units with no vehicle available, and a slightly higher median family income [$889 more]. Limited English Proficiency (LEP) accommodations will likely be required during public involvement efforts of the Project Development phase as 11.37% or 623 persons within the census block groups containing the intersection "speak English less than very well". In the long term, the proposed project is anticipated to have positive effects on the social environment and cohesion of surrounding communities by enhancing multi-modal access to residences, job opportunities, essential services and tourist destinations; improving transit reliability; and enhancing safety conditions. Depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended], the project could affect community cohesion and the area's visual character/aesthetic quality. However, due to the heavy commercial character of each corridor composing the intersection and the fact that the intersection improvement is anticipated to enhance pedestrian/bicycle access and circulation [by reducing opportunities for conflicts between automobiles and pedestrians/bicyclists] and the performance and reliability of transit service operating in the area [by reducing delays at the intersection], impacts on the social environment are anticipated to be minimal. Positive and negative impacts to sociocultural resources will be assessed further as part of the Project Development phase; however, a standalone Sociocultural Effects Evaluation Technical Memorandum will not be prepared as part of the Project Development and Environment Study. A Public Involvement Plan will be included in the Project Development and Environment Study scoping recommendations.

Relocation Potential

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Moderate

The project area primarily consists of commercial/retail/office and residential uses. The noted commercial/retail/office uses line both US 41 and CR 865 (Bonita Beach Road); the residential uses sit behind the commercial/retail/office activities along the two roadways. Vegetated swales and surface parking lots buffer the majority of businesses on each corridor; however, some structures on CR 865 (Bonita Beach Road) are located closer to the roadway. Right-of-way surrounding the intersection ranges from 120 feet to 145 feet along CR 865 (Bonita Beach Road) and 190 feet to 215 feet along US 41. Depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended], additional right of way may be required. Access to proximate businesses and residences may also temporarily be affected and/or modified as a result of the project. Encroachment into surrounding parcels (if necessary) will be coordinated with the appropriate property owners. Further, the proposed project improvements will be designed to minimize right-of-way acquisition. Specific right-of-way requirements will be determined during the Project Development and Environment Study. Based on the foregoing, moderate involvement regarding relocation potential is anticipated. Positive and negative impacts to sociocultural resources will be assessed further as part of the Project Development phase; however, a standalone Sociocultural Effects Evaluation Technical Memorandum will not be prepared as part of the Project Development and Environment Study. A Conceptual Stage Relocation Plan will be included in the Project Development and Environment Study scoping recommendations.

Farmlands

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: None

The 500-foot project buffer consists of 15.81 acres (87.69%) of soils classified as Farmland of Unique Importance. Based on recent aerial imagery and field observations, land containing these soils has been developed. Also, no agricultural land is present within the 500-foot project buffer. According to the City of Bonita Springs Future Land Use Map, the area is expected to continue to support commercial/retail/office and residential uses. In addition, the intersection is located entirely within the Bonita Springs Urbanized Area. For these reasons, no impacts to farmlands are anticipated as a result of the project. In addition, no further coordination with NRCS is needed as the project does not meet the definition of farmland as defined in 7 CFR 658 and the provisions of the Farmland Protection Policy Act of 1981.

Aesthetic Effects

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

The project is located in the City of Bonita Springs, a U.S. Census Designated Place within Lee County. Commercial/retail/office uses line both US 41 and CR 865 (Bonita Beach Road); residential uses sit behind the commercial/retail/office activities along the two roadways. According to the City of Bonita Springs Future Land Use Map, the area surrounding the intersection will continue to support these identified uses. It is important to note that while the project will consider bicycle and pedestrian facilities/facility enhancements in order to improve safety conditions and multi-modal access/mobility, views from/of the surrounding area could be affected depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended]. However, given the heavy commercial character of each corridor and the fact that the project appears to be consistent with the future land use vision and aesthetic character of the intersection, minimal involvement regarding aesthetic effects is anticipated. Positive and negative impacts to sociocultural resources will be assessed further as part of the Project Development phase; however, a standalone Sociocultural Effects Evaluation Technical Memorandum will not be prepared as part of the Project Development and Environment Study.

Economic

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

Commercial/retail/office uses line both US 41 and CR 865 (Bonita Beach Road); residential uses sit behind the commercial/retail/office activities along the two roadways. Two strip shopping centers are respectively located in the northwest and southeast quadrants of the intersection; large tenants of these strip-centers include Publix, Winn-Dixie, and Crunch Fitness. Numerous banking, clothing, and retail establishments surround the intersection such as Bank of America, Wells Fargo, Goodwill, and Walgreens. It is important to note that the two roadways composing the intersection are important in facilitating regional and local traffic [including truck traffic] in the area, particularly with their access to other major transportation corridors and coastal communities/tourist destinations [i.e., Fort Meyers Beach and Little Hickory Island] to the west of the Lee County mainland. In the long term, the proposed project is expected to enhance economic conditions of the area by 1) addressing the deficient capacity of the intersection in the existing and future condition in order to serve the mobility demands of the area, thereby supporting increased growth, 2) better facilitating the movement of local and regional freight, and 3) accommodating multimodal activity through bicycle and pedestrian facilities/facility enhancements and reliable transit. However, depending on the type of improvement proposed [i.e., whether or not an elevated structure is recommended], minimal economic impacts are anticipated due to the fact that access to the noted businesses may be modified or temporarily affected during project construction as a result of the project. Positive and negative impacts to sociocultural resources will be assessed further as part of the Project Development phase; however, a standalone Sociocultural Effects Evaluation Technical Memorandum will not be prepared as part of the Project Development and Environment Study.

Mobility

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Enhanced

The US 41 and CR 865 (Bonita Beach Road) intersection is at-grade with double left turn lanes at all approaches to the intersection. US 41 is classified as a six-lane 'Urban Principal Arterial' with a raised median and right turn lanes that run the length of the project limits. CR 865 (Bonita Beach Road) is classified as a four-lane 'Urban Minor Arterial' with a raised median and turn and merge lanes at various points. US 41 facilitates the north-south movement of regional and local traffic (including truck traffic) as it runs parallel to I-75 along the east coast of the State of Florida; it additionally connects employment and population centers throughout the west coast of Florida. CR 865 (Bonita Beach Road) provides east-west access between major north-south transportation corridors of the area [US 41 and I-75] as well as serves as one of two connections between the coastal communities/tourist destinations to the west and the mainland of Lee County. US 41 and CR 865 (Bonita Beach Road) are designated emergency evacuation routes of both the Florida Division of Emergency Management and Lee County as well as designated regional freight facilities [US 41 - Tier 1 Regional Freight Corridor and CR 865 (Bonita Beach Road) - Tier 2 Regional Freight Connector] according to the Lee County Metropolitan Planning Organization's (MPO's) 2040 Long Range Transportation Plan (LRTP). It should be noted that sidewalks are present on both sides of US 41 and CR 865 (Bonita Beach Road); however, marked bicycle lanes only occur along US 41. Two LeeTran bus routes [Routes 150 and 600], one transportation disadvantaged service provider area [Good Wheels Inc.], and a future trail exists within the 500-foot project buffer. This project is intended to improve traffic operations at the intersection of US 41 and CR 865 (Bonita Beach Road) by increasing the operational capacity to address existing congestion and projected travel demand. In turn, through reduced delays at the intersection, the improvement is anticipated to enhance overall mobility in the area by 1) improving the viability of US 41 as a regional alternative facility to I-75; 2) enhancing east-west access between two primary north-south transportation corridors [US 41 and I-75] as well as between the mainland of Lee County and coastal communities/tourist destinations to the west; 3) enhancing freight mobility and access within the area; 4) increasing the volume of residents and tourists from coastal communities that can be evacuated, enhancing access to facilities of the state evacuation route network, and improving response times to emergency events and incidences; 5) enhancing the performance and reliability of transit service in the area; and 6) improving pedestrian/bicycle access and circulation by modifying/limiting opportunities for conflicts between automobiles and pedestrians/bicyclists. Positive and negative impacts to sociocultural resources will be assessed further as part of the Project Development phase; however, a standalone Sociocultural Effects Evaluation Technical Memorandum will not be prepared as part of the Project Development and Environment Study.

Cultural

Section 4(f) Potential

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

One potential Section 4(f) resource, an Office of Greenways and Trails (OGT) multi-use trail opportunity/hiking trail priority [Estero-Bonita Corridor], exists within the 500-foot project buffer. While no comprehensive Cultural Resource Assessment Survey has been conducted for either US 41 or CR 865 (Bonita Beach Road), no previously recorded resources exist within 500 feet of the intersection; in addition, there is low potential for unrecorded historic resources to exist given the developed nature of the project area. For these reasons, minimal involvement regarding Section 4(f) potential is anticipated. A Section 4(f) Determination of Applicability Form [Form No. 650-050-45] will be included in the Project Development and Environment Study scoping recommendations.

Historic and Archaeological Sites

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

A review of the data indicates that the portion of the project along US 41 is within the boundaries of a previous Cultural Resource Assessment Survey (CRAS) conducted in 1997: the Cultural Resource Assessment Survey of US 41 from North of CR 887 to San Carlos Boulevard [Collier and Lee Counties, Florida]. No comprehensive survey has been conducted along CR 865 (Bonita Beach Road). No previously recorded cultural resources are located within 500 feet of the project corridors. Property appraiser data also identified no parcels with potential unrecorded historic resources. Although considered historic in other parts of the state, US 41 within the project area no longer retains any historic fabric or integrity. Based on the previous survey of US 41, the lack of previously recorded resources within 500 feet of the intersection, the absence of any potential unrecorded historic resources, and the developed nature of the project area, minimal involvement regarding cultural resources is anticipated. A Cultural Resource Assessment Survey will be included in the Project Development and Environment Study scoping recommendations.

Recreation Areas

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

Recreational features located in the project vicinity include: one Office of Greenways and Trails (OGT) multi-use trail opportunity/hiking trail priority [Estero-Bonita Corridor] within the 500-foot project buffer and one private golf course within the 1,320-foot project buffer. Due to the limited number of recreational features within the project vicinity, minimal involvement regarding recreation areas is anticipated as a result of the project.

Natural

Wetlands and Surface Waters

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

While no wetlands were reported within the 500-foot project buffer based on the SFWMD Wetlands 2008-2015 database, the National Wetlands Inventory database identified 1.36 acres [7.55%] of palustrine wetlands within the same buffer. These wetlands are primarily associated with the stormwater ponds within proximity to the intersection and the wide canal that flows along the east side of US 41 and crosses underneath CR 865 (Bonita Beach Road). It should be noted that estuarine wetlands associated with the

Imperial River are located approximately 2,000 feet north of the project. Avoidance and minimization measures will be incorporated into the project's design, best management practices will be utilized during project activities, and compensatory mitigation will be provided for any adverse wetland impacts resulting from the proposed project improvements. Further, the proposed stormwater management system for the project will be developed to meet the design and performance criteria established in the SFWMD Environmental Resource Permit Applicant's Handbook Volumes I and II for the treatment and attenuation of discharges to nearby waterbodies. As such, stormwater runoff from the proposed project will be treated to prevent water quality impacts to nearby wetlands. Additional right-of-way acquisition may be necessary to accommodate improved stormwater management facilities. Due to the presence of the noted features, minimal involvement regarding wetland resources is anticipated. A Natural Resources Evaluation will be included in the Project Development and Environment Study scoping recommendations.

Water Quality and Quantity

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

Stormwater runoff within the project area is currently collected via curb and gutter and a network of vegetated swales adjacent to and on both sides of each roadway. Stormwater ponds are located within proximity to the intersection, and a wide canal flows along the east side of US 41 crossing underneath CR 865 (Bonita Beach Road). The 500-foot project buffer occurs within the watershed of one impaired waterbody [Imperial River - Marine Segment (WBID 3258EB)] - which is impaired for fecal coliform, iron, nutrients, and dissolved oxygen. Other features located within the 500-foot project buffer include: the Surficial Aquifer System [a principal aquifer of the State of Florida], a recharge area of the Floridian Aquifer, and one NPDES stormwater permit. The Imperial River, a tributary of Estero Bay [a designated Aquatic Preserve], is additionally located approximately 2,000 feet north of the project; the Estero Bay tributaries are designated Outstanding Florida Waters (OFWs). The proposed stormwater management system will be developed to meet the design and performance criteria established in the SFWMD Environmental Resource Permit Applicant's Handbook Volumes I and II for the treatment and attenuation of discharges to impaired waters and OFWs; the design will make every effort to maximize the treatment of stormwater runoff from the proposed intersection improvements. A Storm Water Pollution Prevention Program (SWPPP) will also be implemented [as required by the NPDES permit] to control the effects of stormwater runoff during construction. For these reasons, minimal involvement regarding water quality and quantity resources is anticipated. A Water Quality Impact Evaluation, and potentially a Pond Siting Report, will be included in the Project Development and Environment Study scoping recommendations.

Floodplains

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

According to the DFIRM (SFHA) 100 Year Flood Zone data, 2.92 acres [16.21%] of the project's 500-foot buffer occurs within the 100-year floodplain [Flood Zone AE]. The 100-year floodplain is concentrated in the southwest quadrant of the intersection. Floodplain compensation associated with project impacts will be addressed through necessary agency coordination. For these reasons, minimal involvement regarding floodplains is anticipated. A Location Hydraulic Report will be included in the Project Development and Environment Study scoping recommendations.

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Wildlife and Habitat

For the official list of fish and wildlife designated by the state of Florida as Endangered, Threatened or Species of Special Concern, please refer to sections 68A-27.003, .0031 and 005 in *Rules Relating to Endangered or Threatened Species*, Chapter 68A-27, Florida Administrative Code, https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68A-27.

For general information on Florida imperiled species and species conservation programs, go to https://myfwc.com/wildlifehabitats/wildlife/

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

The 500-foot project buffer occurs within the Southwest Coast Ecosystem Management Area; FWS Consultation Areas for the American crocodile, Florida bonneted bat, Florida scrub jay, and Southwest plants; Abundant Range for the Florida black bear; and Core Foraging Area of an active nesting wood stork colony. Least terns and wood storks have been observed within the project area; the canal present on the east side of US 41 serves as suitable habitat for wood storks. Based on the Florida Natural Areas Inventory (FNAI) database, two other endangered or rare species [Eastern indigo snake and scrub stylisma] have the potential to occur within the 500-foot project buffer; additional protected species and habitat are further reported within one mile of the project. Avoidance and minimization measures will be implemented to the greatest extent practicable, and agency coordination will take place to address potential project impacts to the noted listed species. For these reasons and due to the surrounding urban environment, minimal involvement regarding wildlife and habitat resources is anticipated. A Natural Resources Evaluation will be included in the Project Development and Environment Study scoping recommendations.

Coastal and Marine

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

No coastal or marine resources are reported within the 500-foot project buffer; however, estuarine wetlands associated with the Imperial River are located approximately 2,000 feet north of the project. Avoidance and minimization measures will be incorporated into the project's design, and best management practices will be utilized during project activities to prevent potential water quality impacts to proximate estuarine habitats. For this reason, minimal involvement regarding coastal and marine resources is anticipated.

Physical

Noise

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

While commercial uses abut the project intersection, residential subdivisions are present behind the commercial activities. Specific community features within the 500-foot project buffer that may be sensitive to noise and vibration effects include: four homeowner and condominium associations [Waterford I, II, and III and Wedgewood I], a dentist office, and one Office of Greenways and Trails (OGT) multi-use trail opportunity/hiking trail priority [Estero-Bonita Corridor]. An additional dentist office, one religious center, healthcare facilities, one laser facility, and additional recreational facilities are reported within the 1320-foot project buffer. Increased noise levels during construction and presumable noise level increases from higher traffic volumes as a result of improved operational conditions at the US 41 and CR 865 (Bonita Beach Road) intersection could have impacts on nearby residences and other identified sensitive receptors. However, given that the proposed improvements are anticipated to be constructed primarily within the existing right-of-way and abatement criteria will be considered to offset any potential unavoidable adverse effects, overall noise and vibration related impacts as a result of the project are anticipated to be minimal. A Noise Study Report will be included in the Project Development and Environment Study scoping recommendations.

Air Quality

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

The project is not located within a USEPA-designated Air Quality Maintenance Area or Non-Attainment Area for any of the six pollutants [ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and small particulate matter] specified by the USEPA in National Ambient Air Quality Standards; therefore, the Clean Air Act conformity requirements do not currently apply to this project. Minimal, localized impacts to air quality could occur as a result of fugitive dust and exhaust emissions generated from equipment during project construction; no permanent effects to air quality are anticipated. An Air Quality Technical Memorandum will be included in the Project Development and Environmental Study scoping recommendations.

Contamination

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

Potential sources of contamination reported within the 500-foot project buffer include: two hazardous waste facilities/USEPA Resource Conservation and Recovery Act (RCRA) regulated facilities [one of these facilities is also a closed waste cleanup responsible party site], one additional USEPA RCRA regulated facility, two petroleum contamination monitoring sites/storage tank contamination monitoring sites, one additional storage tank contamination monitoring site, and two Super Act risk sources. The noted sites will be investigated to determine their potential contamination risk during the Project Development and Environment Study. Proper mitigation will take place if medium to high risk sites are identified. For these reasons and given the relatively low presence of sites within proximity to the project intersection, minimal involvement regarding contamination is anticipated. A Contamination Screening Evaluation Report will be included in the Project Development and Environment Study scoping recommendations.

Infrastructure

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Moderate

Extensive utilities exist around the project intersection, including: traffic lights, pedestrian signals, cable markers, and utility cabinet boxes. Power lines run along the north side of CR 865 (Bonita Beach Road) and on the west side of US 41 south of CR 865 (Bonita Beach Road). In addition, street lights line both sides of US 41 and are present along CR 865 (Bonita Beach Road) as mounted on the power lines. Parking lot lights also exist on abutting private properties. Moderate involvement regarding infrastructure-related features is anticipated given potential conflicts with the extensive utilities present and the likelihood of relocations taking place as a result of additional right-of-way being required. A Utility Assessment Package will be included in the Project Development and Environment Study scoping recommendations.

Navigation

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: N/A / No Involvement

The project does not cross any navigable waterways and will not affect navigation; therefore, no involvement regarding navigation is anticipated.

Special Designations

Special Designations: Outstanding Florida Waters

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

The Imperial River, a tributary of Estero Bay [a designated Aquatic Preserve], is located approximately 2,000 feet north of the project; the Estero Bay tributaries are designated Outstanding Florida Waters (OFWs). The project, including the proposed stormwater management system, will be developed to meet the design and performance criteria established in the SFWMD Environmental Resource Permit Applicant's Handbook Volumes I and II for the treatment and attenuation of discharges to OFWs. Best management practices will also be utilized during project activities to prevent impacts [primarily siltation] to proximate estuarine habitats. For these reasons, minimal involvement regarding OFWs is anticipated.

Special Designations: Aquatic Preserves

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: Minimal

The Imperial River, a tributary of Estero Bay [a designated Aquatic Preserve], is located approximately 2,000 feet north of the project. As such, the Estero Bay Aquatic Preserve extends into the Imperial River. The project, including the proposed stormwater management system, will be developed to meet the design and performance criteria established in the SFWMD Environmental Resource Permit Applicant's Handbook Volumes I and II for the treatment and attenuation of discharges to these protected waters. Best management practices will also be utilized during project activities to prevent impacts [primarily siltation] to proximate estuarine habitats. For these reasons, minimal involvement regarding Aquatic Preserves is anticipated.

Special Designations: Scenic Highways

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: N/A / No Involvement

There are no Scenic Highways reported within the 500-foot project buffer; therefore, no involvement regarding these specially-designated resources is anticipated.

Special Designations: Wild and Scenic Rivers

Project Level

Refer to Analysis Area PED Comments.

Analysis Area

Areas: Alternative #1

Degree of Effect: N/A / No Involvement

No designated Wild and Scenic Rivers are reported within the 500-foot project buffer; therefore, no involvement regarding these specially-designated resources is anticipated.

Advance Notification Comments

There are no Advance Notification (AN) Package comments for this project.

GIS Analyses

Since there are so many GIS Analyses available for Project #6291 - US 41 at CR 865 (Bonita Beach Road) Intersection Improvement, they have not been included in this ETDM Summary Report. GIS Analyses, however, are always available for this project on the Public ETDM Website. Please click on the link below (or copy this link into your Web Browser) in order to view detailed GIS tabular

information for this project:

http://etdmpub.fla-etat.org/est/index.jsp?tpID=6291&startPageName=GIS%20Analysis%20Results

Special Note: Please be sure that when the GIS Analysis Results page loads, the **Programming Screen Summary Report Published on 01/18/2020 by Lauren Brooks Milestone** is selected. GIS Analyses snapshots have been taken for Project #6291 at various points throughout the project's life-cycle, so it is important that you view the correct snapshot.

Project Attachments

There are no attachments for this project.

Degree of Effect Legend

Color Code	Meaning	ETAT	Public Involvement
N/A	Not Applicable / No Involvement	There is no presence of the issue in relationship to the project, or the issue is irrelevant in relationship to the proposed transportation action.	
0	None (after 12/5/2005)	The issue is present, but the project will have no impact on the issue; project has no adverse effect on ETAT resources; permit issuance or consultation involves routine interaction with the agency. The *None* degree of effect is new as of 12/5/2005.	No community opposition to the planned project. No adverse effect on the community.
1	Enhanced	Project has positive effect on the ETAT resource or can reverse a previous adverse effect leading to environmental improvement.	Affected community supports the proposed project. Project has positive effect.
2	Minimal	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
2	Minimal to None (assigned prior to 12/5/2005)	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
3	Moderate	Agency resources are affected by the proposed project, but avoidance and minimization options are available and can be addressed during development with a moderated amount of agency involvement and moderate cost impact.	Project has adverse effect on elements of the affected community. Public Involvement is needed to seek alternatives more acceptable to the community. Moderate community interaction will be required during project development.
4	Substantial	The project has substantial adverse effects but ETAT understands the project need and will be able to seek avoidance and minimization or mitigation options during project development. Substantial interaction will be required during project development and permitting.	Project has substantial adverse effects on the community and faces substantial community opposition. Intensive community interaction with focused Public Involvement will be required during project development to address community concerns.
5	Potential Dispute (Planning Screen)	Project may not conform to agency statutory requirements and may not be permitted. Project modification or evaluation of alternatives is required before advancing to the LRTP Programming Screen.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
5	Dispute Resolution (Programming Screen)	Project does not conform to agency statutory requirements and will not be permitted. Dispute resolution is required before the project proceeds to programming.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
	No ETAT Consensus	ETAT members from different agencies assigned a different degree of effect to this project, and the ETDM coordinator has not assigned a summary degree of effect.	
	No ETAT Reviews	No ETAT members have reviewed the corresponding issue for this project, and the ETDM coordinator has not assigned a summary degree of effect.	

Project-Level Hardcopy Maps

6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Age Distribution Map

ETDM Alternative
ETDM Alternative Terminus
Major Road
Local Road or Trail

Median Age
0 - 18
18 - 30
30 - 65
> 65

Data Sources:
US Geological Survey
FL Department of Transportation
NAVTEQ
US Census Bureau (2010)

0 0.05 0.1 0.2 Miles

N

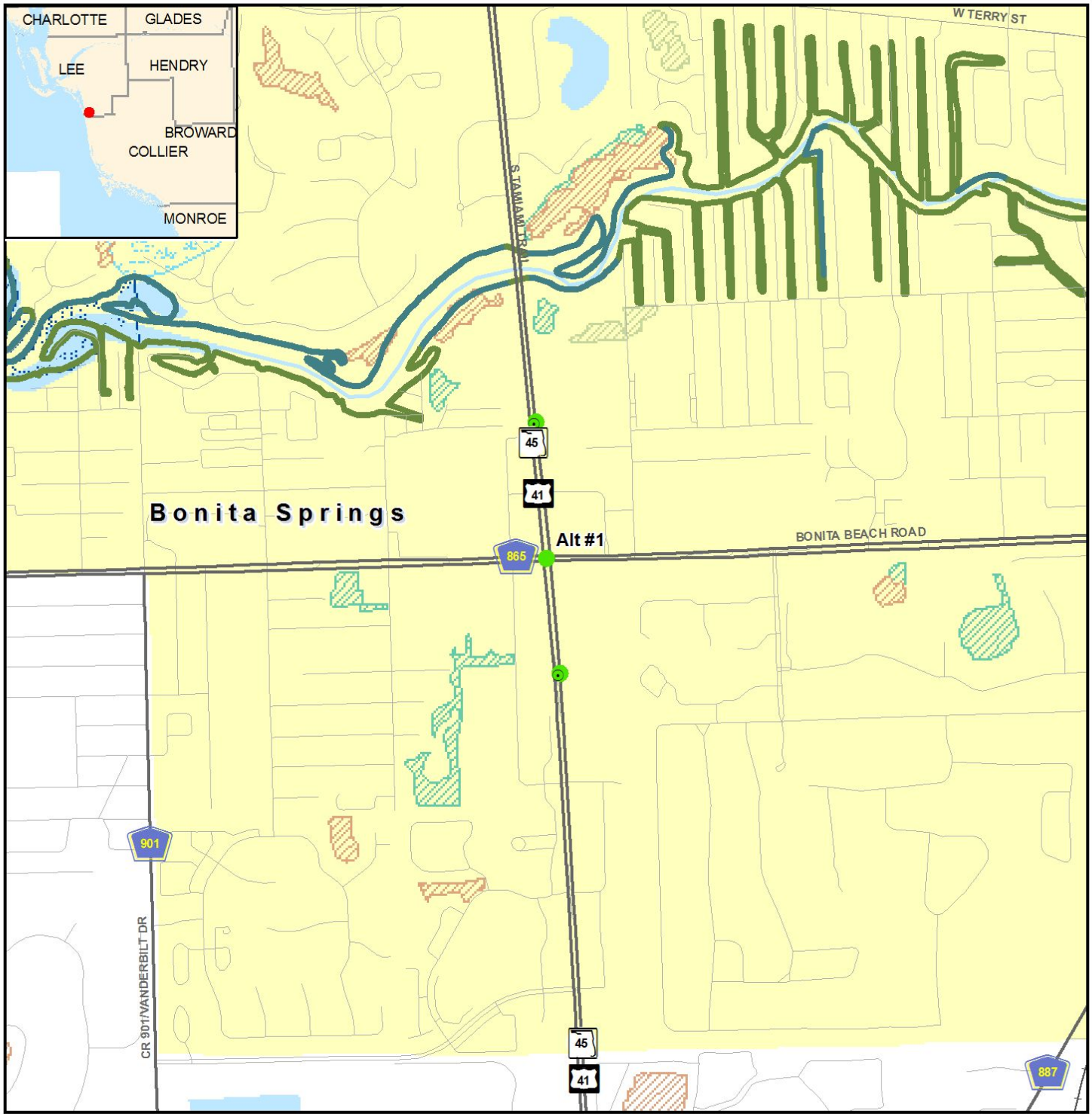
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Coastal and Marine Map

- ETDM Alternative
- ETDM Alternative Terminus
- City Limits
- Navigable Water Way
- Swamp or Marsh
- Exposed Rocky Platform
- Sand Beach
- Gravel Beach/Riprap
- Exposed Tidal Flat
- Sheltered Tidal Flat
- Mixed Sand And Gravel Beach
- Sheltered Rock/Seawall/Vegetated
- Exposed Vertical Rocky Shore/Seawall
- Coastal Barrier Resource Area
- Continuous Seagrass
- Discontinuous Seagrass
- Aquatic Preserve
- Non-vegetated Wetland
- Vegetated Non-forested Wetland
- Wetland Forested Mixed
- Wetland Coniferous Forest
- Wetland Hardwood Forest

Data Sources: NAVTEQ; US Geological Survey; Florida Marine Research Institute; Florida Department of Transportation; Florida Department of Environmental Protection; National Oceanic and Atmospheric Association; Florida Water Management Districts

0 0.05 0.1 0.2 Miles

N

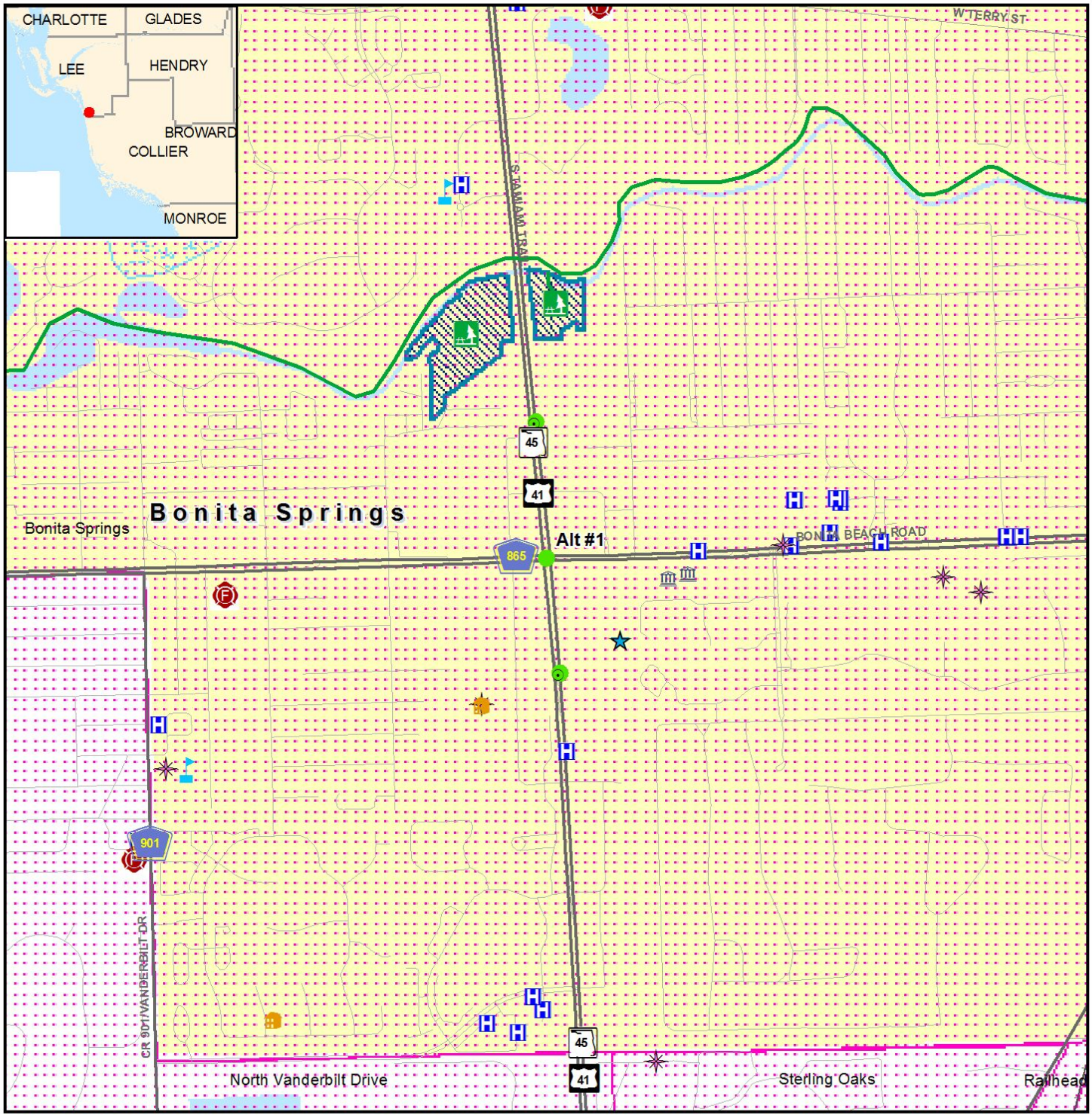
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Community Services Map

- ETDM Alternative
- ETDM Alternative Terminus
- Major Road
- Local Road or Trail
- City Limits
- Government
- Civic Center
- Cemetery
- Social Service
- Community Center
- Law Enforcement
- Place of Worship
- Cultural Center
- Fire Station
- Health Care
- School
- Park
- Recreational Trail
- Community Boundary
- Conservation or Recreation Area

Data Sources:
US Geological Survey; FL Department of Transportation; NAVTEQ; FL Property Appraisers; FL Natural Areas Inventory

0 0.05 0.1 0.2 Miles

N

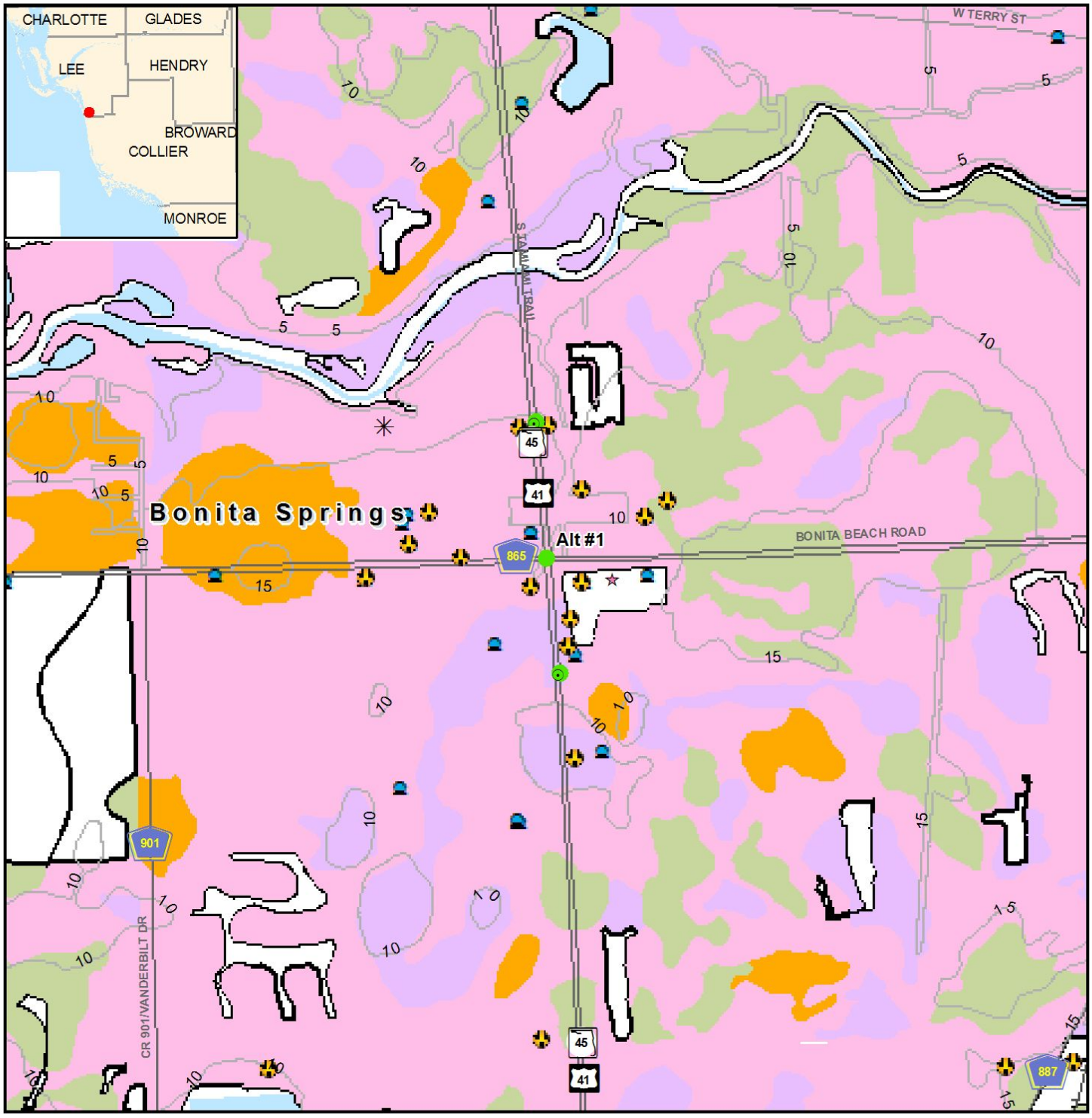
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Contamination Map

- ETDM Alternative
- ETDM Alternative Terminus
- Major Road
- Local Road or Trail
- Toxic Release Inventory
- Dry Cleaning Facility
- Solid Waste Facility
- Hazardous Material Site
- Power Plant
- Superfund Site
- Nuclear Site
- FDEP Tanks
- 5 FT Contour
- Brownfield Area

Soil Drainage

- Excessively Drained
- Well Drained
- Somewhat Excessively Drained
- Moderately Well Drained
- Somewhat Poorly Drained
- Poorly Drained
- Very Poorly Drained
- Unclassified

Data Sources:NAVTEQ; US Geological Survey; FL Department of Transportation; FL Department of Environmental Protection; FL Water Management Districts; US Environmental Protection Agency; Natural Resource Conservation Service

0 0.05 0.1 0.2 Miles

N

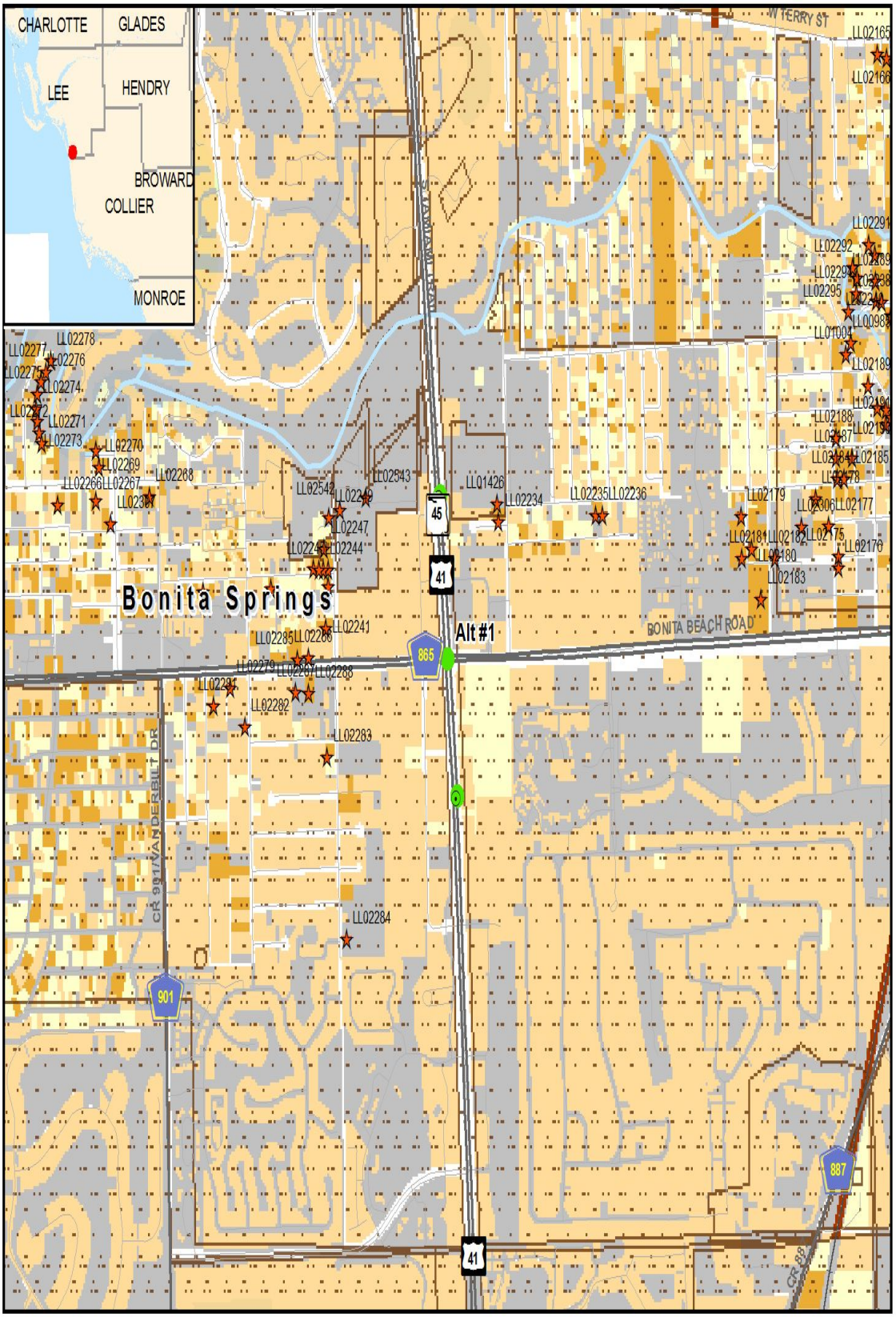
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Cultural Resources Data Map



- ETDM Alternative
- Major Road
- Local Road or Trail
- Historic Structure
- Historic Bridge
- State Historic Highway
- Historic Cemetery
- Historic Resource Group
- Cultural Resource Field Survey Area
- ETDM Alternative

Year Built

- Pre 1970
- Post 1980
- 1970 - 1979
- Parcels w/ no values

N

0 0.050.1 0.2 Miles

etdm Environmental Screening Tool

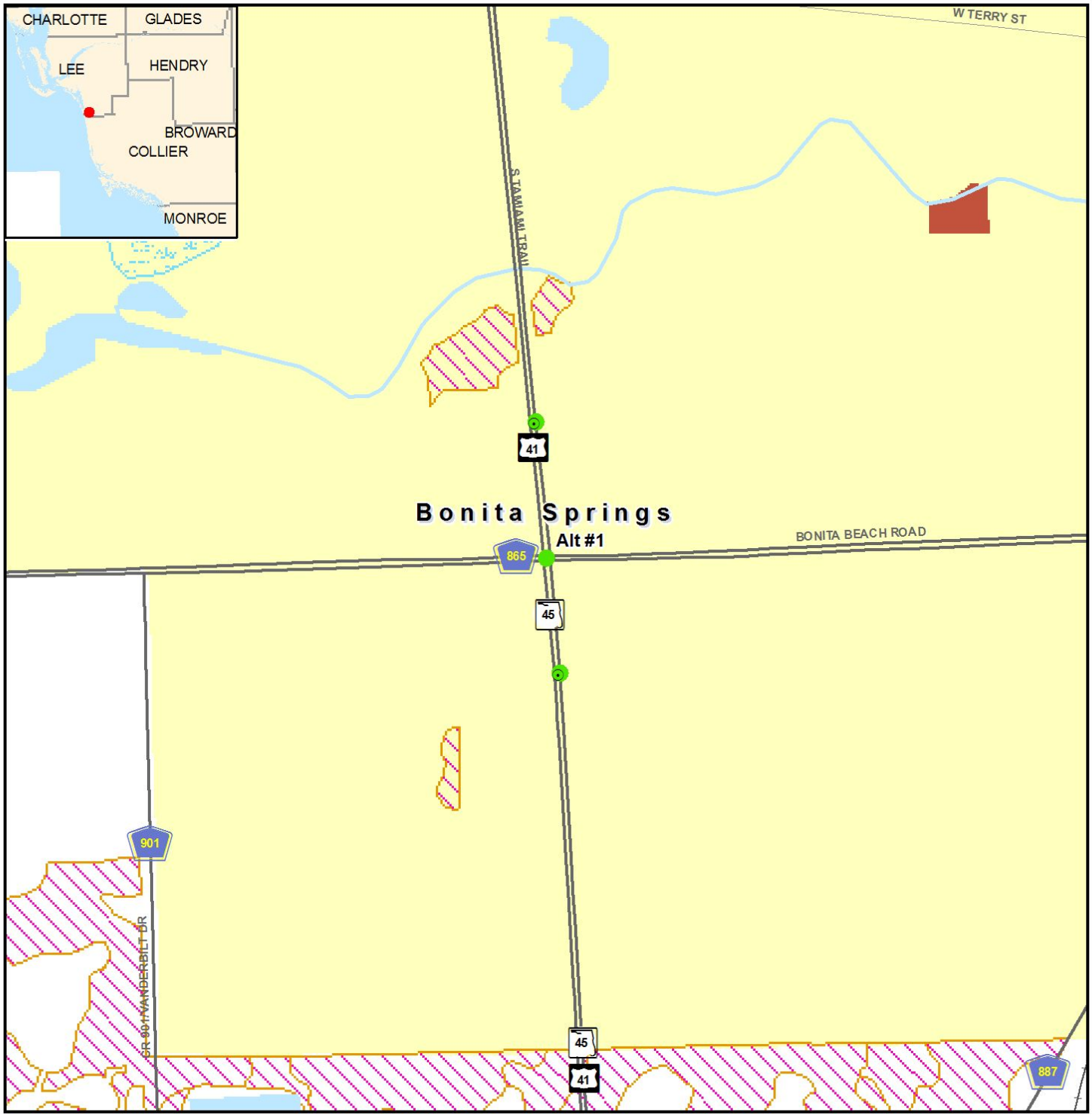
FDOT

Data Sources:
NAVTEQ
US Geological Survey
Florida Department of Transportation
Florida Department of State,
Bureau of Archaeological Research

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Note: Historic properties depicted on this map represent resources listed in the Florida Master Site File excluding archeological site locations, which, pursuant to Chapter 267.135, Florida Statutes, may be exempt from public record (Chapter 119.07, Florida Statutes). Absence of features on the map does not necessarily indicate an absence of resources in the project vicinity.

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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Farmlands Map

- ETDM Alternative
- ETDM Alternative Terminus
- Major Road
- Local Road or Trail
- City Limits
- Cropland/Pastureland
- Nurseries/Vineyards
- Specialty Farms
- Tree Crops
- Rural Open Lands
- Prime Farmland Soils

Data Sources:
NAVTEQ
Florida Water Management Districts
US Geological Survey
Natural Resources Conseration Services

0 0.05 0.1 0.2 Miles

N

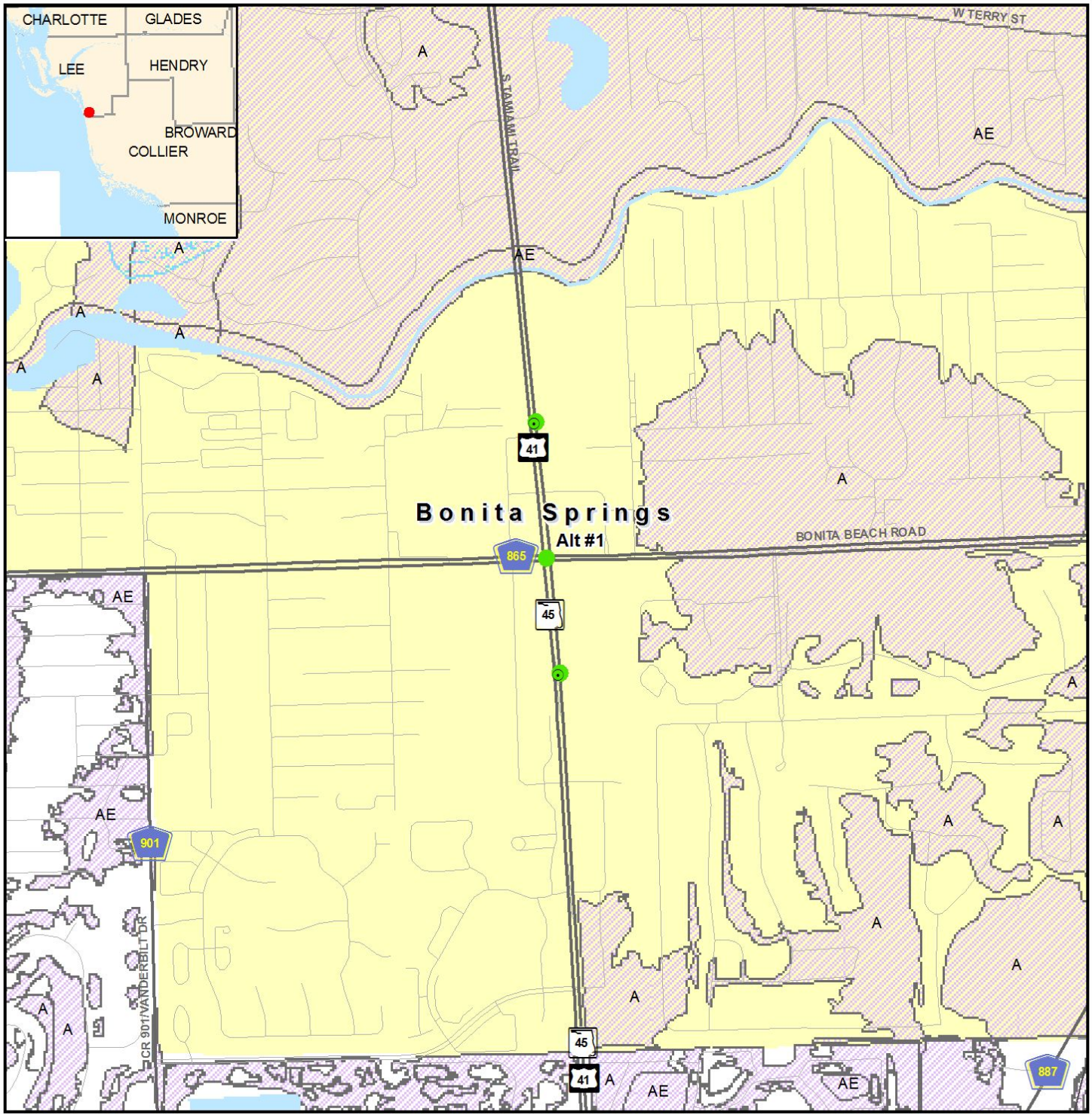
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Floodplains Map

- ETDM Alternative
- ETDM Alternative Terminus
- Major Road
- Local Road or Trail
- City Limits
- Special Flood Hazard Area

Data Sources:
NAVTEQ
US Geological Survey
Federal Emergency Management Agency

0 0.1 0.2 0.4 Miles

N

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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Historic Resource Map

ETDM Alternative
ETDM Alternative Terminus
Major Road
Local Road or Trail

Year Built
Pre 1970
Post 1980
1970 - 1979
Parcels w/ no values

Historic Structure
Historic Bridge
State Historic Highway
Historic Cemetery
Historic Resource Group
Cultural Resource Field Survey Area

Data Sources:
NAVTEQ
US Geological Survey
Florida Department of Transportation
Florida Department of State,
Bureau of Archaeological Research

Note: Historic properties depicted on this map represent resources listed in the Florida Master Site File excluding archeological site locations, which, pursuant to Chapter 267.135, Florida Statutes, may be exempt from public record (Chapter 119.07, Florida Statutes). Absence of features on the map does not necessarily indicate an absence of resources in the project vicinity.

0 0.1 0.2 0.4 Miles

N

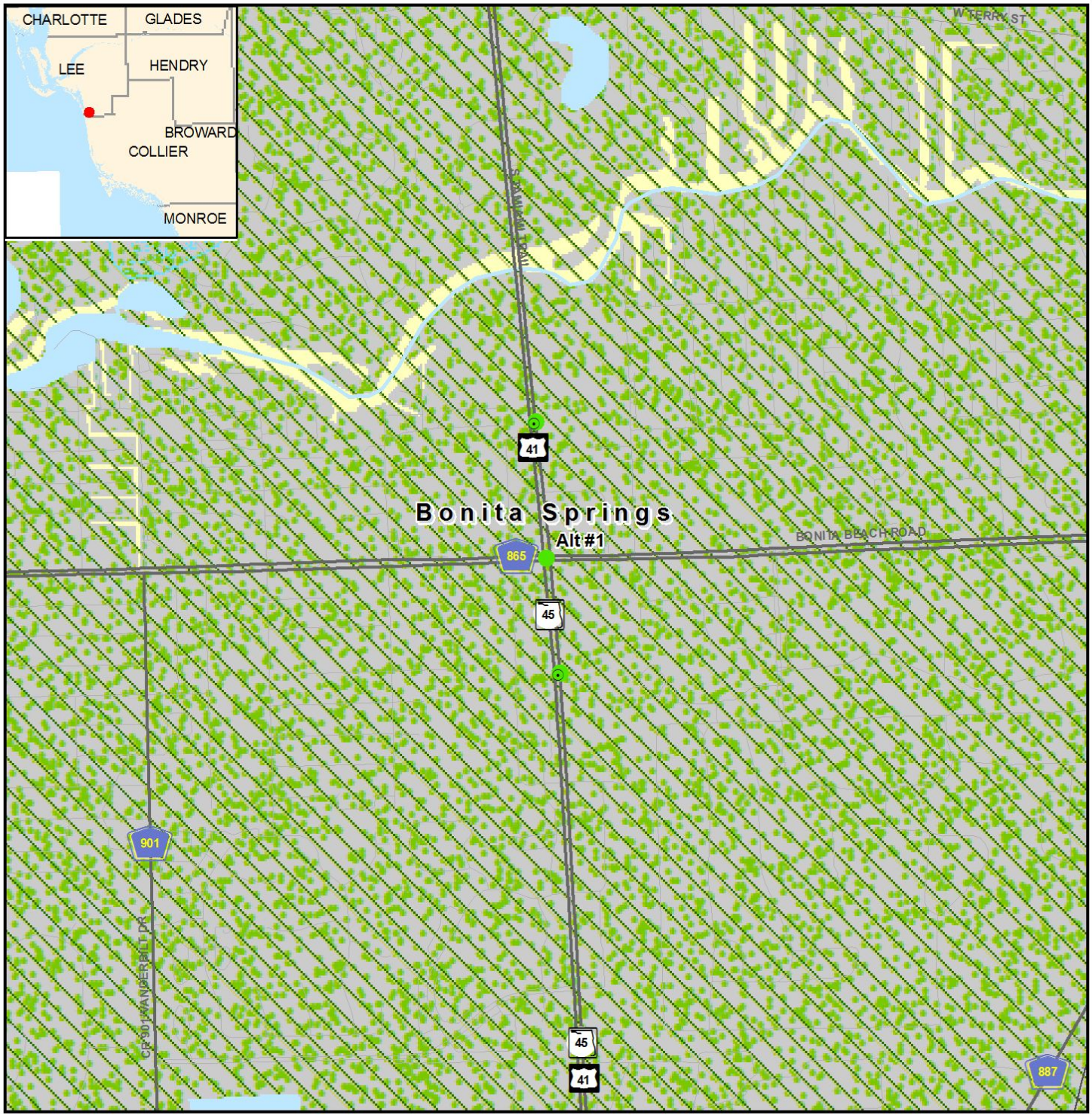
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Hydrogeology Map

ETDM Alternative
ETDM Alternative Terminus
Major Road
Local Road or Trail
City Limits

Recharge Areas of the Floridan Aquifer
Discharge 1 to 5
Discharge > 5
Disharge < 1
Recharge 1 to 10
Recharge > 10
Recharge < 1

Surface Geology
Eocene
Miocene
Miocene/Pliocene
Oligocene
Oligocene/Miocene
Pleistocene
Holocene
Pleistocene/Holocene
Pliocene
Pliocene/Pleistocene

N

0 0.1 0.2 0.4 Miles

Data Sources: NAVTEQ; US Geological Survey
Florida Department of Transportation
South West Florida Water Management District
Florida Geological Survey

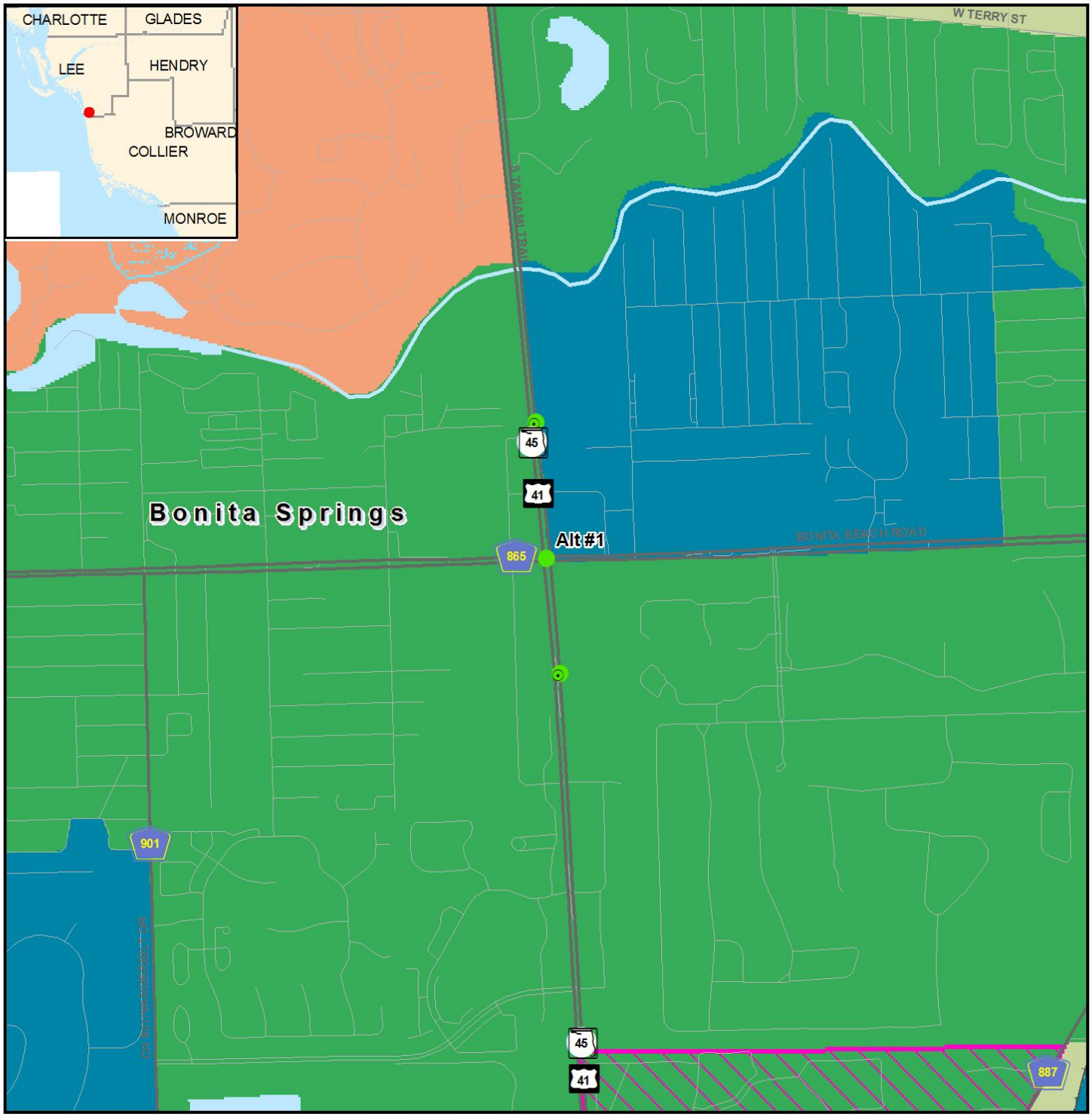
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Income Map

- ETDM Alternative
- ETDM Alternative Terminus
- Major Road
- Local Road or Trail
- > 20% Below Poverty

Median Household Income

- 0 - 10,000
- 10,001 - 29,999
- 30,000 - 49,999
- 50,000 - 79,999
- 80,000 - 125,000
- > 125,000

0 0.1 0.2 0.4 Miles

N

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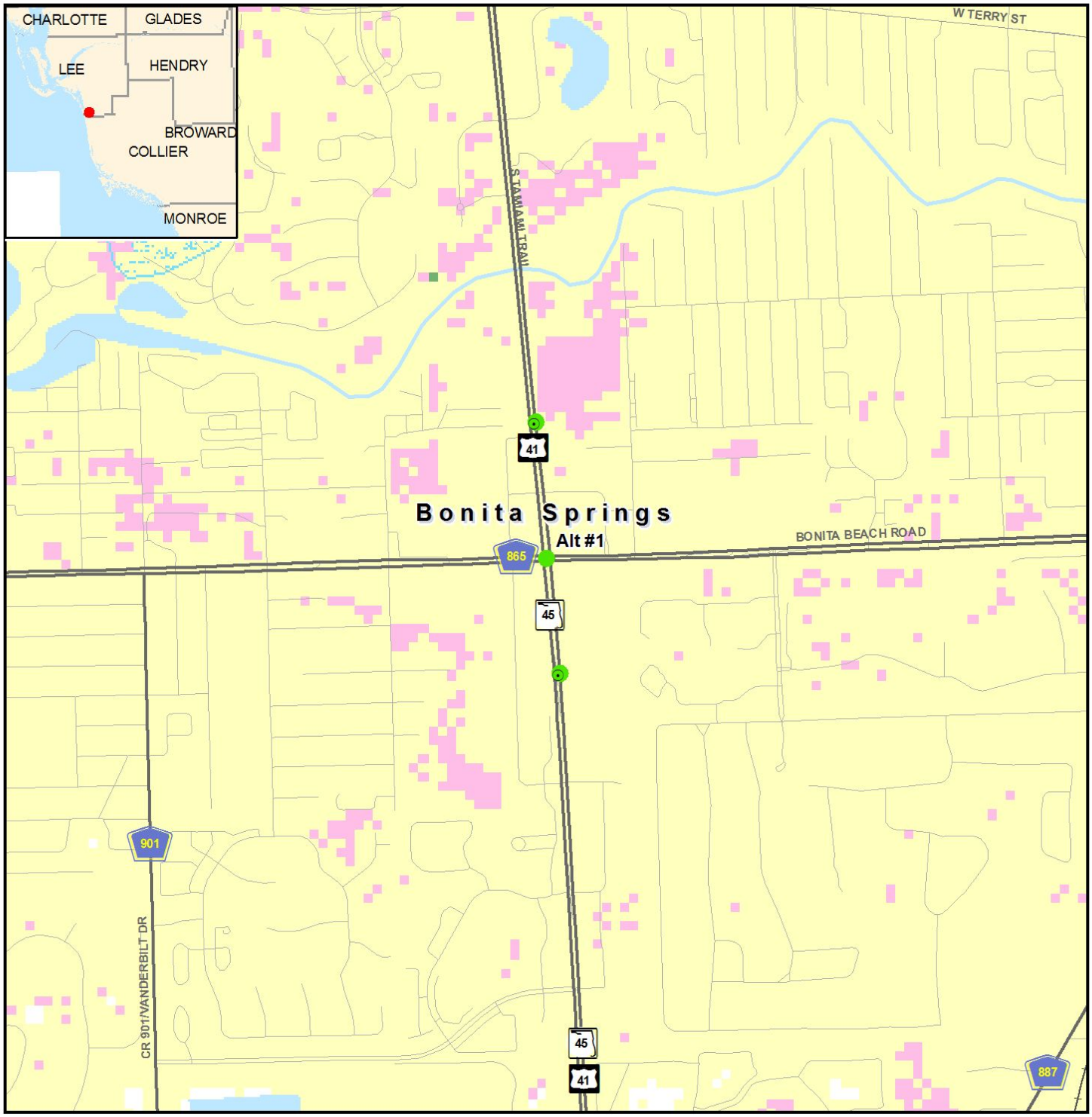
Data Sources:
US Geological Survey
FL Department of Transportation
NAVTEQ
US Census Bureau (2010)

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6291 US 41 at CR 865 (Bonita Beach Road)
Intersection Improvement



Integrated Wildlife Model Map

- ETDM Alternative
- ETDM Alternative Terminus
- Major Road
- Local Road or Trail
- Low Habitat Quality
- Medium Habitat Quality
- High Habitat Quality

Data Sources:
NAVTEQ
US Geological Survey
Florida Department of Transportation
Florida Fish & Wildlife Conservation Commission

0 0.1 0.2 0.4 Miles

N

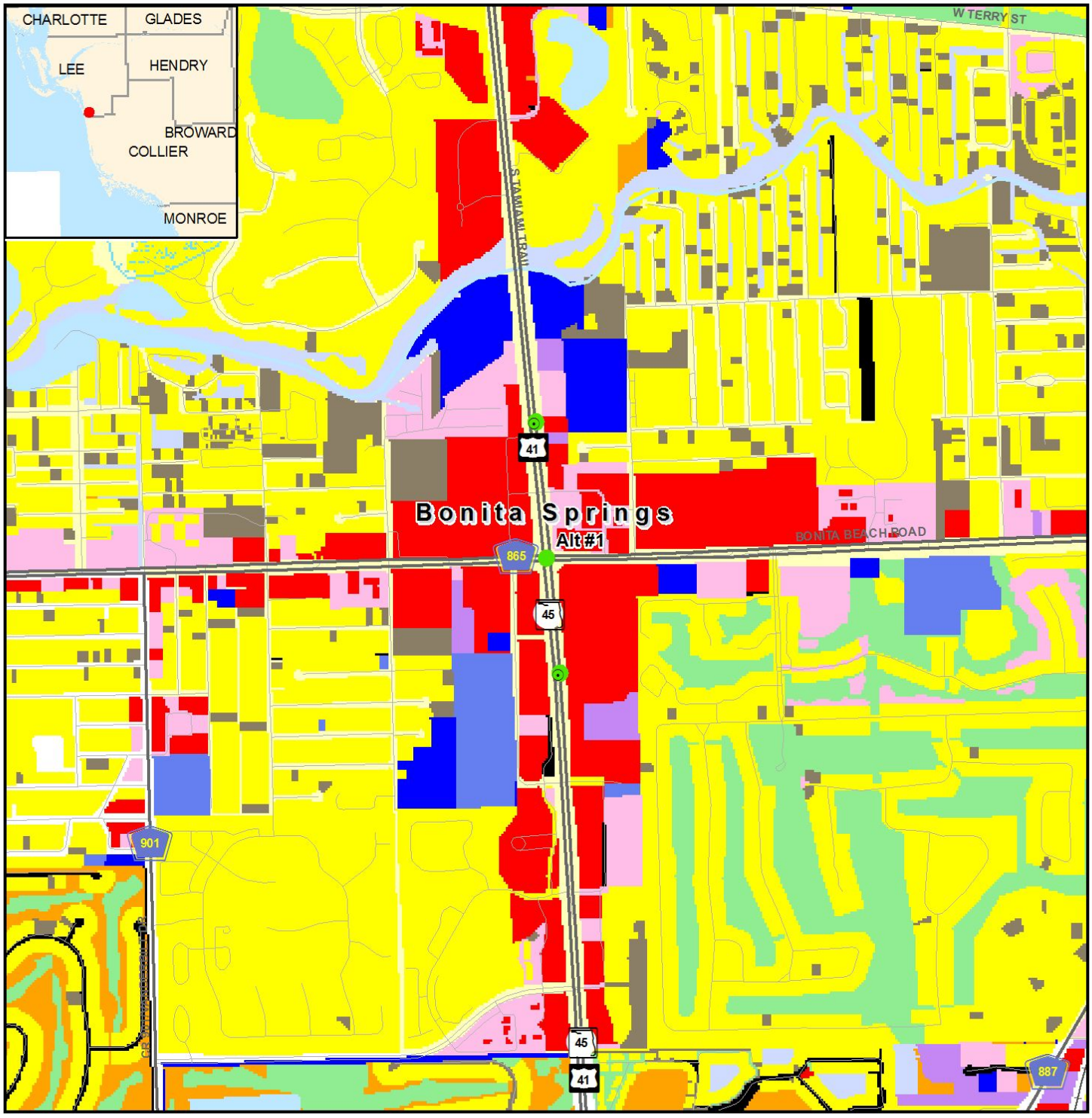
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Land Use Map

- ETDM Alternative
- ETDM Alternative Terminus
- Major Road
- Local Road or Trail
- Agricultural
- Industrial
- Institutional
- Mining
- Open (Not Agricultural)
- Other
- Public
- Right-of-Way
- Recreational
- Residential
- Retail/Office
- Vacant (Residential)
- Vacant (Nonresidential)
- Water
- No Data

Data Sources:
NAVTEQ
US Geological Survey
Florida Department of Revenue
Florida Department of Transportation
Florida County Property Appraiser Offices

0 0.1 0.2 0.4 Miles

N

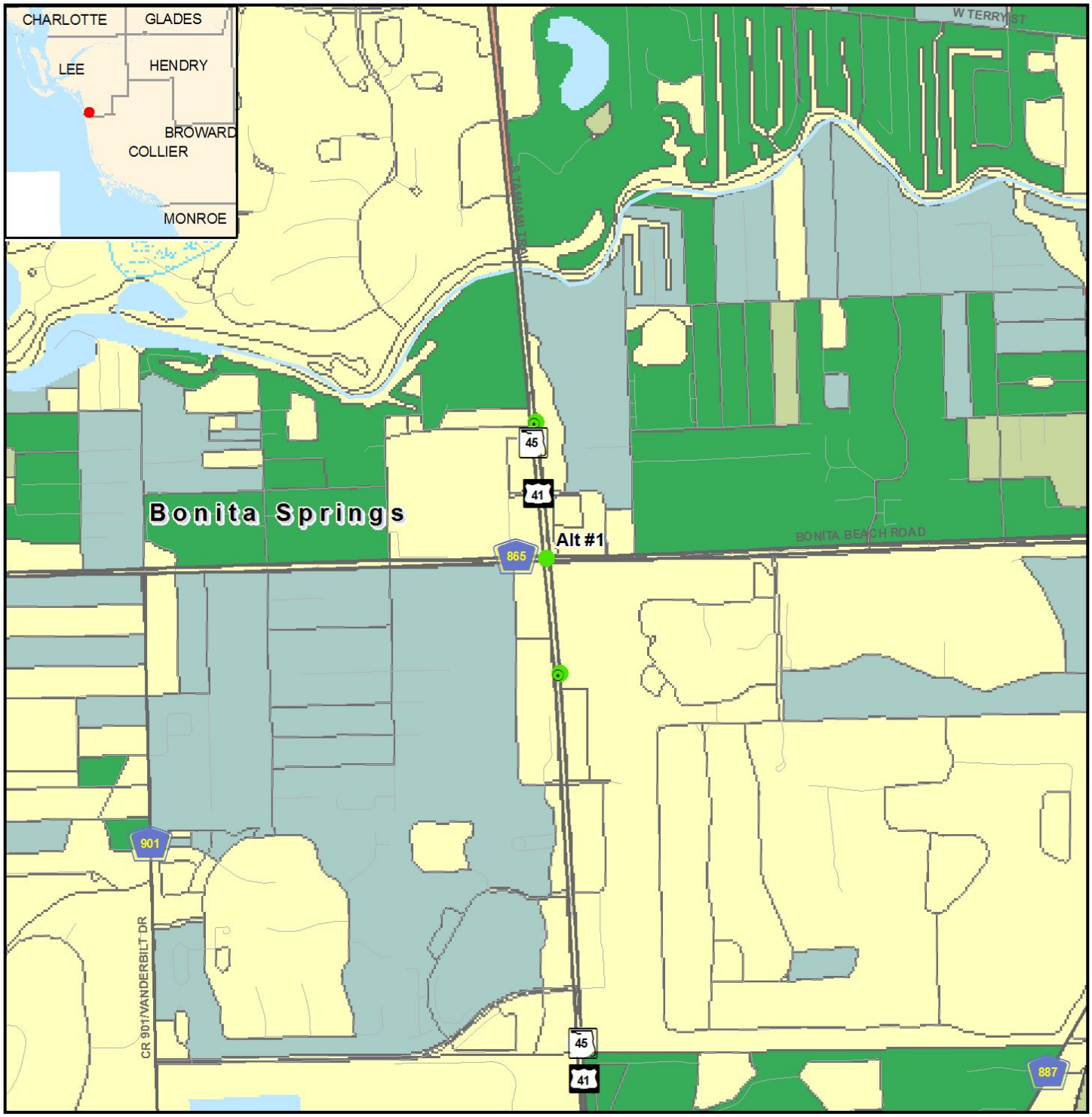
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Minority Population Map

ETDM Alternative
ETDM Alternative Terminus
Major Road
Local Road or Trail

Percent Minority Population (2010)

0 - 6 | 7 - 20 | 21 - 40 | 41 - 60 | 61 - 85 | 86 - 100

Data Sources:
US Geological Survey
FL Department of Transportation
NAVTEQ
US Census Bureau (2010)

0 0.1 0.2 0.4 Miles

N

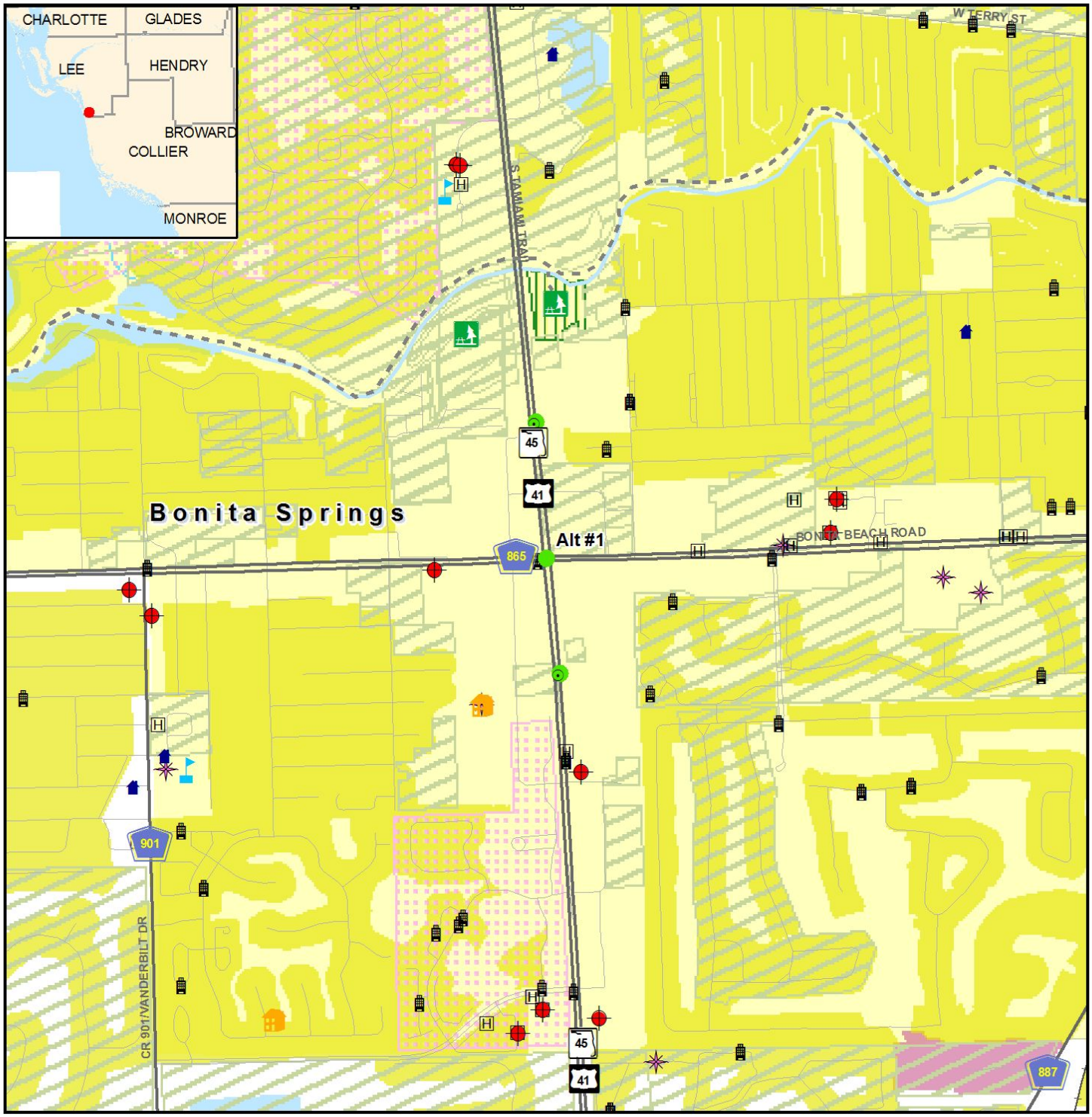
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Noise Map

- ETDM Alternative
- ETDM Alternative Terminus
- City Limits
- Noise Barriers
- Existing Trails
- Condo Owners Associations
- Hospitals
- Laser On-site
- Group Care Facilities
- Cemetery
- Community Center
- Cultural Center
- Health Care
- Park
- Place of Worship
- School
- Historic Cemetery
- Planned Unit Developments
- Wildlife Refuges
- National Parks
- National Park Projects
- Marine Sanctuaries
- Military Installations
- ETAT.LU_NW_INDUSTRIAL_16
- ETAT.LU_NW_RESIDENT_16
- HUD Renewal
- Nat'l Estuarine Reserves
- Enterprise Zones
- DRI

0 0.05 0.1 0.2 Miles

N

Data Sources:
GeoPlan Center, US Geological Survey, US Census Bureau, HUD, Florida DOT, US Fish and Wildlife, National Park Service, NOAA, National Estuarine Research, Enterprise Florida

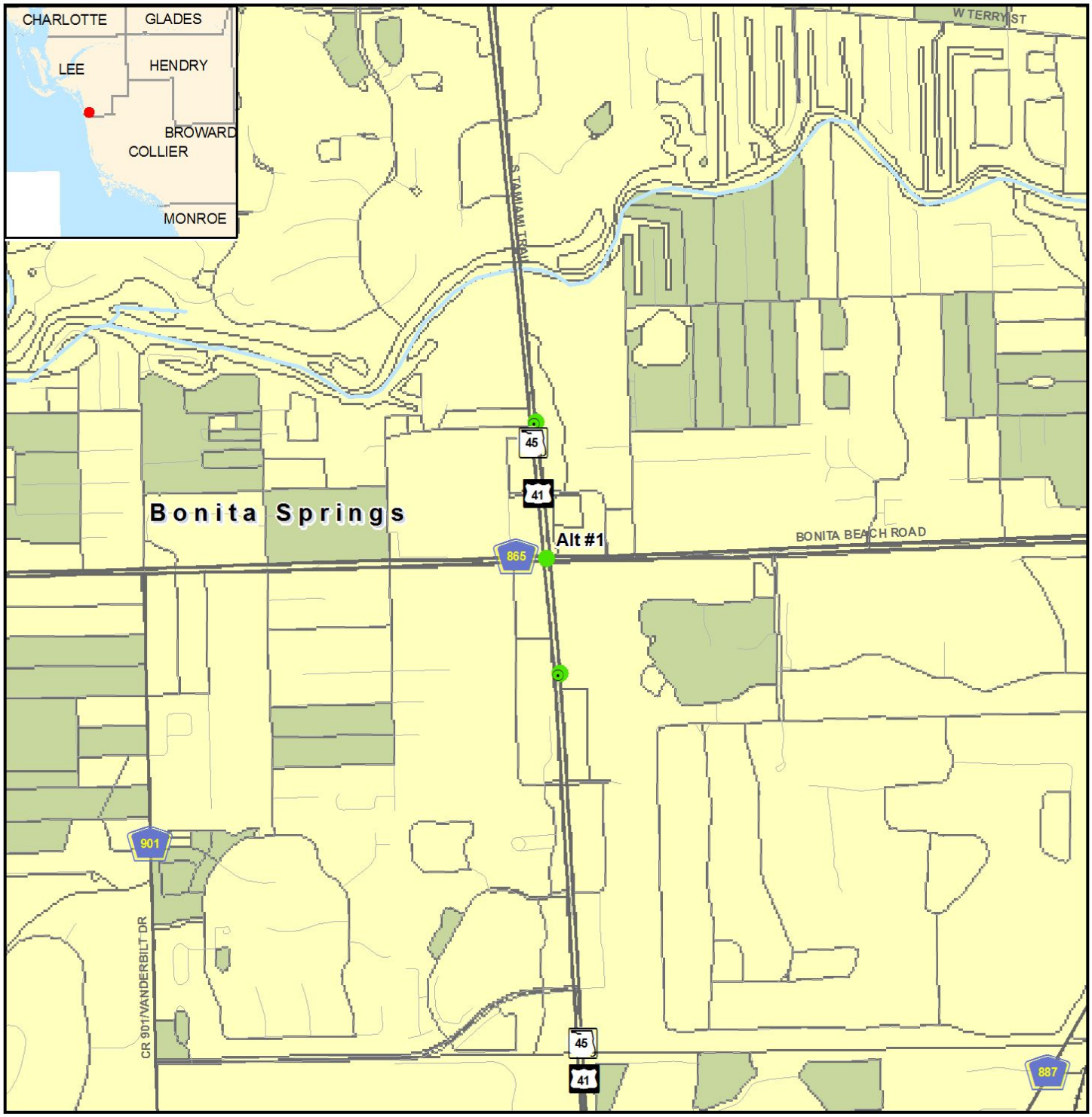
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Population Density Map

ETDM Alternative
ETDM Alternative Terminus
Major Road
Local Road or Trail

Population Per Acre (2010)

0 - 4.9 | 5 - 29.9 | 30 - 99.9 | 100 - 349.9 | 350 - 800 | > 800

Data Sources:
US Geological Survey
FL Department of Transportation
NAVTEQ
US Census Bureau (2010)

0 0.1 0.2 0.4 Miles

N

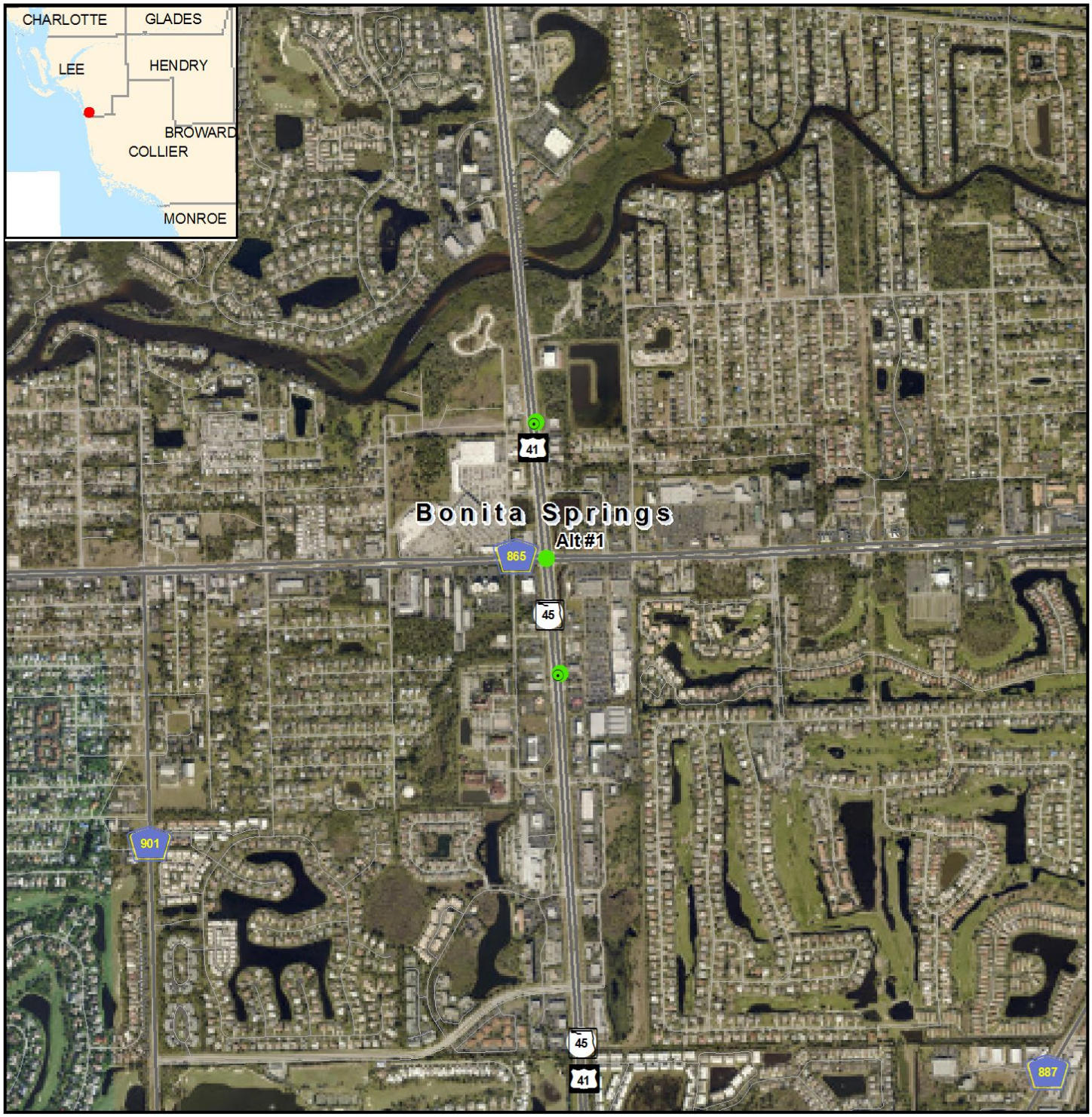
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Project Aerial Map

ETDM Alternative
ETDM Alternative Terminus
Major Road
Local Road or Trail

Data Sources:
Highways - NAVTEQ
Digital Orthophotograph - ArcGIS Online

0 0.1 0.2 0.4 Miles

N

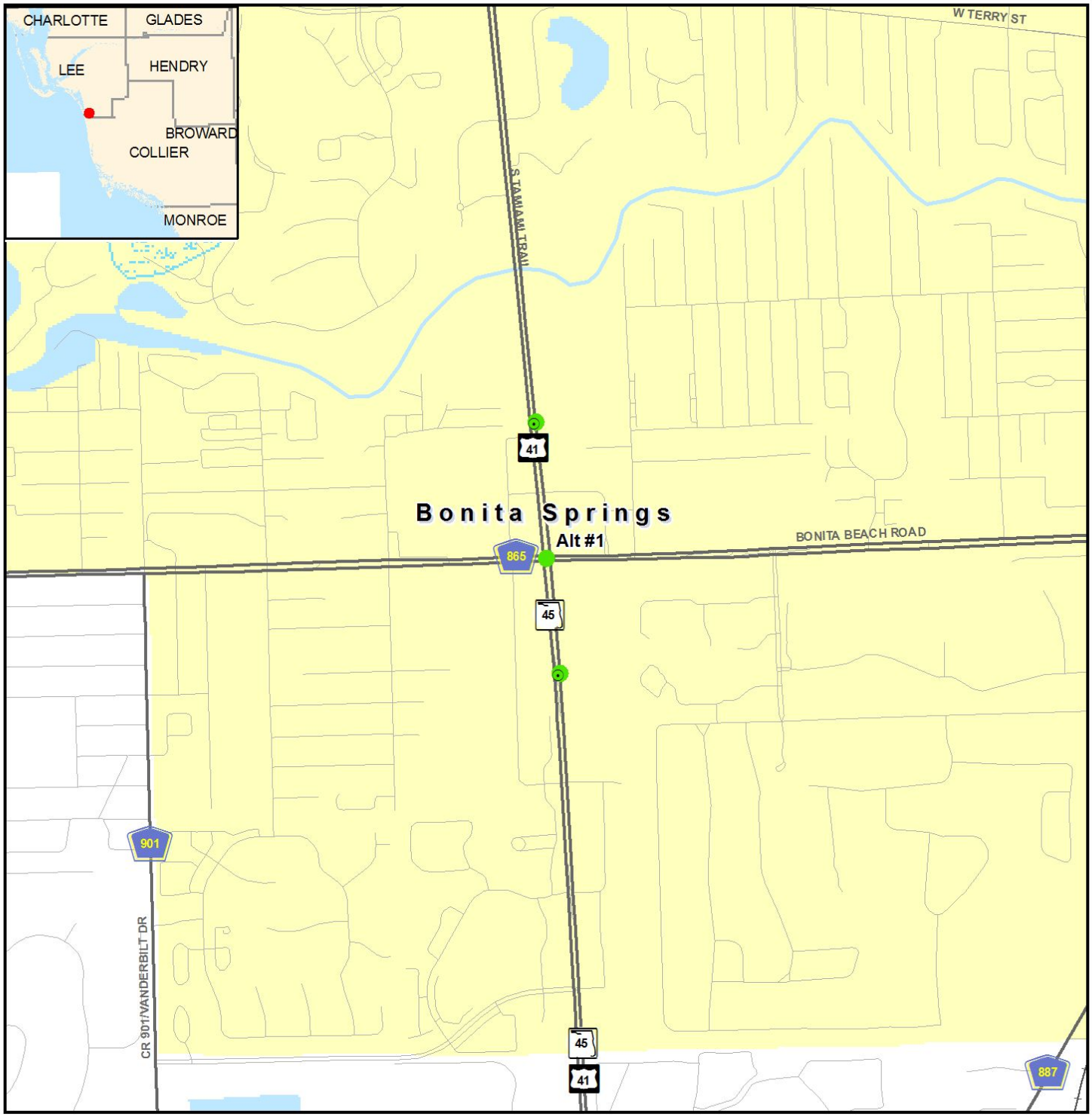
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Project Base Map

ETDM Alternative Terminus
Managed Conservation Lands
Alt #1
Local Road or Trail
Major Road
City Limits

Data Sources:
NAVTEQ
US Geological Survey
US Census Bureau
County Property Appraisers
Florida Natural Areas Inventory

0 0.05 0.1 0.2 Miles

N

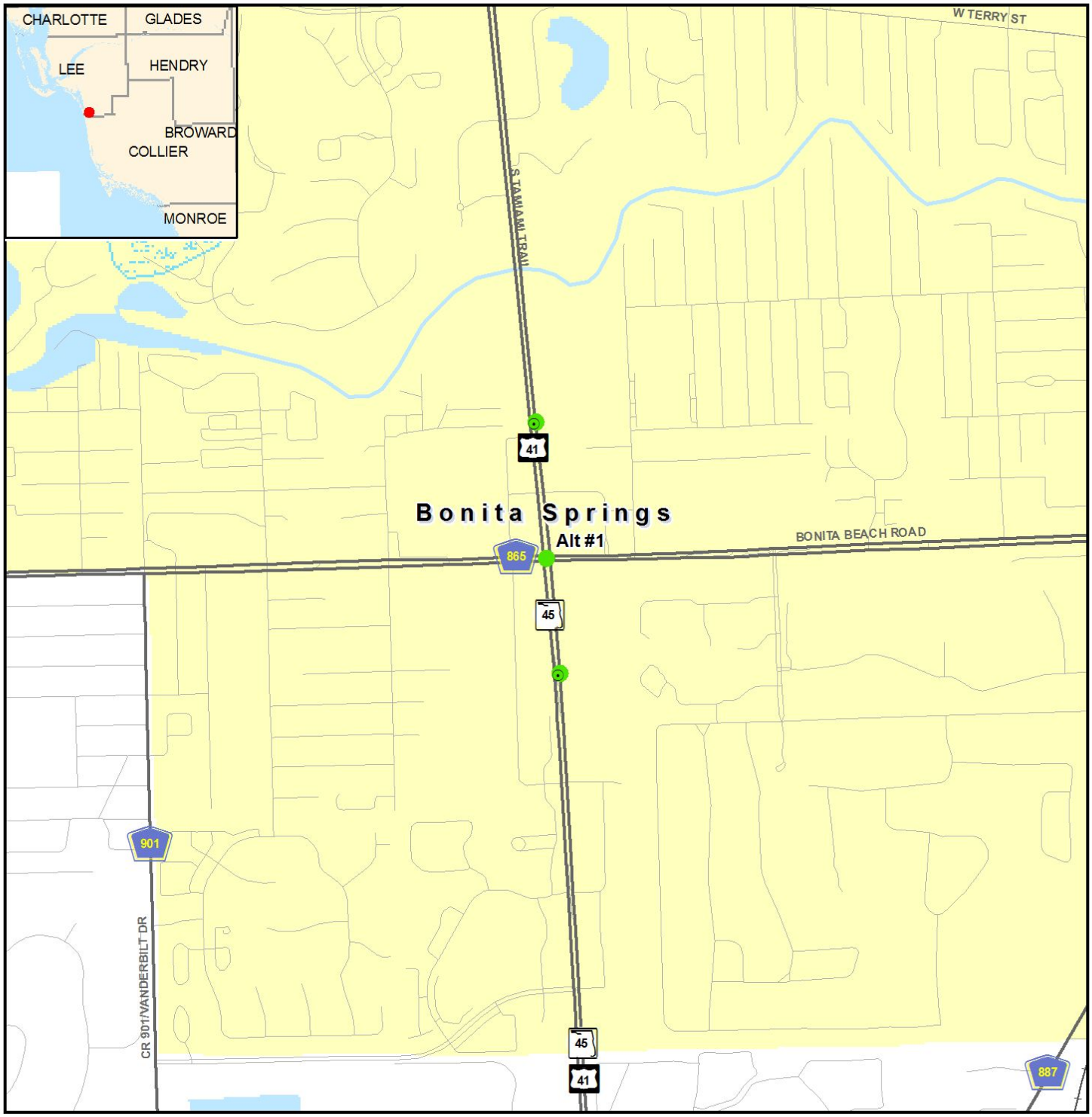
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Recreational Areas Map

- ETDM Alternative
- ETDM Alternative Terminus
- Major Road
- Local Road or Trail
- City Limits
- Conservation or Recreation Area

Data Sources:
NAVTEQ
US Geological Survey
Florida Natural Areas Inventory

0 0.1 0.2 0.4 Miles

N

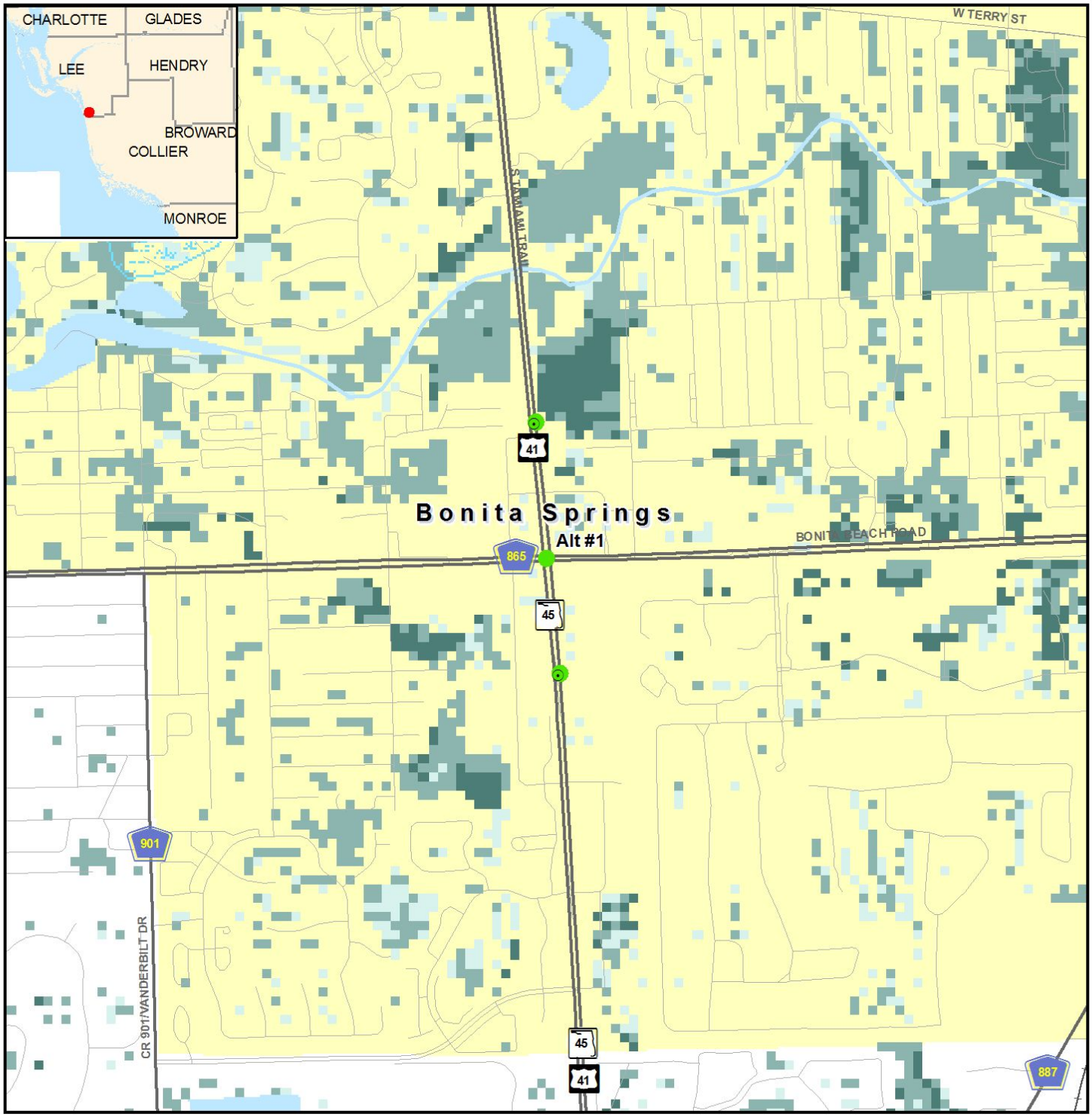
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Species Potential Map

- ETDM Alternative
- ETDM Alternative Terminus
- Major Road
- Local Road or Trail
- City Limits

Potential Habitat Richness

1 - 2 Species | 3 - 5 Species | 6 - 8 Species | 9 - 10 Species | 11 - 13 Species

Data Sources:
NAVTEQ
US Geological Survey
Florida Department of Transportation
Florida Fish & Wildlife Conservation Commission

0 0.1 0.2 0.4 Miles

N

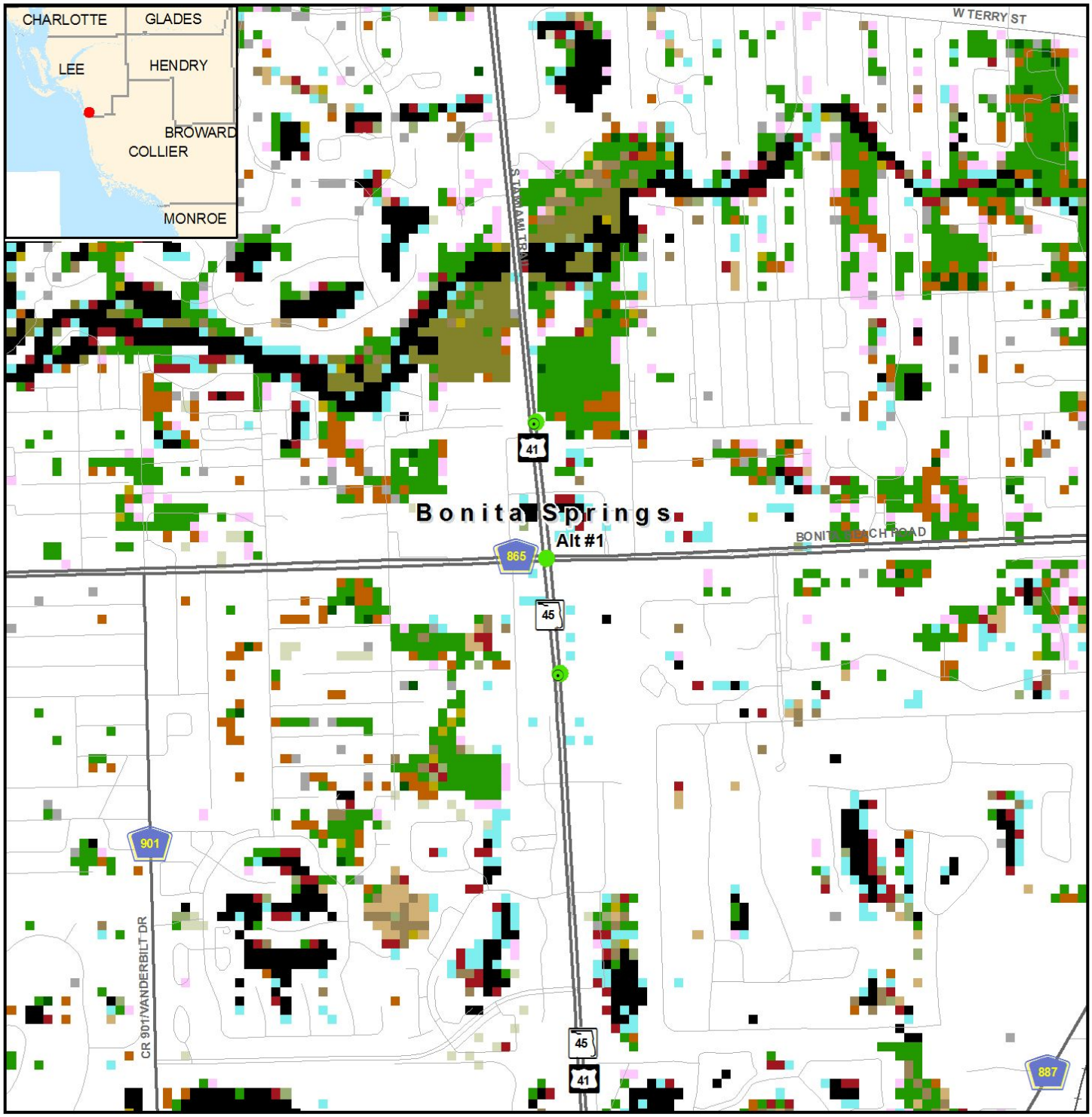
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Vegetation Map

- ETDM Alternative
- ETDM Alternative Terminus
- Not Classified
- Coastal Strand
- Sand/Beach
- Xeric Oak Scrub
- Sand Pine Scrub
- Sandhill
- Dry Prairie
- Mixed Hardwood-pine Forest
- Hardwood Hammocks and Forests
- Pinelands
- Cabbage Palm-live Oak Hammock
- Tropical Hardwood Hammock
- Freshwater Marsh and Wet Prairie
- Sawgrass Marsh
- Cattail Marsh
- Shrub Swamp
- Bay Swamp
- Cypress Swamp
- Cypress/Pine/Cabbage Palm
- Mixed Wetland Forest
- Hardwood Swamp
- Hydric Hammock
- Bottomland Hardwood Forest
- Salt Marsh
- Mangrove Swamp
- Scrub Mangrove
- Tidal Flats
- Open Water
- Shrub and Brushland
- Grassland
- Bare Soil/Clearcut
- Improved Pasture
- Unimproved Pasture
- Sugarcane
- Citrus
- Row and Field Crops
- Other Agriculture
- Exotic Plants
- Australian Pine
- Melaleuca
- Brazilian Pepper
- High Impact Urban
- Low Impact Urban
- Extractive

0 0.1 0.2 0.4 Miles

N

Data Sources: NAVTEQ; Florida Department of Transportation; Florida Fish and Wildlife Conservation Commission

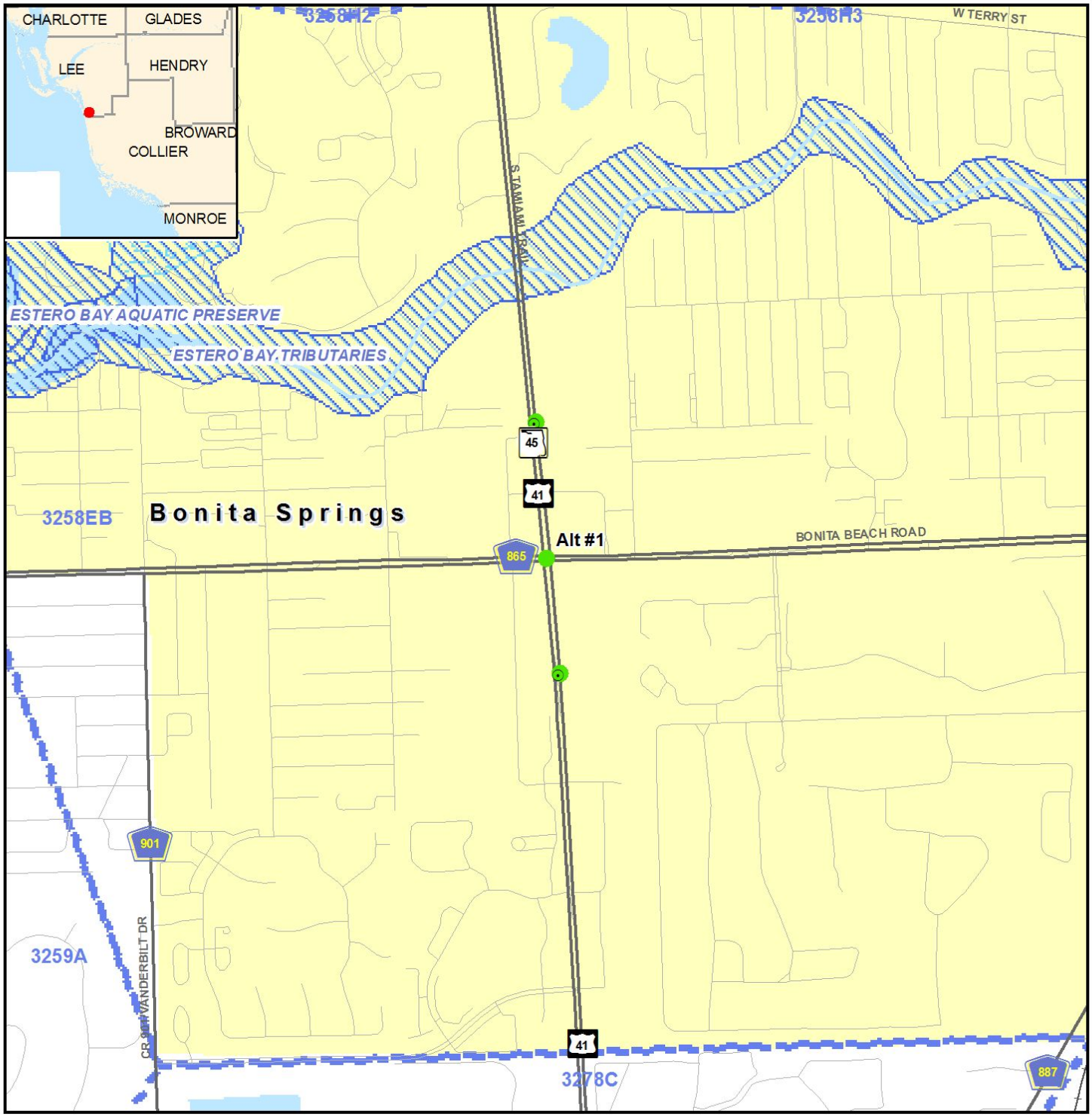
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Water Resource Map

ETDM Alternative
ETDM Alternative Terminus
Major Road
Local Road or Trail
City Limits
1st Magnitude Spring
River, Stream or Canal
Navigable Water Way
SFWMD Canals
Drainage Basin
Outstanding Florida Water
Surface Water Class I
Surface Water Class II
Water Body
Swamp/Marsh

Data Sources:
NAVTEQ
US Geological Survey
Florida Department of Transportation
Florida Department of Environmental Protection
Florida Geological Survey
US Bureau of Transportation Statistics

0 0.1 0.2 0.4 Miles

N

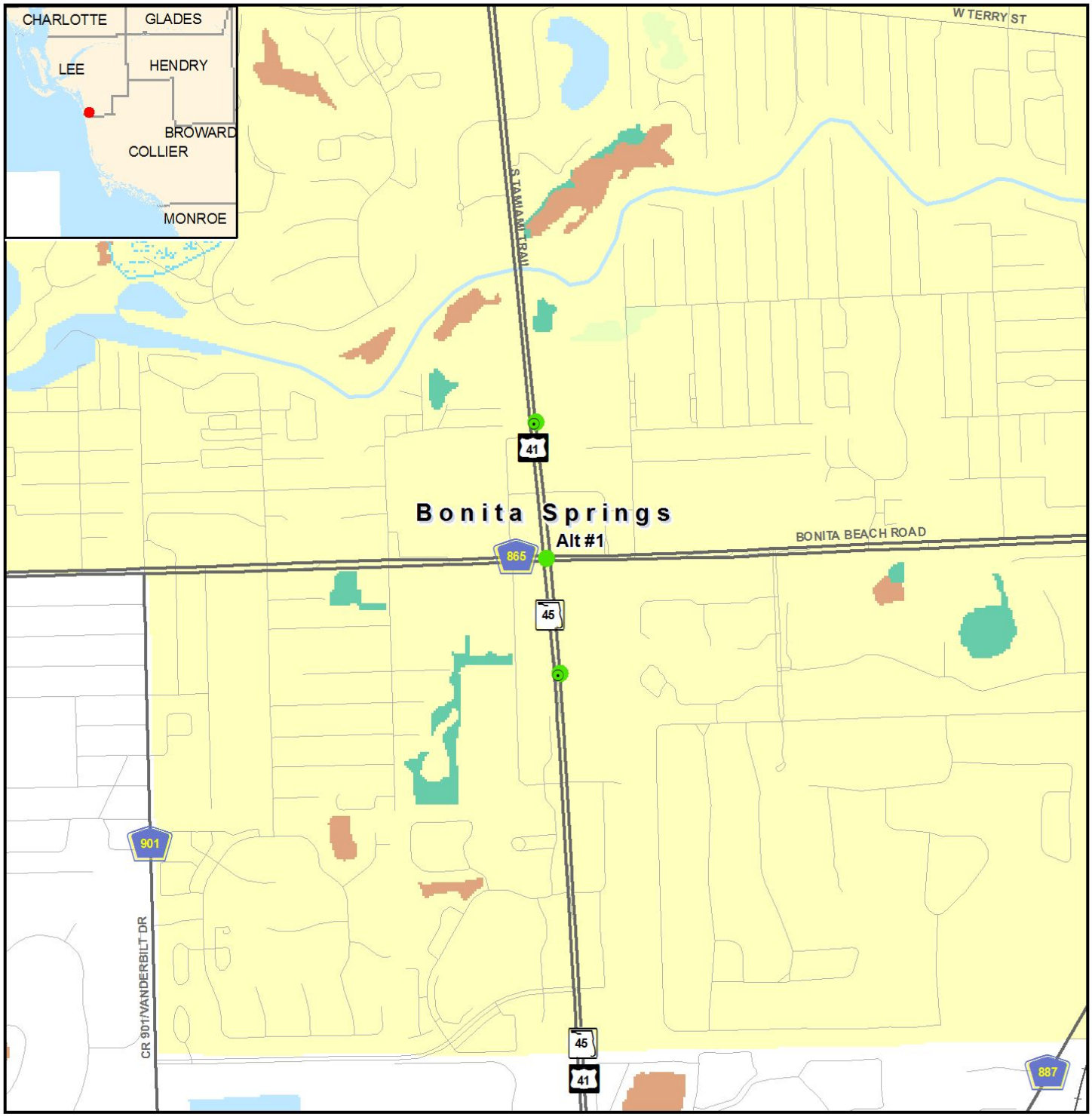
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6291 US 41 at CR 865 (Bonita Beach Road) Intersection Improvement



Wetlands and Surface Waters Map

- ETDM Alternative
- ETDM Alternative Terminus
- Major Road
- Local Road or Trail
- City Limits
- River, Stream or Canal
- Water Body
- Swamp/Marsh
- Non-vegetated Wetland
- Vegetated Non-forested Wetland
- Wetland Forested Mixed
- Wetland Coniferous Forest
- Wetland Hardwood Forest

Data Sources:
NAVTEQ
Florida Water Management Districts
US Geological Survey

0 0.1 0.2 0.4 Miles

N

9/18/2019

etdm Environmental Screening Tool

FDOT

This map and its content is made available by the Florida Department of Transportation on an "as is," "as available" basis without warranties of any kind, express or implied.

Appendix G – LeeTran Transit Coordination

Travis Hills

From: Huff, Dawn <DHuff3@leegov.com>
Sent: Wednesday, October 11, 2023 3:57 PM
To: Jack Freeman
Cc: Bateman, Patrick; Travis Hills
Subject: RE: 444321 - US 41 and Bonita Beach Road PD&E Study - Bus Stop Coordination
Attachments: US 41 & Bonita Beach Rd .xlsx

[External Sender]

Good afternoon Jack,

My apologies for the delayed response. I have reviewed your comments, and the information you sent, and attached is my response. I am available if you still need a meeting after reviewing my comments.

Thank you,

Dawn Huff
Planning and Scheduling Manager

LeeTran

3401 Metro Pkwy
Fort Myers FL, 33901
O: (239) 533-0233
C: (239) 839-4170
DHuff3@leegov.com

www.RideLeeTran.com

Lee County

From: Jack Freeman <jfreeman@kittelson.com>
Sent: Friday, September 22, 2023 9:00 AM
To: Huff, Dawn <DHuff3@leegov.com>
Cc: Bateman, Patrick <Patrick.Bateman@dot.state.fl.us>; Travis Hills <thills@kittelson.com>
Subject: [EXTERNAL] 444321 - US 41 and Bonita Beach Road PD&E Study - Bus Stop Coordination

Caution: This email originated from an external source. Be cautious of attachments and links, and do not provide login information. Report suspicious activity to the Service Desk: servicedesk@leegov.com or 533-HELP.

Good morning Dawn,

Kittelson is conducting a PD&E Study on behalf of FDOT in southern Lee County to improve the US 41 and Bonita Beach Road intersection. We have a recommended preferred alternative which will impact a LeeTran bus stop on SB US 41 near its intersection with Beaumont Road. We would like to have a Teams meeting with you to discuss:

1. Thoughts on potential relocation of this bus stop.
2. Impacts to other bus stops in the study area.
3. Status of Route 150 which does not appear to be operational.

I have attached a rough sketch and some thoughts in this regard.

We are looking for about 30 minutes of your time to discuss. Would Monday, September 25th sometime between 10:30 am and 12 noon work for you?

Jack

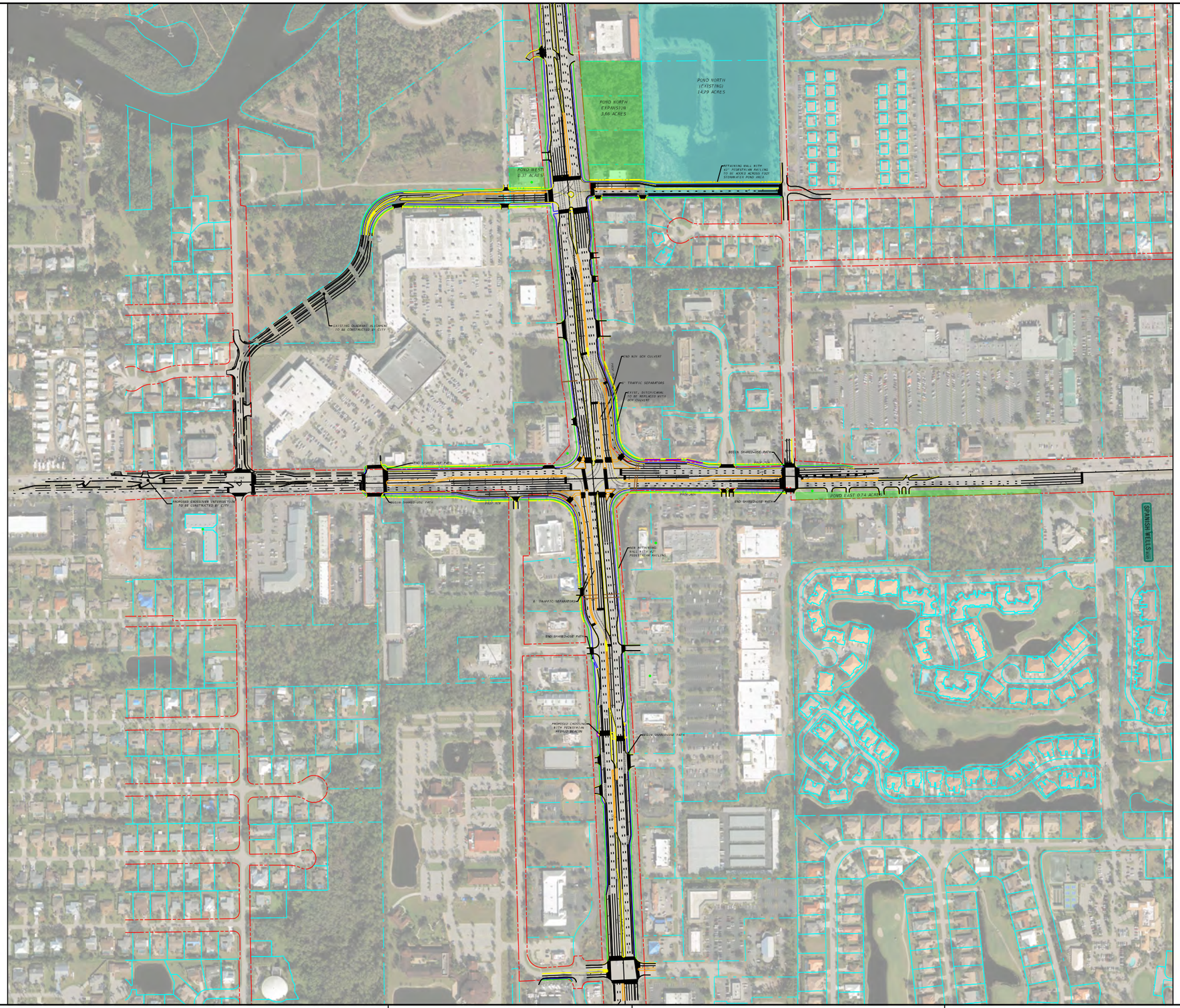
John R. Freeman, Jr., P.E., PTOE, RSP1
Senior Principal

Kittelson & Associates, Inc.
Transportation Engineering / Planning
225 East Robinson Street, Suite 355
Orlando, Florida 32801
407.540.0555
407.373.1103 (direct)
407.701.0185 (cell)

Streetwise Twitter Facebook

US 41/Bonita Beach Rd				
Bus Stop #	**Name**	**Direction**	**Notes from Kittleson**	**LeeTran Comments**
N/A	West of US 41	WB	Abandoned	Route 150 replaced by MoD and this stop does not exist.
11847	S Tamiami Trl @ Bonita Bch Rd SE	SB	Relocate further south in front of KFC	Move stop as suggested and make stop ADA compliant but at least 100' north of service road entrance that is in front of Sportsman Wholesale Bonita Springs.
New Stop	S Tamiami Trl @ Bonita Bch Rd SE	NB	Create new bus stop	Agree and stop should be 100' in turn lane north of the proposed crosswalk and built ADA compliant.
12144	Bonita Bch Rd SE @ Springs Plaza	EB	Possibly move bus stop	Bus Stop doesn't necessarily need to be moved as location of existing stops are evenly place along this corridor. However, if there are turn lanes created with the road widening, then the bus stop should be approximately 100' into the turn lane. When the time comes to widen the road, just want to make the bus stop is designed and built ADA compliant and may need to follow the Transit LDC when making improvements to bus stop on County roads (Bonita Beach Rd).
12146	Bonita Bch Rd @ City Hall	EB	Possibly move bus stop	Bus Stop doesn't necessarily need to be moved as location of existing stops are evenly place along this corridor. However, if there are turn lanes created with the road widening, then the bus stop should be approximately 100' into the turn lane. When the time comes to widen the road, just want to make the bus stop is designed and built ADA compliant and may need to follow the Transit LDC when making improvements to bus stop on County roads (Bonita Beach Rd).
12145	Bonita Bch Rd @ Sunshine Plaza	WB	Possibly move bus stop	Bus Stop doesn't necessarily need to be moved as location of existing stops are evenly place along this corridor. However, if there are turn lanes created with the road widening, then the bus stop should be approximately 100' into the turn lane. When the time comes to widen the road, just want to make the bus stop is designed and built ADA compliant and may need to follow the Transit LDC when making improvements to bus stop on County roads (Bonita Beach Rd).

Appendix H – Preferred Alternative Concept Plans



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H - 1		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 1



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE
MEDIUM/HIGH RISK CONTAMINATION SITES

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

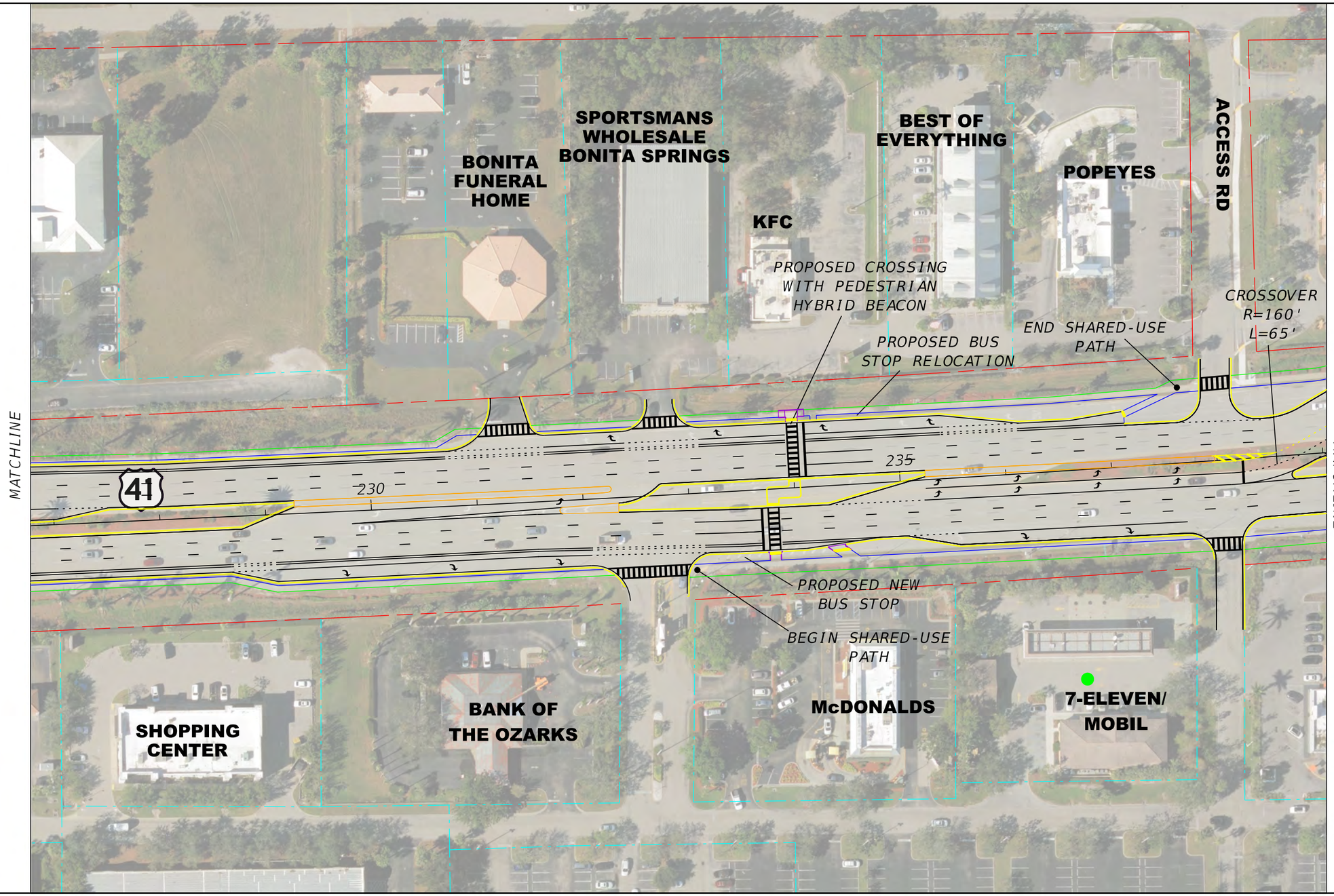
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H - 2		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 2



N

0 20 100

Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE
MEDIUM/HIGH RISK CONTAMINATION SITES

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

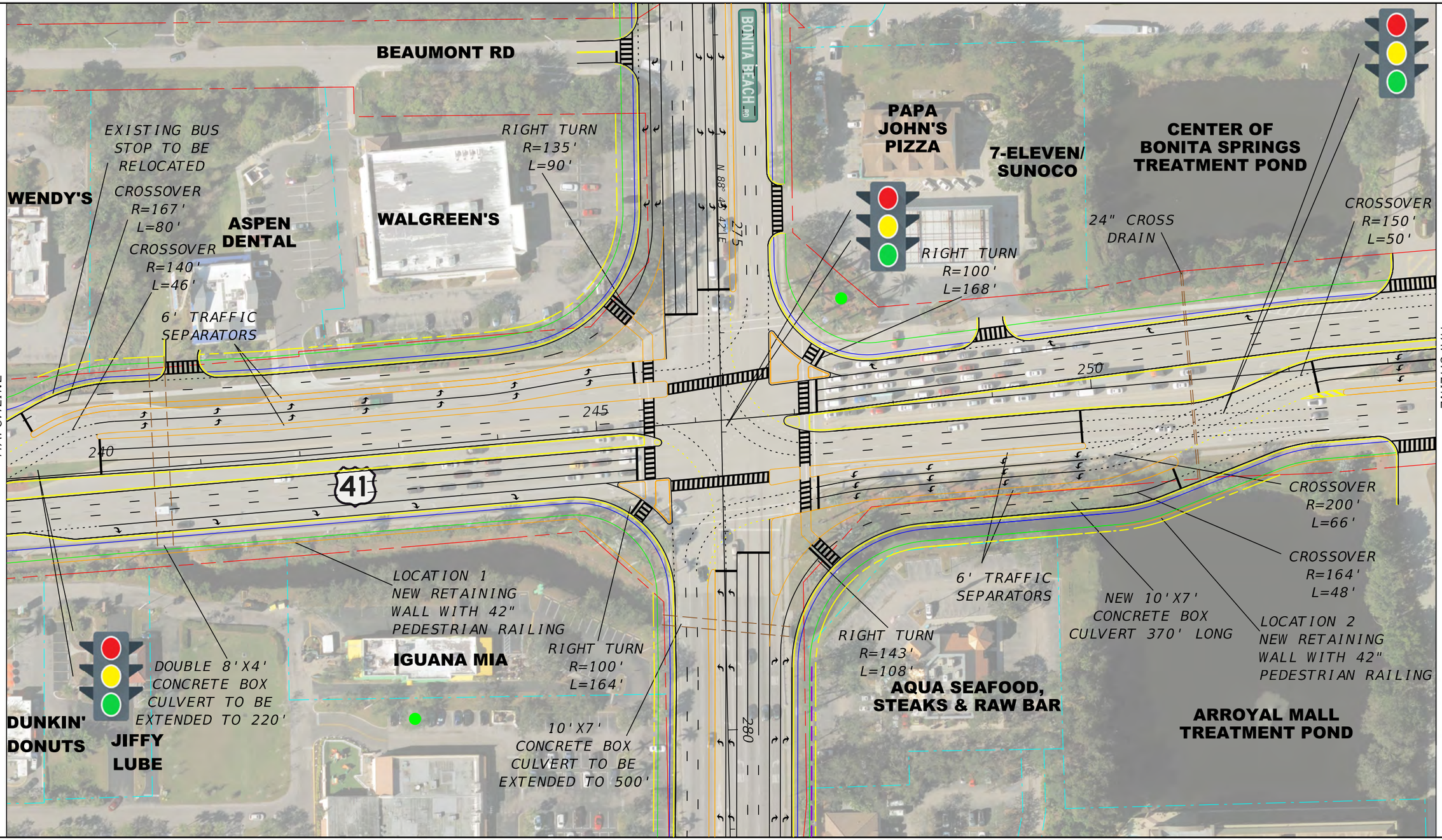
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H - 3		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 3



N

0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE
MEDIUM/HIGH RISK CONTAMINATION SITES

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

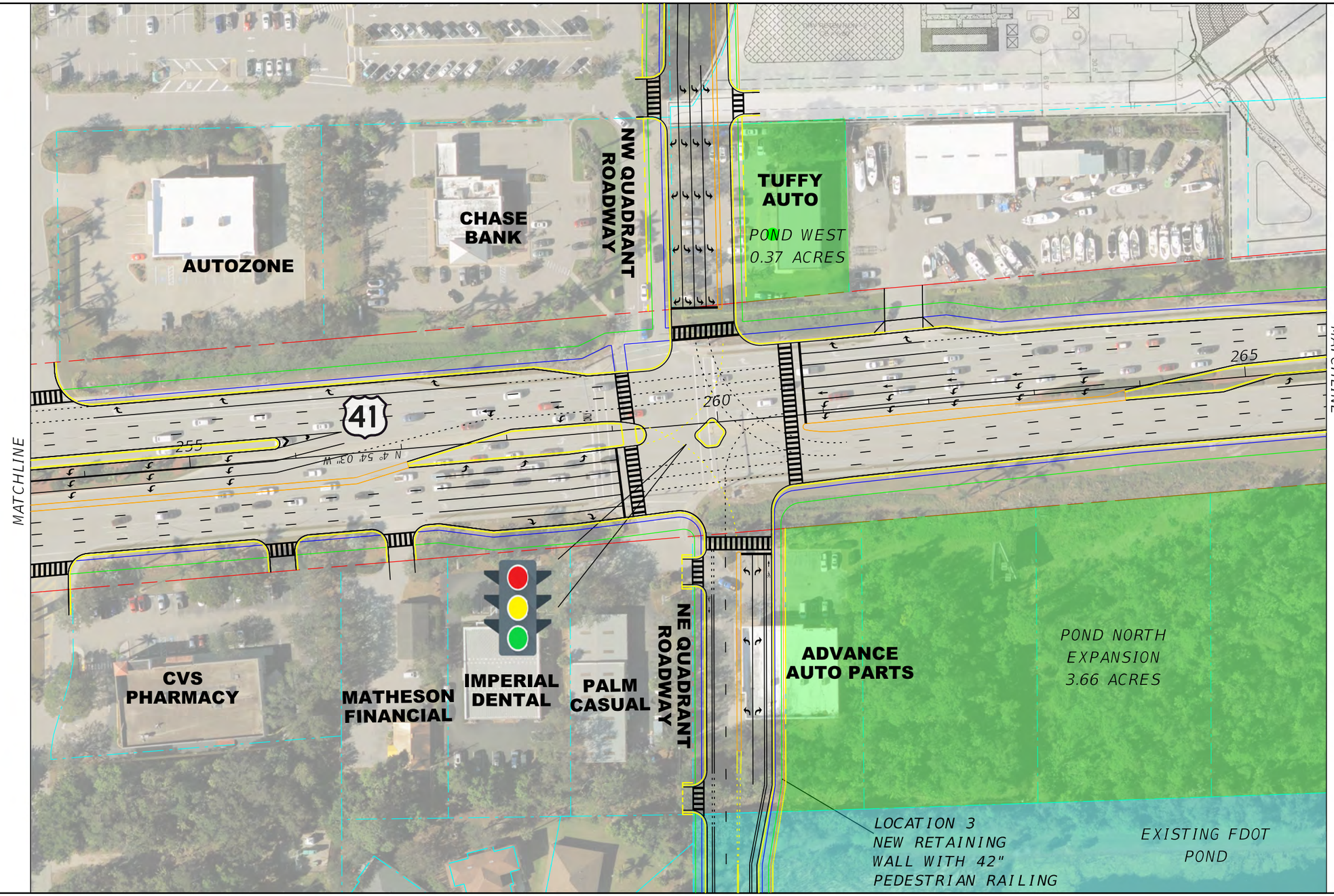
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H-4		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 4



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE
MEDIUM/HIGH RISK CONTAMINATION SITES

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

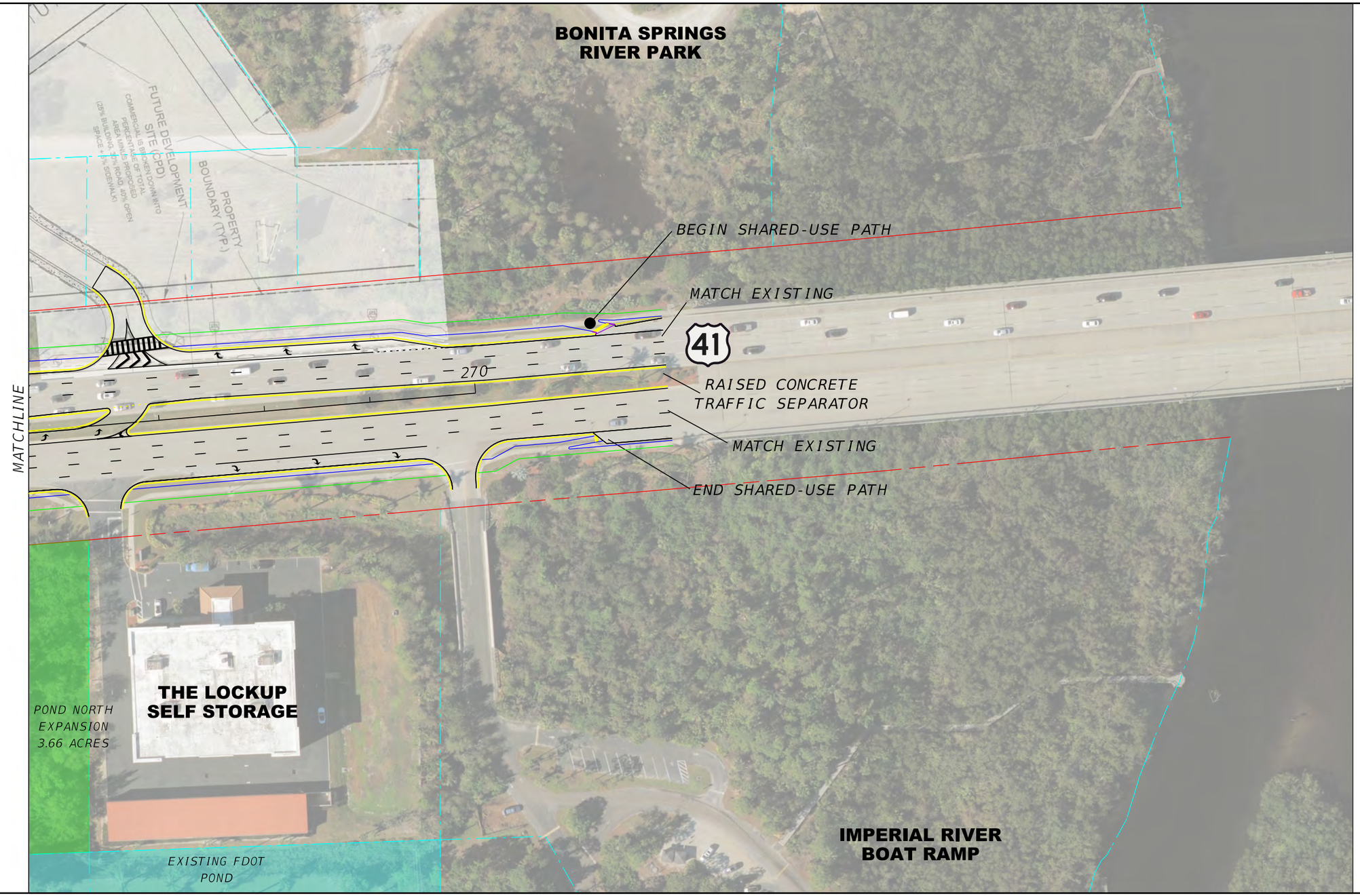
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H - 5		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 5



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE
MEDIUM/HIGH RISK
CONTAMINATION SITES

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

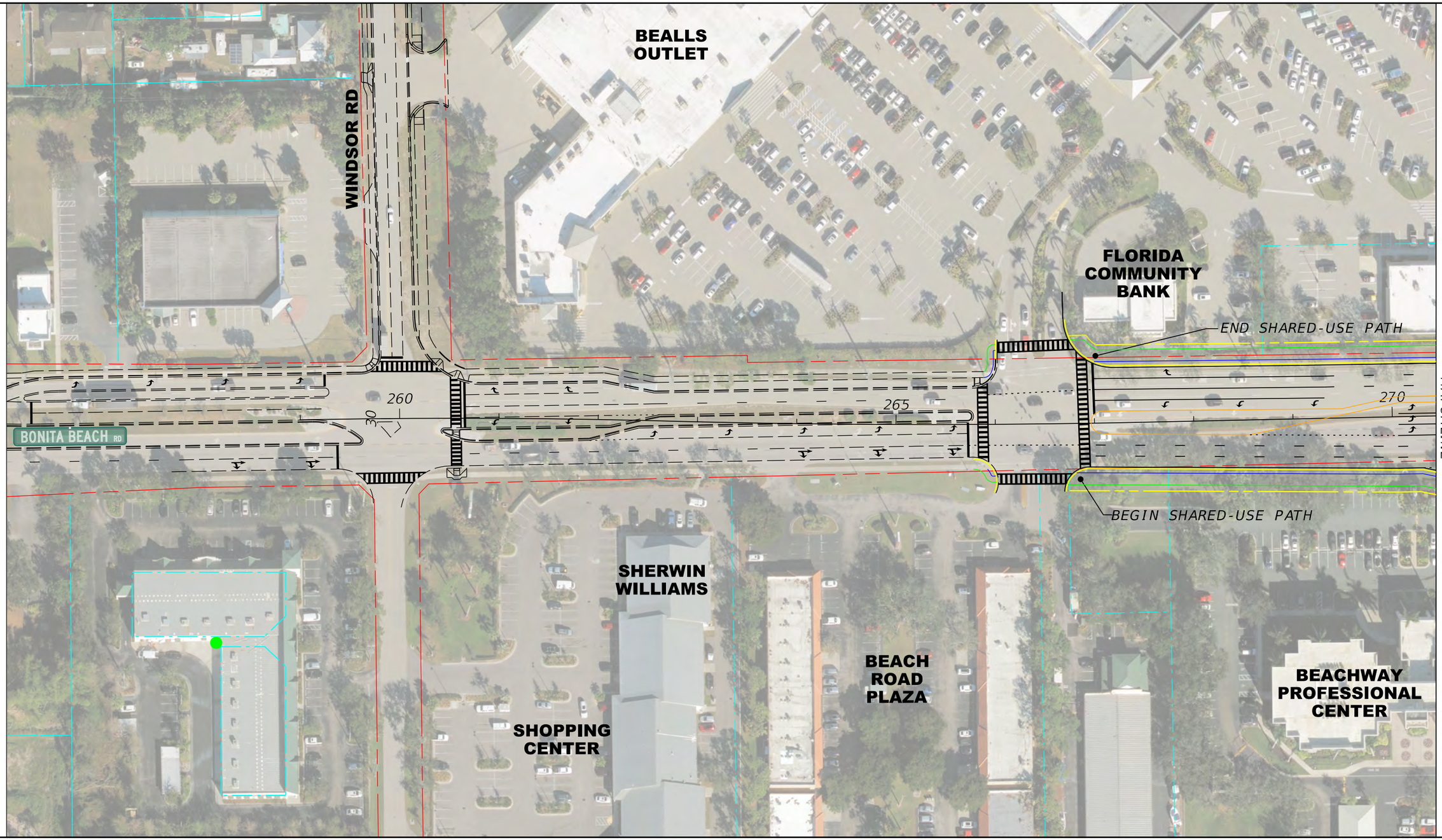
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H - 6		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 6



N

0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE
TO BE CONSTRUCTED BY OTHERS

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023
MEDIUM/HIGH RISK CONTAMINATION SITES

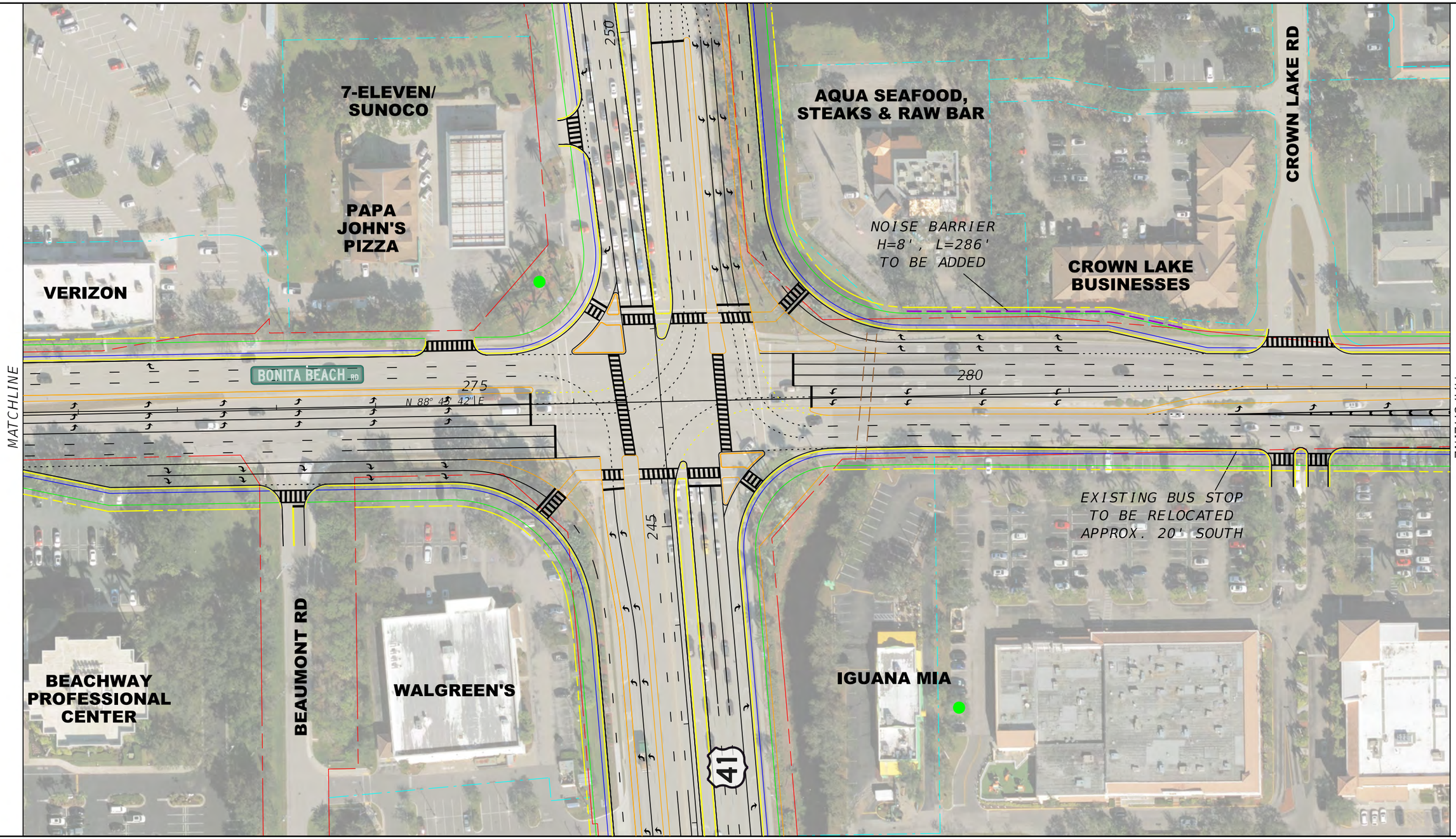
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H-7		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 7



N

0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE
MEDIUM/HIGH RISK CONTAMINATION SITES

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H - 8		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 8

PI STA. = 290+53.27
DELTA = 3° 41' 55" (LT)
D = 0° 34' 11"
T = 324.70
L = 649.18
R = 10,056.50
PC STA. = 287+28.57
PT STA. = 293+77.75

ARROYAL RD

BMO HARRIS BANK

BANK OF AMERICA

BONITA BEACH BALLOON

BEGIN SHARED-USE PATH

EXISTING BUS STOP TO REMAIN

MATCHLINE

285

290

295

BONITA BEACH RD

POND EAST 0.74 ACRES

END SHARED-USE PATH

EXISTING BUS STOP TO BE RELOCATED APPROX. 20' SOUTH

FIFTH THIRD BANK

UNITED STATES POST OFFICE

BONITA SPRINGS CITY HALL

N

0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE
MEDIUM/HIGH RISK CONTAMINATION SITES

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

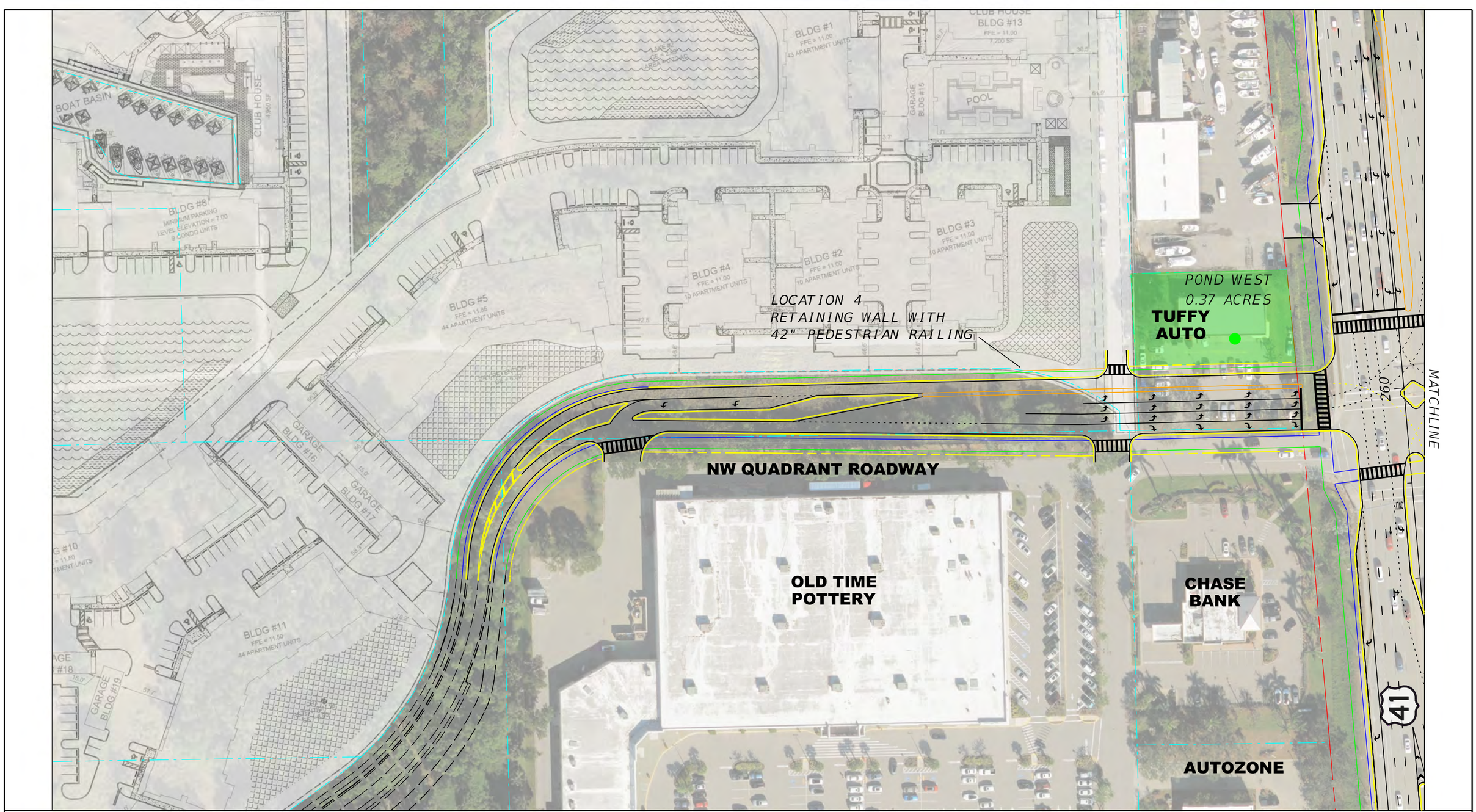
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H - 9		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 9



N

0 20 100

Feet

PARCEL LINE

PROPERTY LINE

PROPOSED ROW

TRAFFIC SEPARATOR

FRONT OF SIDEWALK

BACK OF SIDEWALK

CURB FACE

TO BE CONSTRUCTED BY OTHERS

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

MEDIUM/HIGH RISK CONTAMINATION SITES

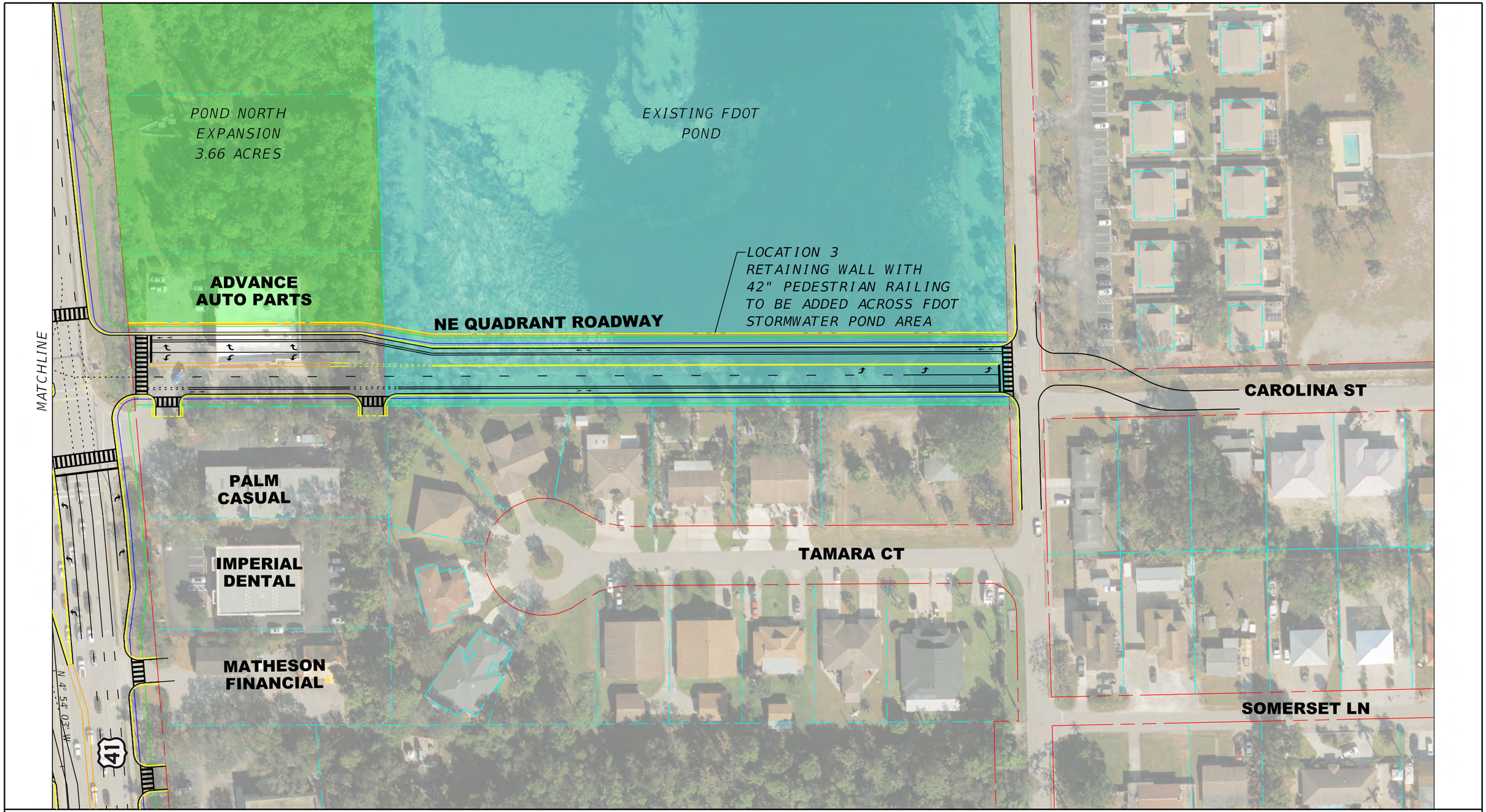
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H - 10		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 10



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TRAFFIC SEPARATOR
FRONT OF SIDEWALK
BACK OF SIDEWALK
CURB FACE
MEDIUM/HIGH RISK
CONTAMINATION SITES

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	H - 11		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO.
11

Appendix I – Typical Section Package

STATE OF FLORIDA

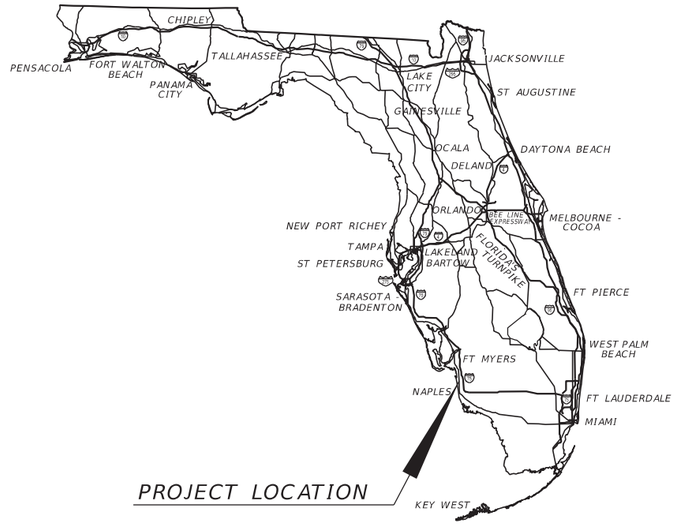
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION PACKAGE

FINANCIAL PROJECT ID 444321-1-22-01

LEE COUNTY

SR 45 (US 41) AT BONITA BEACH ROAD
PROJECT DEVELOMENT AND ENVIRONMENT STUDY



PROJECT LOCATION URL:	https://tinyurl.com/ywy9v8w8
PROJECT LIMITS:	STA. 222+75 - STA. 270+00
EXCEPTIONS:	NONE
BRIDGE LIMITS:	NONE
RAILROAD CROSSING:	NONE

FDOT DISTRICT DESIGN ENGINEER

Sergio Figueroa

Digitally signed by: Sergio Figueroa
DN: CN = Sergio Figueroa C = US O = FLORIDA DEPARTMENT OF TRANSPORTATION
Date: 2025.05.22 13:28:38 -04'00'

CONCURRING WITH:
TYPICAL SECTION ELEMENTS
TARGET SPEED
DESIGN & POSTED SPEED
FOR TYPICAL SECTIONS 1, 2, & 3

FDOT DISTRICT TRAFFIC OPERATIONS ENGINEER



Digitally signed by Kevin Ingle
Date: 2025.05.22 10:40:53-04'00'

CONCURRING WITH:
TARGET SPEED
DESIGN & POSTED SPEED
FOR TYPICAL SECTIONS 1 & 3

FDOT DISTRICT INTERMODAL SYSTEMS DEVELOPMENT MANAGER

Bessie Reina

Digitally signed by: Bessie Reina
DN: CN = Bessie Reina C = US O = FLORIDA DEPARTMENT OF TRANSPORTATION
Date: 2025.05.22 10:25:48 -04'00'

CONCURRING WITH:
CONTEXT CLASSIFICATION
TARGET SPEED
FOR TYPICAL SECTIONS 1 & 3

LEE COUNTY TRANSPORTATION COUNTY ENGINEER

ROBERT L. PRICE LICENSE No 65232 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Robert L. Price, P.E. 65232 State of Florida
Date: 2025.06.05 13:01:32 -04'00'

CONCURRING WITH:
TYPICAL SECTION ELEMENTS
TARGET SPEED
DESIGN & POSTED SPEED
FOR TYPICAL SECTION 2

APPROVED BY:

JOHN R. FREEMAN, JR. LICENSE No 25730 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

John R Freeman Jr

Digitally signed by John R Freeman Jr
DN: serialNumber=A01410C000001973664CADB800099AF27, 2.5.4.97=NTRUS-FL-93-0964447, o=KITTELSON AND ASSOCIATES INC, cn=John R Freeman Jr, sn=Freeman Jr, givenName=John, email=jfreeman@kittelson.com, c=US
Date: 2025.06.03 11:09:27 -04'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

KITTELSON & ASSOCIATES, INC.
225 E ROBINSON STREET, SUITE 355
ORLANDO, FL 32801
JOHN R. FREEMAN, JR., P.E. NO. 25730

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESOPNSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

INDEX OF SHEETS

SHEET NO	SHEET DESCRIPTION
1	COVER SHEET
2	TYPICAL SECTION NO. 1
3	TYPICAL SECTION NO. 2
4	TYPICAL SECTION NO. 3

SHEET NO.
1

5/14/2025 12:38:28 PM dtorre
H:\23\23773 - Malabar Road PD&E Study\Engineering\design\roadway\TYPDRD COVER 01.dgn

PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	(X)	C3C : SUBURBAN COMM.
( )	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
( )	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
( )	N/A : LOCAL ROAD		

FUNCTIONAL CLASSIFICATION

( )	INTERSTATE	( )	MAJOR COLLECTOR
( )	FREEWAY/EXPWY.	( )	MINOR COLLECTOR
(X)	PRINCIPAL ARTERIAL	( )	LOCAL
( )	MINOR ARTERIAL		

HIGHWAY SYSTEM

(X) NATIONAL HIGHWAY SYSTEM
( ) STRATEGIC INTERMODAL SYSTEM
(X) STATE HIGHWAY SYSTEM
( ) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

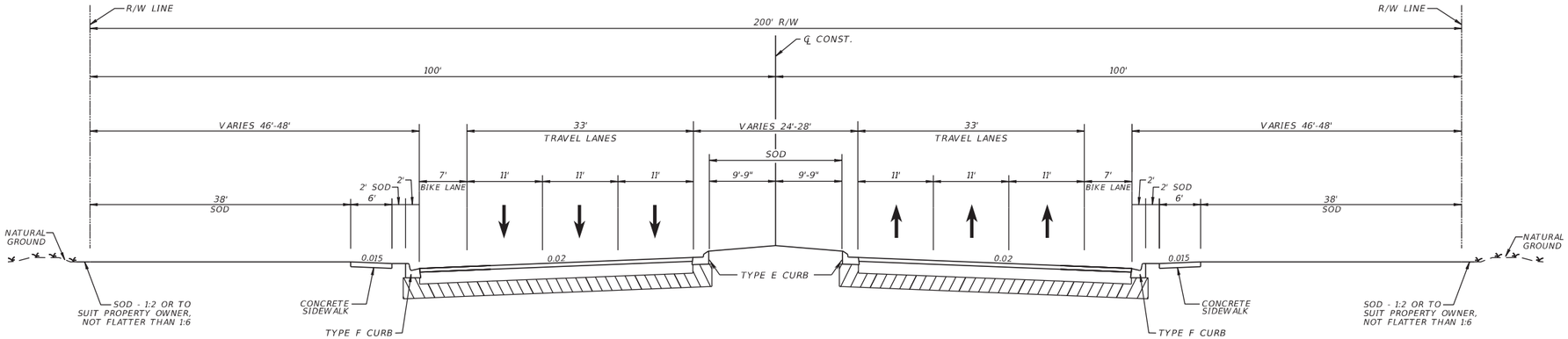
( ) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
(X) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES
( ) 8 - N/A: OFF-STATE HIGHWAY SYSTEM

CRITERIA

(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (LA FACILITIES)
( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 1



SR 45 (US 41)
STA. 227+52.80 TO STA. 228+77.40

TRAFFIC DATA
SOUTH OF BONITA BEACH ROAD

CURRENT YEAR = 2019 AADT = 39,000
ESTIMATED OPENING YEAR = 2030 AADT = 44,000
ESTIMATED DESIGN YEAR = 2050 AADT = 60,000
K = 11% D = 60% T = 3.2% (24 HOUR)
DESIGN HOUR T = 1.6%
DESIGN SPEED = 45 MPH
POSTED SPEED = 45 MPH

TRAFFIC DATA
NORTH OF BONITA BEACH ROAD

CURRENT YEAR = 2019 AADT = 53,000
ESTIMATED OPENING YEAR = 2030 AADT = 59,000
ESTIMATED DESIGN YEAR = 2050 AADT = 78,000
K = 11% D = 57% T = 2.6% (24 HOUR)
DESIGN HOUR T = 1.3%
DESIGN SPEED = 45 MPH
POSTED SPEED = 45 MPH

FINANCIAL PROJECT ID	SHEET NO.
444321-1-22-01	2

5/12/2025 11:38:56 AM

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	( )	C3C : SUBURBAN COMM.
( )	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
( )	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
(X)	N/A : LOCAL ROAD		

FUNCTIONAL CLASSIFICATION

( )	INTERSTATE	( )	MAJOR COLLECTOR
( )	FREEWAY/EXPWY.	( )	MINOR COLLECTOR
( )	PRINCIPAL ARTERIAL	( )	LOCAL
(X)	MINOR ARTERIAL		

HIGHWAY SYSTEM

- ( ) NATIONAL HIGHWAY SYSTEM
- ( ) STRATEGIC INTERMODAL SYSTEM
- ( ) STATE HIGHWAY SYSTEM
- (X) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

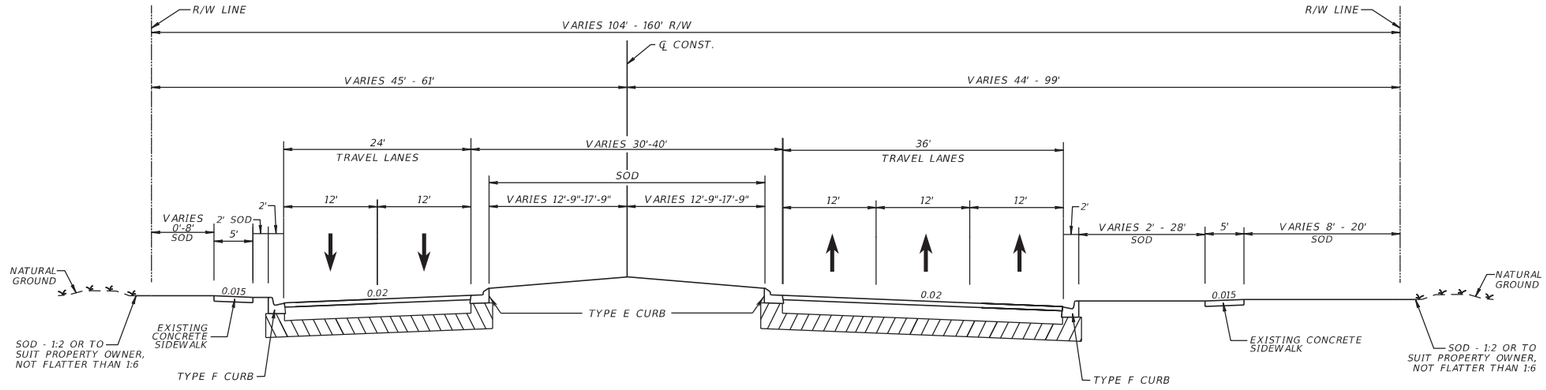
- ( ) 1 - FREEWAY
- ( ) 2 - RESTRICTIVE w/Service Roads
- ( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- ( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- ( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
- ( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ( ) 7 - BOTH MEDIAN TYPES
- (X) 8 - N/A: OFF-STATE HIGHWAY SYSTEM

CRITERIA

- (X) NEW CONSTRUCTION / RECONSTRUCTION
- ( ) RESURFACING (LA FACILITIES)
- ( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 2



BONITA BEACH ROAD
STA. 291+47.40 TO STA. 301+39.40

TRAFFIC DATA
WEST OF US 41

CURRENT YEAR = 2019 AADT = 30,000
ESTIMATED OPENING YEAR = 2030 AADT = 32,000
ESTIMATED DESIGN YEAR = 2050 AADT = 39,000
K = 11% D = 54% T = 3.6% (24 HOUR)
DESIGN HOUR T = 1.8%
DESIGN SPEED = 45 MPH
POSTED SPEED = 45 MPH

TRAFFIC DATA
EAST OF US 41

CURRENT YEAR = 2019 AADT = 30,000
ESTIMATED OPENING YEAR = 2030 AADT = 32,000
ESTIMATED DESIGN YEAR = 2050 AADT = 39,000
K = 11% D = 60% T = 6.0% (24 HOUR)
DESIGN HOUR T = 3.0%
DESIGN SPEED = 45 MPH
POSTED SPEED = 45 MPH

FINANCIAL PROJECT ID	SHEET NO.
444321-1-22-01	3

5/12/2025 9:17:45 AM

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	( )	C3C : SUBURBAN COMM.
( )	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
( )	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
(X)	N/A : LOCAL ROAD		

FUNCTIONAL CLASSIFICATION

( )	INTERSTATE	( )	MAJOR COLLECTOR
( )	FREEWAY/EXPWY.	( )	MINOR COLLECTOR
( )	PRINCIPAL ARTERIAL	(X)	LOCAL
( )	MINOR ARTERIAL		

HIGHWAY SYSTEM

( ) NATIONAL HIGHWAY SYSTEM
( ) STRATEGIC INTERMODAL SYSTEM
( ) STATE HIGHWAY SYSTEM
(X) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

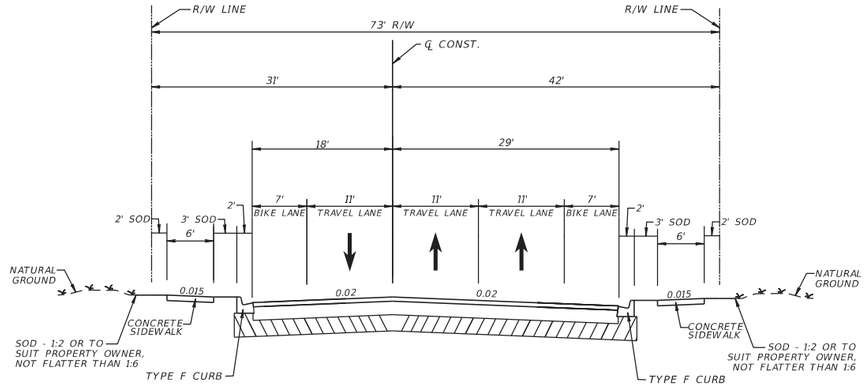
( ) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES
(X) 8 - N/A: OFF-STATE HIGHWAY SYSTEM

CRITERIA

(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (LA FACILITIES)
( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 3



NORTHEAST QUADRANT ROADWAY

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = N/A
ESTIMATED OPENING YEAR = 2030 AADT = 6,700
ESTIMATED DESIGN YEAR = 2050 AADT = 6,700
K = 11% D = 59% T = N/A
DESIGN HOUR T = N/A
DESIGN SPEED = 35 MPH
POSTED SPEED = 35 MPH

FINANCIAL PROJECT ID	SHEET NO.
444321-1-22-01	4

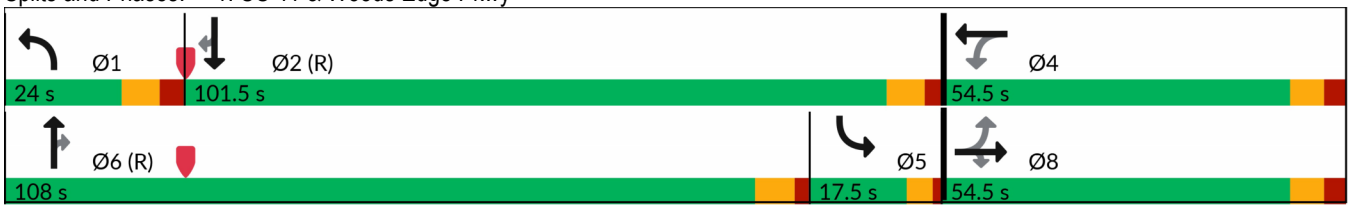
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

Appendix J – Partial DLT Signal Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	207	21	76	66	41	62	2186	26	19	2001	144
Future Volume (vph)	207	21	76	66	41	62	2186	26	19	2001	144
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4	1	6		5	2	
Permitted Phases	8		8	4				6			2
Detector Phase	8	8	8	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5	13.2	25.2	25.2	9.5	25.2	25.2
Total Split (s)	54.5	54.5	54.5	54.5	54.5	24.0	108.0	108.0	17.5	101.5	101.5
Total Split (%)	30.3%	30.3%	30.3%	30.3%	30.3%	13.3%	60.0%	60.0%	9.7%	56.4%	56.4%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.2	5.2	5.2	3.5	5.2	5.2
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	8.2	7.2	7.2	4.5	7.2	7.2
Lead/Lag						Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.9	34.9	34.9	34.9	34.9	11.9	119.9	119.9	10.2	110.3	110.3
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.07	0.67	0.67	0.06	0.61	0.61
v/c Ratio	0.84	0.06	0.20	0.25	0.19	0.56	0.68	0.02	0.20	0.67	0.15
Control Delay (s/veh)	96.1	55.4	2.6	61.3	46.0	99.1	22.3	0.0	76.4	20.6	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	96.1	55.4	2.6	61.3	46.0	99.1	22.3	0.0	76.4	20.6	5.0
LOS	F	E	A	E	D	F	C	A	E	C	A
Approach Delay (s/veh)		70.0			53.9		24.1			20.1	
Approach LOS		E			D		C			C	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay (s/veh): 25.9	Intersection LOS: C
Intersection Capacity Utilization 80.5%	ICU Level of Service D
Analysis Period (min) 15	

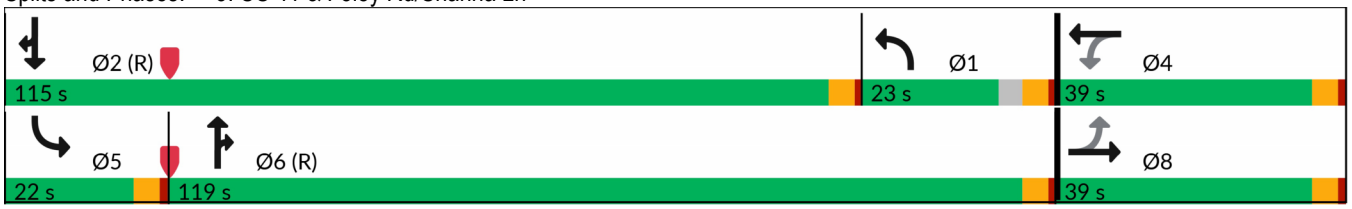
Splits and Phases: 1: US 41 & Woods Edge Pkwy



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	22	0	37	2	24	2325	60	141	2145	45
Future Volume (vph)	22	0	37	2	24	2325	60	141	2145	45
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	Prot	NA	Prot
Protected Phases		8		4	1	6	6	5	2	2
Permitted Phases	8		4							
Detector Phase	8	8	4	4	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	39.0	39.0	39.0	39.0	23.0	119.0	119.0	22.0	115.0	115.0
Total Split (%)	21.7%	21.7%	21.7%	21.7%	12.8%	66.1%	66.1%	12.2%	63.9%	63.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.9	10.9	10.9	10.9	15.3	134.7	134.7	20.9	144.5	144.5
Actuated g/C Ratio	0.06	0.06	0.06	0.06	0.09	0.75	0.75	0.12	0.80	0.80
v/c Ratio	0.41	0.25	0.60	0.47	0.16	0.64	0.05	0.70	0.54	0.04
Control Delay (s/veh)	101.1	2.2	116.9	24.2	52.9	5.5	0.4	79.4	11.1	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	101.1	2.2	116.9	24.2	52.9	5.5	0.4	79.4	11.1	4.2
LOS	F	A	F	C	D	A	A	E	B	A
Approach Delay (s/veh)		27.5		54.6		5.9			15.1	
Approach LOS		C		D		A			B	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 154 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay (s/veh): 11.7	Intersection LOS: B
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 15	

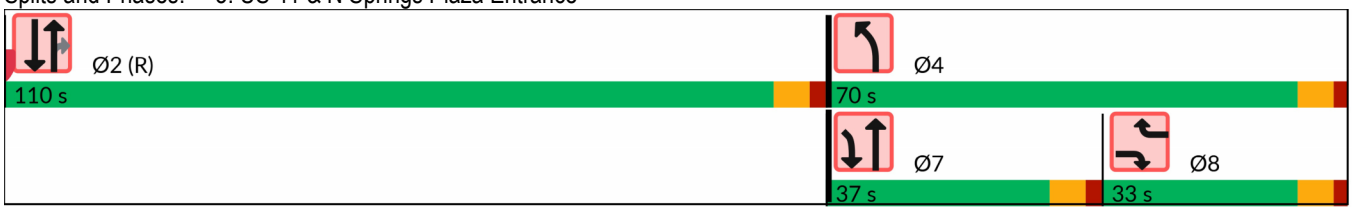
Splits and Phases: 3: US 41 & Foley Rd/Shanna Ln



Lane Group	WBR2	NBL	NBT	NBR	SBT	SER
Lane Configurations						
Traffic Volume (vph)	105	294	2060	70	2010	345
Future Volume (vph)	105	294	2060	70	2010	345
Turn Type	Prot	Prot	NA	custom	NA	Prot
Protected Phases	8	4	2 7		2	7
Permitted Phases				2		
Detector Phase	8	4	2 7	2	2	7
Switch Phase						
Minimum Initial (s)	5.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.8	10.8		24.8	24.8	10.8
Total Split (s)	33.0	70.0		110.0	110.0	37.0
Total Split (%)	18.3%	38.9%		61.1%	61.1%	20.6%
Yellow Time (s)	4.8	4.8		4.8	4.8	4.8
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8	6.8
Lead/Lag	Lag					Lead
Lead-Lag Optimize?	Yes					Yes
Recall Mode	None	None		C-Max	C-Max	Max
Act Effct Green (s)	11.1	48.1	155.3	118.3	118.3	30.2
Actuated g/C Ratio	0.06	0.27	0.86	0.66	0.66	0.17
v/c Ratio	0.69	0.33	0.49	0.07	0.68	0.76
Control Delay (s/veh)	58.0	54.1	0.6	3.4	13.0	80.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	58.0	54.1	0.6	3.4	13.0	80.0
LOS	E	D	A	A	B	F
Approach Delay (s/veh)			7.1		13.0	
Approach LOS			A		B	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 158 (88%), Referenced to phase 2:NBSB, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay (s/veh): 15.7	Intersection LOS: B
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

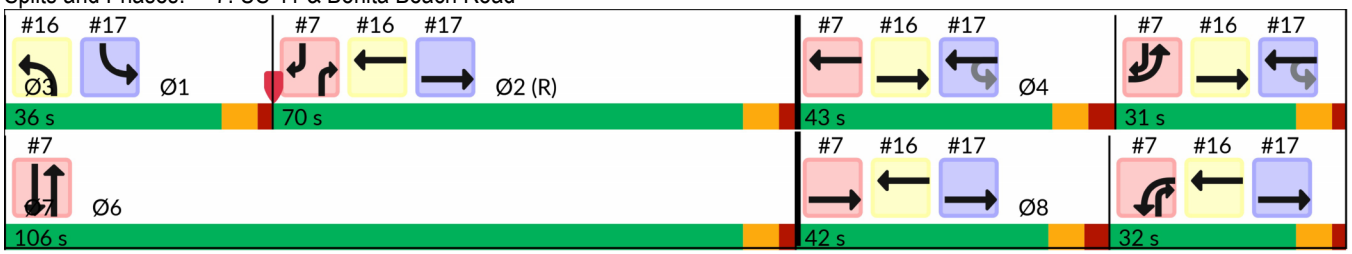
Splits and Phases: 5: US 41 & N Springs Plaza Entrance



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR	Ø1	Ø2
Lane Configurations										
Traffic Volume (vph)	510	665	376	711	1802	363	1772	488		
Future Volume (vph)	510	665	376	711	1802	363	1772	488		
Turn Type	Prot	NA	Prot	NA	NA	custom	NA	custom		
Protected Phases	3	8	7	4	6	2 7	6	2 3	1	2
Permitted Phases										
Detector Phase	3	8	7	4	6	2 7	6	2 3		
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	4.0		4.0		4.0	4.0
Minimum Split (s)	11.8	36.9	12.1	37.3	24.8		24.8		24.8	24.8
Total Split (s)	31.0	42.0	32.0	43.0	106.0		106.0		36.0	70.0
Total Split (%)	17.2%	23.3%	17.8%	23.9%	58.9%		58.9%		20%	39%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8		4.8		4.8	4.8
All-Red Time (s)	2.0	3.1	2.0	3.5	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0			
Total Lost Time (s)	6.8	7.9	6.8	8.3	6.8		6.8			
Lead/Lag	Lag	Lead	Lag	Lead					Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes	Yes
Recall Mode	None	None	None	None	Max		Max		Max	C-Max
Act Effct Green (s)	24.2	34.1	25.2	34.7	99.2	88.4	99.2	87.4		
Actuated g/C Ratio	0.13	0.19	0.14	0.19	0.55	0.49	0.55	0.49		
v/c Ratio	0.76	0.67	0.77	0.71	0.63	0.46	0.62	0.62		
Control Delay (s/veh)	45.6	33.1	46.9	33.9	16.5	13.4	10.5	22.1		
Queue Delay	21.3	2.8	15.0	2.2	0.2	0.0	0.5	0.2		
Total Delay (s/veh)	66.9	35.8	61.9	36.0	16.7	13.4	11.0	22.3		
LOS	E	D	E	D	B	B	B	C		
Approach Delay (s/veh)		49.3		45.0	16.1		13.5			
Approach LOS		D		D	B		B			

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 48 (27%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 25.7	Intersection LOS: C
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: US 41 & Bonita Beach Road



Lane Group	EBR2	NBT	SBL	SBT	NWR
Lane Configurations					
Traffic Volume (vph)	84	2278	440	2205	464
Future Volume (vph)	84	2278	440	2205	464
Turn Type	Perm	NA	Prot	NA	Prot
Protected Phases		2	4	2 4	7
Permitted Phases	4				
Detector Phase	4	2	4	2 4	7
Switch Phase					
Minimum Initial (s)	5.0	4.0	5.0		5.0
Minimum Split (s)	36.9	25.7	36.9		11.8
Total Split (s)	45.0	135.0	45.0		45.0
Total Split (%)	25.0%	75.0%	25.0%		25.0%
Yellow Time (s)	4.8	4.8	4.8		4.8
All-Red Time (s)	3.1	2.9	3.1		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	7.9	7.7	7.9		6.8
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	None		None
Act Effct Green (s)	37.1	127.3	37.1	180.0	38.2
Actuated g/C Ratio	0.21	0.71	0.21	1.00	0.21
v/c Ratio	0.23	0.69	0.44	0.59	0.78
Control Delay (s/veh)	30.3	3.4	91.8	6.5	92.6
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	30.3	3.5	91.8	6.5	92.6
LOS	C	A	F	A	F
Approach Delay (s/veh)		3.5		20.3	
Approach LOS		A		C	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 178 (99%), Referenced to phase 2:NBSB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay (s/veh): 19.4	Intersection LOS: B
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

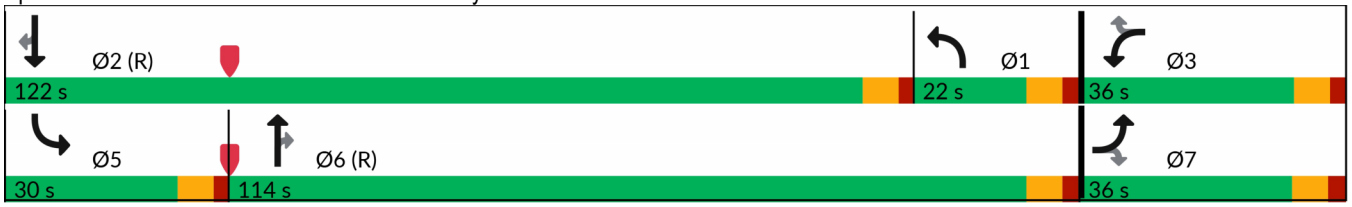
Splits and Phases: 8: US 41 & Crown Lake Blvd



Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	437	58	13	260	84	2795	13	244	2632	424
Future Volume (vph)	437	58	13	260	84	2795	13	244	2632	424
Turn Type	Prot	Perm	Prot	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7		3		1	6		5	2	
Permitted Phases		7		3			6			2
Detector Phase	7	7	3	3	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.1	12.1	12.0	12.0	11.8	24.8	24.8	11.8	24.8	24.8
Total Split (s)	36.0	36.0	36.0	36.0	22.0	114.0	114.0	30.0	122.0	122.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	12.2%	63.3%	63.3%	16.7%	67.8%	67.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.3	2.3	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.1	7.1	7.0	7.0	6.8	6.8	6.8	6.8	6.8	6.8
Lead/Lag					Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	19.2	21.2	21.3	21.3	15.2	119.9	119.9	18.2	122.9	122.9
Actuated g/C Ratio	0.11	0.12	0.12	0.12	0.08	0.67	0.67	0.10	0.68	0.68
v/c Ratio	0.83	0.22	0.06	0.72	0.57	0.68	0.01	0.71	0.61	0.37
Control Delay (s/veh)	95.7	23.3	55.5	21.5	82.6	10.6	0.0	89.5	16.6	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay (s/veh)	95.7	23.3	55.5	21.5	82.6	10.9	0.0	89.5	16.6	5.1
LOS	F	C	E	C	F	B	A	F	B	A
Approach Delay (s/veh)						12.9			20.5	
Approach LOS						B			C	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 10 (6%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay (s/veh): 22.2	Intersection LOS: C
Intersection Capacity Utilization 79.7%	ICU Level of Service D
Analysis Period (min) 15	

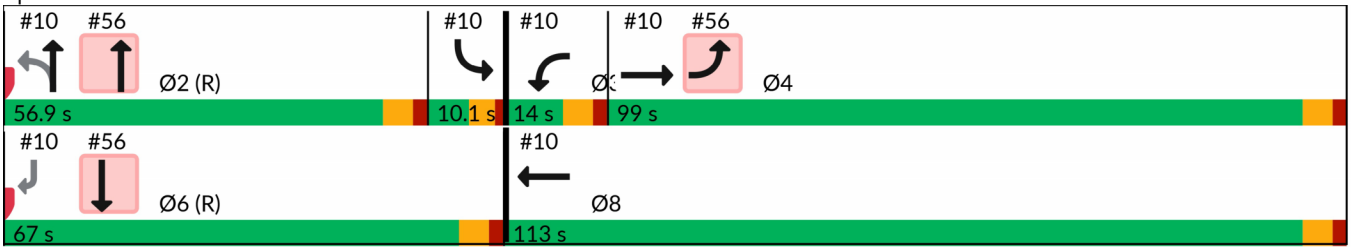
Splits and Phases: 9: US 41 & Publix Driveway



Lane Group	EBT	WBL	WBT	NBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1218	32	1359	0	11	322
Future Volume (vph)	1218	32	1359	0	11	322
Turn Type	NA	Prot	NA	NA	Prot	Perm
Protected Phases	4	3	8	2	1	
Permitted Phases						6
Detector Phase	4	3	8	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	11.0	22.5	22.5	9.5	22.5
Total Split (s)	99.0	14.0	113.0	56.9	10.1	67.0
Total Split (%)	55.0%	7.8%	62.8%	31.6%	5.6%	37.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	4.5	6.0
Lead/Lag	Lag	Lead		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	82.1	7.4	93.2	70.7	5.6	74.8
Actuated g/C Ratio	0.46	0.04	0.52	0.39	0.03	0.42
v/c Ratio	0.79	0.45	0.77	0.08	0.20	0.47
Control Delay (s/veh)	76.1	127.6	19.3	1.4	55.5	8.4
Queue Delay	1.4	0.0	0.0	0.0	0.0	0.3
Total Delay (s/veh)	77.5	127.6	19.3	1.4	55.5	8.7
LOS	E	F	B	A	E	A
Approach Delay (s/veh)	77.5		21.8	1.4		
Approach LOS	E		C	A		

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 61 (34%), Referenced to phase 2:NBTL and 6:SBR, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 42.8	Intersection LOS: D
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

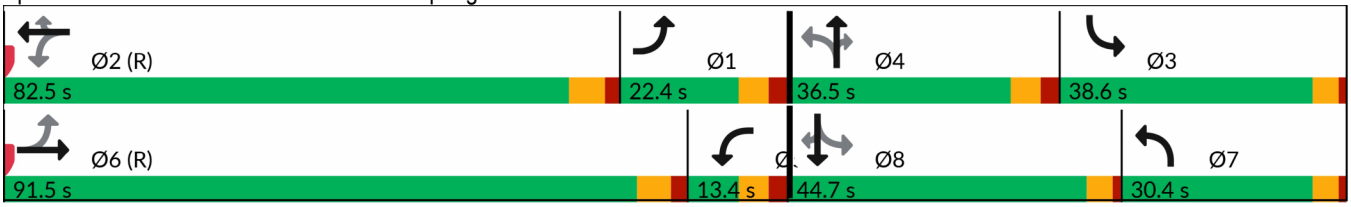
Splits and Phases: 10: Windsor Rd & Bonita Beach Rd



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	119	1148	80	1190	193	29	23	67	192	19	197
Future Volume (vph)	119	1148	80	1190	193	29	23	67	192	19	197
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		7	4		3	8	
Permitted Phases	6		2		2	4		4	8		8
Detector Phase	1	6	5	2	2	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	5.0	20.0	5.0	20.0	20.0	5.0	7.0	7.0	5.0	5.0	5.0
Minimum Split (s)	23.4	93.6	14.4	84.6	84.6	32.4	37.5	37.5	39.6	39.6	39.6
Total Split (s)	22.4	91.5	13.4	82.5	82.5	30.4	36.5	36.5	38.6	44.7	44.7
Total Split (%)	12.4%	50.8%	7.4%	45.8%	45.8%	16.9%	20.3%	20.3%	21.4%	24.8%	24.8%
Yellow Time (s)	4.0	4.7	4.0	4.7	4.7	3.5	4.0	4.0	3.5	3.5	3.5
All-Red Time (s)	2.2	2.0	2.2	2.0	2.0	1.0	2.5	2.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.7	6.2	6.7	6.7	4.5	6.5	6.5	4.5	4.5	4.5
Lead/Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	140.4	127.6	125.2	118.6	118.6	16.3	8.6	8.6	28.9	28.9	20.7
Actuated g/C Ratio	0.78	0.71	0.70	0.66	0.66	0.09	0.05	0.05	0.16	0.16	0.12
v/c Ratio	0.32	0.48	0.27	0.52	0.18	0.28	0.28	0.31	0.45	0.45	0.56
Control Delay (s/veh)	5.4	0.9	10.6	19.9	2.8	69.9	90.1	3.5	73.8	73.6	14.0
Queue Delay	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.4	1.2	10.6	20.2	2.8	69.9	90.1	3.5	73.8	73.6	14.0
LOS	A	A	B	C	A	E	F	A	E	E	B
Approach Delay (s/veh)		1.6		17.4			36.6			44.9	
Approach LOS		A		B			D			D	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 190	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay (s/veh): 15.4	Intersection LOS: B
Intersection Capacity Utilization 66.5%	ICU Level of Service C
Analysis Period (min) 15	

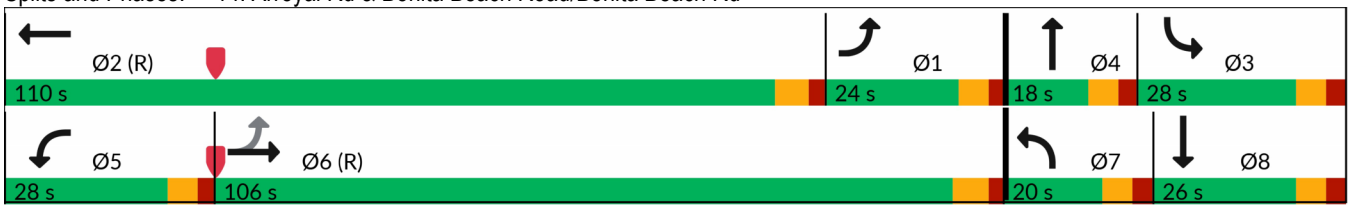
Splits and Phases: 11: Center of Bonita Springs Entrance & Bonita Beach Rd/Bonita Beach Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	212	1198	173	1302	55	42	282	44
Future Volume (vph)	212	1198	173	1302	55	42	282	44
Turn Type	pm+pt	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	1	6	5	2	7	4	3	8
Permitted Phases	6							
Detector Phase	1	6	5	2	7	4	3	8
Switch Phase								
Minimum Initial (s)	7.0	20.0	7.0	20.0	8.0	8.0	8.0	8.0
Minimum Split (s)	13.0	29.7	13.0	29.7	14.6	39.6	14.6	39.6
Total Split (s)	24.0	106.0	28.0	110.0	20.0	18.0	28.0	26.0
Total Split (%)	13.3%	58.9%	15.6%	61.1%	11.1%	10.0%	15.6%	14.4%
Yellow Time (s)	4.0	4.7	4.0	4.7	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.7	6.0	6.7	6.6	6.6	6.6	6.6
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	104.6	103.9	20.5	106.3	10.4	11.0	18.8	22.3
Actuated g/C Ratio	0.58	0.58	0.11	0.59	0.06	0.06	0.10	0.12
v/c Ratio	0.83	0.42	0.87	0.78	0.56	0.92	0.80	0.74
Control Delay (s/veh)	89.8	22.8	132.9	17.4	102.9	108.2	104.7	72.1
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	89.8	23.0	132.9	17.4	102.9	108.2	104.7	72.1
LOS	F	C	F	B	F	F	F	E
Approach Delay (s/veh)		33.0		28.8		106.6		91.1
Approach LOS		C		C		F		F

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay (s/veh): 41.9	Intersection LOS: D
Intersection Capacity Utilization 97.1%	ICU Level of Service F
Analysis Period (min) 15	

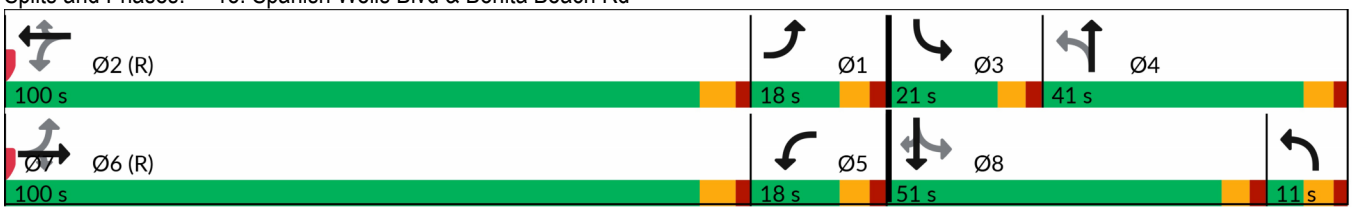
Splits and Phases: 14: Arroyal Rd & Bonita Beach Road/Bonita Beach Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	66	1403	108	44	1584	131	111	19	132	27	76
Future Volume (vph)	66	1403	108	44	1584	131	111	19	132	27	76
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4	3	8	
Permitted Phases	6		6	2		2	4		8		8
Detector Phase	1	6	6	5	2	2	7	4	3	8	8
Switch Phase											
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	7.0	5.0	7.0	7.0
Minimum Split (s)	11.0	38.7	38.7	11.0	50.7	50.7	11.0	45.0	11.0	48.0	48.0
Total Split (s)	18.0	100.0	100.0	18.0	100.0	100.0	11.0	41.0	21.0	51.0	51.0
Total Split (%)	10.0%	55.6%	55.6%	10.0%	55.6%	55.6%	6.1%	22.8%	11.7%	28.3%	28.3%
Yellow Time (s)	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.7	6.7	6.0	6.7	6.7	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	131.2	124.7	124.7	130.0	122.5	122.5	17.4	9.8	16.2	8.6	8.6
Actuated g/C Ratio	0.73	0.69	0.69	0.72	0.68	0.68	0.10	0.05	0.09	0.05	0.05
v/c Ratio	0.38	0.61	0.10	0.20	0.69	0.12	0.68	0.52	0.86	0.33	0.48
Control Delay (s/veh)	16.6	10.4	0.4	10.8	20.2	2.6	97.6	40.9	119.6	92.9	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.6	10.4	0.4	10.8	20.2	2.6	97.6	40.9	119.6	92.9	17.9
LOS	B	B	A	B	C	A	F	D	F	F	B
Approach Delay (s/veh)		10.0			18.6			75.6		83.6	
Approach LOS		A			B			E		F	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 21.8	Intersection LOS: C
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

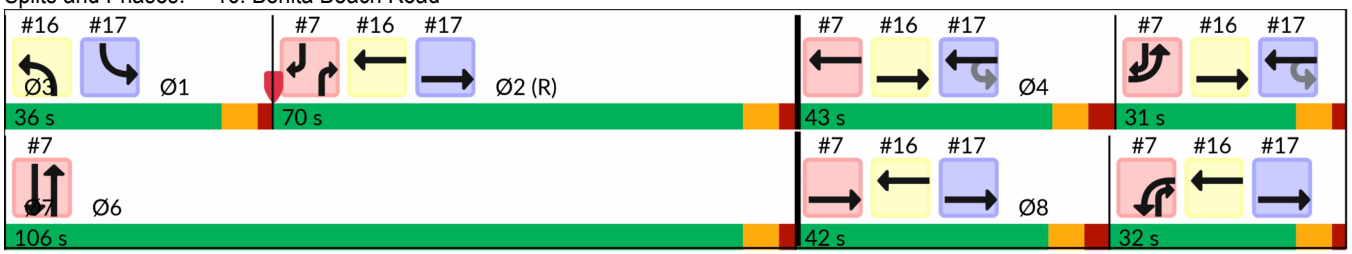
Splits and Phases: 15: Spanish Wells Blvd & Bonita Beach Rd



Lane Group	EBT	EBR	WBT	NBL	Ø2	Ø3	Ø4	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1175	251	1199	294						
Future Volume (vph)	1175	251	1199	294						
Turn Type	NA	Free	NA	Prot						
Protected Phases	3 4		2 7 8	1	2	3	4	6	7	8
Permitted Phases		Free								
Detector Phase	3 4		2 7 8	1						
Switch Phase										
Minimum Initial (s)				4.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)				24.8	24.8	11.8	37.3	24.8	12.1	36.9
Total Split (s)				36.0	70.0	31.0	43.0	106.0	32.0	42.0
Total Split (%)				20.0%	39%	17%	24%	59%	18%	23%
Yellow Time (s)				4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)				2.0	2.0	2.0	3.5	2.0	2.0	3.1
Lost Time Adjust (s)				0.0						
Total Lost Time (s)				6.8						
Lead/Lag				Lead	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode				Max	C-Max	None	None	Max	None	None
Act Effct Green (s)	67.2	180.0	137.2	29.2						
Actuated g/C Ratio	0.37	1.00	0.76	0.16						
v/c Ratio	0.36	0.09	0.30	0.51						
Control Delay (s/veh)	57.5	0.1	0.9	85.8						
Queue Delay	0.1	0.0	0.4	0.0						
Total Delay (s/veh)	57.7	0.1	1.3	85.8						
LOS	E	A	A	F						
Approach Delay (s/veh)	47.5		1.3	85.8						
Approach LOS	D		A	F						

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 48 (27%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 32.4	Intersection LOS: C
Intersection Capacity Utilization 42.1%	ICU Level of Service A
Analysis Period (min) 15	

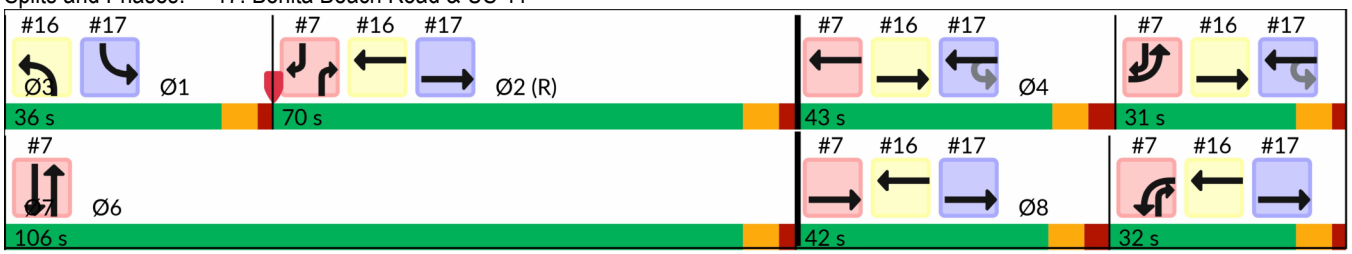
Splits and Phases: 16: Bonita Beach Road



Lane Group	EBT	WBT	WBR	SBL	Ø2	Ø3	Ø4	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1029	1088	464	440						
Future Volume (vph)	1029	1088	464	440						
Turn Type	NA	NA	Free	Prot						
Protected Phases	2 7 8	3 4		1	2	3	4	6	7	8
Permitted Phases			Free							
Detector Phase	2 7 8	3 4		1						
Switch Phase										
Minimum Initial (s)				4.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)				24.8	24.8	11.8	37.3	24.8	12.1	36.9
Total Split (s)				36.0	70.0	31.0	43.0	106.0	32.0	42.0
Total Split (%)				20.0%	39%	17%	24%	59%	18%	23%
Yellow Time (s)				4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)				2.0	2.0	2.0	3.5	2.0	2.0	3.1
Lost Time Adjust (s)				0.0						
Total Lost Time (s)				6.8						
Lead/Lag				Lead	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode				Max	C-Max	None	None	Max	None	None
Act Effct Green (s)	137.2	67.2	180.0	29.2						
Actuated g/C Ratio	0.76	0.37	1.00	0.16						
v/c Ratio	0.26	0.38	0.16	0.52						
Control Delay (s/veh)	0.8	56.8	0.1	46.3						
Queue Delay	0.3	0.1	0.0	0.0						
Total Delay (s/veh)	1.1	56.9	0.1	46.3						
LOS	A	E	A	D						
Approach Delay (s/veh)	1.1	39.9		46.3						
Approach LOS	A	D		D						

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 48 (27%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 27.6	Intersection LOS: C
Intersection Capacity Utilization 38.9%	ICU Level of Service A
Analysis Period (min) 15	

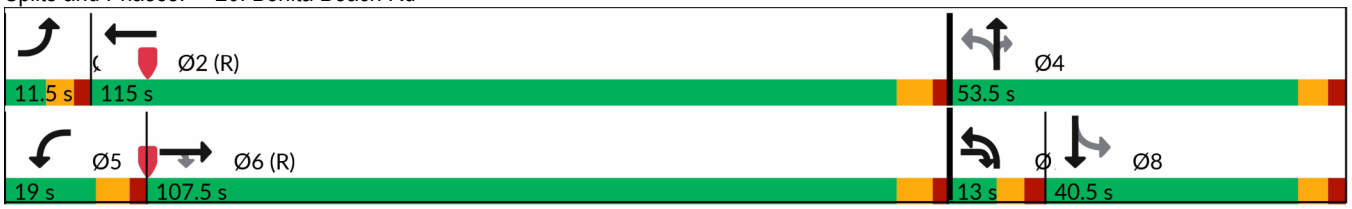
Splits and Phases: 17: Bonita Beach Road & US 41



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	1	1295	163	171	1502	155	10	250	18	11
Future Volume (vph)	1	1295	163	171	1502	155	10	250	18	11
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+pt	NA	Perm	Perm	NA
Protected Phases	1	6	7	5	2	7	4			8
Permitted Phases			6			4		4	8	
Detector Phase	1	6	7	5	2	7	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	24.0	5.0	5.0	24.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.5	42.7	11.5	11.7	30.7	11.5	42.5	42.5	40.5	40.5
Total Split (s)	11.5	107.5	13.0	19.0	115.0	13.0	53.5	53.5	40.5	40.5
Total Split (%)	6.4%	59.7%	7.2%	10.6%	63.9%	7.2%	29.7%	29.7%	22.5%	22.5%
Yellow Time (s)	4.0	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.7	6.5	6.7	6.7	6.5	6.5	6.5		6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead			Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	Max	Max
Act Effct Green (s)	5.0	101.3	114.5	11.8	117.6	47.0	47.0	47.0		34.0
Actuated g/C Ratio	0.03	0.56	0.64	0.07	0.65	0.26	0.26	0.26		0.19
v/c Ratio	0.02	0.68	0.16	0.79	0.68	0.44	0.02	0.54		0.12
Control Delay (s/veh)	86.0	30.3	4.2	116.8	14.8	59.2	49.8	38.4		54.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	86.0	30.3	4.2	116.8	14.8	59.2	49.8	38.4		54.7
LOS	F	C	A	F	B	E	D	D		D
Approach Delay (s/veh)		27.5			25.1		46.4			54.7
Approach LOS		C			C		D			D

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 28.8	Intersection LOS: C
Intersection Capacity Utilization 76.8%	ICU Level of Service D
Analysis Period (min) 15	

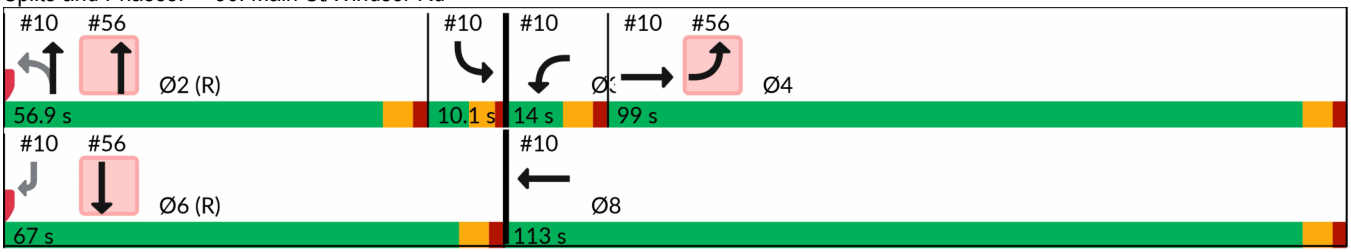
Splits and Phases: 20: Bonita Beach Rd



Lane Group	EBL	NBT	SBT	Ø1	Ø3	Ø8
Lane Configurations						
Traffic Volume (vph)	328	29	333			
Future Volume (vph)	328	29	333			
Turn Type	Prot	NA	NA			
Protected Phases	4	2	6	1	3	8
Permitted Phases						
Detector Phase	4	2	6			
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	11.0	22.5
Total Split (s)	99.0	56.9	67.0	10.1	14.0	113.0
Total Split (%)	55.0%	31.6%	37.2%	6%	8%	63%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			
Total Lost Time (s)	6.0	6.0	6.0			
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	82.1	70.7	74.8			
Actuated g/C Ratio	0.46	0.39	0.42			
v/c Ratio	0.43	0.04	0.24			
Control Delay (s/veh)	64.9	56.9	39.7			
Queue Delay	3.7	1.4	0.0			
Total Delay (s/veh)	68.6	58.3	39.7			
LOS	E	E	D			
Approach Delay (s/veh)	68.6	58.3	39.7			
Approach LOS	E	E	D			

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 61 (34%), Referenced to phase 2:NBTL and 6:SBR, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 54.2	Intersection LOS: D
Intersection Capacity Utilization 37.4%	ICU Level of Service A
Analysis Period (min) 15	

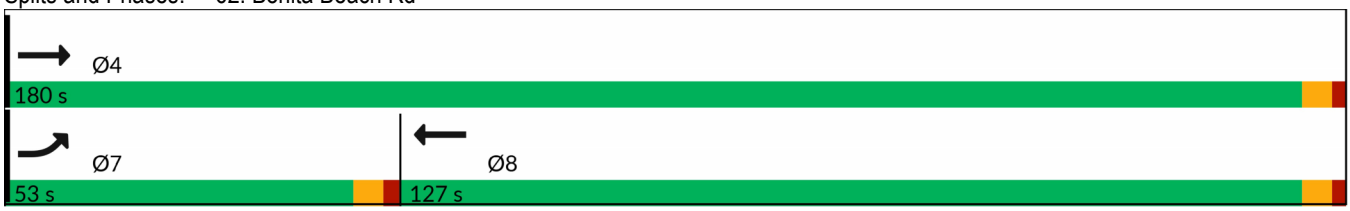
Splits and Phases: 56: Main St/Windsor Rd



Lane Group	EBL	EBT	WBT
Lane Configurations			
Traffic Volume (vph)	328	1239	1687
Future Volume (vph)	328	1239	1687
Turn Type	Prot	NA	NA
Protected Phases	7	4	8
Permitted Phases			
Detector Phase	7	4	8
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0
Total Split (s)	53.0	180.0	127.0
Total Split (%)	29.4%	100.0%	70.6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes
Recall Mode	None	None	None
Act Effct Green (s)	39.6	180.0	128.4
Actuated g/C Ratio	0.22	1.00	0.71
v/c Ratio	0.89	0.37	0.70
Control Delay (s/veh)	88.2	0.2	12.3
Queue Delay	3.3	0.8	0.6
Total Delay (s/veh)	91.5	1.0	12.9
LOS	F	A	B
Approach Delay (s/veh)		19.9	12.9
Approach LOS		B	B

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 67 (37%), Referenced to phase 2: and 6:, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 16.3	Intersection LOS: B
Intersection Capacity Utilization 74.8%	ICU Level of Service D
Analysis Period (min) 15	

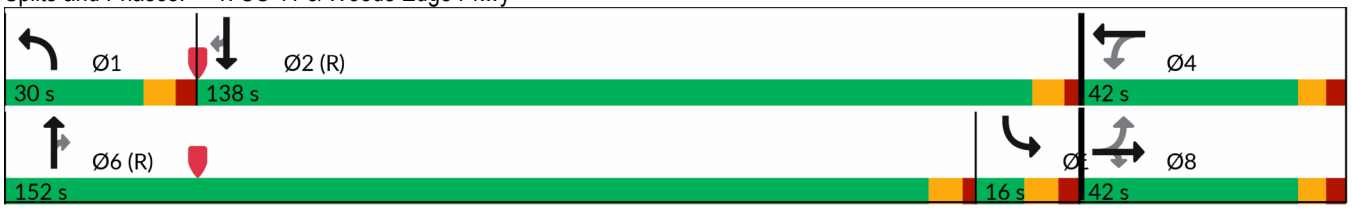
Splits and Phases: 62: Bonita Beach Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	209	27	86	83	11	67	2740	39	8	1749	81
Future Volume (vph)	209	27	86	83	11	67	2740	39	8	1749	81
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4	1	6		5	2	
Permitted Phases	8		8	4				6			2
Detector Phase	8	8	8	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	54.5	54.5	54.5	52.5	52.5	15.0	49.0	49.0	13.2	48.0	48.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	30.0	152.0	152.0	16.0	138.0	138.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%	14.3%	72.4%	72.4%	7.6%	65.7%	65.7%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	8.2	7.2	7.2	8.2	7.2	7.2
Lead/Lag						Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.4	34.4	34.4	34.4	34.4	13.9	154.5	154.5	6.6	138.8	138.8
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.07	0.74	0.74	0.03	0.66	0.66
v/c Ratio	0.97	0.10	0.26	0.38	0.07	0.62	0.77	0.03	0.14	0.54	0.08
Control Delay (s/veh)	136.6	75.7	8.4	83.9	52.1	117.0	19.8	0.5	75.5	7.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	136.6	75.7	8.4	83.9	52.1	117.0	19.8	0.5	75.5	7.6	0.2
LOS	F	E	A	F	D	F	B	A	E	A	A
Approach Delay (s/veh)		97.2			77.9		21.9			7.6	
Approach LOS		F			E		C			A	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 22.6	Intersection LOS: C
Intersection Capacity Utilization 86.2%	ICU Level of Service E
Analysis Period (min) 15	

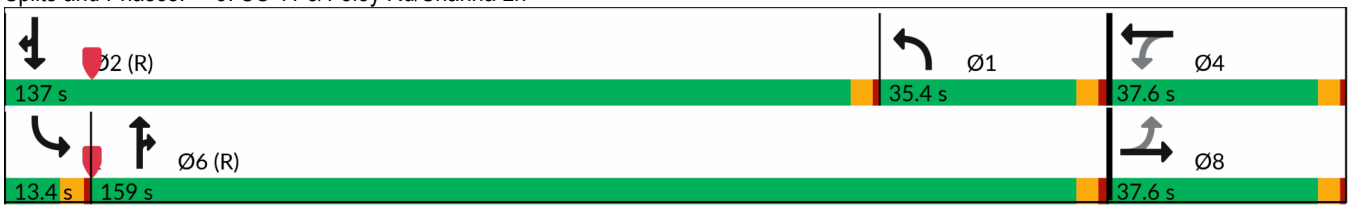
Splits and Phases: 1: US 41 & Woods Edge Pkwy



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	13	2	32	3	12	288	50	100	1839	28
Future Volume (vph)	13	2	32	3	12	288	50	100	1839	28
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	Prot	NA	Prot
Protected Phases		8		4	1	6	6	5	2	2
Permitted Phases	8		4							
Detector Phase	8	8	4	4	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	37.6	37.6	37.6	37.6	35.4	159.0	159.0	13.4	137.0	137.0
Total Split (%)	17.9%	17.9%	17.9%	17.9%	16.9%	75.7%	75.7%	6.4%	65.2%	65.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.7	10.7	10.7	10.7	20.8	161.0	161.0	24.8	169.1	169.1
Actuated g/C Ratio	0.05	0.05	0.05	0.05	0.10	0.77	0.77	0.12	0.81	0.81
v/c Ratio	0.39	0.35	0.51	0.60	0.07	0.08	0.04	0.49	0.47	0.02
Control Delay (s/veh)	125.0	32.7	120.5	28.8	71.7	2.2	0.0	111.7	6.1	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	125.0	32.7	120.5	28.8	71.7	2.2	0.0	111.7	6.1	2.3
LOS	F	C	F	C	E	A	A	F	A	A
Approach Delay (s/veh)		56.2		50.4		4.3			11.4	
Approach LOS		E		D		A			B	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay (s/veh): 13.5	Intersection LOS: B
Intersection Capacity Utilization 59.4%	ICU Level of Service B
Analysis Period (min) 15	

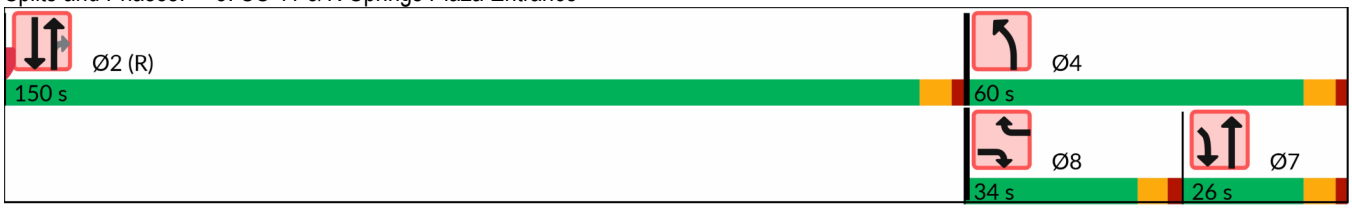
Splits and Phases: 3: US 41 & Foley Rd/Shanna Ln



Lane Group	WBR2	NBL	NBT	NBR	SBT	SER
Lane Configurations						
Traffic Volume (vph)	246	277	2672	50	1731	246
Future Volume (vph)	246	277	2672	50	1731	246
Turn Type	Prot	Prot	NA	custom	NA	Prot
Protected Phases	8	4	2 7		2	7
Permitted Phases				2		
Detector Phase	8	4	2 7	2	2	7
Switch Phase						
Minimum Initial (s)	5.0	5.0		4.0	4.0	5.0
Minimum Split (s)	11.8	35.8		17.8	17.8	11.8
Total Split (s)	34.0	60.0		150.0	150.0	26.0
Total Split (%)	16.2%	28.6%		71.4%	71.4%	12.4%
Yellow Time (s)	4.8	4.8		4.8	4.8	4.8
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8	6.8
Lead/Lag	Lead					Lag
Lead-Lag Optimize?	Yes					Yes
Recall Mode	None	None		C-Max	C-Max	None
Act Effct Green (s)	27.2	53.2	169.2	143.2	143.2	19.2
Actuated g/C Ratio	0.13	0.25	0.81	0.68	0.68	0.09
v/c Ratio	1.00	0.33	0.68	0.05	0.55	1.00
Control Delay (s/veh)	125.0	65.0	9.3	2.0	5.1	140.4
Queue Delay	7.9	0.0	0.4	0.0	0.0	0.0
Total Delay (s/veh)	132.9	65.0	9.7	2.0	5.1	140.4
LOS	F	E	A	A	A	F
Approach Delay (s/veh)			14.7		5.1	
Approach LOS			B		A	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 196 (93%), Referenced to phase 2:NBSB, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 22.8	Intersection LOS: C
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

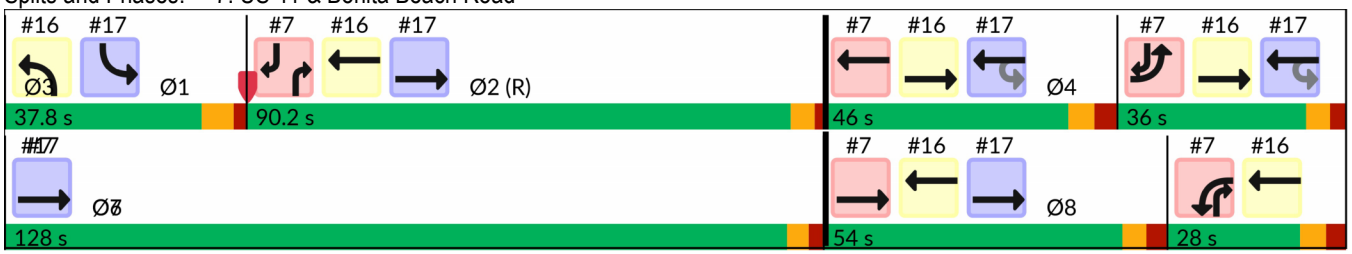
Splits and Phases: 5: US 41 & N Springs Plaza Entrance



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR	Ø1	Ø2
Lane Configurations										
Traffic Volume (vph)	544	954	260	686	2345	393	1548	403		
Future Volume (vph)	544	954	260	686	2345	393	1548	403		
Turn Type	Prot	NA	Prot	NA	NA	custom	NA	custom		
Protected Phases	3	8	7	4	6	2 7	6	2 3	1	2
Permitted Phases										
Detector Phase	3	8	7	4	6	2 7	6	2 3		
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0		4.0	4.0
Minimum Split (s)	11.4	36.1	12.1	36.5	23.5		23.5		24.8	23.0
Total Split (s)	36.0	54.0	28.0	46.0	128.0		128.0		37.8	90.2
Total Split (%)	17.1%	25.7%	13.3%	21.9%	61.0%		61.0%		18%	43%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5		3.5		4.8	4.0
All-Red Time (s)	2.4	3.1	3.1	3.5	2.0		2.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0			
Total Lost Time (s)	6.4	7.1	7.1	7.5	5.5		5.5			
Lead/Lag	Lag	Lead	Lag	Lead					Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes	Yes
Recall Mode	None	None	None	None	None		None		Max	C-Max
Act Effct Green (s)	29.6	46.9	20.9	38.5	122.5	108.2	122.5	116.2		
Actuated g/C Ratio	0.14	0.22	0.10	0.18	0.58	0.52	0.58	0.55		
v/c Ratio	0.78	0.83	0.76	0.72	0.78	0.48	0.51	0.45		
Control Delay (s/veh)	41.0	27.7	60.4	34.1	30.7	15.9	17.6	11.2		
Queue Delay	24.9	0.0	22.1	3.0	1.0	0.3	0.3	0.2		
Total Delay (s/veh)	66.0	27.7	82.4	37.2	31.7	16.2	17.9	11.4		
LOS	E	C	F	D	C	B	B	B		
Approach Delay (s/veh)		41.6		49.6	29.4		16.5			
Approach LOS		D		D	C		B			

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 51 (24%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay (s/veh): 31.1	Intersection LOS: C
Intersection Capacity Utilization 85.8%	ICU Level of Service E
Analysis Period (min) 15	

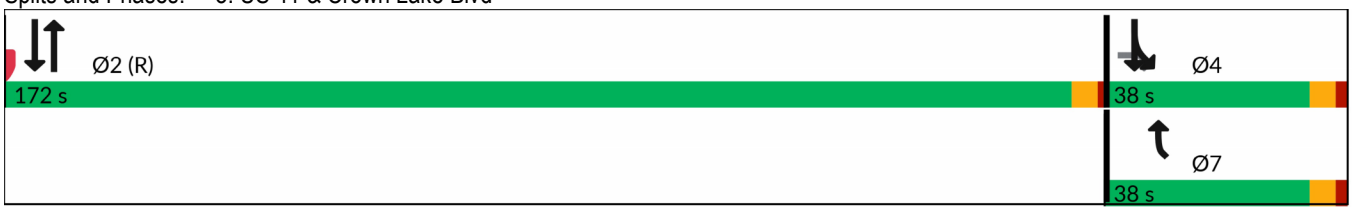
Splits and Phases: 7: US 41 & Bonita Beach Road



Lane Group	EBR2	NBT	SBL	SBT	NWR
Lane Configurations					
Traffic Volume (vph)	61	2854	476	1912	336
Future Volume (vph)	61	2854	476	1912	336
Turn Type	Perm	NA	Prot	NA	Prot
Protected Phases		2	4	2 4	7
Permitted Phases	4				
Detector Phase	4	2	4	2 4	7
Switch Phase					
Minimum Initial (s)	5.0	4.0	5.0		5.0
Minimum Split (s)	35.0	23.0	35.0		11.0
Total Split (s)	38.0	172.0	38.0		38.0
Total Split (%)	18.1%	81.9%	18.1%		18.1%
Yellow Time (s)	4.0	4.0	4.0		4.0
All-Red Time (s)	2.0	1.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	5.0	6.0		6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	None		None
Act Effct Green (s)	32.0	167.0	32.0	210.0	32.0
Actuated g/C Ratio	0.15	0.80	0.15	1.00	0.15
v/c Ratio	0.20	0.75	0.64	0.50	0.79
Control Delay (s/veh)	9.4	3.8	100.4	3.7	118.6
Queue Delay	0.0	2.7	0.0	0.0	0.1
Total Delay (s/veh)	9.4	6.5	100.4	3.7	118.6
LOS	A	A	F	A	F
Approach Delay (s/veh)		6.5		22.6	
Approach LOS		A		C	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 204 (97%), Referenced to phase 2:NBSB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 20.0	Intersection LOS: B
Intersection Capacity Utilization 77.3%	ICU Level of Service D
Analysis Period (min) 15	

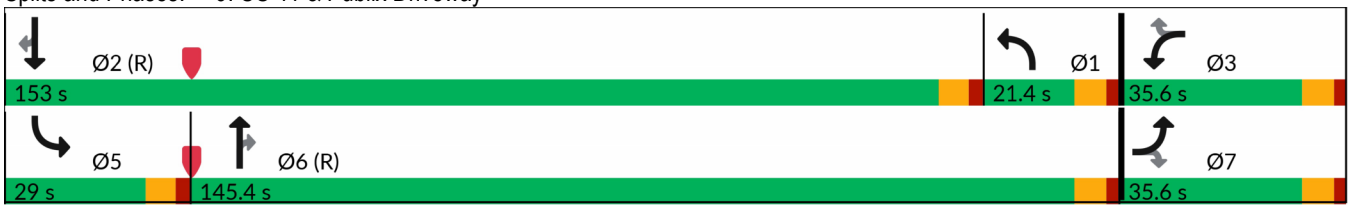
Splits and Phases: 8: US 41 & Crown Lake Blvd



Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	531	51	13	187	59	3269	12	262	2368	308
Future Volume (vph)	531	51	13	187	59	3269	12	262	2368	308
Turn Type	Prot	Perm	Prot	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7		3		1	6		5	2	
Permitted Phases		7		3			6			2
Detector Phase	7	7	3	3	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.1	12.1	12.0	12.0	11.8	24.8	24.8	11.8	24.8	24.8
Total Split (s)	35.6	35.6	35.6	35.6	21.4	145.4	145.4	29.0	153.0	153.0
Total Split (%)	17.0%	17.0%	17.0%	17.0%	10.2%	69.2%	69.2%	13.8%	72.9%	72.9%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Lead/Lag					Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	25.2	27.2	27.2	27.2	14.6	141.9	141.9	20.5	147.8	147.8
Actuated g/C Ratio	0.12	0.13	0.13	0.13	0.07	0.68	0.68	0.10	0.70	0.70
v/c Ratio	0.91	0.19	0.06	0.57	0.50	0.79	0.01	0.81	0.55	0.27
Control Delay (s/veh)	92.2	16.1	69.7	34.4	113.0	30.9	0.0	111.2	15.7	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0
Total Delay (s/veh)	92.2	16.1	69.7	34.4	113.0	34.2	0.0	111.2	15.7	3.8
LOS	F	B	E	C	F	C	A	F	B	A
Approach Delay (s/veh)						35.5			23.0	
Approach LOS						D			C	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 43 (20%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 34.4	Intersection LOS: C
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

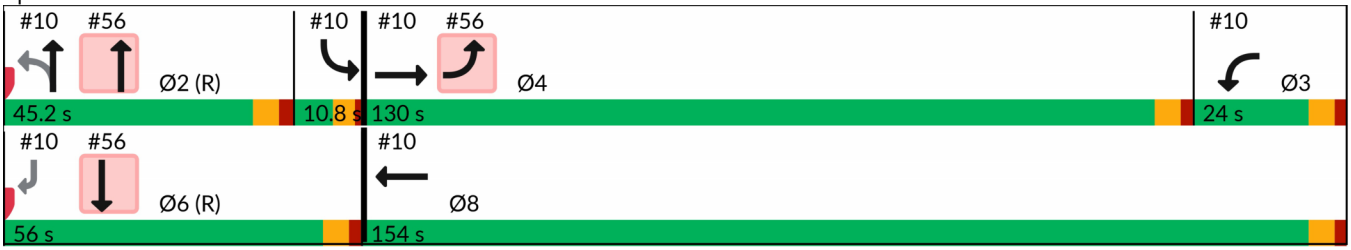
Splits and Phases: 9: US 41 & Publix Driveway



Lane Group	EBT	WBL	WBT	NBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1452	33	1290	0	15	259
Future Volume (vph)	1452	33	1290	0	15	259
Turn Type	NA	Prot	NA	NA	Prot	Perm
Protected Phases	4	3	8	2	1	
Permitted Phases						6
Detector Phase	4	3	8	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	9.5	24.0
Total Split (s)	130.0	24.0	154.0	45.2	10.8	56.0
Total Split (%)	61.9%	11.4%	73.3%	21.5%	5.1%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	4.5	6.0
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	124.0	9.5	137.1	54.4	6.1	60.9
Actuated g/C Ratio	0.59	0.05	0.65	0.26	0.03	0.29
v/c Ratio	0.75	0.43	0.59	0.14	0.30	0.52
Control Delay (s/veh)	20.2	129.8	28.9	8.3	59.7	11.9
Queue Delay	0.6	0.0	0.1	0.0	0.0	0.5
Total Delay (s/veh)	20.7	129.8	29.1	8.3	59.7	12.4
LOS	C	F	C	A	E	B
Approach Delay (s/veh)	20.7		31.6	8.3		
Approach LOS	C		C	A		

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 177 (84%), Referenced to phase 2:NBTL and 6:SBR, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 24.6	Intersection LOS: C
Intersection Capacity Utilization 71.3%	ICU Level of Service C
Analysis Period (min) 15	

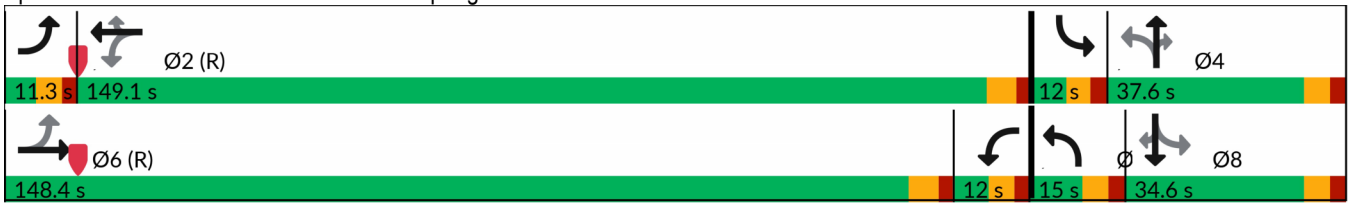
Splits and Phases: 10: Windsor Rd & Bonita Beach Rd



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	73	1449	41	1163	150	29	25	87	115	9	147
Future Volume (vph)	73	1449	41	1163	150	29	25	87	115	9	147
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		7	4		3	8	
Permitted Phases	6		2		2	4		4	8		8
Detector Phase	1	6	5	2	2	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	5.0	20.0	5.0	20.0	20.0	5.0	7.0	7.0	5.0	5.0	5.0
Minimum Split (s)	11.2	41.7	11.2	39.7	39.7	11.5	37.5	37.5	11.0	24.5	24.5
Total Split (s)	11.3	148.4	12.0	149.1	149.1	15.0	37.6	37.6	12.0	34.6	34.6
Total Split (%)	5.4%	70.7%	5.7%	71.0%	71.0%	7.1%	17.9%	17.9%	5.7%	16.5%	16.5%
Yellow Time (s)	4.0	4.7	4.0	4.7	4.7	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.2	2.0	2.2	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.7	6.2	6.7	6.7	6.5	6.5	6.5	6.0	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	164.3	163.8	160.6	160.1	160.1	19.1	11.4	11.4	17.0	16.1	11.7
Actuated g/C Ratio	0.78	0.78	0.76	0.76	0.76	0.09	0.05	0.05	0.08	0.08	0.06
v/c Ratio	0.21	0.53	0.15	0.43	0.12	0.21	0.25	0.44	0.54	0.56	0.65
Control Delay (s/veh)	6.7	6.5	17.4	21.7	8.4	85.9	99.3	11.3	104.0	107.1	25.2
Queue Delay	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay (s/veh)	6.7	6.7	17.4	21.9	8.4	85.9	99.3	11.3	104.0	107.1	25.4
LOS	A	A	B	C	A	F	F	B	F	F	C
Approach Delay (s/veh)		6.7		20.3			42.0			62.1	
Approach LOS		A		C			D			E	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay (s/veh): 18.3	Intersection LOS: B
Intersection Capacity Utilization 70.6%	ICU Level of Service C
Analysis Period (min) 15	

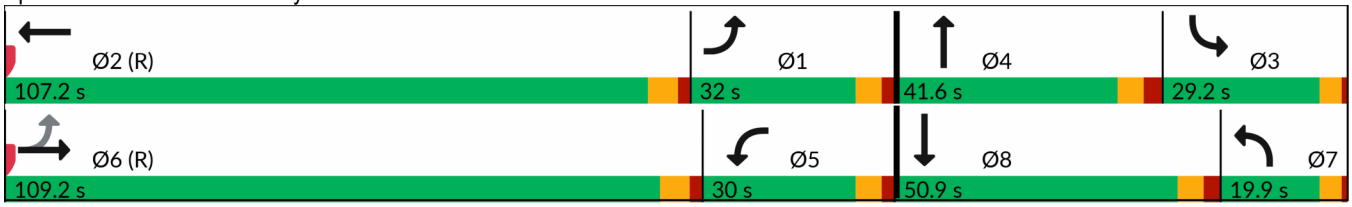
Splits and Phases: 11: Center of Bonita Springs Entrance & Bonita Beach Rd/Bonita Beach Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	258	1545	128	1052	64	60	301	36
Future Volume (vph)	258	1545	128	1052	64	60	301	36
Turn Type	pm+pt	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	1	6	5	2	7	4	3	8
Permitted Phases	6							
Detector Phase	1	6	5	2	7	4	3	8
Switch Phase								
Minimum Initial (s)	7.0	20.0	7.0	20.0	5.0	8.0	5.0	8.0
Minimum Split (s)	13.0	29.7	13.0	29.7	9.5	41.6	9.5	39.6
Total Split (s)	32.0	109.2	30.0	107.2	19.9	41.6	29.2	50.9
Total Split (%)	15.2%	52.0%	14.3%	51.0%	9.5%	19.8%	13.9%	24.2%
Yellow Time (s)	4.0	4.7	4.0	4.7	3.5	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	1.0	2.6	1.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.7	6.0	6.7	4.5	6.6	4.5	6.6
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	147.9	124.9	20.4	122.9	24.9	17.0	24.0	16.1
Actuated g/C Ratio	0.70	0.59	0.10	0.59	0.12	0.08	0.11	0.08
v/c Ratio	0.77	0.52	0.76	0.63	0.31	0.78	0.79	0.82
Control Delay (s/veh)	85.2	22.2	107.5	22.2	88.0	107.1	106.0	70.7
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	85.2	22.5	107.5	22.2	88.0	107.1	106.0	70.7
LOS	F	C	F	C	F	F	F	E
Approach Delay (s/veh)		31.4		30.0		100.6		94.1
Approach LOS		C		C		F		F

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 41.7	Intersection LOS: D
Intersection Capacity Utilization 85.8%	ICU Level of Service E
Analysis Period (min) 15	

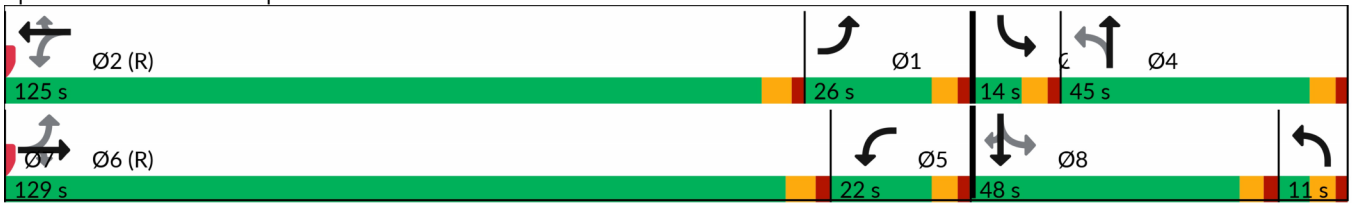
Splits and Phases: 14: Arroyal Rd & Bonita Beach Road/Bonita Beach Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	19	1805	98	29	1281	63	87	4	122	12	44
Future Volume (vph)	19	1805	98	29	1281	63	87	4	122	12	44
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4	3	8	
Permitted Phases	6		6	2		2	4		8		8
Detector Phase	1	6	6	5	2	2	7	4	3	8	8
Switch Phase											
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	7.0	5.0	7.0	7.0
Minimum Split (s)	11.0	38.7	38.7	11.0	50.7	50.7	11.0	45.0	11.0	48.0	48.0
Total Split (s)	26.0	129.0	129.0	22.0	125.0	125.0	11.0	45.0	14.0	48.0	48.0
Total Split (%)	12.4%	61.4%	61.4%	10.5%	59.5%	59.5%	5.2%	21.4%	6.7%	22.9%	22.9%
Yellow Time (s)	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.7	6.7	6.0	6.7	6.7	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	168.0	159.4	159.4	164.4	159.2	159.2	17.6	8.5	16.7	7.6	7.6
Actuated g/C Ratio	0.80	0.76	0.76	0.78	0.76	0.76	0.08	0.04	0.08	0.04	0.04
v/c Ratio	0.07	0.71	0.08	0.21	0.50	0.05	0.62	0.46	0.90	0.21	0.34
Control Delay (s/veh)	0.9	9.3	0.1	11.2	12.3	0.1	110.2	38.2	143.8	105.4	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	0.9	9.3	0.1	11.2	12.3	0.1	110.2	38.2	143.8	105.4	6.5
LOS	A	A	A	B	B	A	F	D	F	F	A
Approach Delay (s/veh)		8.7			11.7			84.8		107.4	
Approach LOS		A			B			F		F	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 17.6	Intersection LOS: B
Intersection Capacity Utilization 73.9%	ICU Level of Service D
Analysis Period (min) 15	

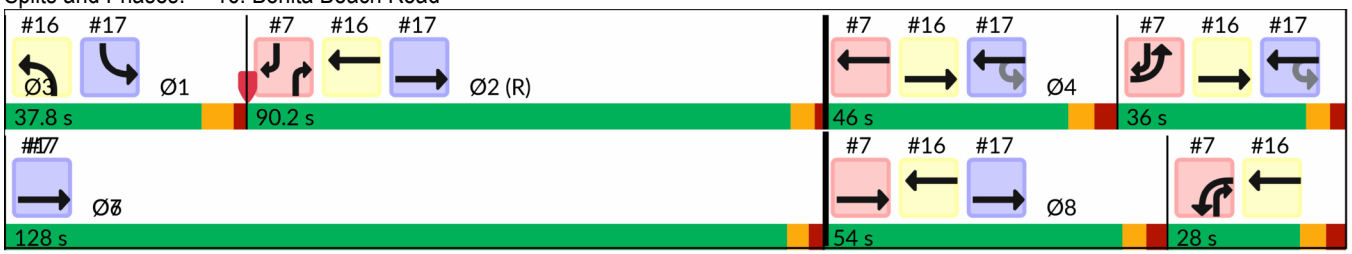
Splits and Phases: 15: Spanish Wells Blvd & Bonita Beach Rd



Lane Group	EBT	EBR	WBT	NBL	Ø2	Ø3	Ø4	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1498	193	1089	277						
Future Volume (vph)	1498	193	1089	277						
Turn Type	NA	Free	NA	Prot						
Protected Phases	3 4		2 7 8	1	2	3	4	6	7	8
Permitted Phases		Free								
Detector Phase	3 4		2 7 8	1						
Switch Phase										
Minimum Initial (s)				4.0	4.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)				24.8	23.0	11.4	36.5	23.5	12.1	36.1
Total Split (s)				37.8	90.2	36.0	46.0	128.0	28.0	54.0
Total Split (%)				18.0%	43%	17%	22%	61%	13%	26%
Yellow Time (s)				4.8	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)				2.0	1.0	2.4	3.5	2.0	3.1	3.1
Lost Time Adjust (s)				0.0						
Total Lost Time (s)				6.8						
Lead/Lag				Lead	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode				Max	C-Max	None	None	None	None	None
Act Effct Green (s)	75.6	210.0	167.2	31.0						
Actuated g/C Ratio	0.36	1.00	0.80	0.15						
v/c Ratio	0.48	0.07	0.26	0.53						
Control Delay (s/veh)	48.6	0.0	0.3	66.9						
Queue Delay	0.2	0.0	0.3	0.4						
Total Delay (s/veh)	48.8	0.0	0.6	67.3						
LOS	D	A	A	E						
Approach Delay (s/veh)	43.2		0.6	67.3						
Approach LOS	D		A	E						

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 51 (24%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay (s/veh): 30.2	Intersection LOS: C
Intersection Capacity Utilization 38.0%	ICU Level of Service A
Analysis Period (min) 15	

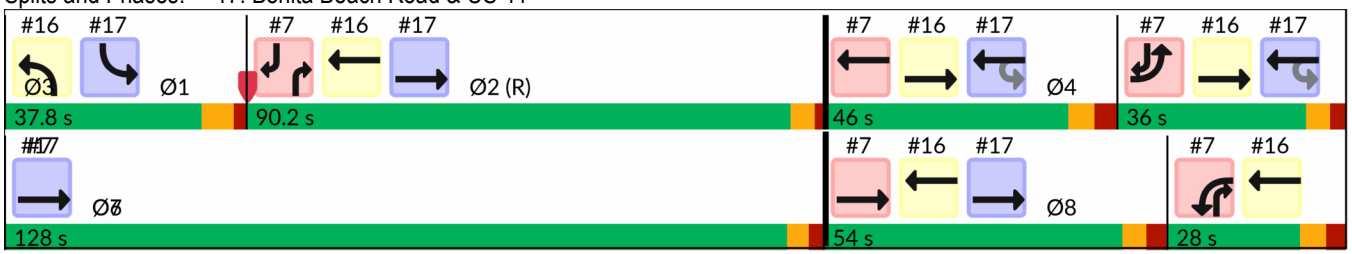
Splits and Phases: 16: Bonita Beach Road



Lane Group	EBT	WBT	WBR	SBL	Ø2	Ø3	Ø4	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1347	946	336	476						
Future Volume (vph)	1347	946	336	476						
Turn Type	NA	NA	Free	Prot						
Protected Phases	2 7 8	3 4		1	2	3	4	6	7	8
Permitted Phases			Free							
Detector Phase	2 7 8	3 4		1						
Switch Phase										
Minimum Initial (s)				4.0	4.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)				24.8	23.0	11.4	36.5	23.5	12.1	36.1
Total Split (s)				37.8	90.2	36.0	46.0	128.0	28.0	54.0
Total Split (%)				18.0%	43%	17%	22%	61%	13%	26%
Yellow Time (s)				4.8	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)				2.0	1.0	2.4	3.5	2.0	3.1	3.1
Lost Time Adjust (s)				0.0						
Total Lost Time (s)				6.8						
Lead/Lag				Lead	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode				Max	C-Max	None	None	None	None	None
Act Effct Green (s)	167.2	75.6	210.0	31.0						
Actuated g/C Ratio	0.80	0.36	1.00	0.15						
v/c Ratio	0.33	0.34	0.12	0.63						
Control Delay (s/veh)	1.0	71.3	0.1	48.3						
Queue Delay	0.4	0.1	0.0	1.3						
Total Delay (s/veh)	1.4	71.4	0.1	49.6						
LOS	A	E	A	D						
Approach Delay (s/veh)	1.4	52.7		49.6						
Approach LOS	A	D		D						

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 51 (24%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay (s/veh): 29.9	Intersection LOS: C
Intersection Capacity Utilization 44.0%	ICU Level of Service A
Analysis Period (min) 15	

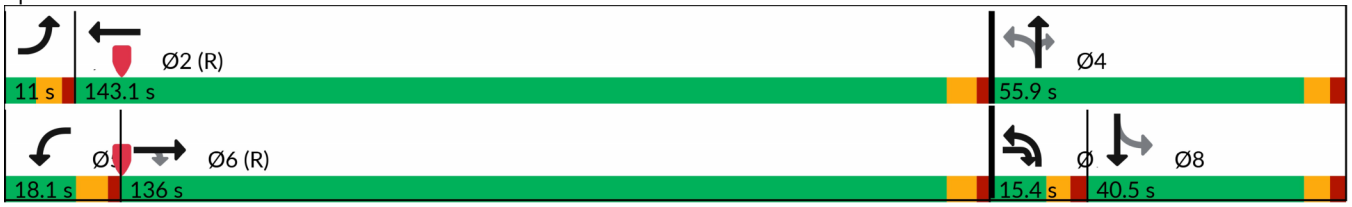
Splits and Phases: 17: Bonita Beach Road & US 41



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	10	1555	186	142	1400	183	18	234	26	17
Future Volume (vph)	10	1555	186	142	1400	183	18	234	26	17
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+pt	NA	Perm	Perm	NA
Protected Phases	1	6	7	5	2	7	4			8
Permitted Phases			6			4		4	8	
Detector Phase	1	6	7	5	2	7	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	24.0	5.0	5.0	24.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	42.7	11.5	11.7	30.7	11.5	42.5	42.5	40.5	40.5
Total Split (s)	11.0	136.0	15.4	18.1	143.1	15.4	55.9	55.9	40.5	40.5
Total Split (%)	5.2%	64.8%	7.3%	8.6%	68.1%	7.3%	26.6%	26.6%	19.3%	19.3%
Yellow Time (s)	4.0	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.7	6.5	6.7	6.7	6.5	6.5	6.5		6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead			Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	Max	Max
Act Effct Green (s)	5.0	129.7	145.3	11.0	143.0	49.4	49.4	49.4		34.0
Actuated g/C Ratio	0.02	0.62	0.69	0.05	0.68	0.24	0.24	0.24		0.16
v/c Ratio	0.24	0.73	0.17	0.80	0.59	0.57	0.04	0.55		0.20
Control Delay (s/veh)	114.1	30.4	4.3	121.4	13.9	77.3	62.6	49.7		75.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	114.1	30.4	4.3	121.4	13.9	77.3	62.6	49.7		75.5
LOS	F	C	A	F	B	E	E	D		E
Approach Delay (s/veh)		28.1			23.7		61.9			75.5
Approach LOS		C			C		E			E

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay (s/veh): 30.8	Intersection LOS: C
Intersection Capacity Utilization 80.4%	ICU Level of Service D
Analysis Period (min) 15	

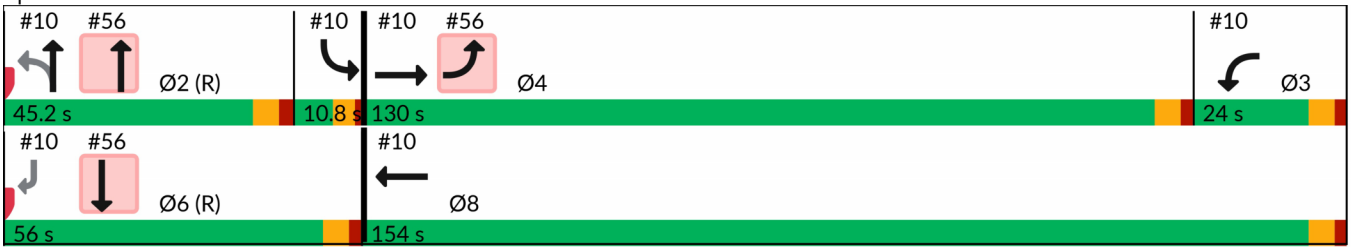
Splits and Phases: 20: Bonita Beach Rd



Lane Group	EBL	NBT	SBT	Ø1	Ø3	Ø8
Lane Configurations						
Traffic Volume (vph)	346	15	274			
Future Volume (vph)	346	15	274			
Turn Type	Prot	NA	NA			
Protected Phases	4	2	6	1	3	8
Permitted Phases						
Detector Phase	4	2	6			
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	9.5	24.0	24.0
Total Split (s)	130.0	45.2	56.0	10.8	24.0	154.0
Total Split (%)	61.9%	21.5%	26.7%	5%	11%	73%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			
Total Lost Time (s)	6.0	6.0	6.0			
Lead/Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	124.0	54.4	60.9			
Actuated g/C Ratio	0.59	0.26	0.29			
v/c Ratio	0.35	0.03	0.28			
Control Delay (s/veh)	27.8	101.0	55.4			
Queue Delay	3.7	0.0	0.1			
Total Delay (s/veh)	31.5	101.0	55.4			
LOS	C	F	E			
Approach Delay (s/veh)	31.5	101.0	55.4			
Approach LOS	C	F	E			

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 177 (84%), Referenced to phase 2:NBTL and 6:SBR, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 43.5	Intersection LOS: D
Intersection Capacity Utilization 36.7%	ICU Level of Service A
Analysis Period (min) 15	

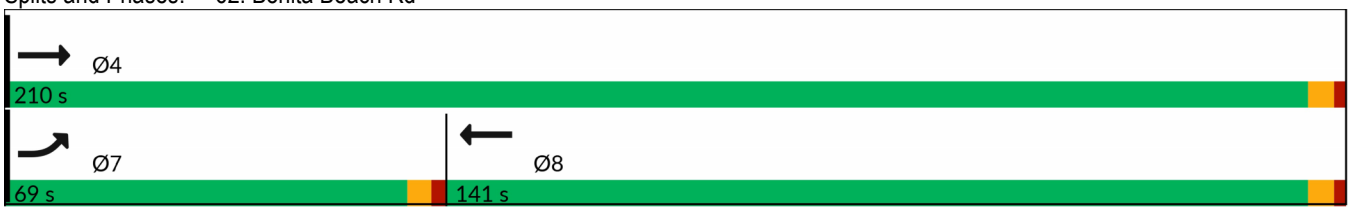
Splits and Phases: 56: Main St/Windsor Rd



Lane Group	EBL	EBT	WBT
Lane Configurations			
Traffic Volume (vph)	346	1469	1556
Future Volume (vph)	346	1469	1556
Turn Type	Prot	NA	NA
Protected Phases	7	4	8
Permitted Phases			
Detector Phase	7	4	8
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0
Total Split (s)	69.0	210.0	141.0
Total Split (%)	32.9%	100.0%	67.1%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes
Recall Mode	None	None	None
Act Effct Green (s)	48.8	210.0	149.2
Actuated g/C Ratio	0.23	1.00	0.71
v/c Ratio	0.89	0.44	0.65
Control Delay (s/veh)	82.0	0.3	13.0
Queue Delay	3.3	0.1	0.5
Total Delay (s/veh)	85.3	0.4	13.6
LOS	F	A	B
Approach Delay (s/veh)		16.6	13.6
Approach LOS		B	B

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 163 (78%), Referenced to phase 2: and 6:, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 15.2	Intersection LOS: B
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

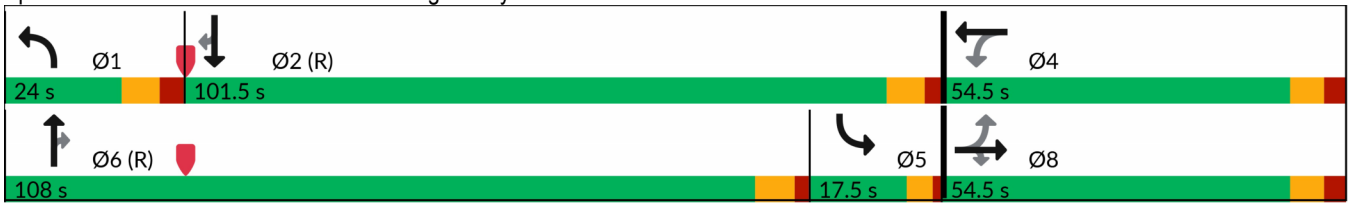
Splits and Phases: 62: Bonita Beach Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	207	21	73	66	41	62	3060	26	19	2802	144
Future Volume (vph)	207	21	73	66	41	62	3060	26	19	2802	144
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4	1	6		5	2	
Permitted Phases	8		8	4				6			2
Detector Phase	8	8	8	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5	13.2	25.2	25.2	9.5	25.2	25.2
Total Split (s)	54.5	54.5	54.5	54.5	54.5	24.0	108.0	108.0	17.5	101.5	101.5
Total Split (%)	30.3%	30.3%	30.3%	30.3%	30.3%	13.3%	60.0%	60.0%	9.7%	56.4%	56.4%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.2	5.2	5.2	3.5	5.2	5.2
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	8.2	7.2	7.2	4.5	7.2	7.2
Lead/Lag						Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.9	34.9	34.9	34.9	34.9	11.9	119.9	119.9	10.2	110.3	110.3
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.07	0.67	0.67	0.06	0.61	0.61
v/c Ratio	0.84	0.06	0.19	0.25	0.19	0.56	0.95	0.02	0.20	0.94	0.15
Control Delay (s/veh)	96.1	55.4	2.1	61.3	46.0	99.1	36.3	0.0	69.2	28.0	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	96.1	55.4	2.1	61.3	46.0	99.1	36.3	0.0	69.2	28.0	4.0
LOS	F	E	A	E	D	F	D	A	E	C	A
Approach Delay (s/veh)		70.5			53.9		37.3			27.1	
Approach LOS		E			D		D			C	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 34.5	Intersection LOS: C
Intersection Capacity Utilization 89.5%	ICU Level of Service E
Analysis Period (min) 15	

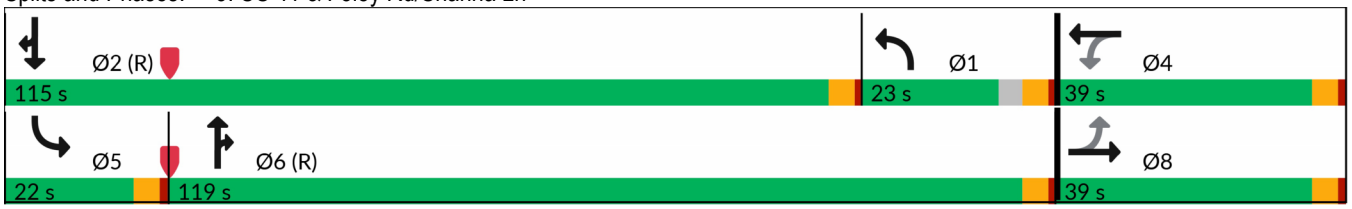
Splits and Phases: 1: US 41 & Woods Edge Pkwy



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	22	0	37	2	25	3199	60	141	2946	45
Future Volume (vph)	22	0	37	2	25	3199	60	141	2946	45
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	Prot	NA	Prot
Protected Phases		8		4	1	6	6	5	2	2
Permitted Phases	8		4							
Detector Phase	8	8	4	4	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	39.0	39.0	39.0	39.0	23.0	119.0	119.0	22.0	115.0	115.0
Total Split (%)	21.7%	21.7%	21.7%	21.7%	12.8%	66.1%	66.1%	12.2%	63.9%	63.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.9	10.9	10.9	10.9	15.4	134.7	134.7	20.9	144.5	144.5
Actuated g/C Ratio	0.06	0.06	0.06	0.06	0.09	0.75	0.75	0.12	0.80	0.80
v/c Ratio	0.41	0.25	0.60	0.47	0.17	0.88	0.05	0.70	0.74	0.04
Control Delay (s/veh)	101.1	2.3	116.9	24.2	55.4	13.4	2.9	76.2	12.8	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	101.1	2.3	116.9	24.2	55.4	13.4	2.9	76.2	12.8	4.8
LOS	F	A	F	C	E	B	A	E	B	A
Approach Delay (s/veh)		27.5		54.6		13.5			15.6	
Approach LOS		C		D		B			B	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 154 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay (s/veh): 15.4	Intersection LOS: B
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	

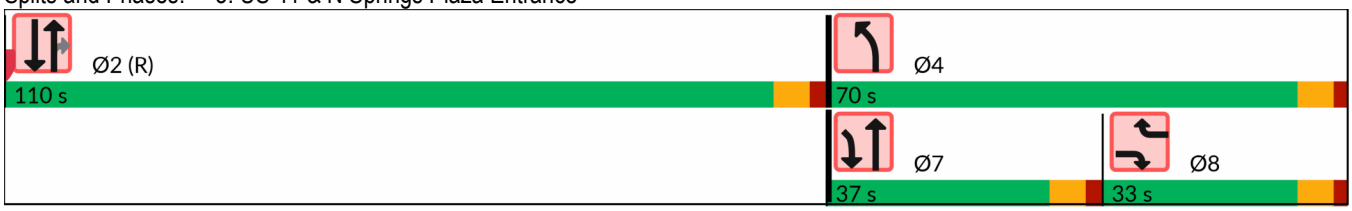
Splits and Phases: 3: US 41 & Foley Rd/Shanna Ln



Lane Group	WBR2	NBL	NBT	NBR	SBT	SER
Lane Configurations						
Traffic Volume (vph)	105	385	2843	70	2763	393
Future Volume (vph)	105	385	2843	70	2763	393
Turn Type	Prot	Prot	NA	custom	NA	Prot
Protected Phases	8	4	2 7		2	7
Permitted Phases				2		
Detector Phase	8	4	2 7	2	2	7
Switch Phase						
Minimum Initial (s)	5.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.8	10.8		24.8	24.8	10.8
Total Split (s)	33.0	70.0		110.0	110.0	37.0
Total Split (%)	18.3%	38.9%		61.1%	61.1%	20.6%
Yellow Time (s)	4.8	4.8		4.8	4.8	4.8
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8	6.8
Lead/Lag	Lag					Lead
Lead-Lag Optimize?	Yes					Yes
Recall Mode	None	None		C-Max	C-Max	Max
Act Effct Green (s)	11.0	48.0	155.4	118.4	118.4	30.2
Actuated g/C Ratio	0.06	0.27	0.86	0.66	0.66	0.17
v/c Ratio	0.69	0.43	0.68	0.07	0.92	0.87
Control Delay (s/veh)	57.8	55.9	0.7	3.6	22.5	84.0
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0
Total Delay (s/veh)	57.8	55.9	0.7	3.6	22.8	84.0
LOS	E	E	A	A	C	F
Approach Delay (s/veh)			7.2		22.8	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 158 (88%), Referenced to phase 2:NBSB, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay (s/veh): 19.3	Intersection LOS: B
Intersection Capacity Utilization 91.2%	ICU Level of Service F
Analysis Period (min) 15	

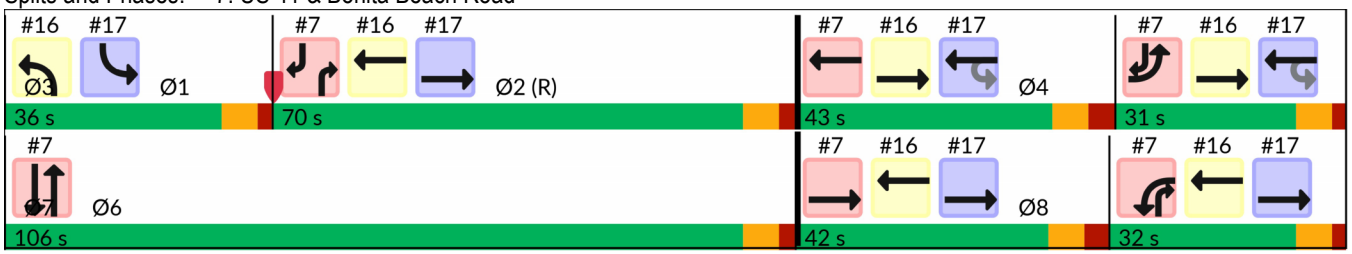
Splits and Phases: 5: US 41 & N Springs Plaza Entrance



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR	Ø1	Ø2
Lane Configurations										
Traffic Volume (vph)	608	751	471	819	2474	474	2430	618		
Future Volume (vph)	608	751	471	819	2474	474	2430	618		
Turn Type	Prot	NA	Prot	NA	NA	custom	NA	custom		
Protected Phases	3	8	7	4	6	2 7	6	2 3	1	2
Permitted Phases										
Detector Phase	3	8	7	4	6	2 7	6	2 3		
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	4.0		4.0		4.0	4.0
Minimum Split (s)	11.8	36.9	12.1	37.3	24.8		24.8		24.8	24.8
Total Split (s)	31.0	42.0	32.0	43.0	106.0		106.0		36.0	70.0
Total Split (%)	17.2%	23.3%	17.8%	23.9%	58.9%		58.9%		20%	39%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8		4.8		4.8	4.8
All-Red Time (s)	2.0	3.1	2.0	3.5	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0			
Total Lost Time (s)	6.8	7.9	6.8	8.3	6.8		6.8			
Lead/Lag	Lag	Lead	Lag	Lead					Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes	Yes
Recall Mode	None	None	None	None	Max		Max		Max	C-Max
Act Effct Green (s)	24.2	34.1	25.2	34.7	99.2	88.4	99.2	87.4		
Actuated g/C Ratio	0.13	0.19	0.14	0.19	0.55	0.49	0.55	0.49		
v/c Ratio	0.90	0.76	0.97	0.81	0.86	0.61	0.85	0.78		
Control Delay (s/veh)	54.9	31.1	69.1	30.4	23.0	18.3	27.0	27.0		
Queue Delay	47.6	3.2	40.7	2.5	2.0	0.1	31.1	0.8		
Total Delay (s/veh)	102.5	34.3	109.8	33.0	25.1	18.3	58.2	27.8		
LOS	F	C	F	C	C	B	E	C		
Approach Delay (s/veh)		64.8		61.0	24.0		52.0			
Approach LOS		E		E	C		D			

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 48 (27%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 45.8	Intersection LOS: D
Intersection Capacity Utilization 91.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: US 41 & Bonita Beach Road



Lane Group	EBR2	NBT	SBL	SBT	NWR
Lane Configurations					
Traffic Volume (vph)	84	3048	552	2993	579
Future Volume (vph)	84	3048	552	2993	579
Turn Type	Perm	NA	Prot	NA	Prot
Protected Phases		2	4	2 4	7
Permitted Phases	4				
Detector Phase	4	2	4	2 4	7
Switch Phase					
Minimum Initial (s)	5.0	4.0	5.0		5.0
Minimum Split (s)	36.9	25.7	36.9		11.8
Total Split (s)	45.0	135.0	45.0		45.0
Total Split (%)	25.0%	75.0%	25.0%		25.0%
Yellow Time (s)	4.8	4.8	4.8		4.8
All-Red Time (s)	3.1	2.9	3.1		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	7.9	7.7	7.9		6.8
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	None		None
Act Effct Green (s)	37.1	127.3	37.1	180.0	38.2
Actuated g/C Ratio	0.21	0.71	0.21	1.00	0.21
v/c Ratio	0.24	0.91	0.55	0.79	0.97
Control Delay (s/veh)	42.4	7.2	95.5	17.8	111.8
Queue Delay	0.0	25.0	0.0	0.2	0.6
Total Delay (s/veh)	42.4	32.2	95.5	18.0	112.4
LOS	D	C	F	B	F
Approach Delay (s/veh)		32.2		29.9	
Approach LOS		C		C	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 178 (99%), Referenced to phase 2:NBSB, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 37.5	Intersection LOS: D
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

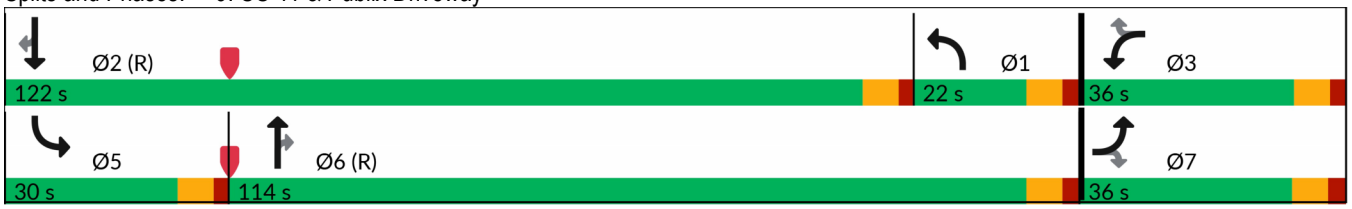
Splits and Phases: 8: US 41 & Crown Lake Blvd



Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	490	58	13	322	84	3680	13	305	3532	494
Future Volume (vph)	490	58	13	322	84	3680	13	305	3532	494
Turn Type	Prot	Perm	Prot	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7		3		1	6		5	2	
Permitted Phases		7		3			6			2
Detector Phase	7	7	3	3	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.1	12.1	12.0	12.0	11.8	24.8	24.8	11.8	24.8	24.8
Total Split (s)	36.0	36.0	36.0	36.0	22.0	114.0	114.0	30.0	122.0	122.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	12.2%	63.3%	63.3%	16.7%	67.8%	67.8%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.3	2.3	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.1	7.1	7.0	7.0	6.8	6.8	6.8	6.8	6.8	6.8
Lead/Lag					Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	21.7	23.7	23.8	23.8	15.2	114.9	114.9	20.7	120.4	120.4
Actuated g/C Ratio	0.12	0.13	0.13	0.13	0.08	0.64	0.64	0.12	0.67	0.67
v/c Ratio	0.82	0.20	0.05	0.85	0.57	0.93	0.01	0.78	0.84	0.44
Control Delay (s/veh)	98.5	24.0	47.0	24.8	74.2	19.6	0.0	91.3	25.5	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	30.8	0.0	0.0	2.1	0.0
Total Delay (s/veh)	98.5	24.1	47.0	24.8	74.2	50.3	0.0	91.3	27.6	8.3
LOS	F	C	D	C	E	D	A	F	C	A
Approach Delay (s/veh)						50.7			29.9	
Approach LOS						D			C	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 10 (6%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 42.2	Intersection LOS: D
Intersection Capacity Utilization 97.4%	ICU Level of Service F
Analysis Period (min) 15	

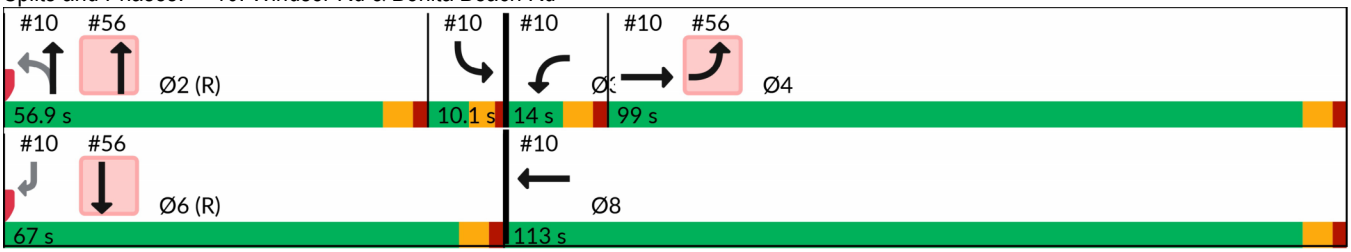
Splits and Phases: 9: US 41 & Publix Driveway



Lane Group	EBT	WBL	WBT	NBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1450	32	1688	0	11	392
Future Volume (vph)	1450	32	1688	0	11	392
Turn Type	NA	Prot	NA	NA	Prot	Perm
Protected Phases	4	3	8	2	1	
Permitted Phases						6
Detector Phase	4	3	8	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	11.0	22.5	22.5	9.5	22.5
Total Split (s)	99.0	14.0	113.0	56.9	10.1	67.0
Total Split (%)	55.0%	7.8%	62.8%	31.6%	5.6%	37.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	4.5	6.0
Lead/Lag	Lag	Lead		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	94.5	7.4	105.6	58.4	5.6	62.4
Actuated g/C Ratio	0.53	0.04	0.59	0.32	0.03	0.35
v/c Ratio	0.82	0.45	0.84	0.09	0.20	0.67
Control Delay (s/veh)	72.2	123.3	11.8	1.5	49.2	14.6
Queue Delay	1.5	0.0	0.6	0.0	0.0	0.5
Total Delay (s/veh)	73.7	123.3	12.3	1.5	49.2	15.2
LOS	E	F	B	A	D	B
Approach Delay (s/veh)	73.7		14.4	1.5		
Approach LOS	E		B	A		

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 61 (34%), Referenced to phase 2:NBTL and 6:SBR, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay (s/veh): 38.1	Intersection LOS: D
Intersection Capacity Utilization 91.0%	ICU Level of Service F
Analysis Period (min) 15	

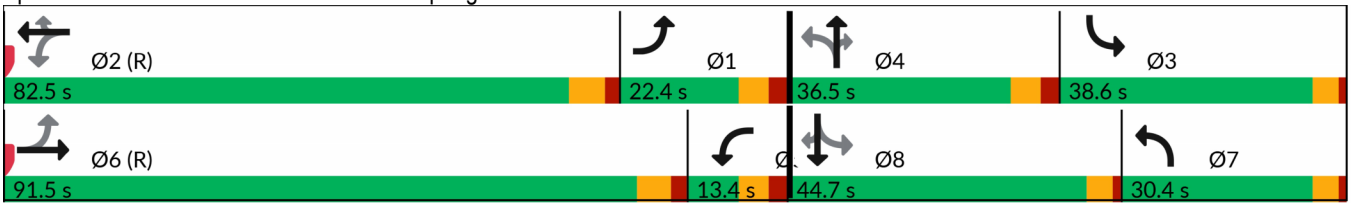
Splits and Phases: 10: Windsor Rd & Bonita Beach Rd



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	119	1380	80	1519	193	29	23	67	192	19	197
Future Volume (vph)	119	1380	80	1519	193	29	23	67	192	19	197
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		7	4		3	8	
Permitted Phases	6		2		2	4		4	8		8
Detector Phase	1	6	5	2	2	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	5.0	20.0	5.0	20.0	20.0	5.0	7.0	7.0	5.0	5.0	5.0
Minimum Split (s)	23.4	93.6	14.4	84.6	84.6	32.4	37.5	37.5	39.6	39.6	39.6
Total Split (s)	22.4	91.5	13.4	82.5	82.5	30.4	36.5	36.5	38.6	44.7	44.7
Total Split (%)	12.4%	50.8%	7.4%	45.8%	45.8%	16.9%	20.3%	20.3%	21.4%	24.8%	24.8%
Yellow Time (s)	4.0	4.7	4.0	4.7	4.7	3.5	4.0	4.0	3.5	3.5	3.5
All-Red Time (s)	2.2	2.0	2.2	2.0	2.0	1.0	2.5	2.5	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.7	6.2	6.7	6.7	4.5	6.5	6.5	4.5	4.5	4.5
Lead/Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	140.4	126.8	125.2	117.8	117.8	16.3	8.6	8.6	28.9	28.9	20.7
Actuated g/C Ratio	0.78	0.70	0.70	0.65	0.65	0.09	0.05	0.05	0.16	0.16	0.12
v/c Ratio	0.42	0.57	0.35	0.67	0.18	0.28	0.28	0.31	0.45	0.45	0.56
Control Delay (s/veh)	23.1	1.0	13.6	21.9	1.5	69.9	90.1	3.5	73.8	73.6	14.0
Queue Delay	0.0	0.4	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.1	1.4	13.6	22.4	1.5	69.9	90.1	3.5	73.8	73.6	14.0
LOS	C	A	B	C	A	E	F	A	E	E	B
Approach Delay (s/veh)		3.1		19.8			36.6			44.9	
Approach LOS		A		B			D			D	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 190	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay (s/veh): 16.4	Intersection LOS: B
Intersection Capacity Utilization 75.6%	ICU Level of Service D
Analysis Period (min) 15	

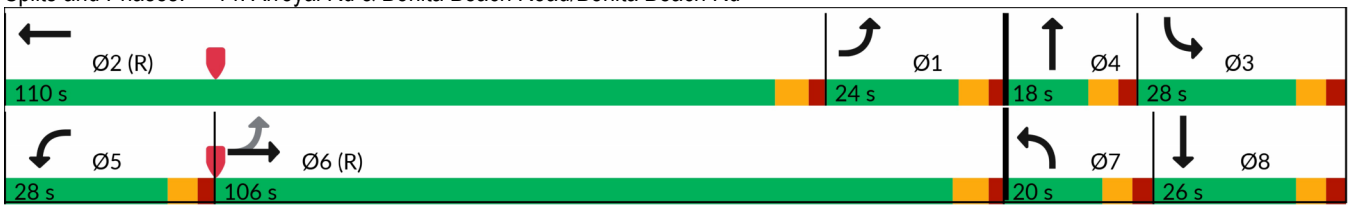
Splits and Phases: 11: Center of Bonita Springs Entrance & Bonita Beach Rd/Bonita Beach Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	212	1507	173	1620	55	42	343	44
Future Volume (vph)	212	1507	173	1620	55	42	343	44
Turn Type	pm+pt	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	1	6	5	2	7	4	3	8
Permitted Phases	6							
Detector Phase	1	6	5	2	7	4	3	8
Switch Phase								
Minimum Initial (s)	7.0	20.0	7.0	20.0	8.0	8.0	8.0	8.0
Minimum Split (s)	13.0	29.7	13.0	29.7	14.6	39.6	14.6	39.6
Total Split (s)	24.0	106.0	28.0	110.0	20.0	18.0	28.0	26.0
Total Split (%)	13.3%	58.9%	15.6%	61.1%	11.1%	10.0%	15.6%	14.4%
Yellow Time (s)	4.0	4.7	4.0	4.7	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.7	6.0	6.7	6.6	6.6	6.6	6.6
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	103.0	102.3	20.3	104.5	10.4	11.0	20.6	24.1
Actuated g/C Ratio	0.57	0.57	0.11	0.58	0.06	0.06	0.11	0.13
v/c Ratio	0.98	0.54	0.88	0.99	0.56	0.92	0.89	0.70
Control Delay (s/veh)	124.9	25.6	125.5	35.8	102.9	108.2	110.5	67.9
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	124.9	26.0	125.5	35.8	102.9	108.2	110.5	67.9
LOS	F	C	F	D	F	F	F	E
Approach Delay (s/veh)		38.1		43.1		106.6		94.8
Approach LOS		D		D		F		F

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay (s/veh): 49.9	Intersection LOS: D
Intersection Capacity Utilization 107.9%	ICU Level of Service G
Analysis Period (min) 15	

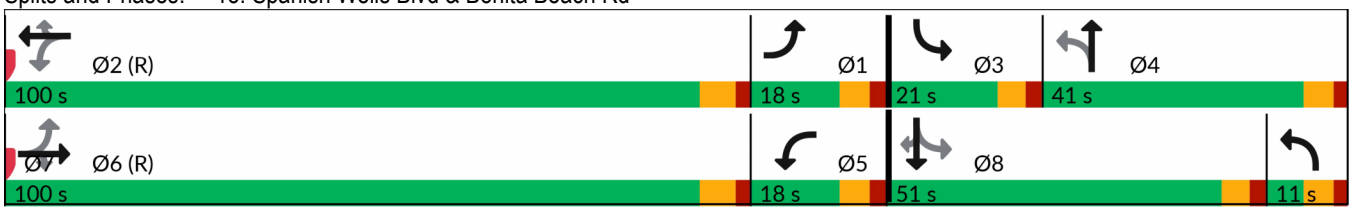
Splits and Phases: 14: Arroyal Rd & Bonita Beach Road/Bonita Beach Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	66	1773	108	44	1964	131	111	19	132	27	76
Future Volume (vph)	66	1773	108	44	1964	131	111	19	132	27	76
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4	3	8	
Permitted Phases	6		6	2		2	4		8		8
Detector Phase	1	6	6	5	2	2	7	4	3	8	8
Switch Phase											
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	7.0	5.0	7.0	7.0
Minimum Split (s)	11.0	38.7	38.7	11.0	50.7	50.7	11.0	45.0	11.0	48.0	48.0
Total Split (s)	18.0	100.0	100.0	18.0	100.0	100.0	11.0	41.0	21.0	51.0	51.0
Total Split (%)	10.0%	55.6%	55.6%	10.0%	55.6%	55.6%	6.1%	22.8%	11.7%	28.3%	28.3%
Yellow Time (s)	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.7	6.7	6.0	6.7	6.7	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	131.2	124.7	124.7	130.0	122.5	122.5	17.4	9.8	16.2	8.6	8.6
Actuated g/C Ratio	0.73	0.69	0.69	0.72	0.68	0.68	0.10	0.05	0.09	0.05	0.05
v/c Ratio	0.63	0.77	0.10	0.32	0.85	0.12	0.68	0.52	0.86	0.33	0.48
Control Delay (s/veh)	56.3	15.2	0.4	23.1	27.4	2.6	97.6	40.9	119.6	92.9	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.3	15.2	0.4	23.1	27.4	2.6	97.6	40.9	119.6	92.9	17.9
LOS	E	B	A	C	C	A	F	D	F	F	B
Approach Delay (s/veh)		15.7			25.7			75.6		83.6	
Approach LOS		B			C			E		F	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 26.4	Intersection LOS: C
Intersection Capacity Utilization 81.9%	ICU Level of Service D
Analysis Period (min) 15	

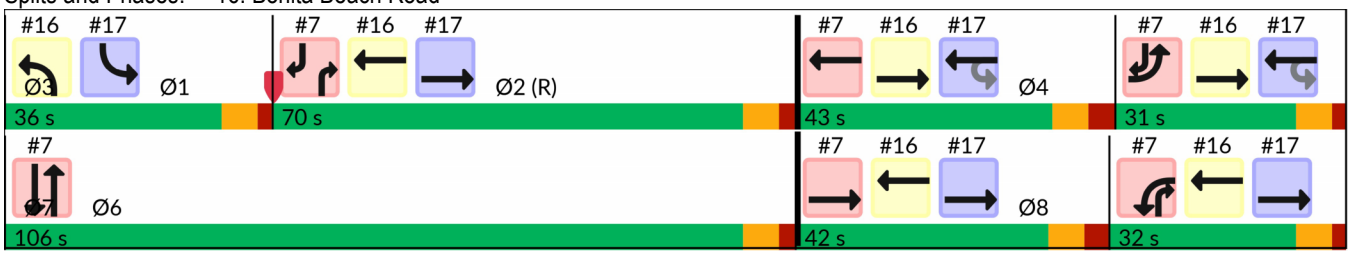
Splits and Phases: 15: Spanish Wells Blvd & Bonita Beach Rd



Lane Group	EBT	EBR	WBT	NBL	Ø2	Ø3	Ø4	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1359	299	1437	385						
Future Volume (vph)	1359	299	1437	385						
Turn Type	NA	Free	NA	Prot						
Protected Phases	3 4		2 7 8	1	2	3	4	6	7	8
Permitted Phases		Free								
Detector Phase	3 4		2 7 8	1						
Switch Phase										
Minimum Initial (s)				4.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)				24.8	24.8	11.8	37.3	24.8	12.1	36.9
Total Split (s)				36.0	70.0	31.0	43.0	106.0	32.0	42.0
Total Split (%)				20.0%	39%	17%	24%	59%	18%	23%
Yellow Time (s)				4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)				2.0	2.0	2.0	3.5	2.0	2.0	3.1
Lost Time Adjust (s)				0.0						
Total Lost Time (s)				6.8						
Lead/Lag				Lead	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode				Max	C-Max	None	None	Max	None	None
Act Effct Green (s)	67.2	180.0	137.2	29.2						
Actuated g/C Ratio	0.37	1.00	0.76	0.16						
v/c Ratio	0.42	0.11	0.36	0.67						
Control Delay (s/veh)	61.0	0.1	1.0	88.4						
Queue Delay	0.2	0.0	0.7	0.0						
Total Delay (s/veh)	61.2	0.1	1.6	88.4						
LOS	E	A	A	F						
Approach Delay (s/veh)	50.2		1.6	88.4						
Approach LOS	D		A	F						

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 48 (27%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 34.4	Intersection LOS: C
Intersection Capacity Utilization 49.1%	ICU Level of Service A
Analysis Period (min) 15	

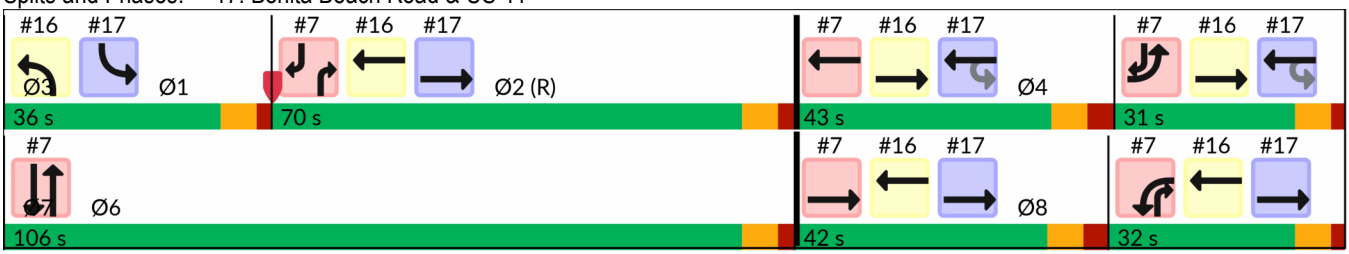
Splits and Phases: 16: Bonita Beach Road



Lane Group	EBT	WBT	WBR	SBL	Ø2	Ø3	Ø4	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1226	1291	579	552						
Future Volume (vph)	1226	1291	579	552						
Turn Type	NA	NA	Free	Prot						
Protected Phases	2 7 8	3 4		1	2	3	4	6	7	8
Permitted Phases			Free							
Detector Phase	2 7 8	3 4		1						
Switch Phase										
Minimum Initial (s)				4.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)				24.8	24.8	11.8	37.3	24.8	12.1	36.9
Total Split (s)				36.0	70.0	31.0	43.0	106.0	32.0	42.0
Total Split (%)				20.0%	39%	17%	24%	59%	18%	23%
Yellow Time (s)				4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)				2.0	2.0	2.0	3.5	2.0	2.0	3.1
Lost Time Adjust (s)				0.0						
Total Lost Time (s)				6.8						
Lead/Lag				Lead	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode				Max	C-Max	None	None	Max	None	None
Act Effct Green (s)	137.2	67.2	180.0	29.2						
Actuated g/C Ratio	0.76	0.37	1.00	0.16						
v/c Ratio	0.31	0.45	0.20	0.66						
Control Delay (s/veh)	0.8	61.4	0.1	47.0						
Queue Delay	0.4	0.2	0.0	0.0						
Total Delay (s/veh)	1.2	61.5	0.1	47.0						
LOS	A	E	A	D						
Approach Delay (s/veh)	1.2	42.5		47.0						
Approach LOS	A	D		D						

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 48 (27%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 29.3	Intersection LOS: C
Intersection Capacity Utilization 44.6%	ICU Level of Service A
Analysis Period (min) 15	

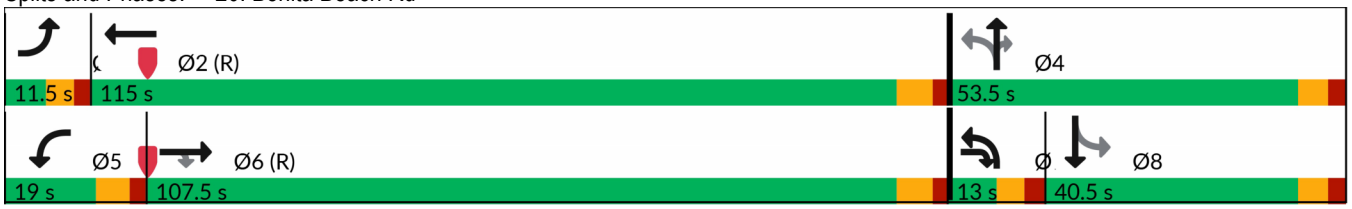
Splits and Phases: 17: Bonita Beach Road & US 41



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	1	1580	163	171	1901	155	10	250	18	11
Future Volume (vph)	1	1580	163	171	1901	155	10	250	18	11
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+pt	NA	Perm	Perm	NA
Protected Phases	1	6	7	5	2	7	4			8
Permitted Phases			6			4		4	8	
Detector Phase	1	6	7	5	2	7	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	24.0	5.0	5.0	24.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.5	42.7	11.5	11.7	30.7	11.5	42.5	42.5	40.5	40.5
Total Split (s)	11.5	107.5	13.0	19.0	115.0	13.0	53.5	53.5	40.5	40.5
Total Split (%)	6.4%	59.7%	7.2%	10.6%	63.9%	7.2%	29.7%	29.7%	22.5%	22.5%
Yellow Time (s)	4.0	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.7	6.5	6.7	6.7	6.5	6.5	6.5		6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead			Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	Max	Max
Act Effct Green (s)	5.0	101.3	114.5	11.8	117.6	47.0	47.0	47.0		34.0
Actuated g/C Ratio	0.03	0.56	0.64	0.07	0.65	0.26	0.26	0.26		0.19
v/c Ratio	0.02	0.84	0.16	0.79	0.86	0.44	0.02	0.54		0.12
Control Delay (s/veh)	86.0	37.4	5.7	120.0	10.6	59.2	49.8	39.4		54.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	86.0	37.4	5.7	120.0	10.6	59.2	49.8	39.4		54.7
LOS	F	D	A	F	B	E	D	D		D
Approach Delay (s/veh)		34.5			19.6		47.1			54.7
Approach LOS		C			B		D			D

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 28.6	Intersection LOS: C
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

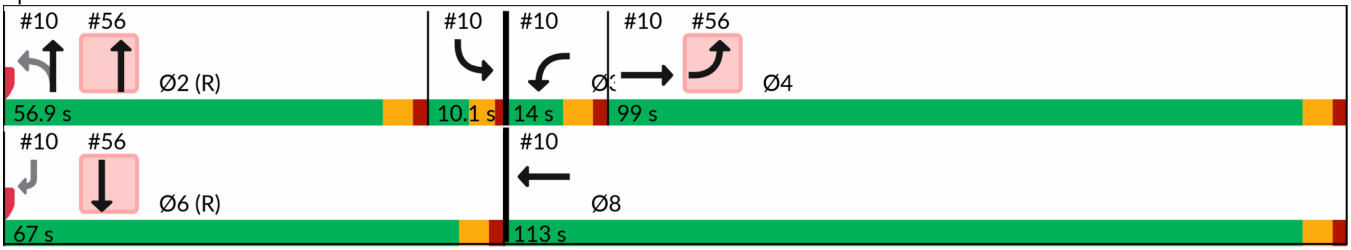
Splits and Phases: 20: Bonita Beach Rd



Lane Group	EBL	NBT	SBT	Ø1	Ø3	Ø8
Lane Configurations						
Traffic Volume (vph)	381	29	403			
Future Volume (vph)	381	29	403			
Turn Type	Prot	NA	NA			
Protected Phases	4	2	6	1	3	8
Permitted Phases						
Detector Phase	4	2	6			
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	11.0	22.5
Total Split (s)	99.0	56.9	67.0	10.1	14.0	113.0
Total Split (%)	55.0%	31.6%	37.2%	6%	8%	63%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			
Total Lost Time (s)	6.0	6.0	6.0			
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	94.5	58.4	62.4			
Actuated g/C Ratio	0.53	0.32	0.35			
v/c Ratio	0.43	0.05	0.35			
Control Delay (s/veh)	63.4	56.9	45.4			
Queue Delay	58.1	4.6	0.1			
Total Delay (s/veh)	121.5	61.4	45.5			
LOS	F	E	D			
Approach Delay (s/veh)	121.5	61.4	45.5			
Approach LOS	F	E	D			

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 61 (34%), Referenced to phase 2:NBTL and 6:SBR, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay (s/veh): 81.7	Intersection LOS: F
Intersection Capacity Utilization 42.2%	ICU Level of Service A
Analysis Period (min) 15	

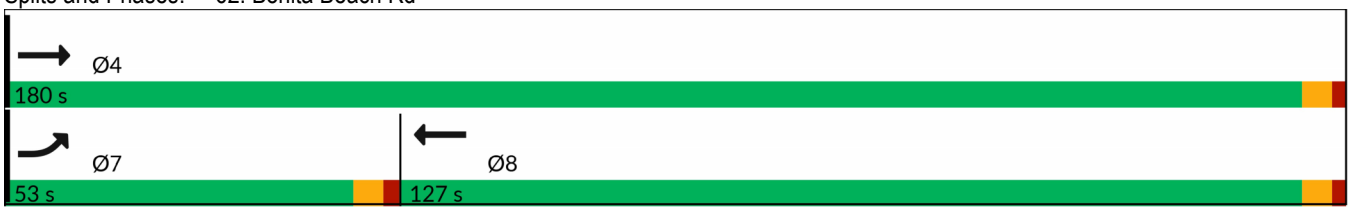
Splits and Phases: 56: Main St/Windsor Rd



Lane Group	EBL	EBT	WBT
Lane Configurations			
Traffic Volume (vph)	381	1471	2086
Future Volume (vph)	381	1471	2086
Turn Type	Prot	NA	NA
Protected Phases	7	4	8
Permitted Phases			
Detector Phase	7	4	8
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0
Total Split (s)	53.0	180.0	127.0
Total Split (%)	29.4%	100.0%	70.6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes
Recall Mode	None	None	None
Act Effct Green (s)	43.9	180.0	124.1
Actuated g/C Ratio	0.24	1.00	0.69
v/c Ratio	0.93	0.44	0.90
Control Delay (s/veh)	76.5	0.2	13.2
Queue Delay	53.4	0.9	0.0
Total Delay (s/veh)	129.9	1.1	13.2
LOS	F	A	B
Approach Delay (s/veh)		27.6	13.2
Approach LOS		C	B

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 67 (37%), Referenced to phase 2: and 6:, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 20.0	Intersection LOS: B
Intersection Capacity Utilization 88.8%	ICU Level of Service E
Analysis Period (min) 15	

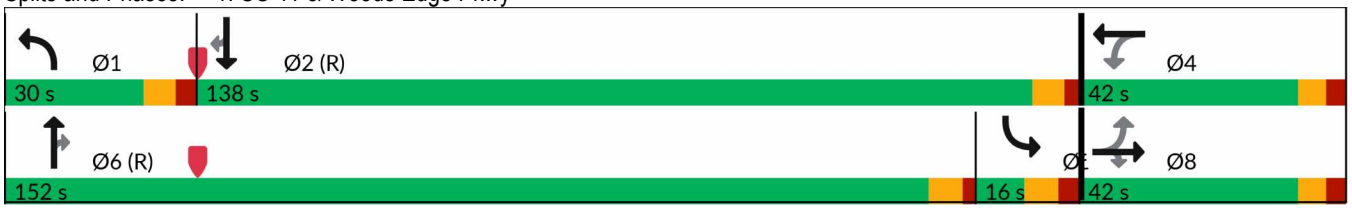
Splits and Phases: 62: Bonita Beach Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	209	27	86	83	11	67	3816	39	8	2447	81
Future Volume (vph)	209	27	86	83	11	67	3816	39	8	2447	81
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		8			4	1	6		5	2	
Permitted Phases	8		8	4				6			2
Detector Phase	8	8	8	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	54.5	54.5	54.5	52.5	52.5	15.0	49.0	49.0	13.2	48.0	48.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	30.0	152.0	152.0	16.0	138.0	138.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%	14.3%	72.4%	72.4%	7.6%	65.7%	65.7%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.2	5.2	5.2	5.2	5.2	5.2
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	8.2	7.2	7.2	8.2	7.2	7.2
Lead/Lag						Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.4	34.4	34.4	34.4	34.4	13.9	154.5	154.5	6.6	138.8	138.8
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.07	0.74	0.74	0.03	0.66	0.66
v/c Ratio	0.97	0.10	0.26	0.38	0.07	0.62	1.07	0.03	0.14	0.76	0.08
Control Delay (s/veh)	136.6	75.7	8.4	83.9	52.1	117.0	66.7	0.5	81.1	12.7	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	136.6	75.7	8.4	83.9	52.1	117.0	66.7	0.5	81.1	12.7	2.0
LOS	F	E	A	F	D	F	E	A	F	B	A
Approach Delay (s/veh)		97.2			77.9		66.9			12.6	
Approach LOS		F			E		E			B	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay (s/veh): 48.5	Intersection LOS: D
Intersection Capacity Utilization 104.2%	ICU Level of Service G
Analysis Period (min) 15	

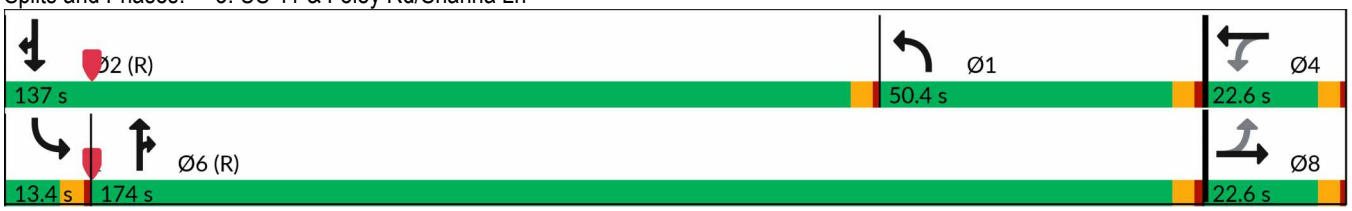
Splits and Phases: 1: US 41 & Woods Edge Pkwy



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	13	2	32	3	12	3958	50	100	2537	28
Future Volume (vph)	13	2	32	3	12	3958	50	100	2537	28
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	Prot	NA	Prot
Protected Phases		8		4	1	6	6	5	2	2
Permitted Phases	8		4							
Detector Phase	8	8	4	4	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	22.6	22.6	22.6	22.6	50.4	174.0	174.0	13.4	137.0	137.0
Total Split (%)	10.8%	10.8%	10.8%	10.8%	24.0%	82.9%	82.9%	6.4%	65.2%	65.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	12.3	12.3	12.3	12.3	29.8	169.5	169.5	14.7	158.4	158.4
Actuated g/C Ratio	0.06	0.06	0.06	0.06	0.14	0.81	0.81	0.07	0.75	0.75
v/c Ratio	0.39	0.32	0.44	0.74	0.05	1.02	0.04	0.83	0.69	0.03
Control Delay (s/veh)	123.2	30.3	110.6	74.9	62.0	22.2	0.0	140.6	9.9	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	123.2	30.3	110.6	74.9	62.0	22.2	0.0	140.6	9.9	1.9
LOS	F	C	F	E	E	C	A	F	A	A
Approach Delay (s/veh)		54.0		83.3		22.1			14.7	
Approach LOS		D		F		C			B	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 20.7	Intersection LOS: C
Intersection Capacity Utilization 99.0%	ICU Level of Service F
Analysis Period (min) 15	

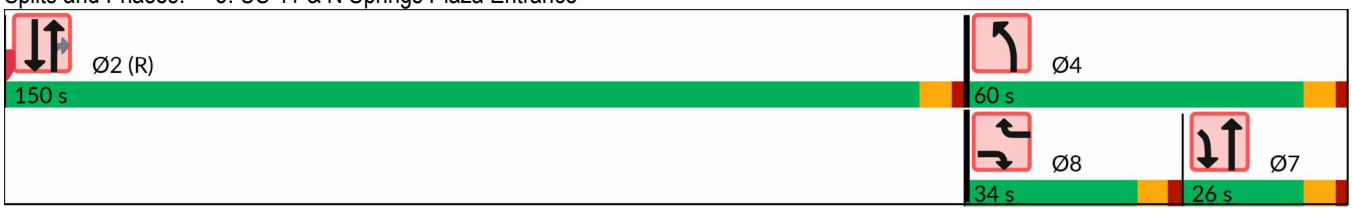
Splits and Phases: 3: US 41 & Foley Rd/Shanna Ln



Lane Group	WBR2	NBL	NBT	NBR	SBT	SER
Lane Configurations						
Traffic Volume (vph)	66	369	3656	50	2377	66
Future Volume (vph)	66	369	3656	50	2377	66
Turn Type	Prot	Prot	NA	custom	NA	Prot
Protected Phases	8	4	2 7		2	7
Permitted Phases				2		
Detector Phase	8	4	2 7	2	2	7
Switch Phase						
Minimum Initial (s)	5.0	5.0		4.0	4.0	5.0
Minimum Split (s)	11.8	35.8		17.8	17.8	11.8
Total Split (s)	34.0	60.0		150.0	150.0	26.0
Total Split (%)	16.2%	28.6%		71.4%	71.4%	12.4%
Yellow Time (s)	4.8	4.8		4.8	4.8	4.8
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8	6.8
Lead/Lag	Lead					Lag
Lead-Lag Optimize?	Yes					Yes
Recall Mode	None	None		C-Max	C-Max	None
Act Effct Green (s)	8.2	53.2	188.2	143.2	143.2	38.2
Actuated g/C Ratio	0.04	0.25	0.90	0.68	0.68	0.18
v/c Ratio	0.59	0.44	0.84	0.05	0.74	0.13
Control Delay (s/veh)	49.5	49.7	7.6	3.9	8.1	61.0
Queue Delay	0.1	0.0	46.1	0.0	0.0	0.0
Total Delay (s/veh)	49.6	49.7	53.8	3.9	8.1	61.0
LOS	D	D	D	A	A	E
Approach Delay (s/veh)			52.8		8.1	
Approach LOS			D		A	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 196 (93%), Referenced to phase 2:NBSB, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay (s/veh): 36.5	Intersection LOS: D
Intersection Capacity Utilization 86.1%	ICU Level of Service E
Analysis Period (min) 15	

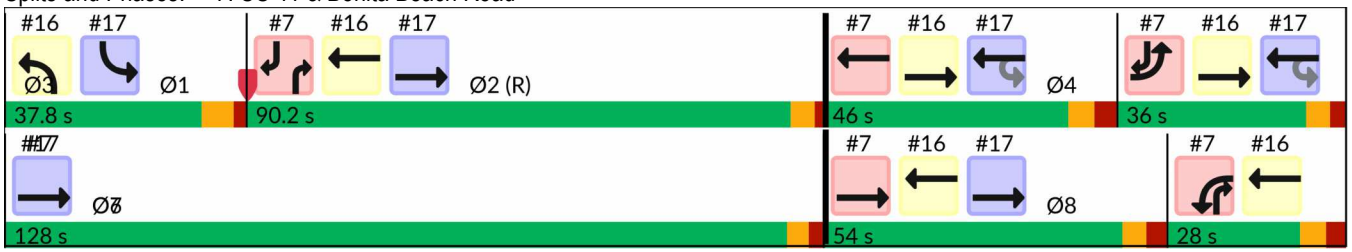
Splits and Phases: 5: US 41 & N Springs Plaza Entrance



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR	Ø1	Ø2
Lane Configurations										
Traffic Volume (vph)	679	1129	328	816	3211	511	2126	519		
Future Volume (vph)	679	1129	328	816	3211	511	2126	519		
Turn Type	Prot	NA	Prot	NA	NA	custom	NA	custom		
Protected Phases	3	8	7	4	6	2 7	6	2 3	1	2
Permitted Phases										
Detector Phase	3	8	7	4	6	2 7	6	2 3		
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0		4.0	4.0
Minimum Split (s)	11.4	36.1	12.1	36.5	23.5		23.5		24.8	23.0
Total Split (s)	36.0	54.0	28.0	46.0	128.0		128.0		37.8	90.2
Total Split (%)	17.1%	25.7%	13.3%	21.9%	61.0%		61.0%		18%	43%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5		3.5		4.8	4.0
All-Red Time (s)	2.4	3.1	3.1	3.5	2.0		2.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0			
Total Lost Time (s)	6.4	7.1	7.1	7.5	5.5		5.5			
Lead/Lag	Lag	Lead	Lag	Lead					Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes	Yes
Recall Mode	None	None	None	None	None		None		Max	C-Max
Act Effct Green (s)	29.6	46.9	20.9	38.5	122.5	108.2	122.5	116.2		
Actuated g/C Ratio	0.14	0.22	0.10	0.18	0.58	0.52	0.58	0.55		
v/c Ratio	0.97	0.98	0.96	0.86	1.07	0.63	0.71	0.58		
Control Delay (s/veh)	60.4	42.1	83.0	29.2	67.5	17.4	26.1	15.3		
Queue Delay	41.1	0.0	42.6	3.7	14.7	0.8	2.2	0.6		
Total Delay (s/veh)	101.6	42.1	125.7	32.9	82.2	18.2	28.3	15.9		
LOS	F	D	F	C	F	B	C	B		
Approach Delay (s/veh)		64.4		59.5	73.4		25.8			
Approach LOS		E		E	E		C			

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 51 (24%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay (s/veh): 56.5	Intersection LOS: E
Intersection Capacity Utilization 107.2%	ICU Level of Service G
Analysis Period (min) 15	

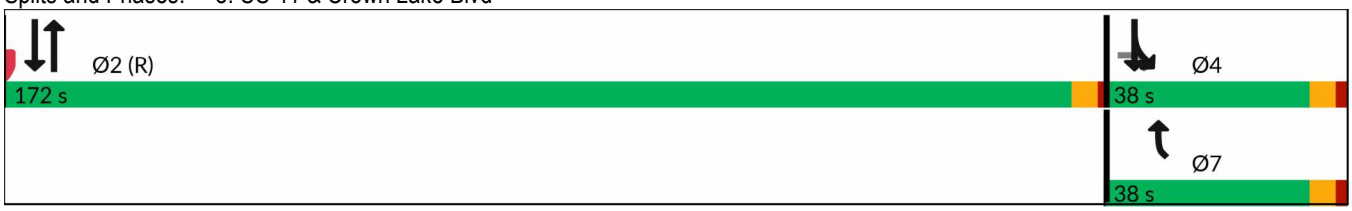
Splits and Phases: 7: US 41 & Bonita Beach Road



Lane Group	EBR2	NBT	SBL	SBT	NWR
Lane Configurations					
Traffic Volume (vph)	61	3855	611	2606	419
Future Volume (vph)	61	3855	611	2606	419
Turn Type	Perm	NA	Prot	NA	Prot
Protected Phases		2	4	2 4	7
Permitted Phases	4				
Detector Phase	4	2	4	2 4	7
Switch Phase					
Minimum Initial (s)	5.0	4.0	5.0		5.0
Minimum Split (s)	35.0	23.0	35.0		11.0
Total Split (s)	38.0	172.0	38.0		38.0
Total Split (%)	18.1%	81.9%	18.1%		18.1%
Yellow Time (s)	4.0	4.0	4.0		4.0
All-Red Time (s)	2.0	1.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	5.0	6.0		6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	None		None
Act Effct Green (s)	32.0	167.0	32.0	210.0	32.0
Actuated g/C Ratio	0.15	0.80	0.15	1.00	0.15
v/c Ratio	0.23	1.01	0.82	0.68	0.99
Control Delay (s/veh)	47.4	15.7	101.5	10.6	136.9
Queue Delay	0.0	36.6	0.0	0.0	1.0
Total Delay (s/veh)	47.4	52.3	101.5	10.6	137.9
LOS	D	D	F	B	F
Approach Delay (s/veh)		52.3		27.6	
Approach LOS		D		C	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 204 (97%), Referenced to phase 2:NBSB, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay (s/veh): 46.4	Intersection LOS: D
Intersection Capacity Utilization 99.6%	ICU Level of Service F
Analysis Period (min) 15	

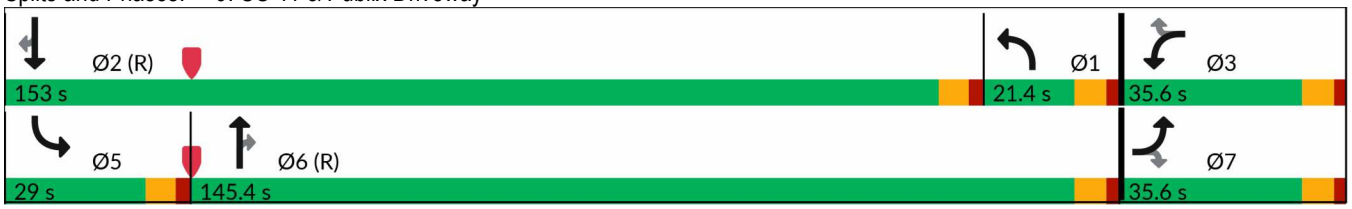
Splits and Phases: 8: US 41 & Crown Lake Blvd



Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	603	51	13	231	59	4353	12	334	3197	371
Future Volume (vph)	603	51	13	231	59	4353	12	334	3197	371
Turn Type	Prot	Perm	Prot	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7		3		1	6		5	2	
Permitted Phases		7		3			6			2
Detector Phase	7	7	3	3	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.1	12.1	12.0	12.0	11.8	24.8	24.8	11.8	24.8	24.8
Total Split (s)	35.6	35.6	35.6	35.6	21.4	145.4	145.4	29.0	153.0	153.0
Total Split (%)	17.0%	17.0%	17.0%	17.0%	10.2%	69.2%	69.2%	13.8%	72.9%	72.9%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Lead/Lag					Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	26.8	28.8	28.8	28.8	14.6	138.6	138.6	22.2	146.2	146.2
Actuated g/C Ratio	0.13	0.14	0.14	0.14	0.07	0.66	0.66	0.11	0.70	0.70
v/c Ratio	0.98	0.19	0.06	0.68	0.50	1.08	0.01	0.95	0.75	0.33
Control Delay (s/veh)	120.3	23.2	56.5	33.1	97.0	71.6	0.0	126.9	21.5	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0	0.2	0.0
Total Delay (s/veh)	120.3	23.2	56.5	33.1	97.0	79.1	0.0	126.9	21.7	6.3
LOS	F	C	E	C	F	E	A	F	C	A
Approach Delay (s/veh)						79.1			29.2	
Approach LOS						E			C	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 43 (20%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay (s/veh): 59.2	Intersection LOS: E
Intersection Capacity Utilization 105.2%	ICU Level of Service G
Analysis Period (min) 15	

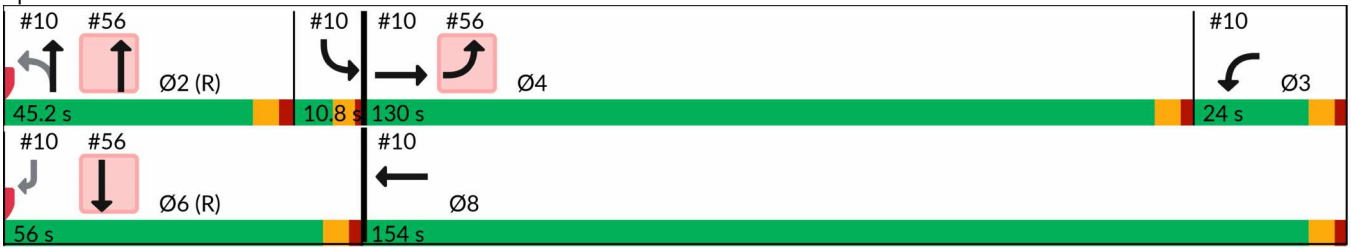
Splits and Phases: 9: US 41 & Publix Driveway



Lane Group	EBT	WBL	WBT	NBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1816	32	1629	0	15	321
Future Volume (vph)	1816	32	1629	0	15	321
Turn Type	NA	Prot	NA	NA	Prot	Perm
Protected Phases	4	3	8	2	1	
Permitted Phases						6
Detector Phase	4	3	8	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	9.5	24.0
Total Split (s)	130.0	24.0	154.0	45.2	10.8	56.0
Total Split (%)	61.9%	11.4%	73.3%	21.5%	5.1%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	4.5	6.0
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	124.0	10.4	138.0	53.5	6.1	60.0
Actuated g/C Ratio	0.59	0.05	0.66	0.25	0.03	0.29
v/c Ratio	0.93	0.39	0.74	0.14	0.30	0.68
Control Delay (s/veh)	34.0	118.2	32.4	8.7	53.9	24.1
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.8
Total Delay (s/veh)	34.0	118.2	32.6	8.7	53.9	24.9
LOS	C	F	C	A	D	C
Approach Delay (s/veh)	34.0		34.3	8.7		
Approach LOS	C		C	A		

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 177 (84%), Referenced to phase 2:NBTL and 6:SBR, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 33.0	Intersection LOS: C
Intersection Capacity Utilization 84.5%	ICU Level of Service E
Analysis Period (min) 15	

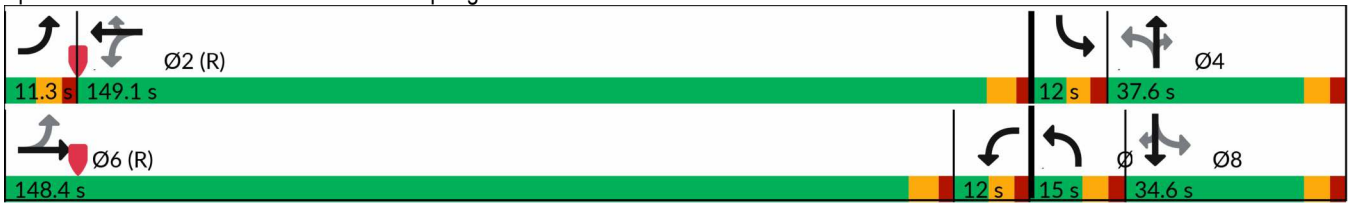
Splits and Phases: 10: Windsor Rd & Bonita Beach Rd



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	73	1811	41	1501	150	29	25	87	115	9	147
Future Volume (vph)	73	1811	41	1501	150	29	25	87	115	9	147
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		7	4		3	8	
Permitted Phases	6		2		2	4		4	8		8
Detector Phase	1	6	5	2	2	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	5.0	20.0	5.0	20.0	20.0	5.0	7.0	7.0	5.0	5.0	5.0
Minimum Split (s)	11.2	41.7	11.2	39.7	39.7	11.5	37.5	37.5	11.0	24.5	24.5
Total Split (s)	11.3	148.4	12.0	149.1	149.1	15.0	37.6	37.6	12.0	34.6	34.6
Total Split (%)	5.4%	70.7%	5.7%	71.0%	71.0%	7.1%	17.9%	17.9%	5.7%	16.5%	16.5%
Yellow Time (s)	4.0	4.7	4.0	4.7	4.7	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.2	2.0	2.2	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.7	6.2	6.7	6.7	6.5	6.5	6.5	6.0	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	163.1	162.6	159.3	158.8	158.8	20.3	12.6	12.6	18.2	17.3	12.9
Actuated g/C Ratio	0.78	0.77	0.76	0.76	0.76	0.10	0.06	0.06	0.09	0.08	0.06
v/c Ratio	0.31	0.67	0.23	0.56	0.12	0.20	0.23	0.43	0.50	0.53	0.69
Control Delay (s/veh)	9.0	9.4	24.8	26.8	8.2	83.7	96.1	10.4	99.5	102.1	38.3
Queue Delay	0.0	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay (s/veh)	9.0	9.8	24.8	27.1	8.2	83.7	96.1	10.4	99.5	102.1	38.6
LOS	A	A	C	C	A	F	F	B	F	F	D
Approach Delay (s/veh)		9.8		25.4			40.5			67.1	
Approach LOS		A		C			D			E	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay (s/veh): 21.4	Intersection LOS: C
Intersection Capacity Utilization 80.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 11: Center of Bonita Springs Entrance & Bonita Beach Rd/Bonita Beach Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	258	1973	128	1333	64	60	373	36
Future Volume (vph)	258	1973	128	1333	64	60	373	36
Turn Type	pm+pt	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	1	6	5	2	7	4	3	8
Permitted Phases	6							
Detector Phase	1	6	5	2	7	4	3	8
Switch Phase								
Minimum Initial (s)	7.0	20.0	7.0	20.0	5.0	8.0	5.0	8.0
Minimum Split (s)	13.0	29.7	13.0	29.7	9.5	41.6	9.5	39.6
Total Split (s)	32.0	109.2	30.0	107.2	19.9	41.6	29.2	50.9
Total Split (%)	15.2%	52.0%	14.3%	51.0%	9.5%	19.8%	13.9%	24.2%
Yellow Time (s)	4.0	4.7	4.0	4.7	3.5	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	1.0	2.6	1.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.7	6.0	6.7	4.5	6.6	4.5	6.6
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	141.9	115.2	24.0	113.2	30.9	17.0	30.0	16.1
Actuated g/C Ratio	0.68	0.55	0.11	0.54	0.15	0.08	0.14	0.08
v/c Ratio	0.98	0.72	0.64	0.86	0.25	0.78	0.78	0.82
Control Delay (s/veh)	141.3	34.5	90.2	35.5	81.3	107.1	102.6	69.0
Queue Delay	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	141.3	35.5	90.2	35.5	81.3	107.1	102.6	69.0
LOS	F	D	F	D	F	F	F	E
Approach Delay (s/veh)		47.7		39.6		98.3		92.8
Approach LOS		D		D		F		F

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay (s/veh): 51.8	Intersection LOS: D
Intersection Capacity Utilization 97.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 14: Arroyal Rd & Bonita Beach Road/Bonita Beach Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	19	2305	98	29	1606	63	87	4	122	12	44
Future Volume (vph)	19	2305	98	29	1606	63	87	4	122	12	44
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4	3	8	
Permitted Phases	6		6	2		2	4		8		8
Detector Phase	1	6	6	5	2	2	7	4	3	8	8
Switch Phase											
Minimum Initial (s)	5.0	20.0	20.0	5.0	20.0	20.0	5.0	7.0	5.0	7.0	7.0
Minimum Split (s)	11.0	38.7	38.7	11.0	50.7	50.7	11.0	45.0	11.0	48.0	48.0
Total Split (s)	26.0	129.0	129.0	22.0	125.0	125.0	11.0	45.0	14.0	48.0	48.0
Total Split (%)	12.4%	61.4%	61.4%	10.5%	59.5%	59.5%	5.2%	21.4%	6.7%	22.9%	22.9%
Yellow Time (s)	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.7	6.7	6.0	6.7	6.7	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	168.0	159.4	159.4	164.4	159.2	159.2	17.6	8.5	16.7	7.6	7.6
Actuated g/C Ratio	0.80	0.76	0.76	0.78	0.76	0.76	0.08	0.04	0.08	0.04	0.04
v/c Ratio	0.09	0.91	0.08	0.37	0.62	0.05	0.62	0.46	0.90	0.21	0.34
Control Delay (s/veh)	1.1	21.9	0.1	45.0	15.0	0.1	110.2	38.2	143.8	105.4	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	1.1	21.9	0.1	45.0	15.0	0.1	110.2	38.2	143.8	105.4	6.5
LOS	A	C	A	D	B	A	F	D	F	F	A
Approach Delay (s/veh)		20.9			14.9			84.8		107.4	
Approach LOS		C			B			F		F	

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 24.0	Intersection LOS: C
Intersection Capacity Utilization 87.7%	ICU Level of Service E
Analysis Period (min) 15	

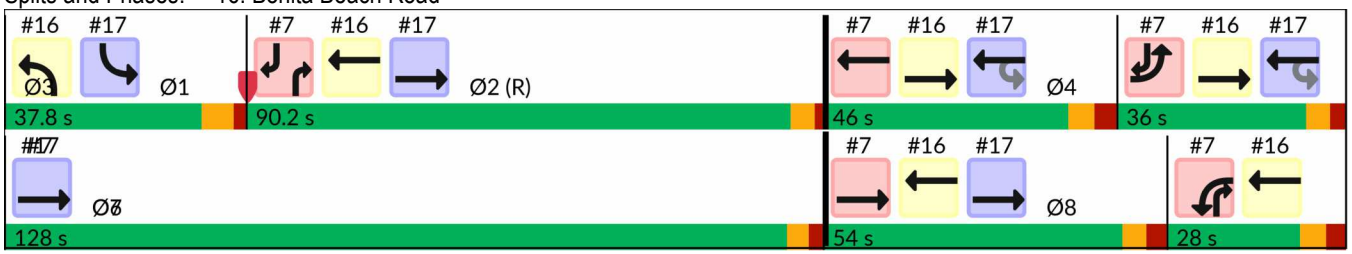
Splits and Phases: 15: Spanish Wells Blvd & Bonita Beach Rd



Lane Group	EBT	EBR	WBT	NBL	Ø2	Ø3	Ø4	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1808	245	1335	369						
Future Volume (vph)	1808	245	1335	369						
Turn Type	NA	Free	NA	Prot						
Protected Phases	3 4		2 7 8	1	2	3	4	6	7	8
Permitted Phases		Free								
Detector Phase	3 4		2 7 8	1						
Switch Phase										
Minimum Initial (s)				4.0	4.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)				24.8	23.0	11.4	36.5	23.5	12.1	36.1
Total Split (s)				37.8	90.2	36.0	46.0	128.0	28.0	54.0
Total Split (%)				18.0%	43%	17%	22%	61%	13%	26%
Yellow Time (s)				4.8	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)				2.0	1.0	2.4	3.5	2.0	3.1	3.1
Lost Time Adjust (s)				0.0						
Total Lost Time (s)				6.8						
Lead/Lag				Lead	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode				Max	C-Max	None	None	None	None	None
Act Effct Green (s)	75.6	210.0	167.2	31.0						
Actuated g/C Ratio	0.36	1.00	0.80	0.15						
v/c Ratio	0.58	0.09	0.32	0.71						
Control Delay (s/veh)	53.5	0.0	0.5	70.8						
Queue Delay	0.5	0.0	0.5	51.9						
Total Delay (s/veh)	54.0	0.0	0.9	122.8						
LOS	D	A	A	F						
Approach Delay (s/veh)	47.6		0.9	122.8						
Approach LOS	D		A	F						

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 51 (24%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay (s/veh): 38.4	Intersection LOS: D
Intersection Capacity Utilization 45.2%	ICU Level of Service A
Analysis Period (min) 15	

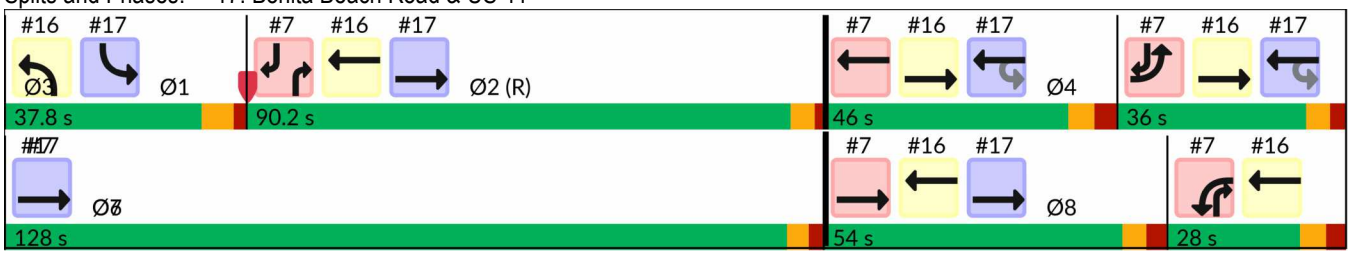
Splits and Phases: 16: Bonita Beach Road



Lane Group	EBT	WBT	WBR	SBL	Ø2	Ø3	Ø4	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1640	1144	419	611						
Future Volume (vph)	1640	1144	419	611						
Turn Type	NA	NA	Free	Prot						
Protected Phases	2 7 8	3 4		1	2	3	4	6	7	8
Permitted Phases			Free							
Detector Phase	2 7 8	3 4		1						
Switch Phase										
Minimum Initial (s)				4.0	4.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)				24.8	23.0	11.4	36.5	23.5	12.1	36.1
Total Split (s)				37.8	90.2	36.0	46.0	128.0	28.0	54.0
Total Split (%)				18.0%	43%	17%	22%	61%	13%	26%
Yellow Time (s)				4.8	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)				2.0	1.0	2.4	3.5	2.0	3.1	3.1
Lost Time Adjust (s)				0.0						
Total Lost Time (s)				6.8						
Lead/Lag				Lead	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode				Max	C-Max	None	None	None	None	None
Act Effct Green (s)	167.2	75.6	210.0	31.0						
Actuated g/C Ratio	0.80	0.36	1.00	0.15						
v/c Ratio	0.40	0.41	0.15	0.81						
Control Delay (s/veh)	1.9	82.1	0.1	48.0						
Queue Delay	0.7	0.1	0.0	56.7						
Total Delay (s/veh)	2.6	82.3	0.1	104.8						
LOS	A	F	A	F						
Approach Delay (s/veh)	2.6	60.2		104.8						
Approach LOS	A	E		F						

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 51 (24%), Referenced to phase 2:SBR, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay (s/veh): 42.6	Intersection LOS: D
Intersection Capacity Utilization 52.0%	ICU Level of Service A
Analysis Period (min) 15	

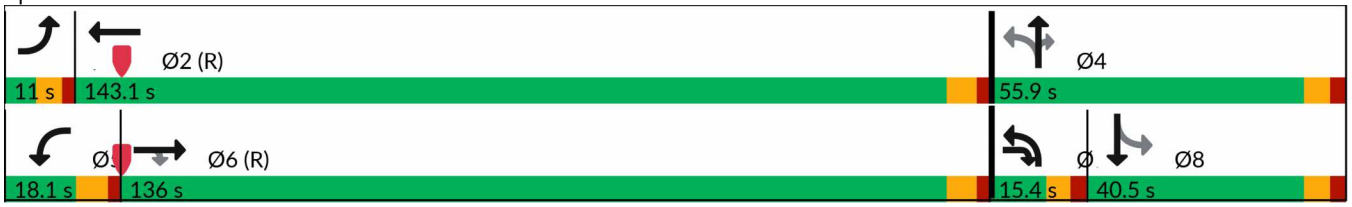
Splits and Phases: 17: Bonita Beach Road & US 41



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	10	1989	186	142	1801	183	18	234	26	17
Future Volume (vph)	10	1989	186	142	1801	183	18	234	26	17
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+pt	NA	Perm	Perm	NA
Protected Phases	1	6	7	5	2	7	4			8
Permitted Phases			6			4		4	8	
Detector Phase	1	6	7	5	2	7	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	24.0	5.0	5.0	24.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	42.7	11.5	11.7	30.7	11.5	42.5	42.5	40.5	40.5
Total Split (s)	11.0	136.0	15.4	18.1	143.1	15.4	55.9	55.9	40.5	40.5
Total Split (%)	5.2%	64.8%	7.3%	8.6%	68.1%	7.3%	26.6%	26.6%	19.3%	19.3%
Yellow Time (s)	4.0	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.7	6.5	6.7	6.7	6.5	6.5	6.5		6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead			Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	Max	Max
Act Effct Green (s)	5.0	129.7	145.3	11.0	143.0	49.4	49.4	49.4		34.0
Actuated g/C Ratio	0.02	0.62	0.69	0.05	0.68	0.24	0.24	0.24		0.16
v/c Ratio	0.24	0.93	0.17	0.80	0.76	0.57	0.04	0.55		0.20
Control Delay (s/veh)	114.1	44.9	5.9	89.2	30.9	77.3	62.6	49.7		75.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	114.1	44.9	5.9	89.2	30.9	77.3	62.6	49.7		75.5
LOS	F	D	A	F	C	E	E	D		E
Approach Delay (s/veh)		41.9			35.2		61.9			75.5
Approach LOS		D			D		E			E

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 41.3	Intersection LOS: D
Intersection Capacity Utilization 91.7%	ICU Level of Service F
Analysis Period (min) 15	

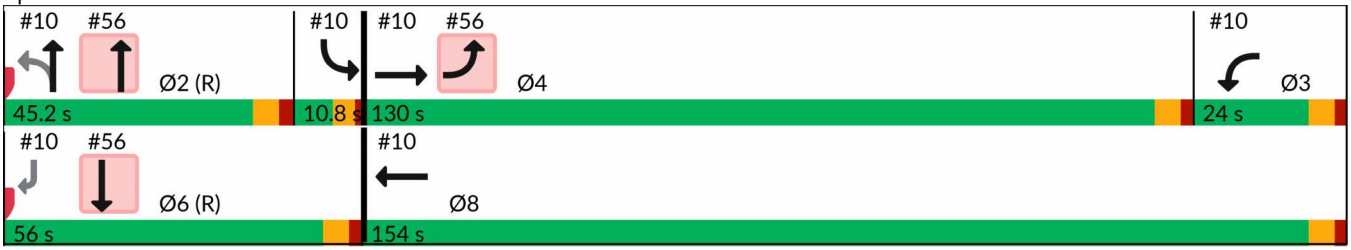
Splits and Phases: 20: Bonita Beach Rd



Lane Group	EBL	NBT	SBT	Ø1	Ø3	Ø8
Lane Configurations						
Traffic Volume (vph)	416	15	337			
Future Volume (vph)	416	15	337			
Turn Type	Prot	NA	NA			
Protected Phases	4	2	6	1	3	8
Permitted Phases						
Detector Phase	4	2	6			
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	9.5	24.0	24.0
Total Split (s)	130.0	45.2	56.0	10.8	24.0	154.0
Total Split (%)	61.9%	21.5%	26.7%	5%	11%	73%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			
Total Lost Time (s)	6.0	6.0	6.0			
Lead/Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	124.0	53.5	60.0			
Actuated g/C Ratio	0.59	0.25	0.29			
v/c Ratio	0.42	0.03	0.35			
Control Delay (s/veh)	60.9	93.4	57.9			
Queue Delay	61.5	0.0	0.1			
Total Delay (s/veh)	122.3	93.4	58.0			
LOS	F	F	E			
Approach Delay (s/veh)	122.3	93.4	58.0			
Approach LOS	F	F	E			

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 177 (84%), Referenced to phase 2:NBTL and 6:SBR, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 93.5	Intersection LOS: F
Intersection Capacity Utilization 42.4%	ICU Level of Service A
Analysis Period (min) 15	

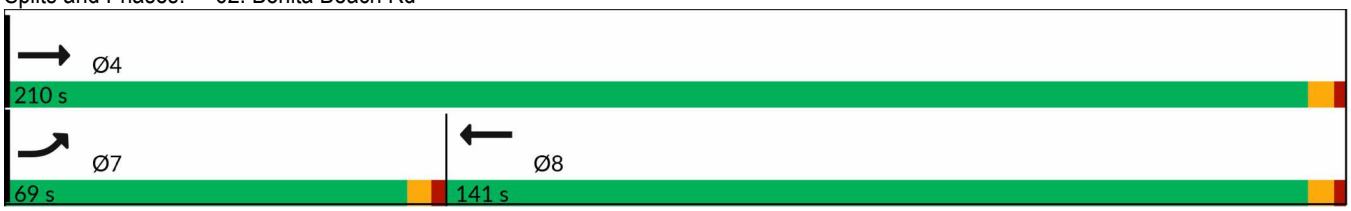
Splits and Phases: 56: Main St/Windsor Rd



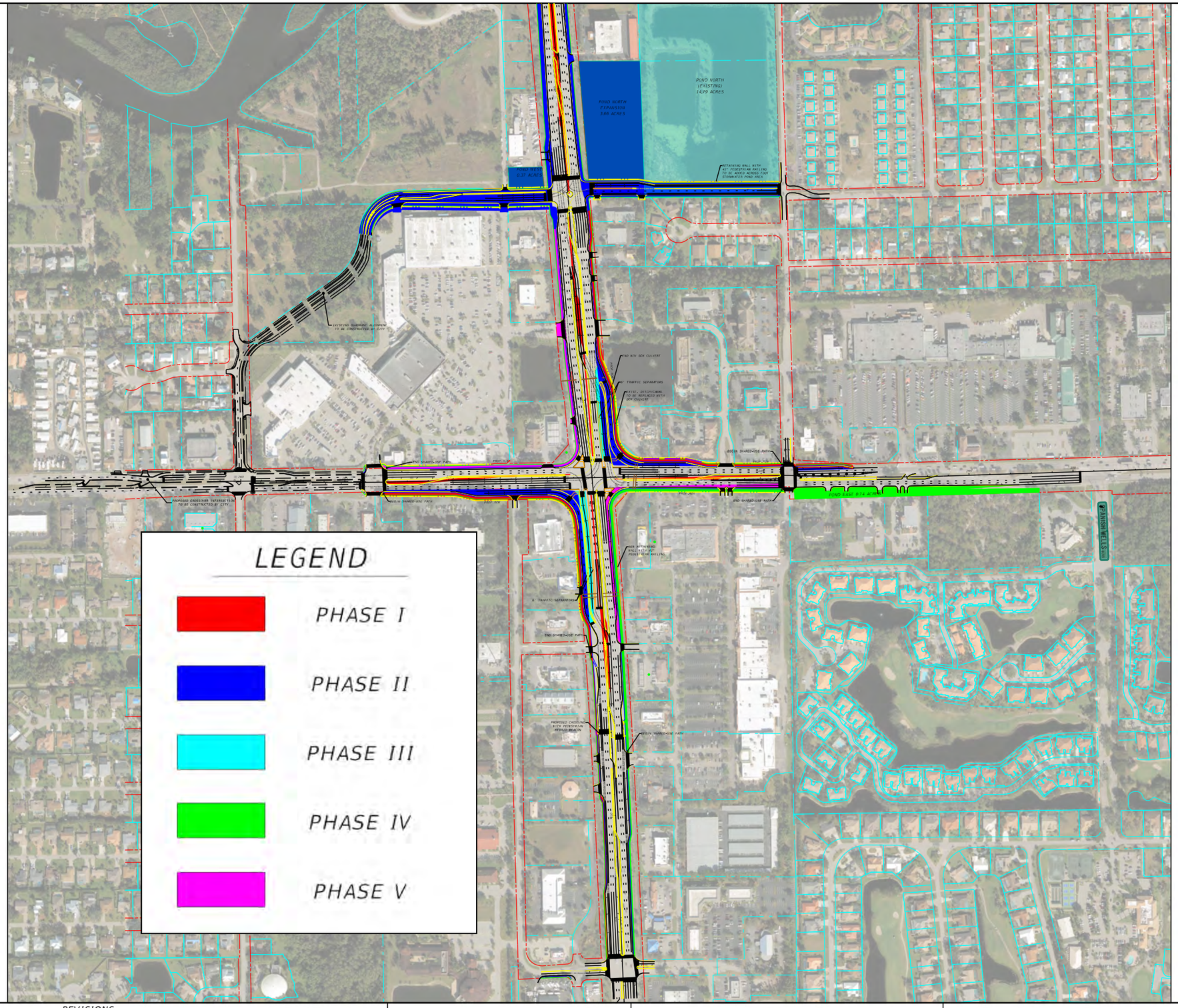
Lane Group	EBL	EBT	WBT
Lane Configurations			
Traffic Volume (vph)	416	1831	1957
Future Volume (vph)	416	1831	1957
Turn Type	Prot	NA	NA
Protected Phases	7	4	8
Permitted Phases			
Detector Phase	7	4	8
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0
Total Split (s)	69.0	210.0	141.0
Total Split (%)	32.9%	100.0%	67.1%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes
Recall Mode	None	None	None
Act Effct Green (s)	56.3	210.0	141.7
Actuated g/C Ratio	0.27	1.00	0.67
v/c Ratio	0.92	0.54	0.86
Control Delay (s/veh)	82.2	0.3	16.7
Queue Delay	57.4	1.4	0.0
Total Delay (s/veh)	139.6	1.7	16.7
LOS	F	A	B
Approach Delay (s/veh)		27.3	16.7
Approach LOS		C	B

Intersection Summary	
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 163 (78%), Referenced to phase 2: and 6:, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay (s/veh): 22.4	Intersection LOS: C
Intersection Capacity Utilization 87.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 62: Bonita Beach Rd



Appendix K – Transportation Management Plan Typical Sections



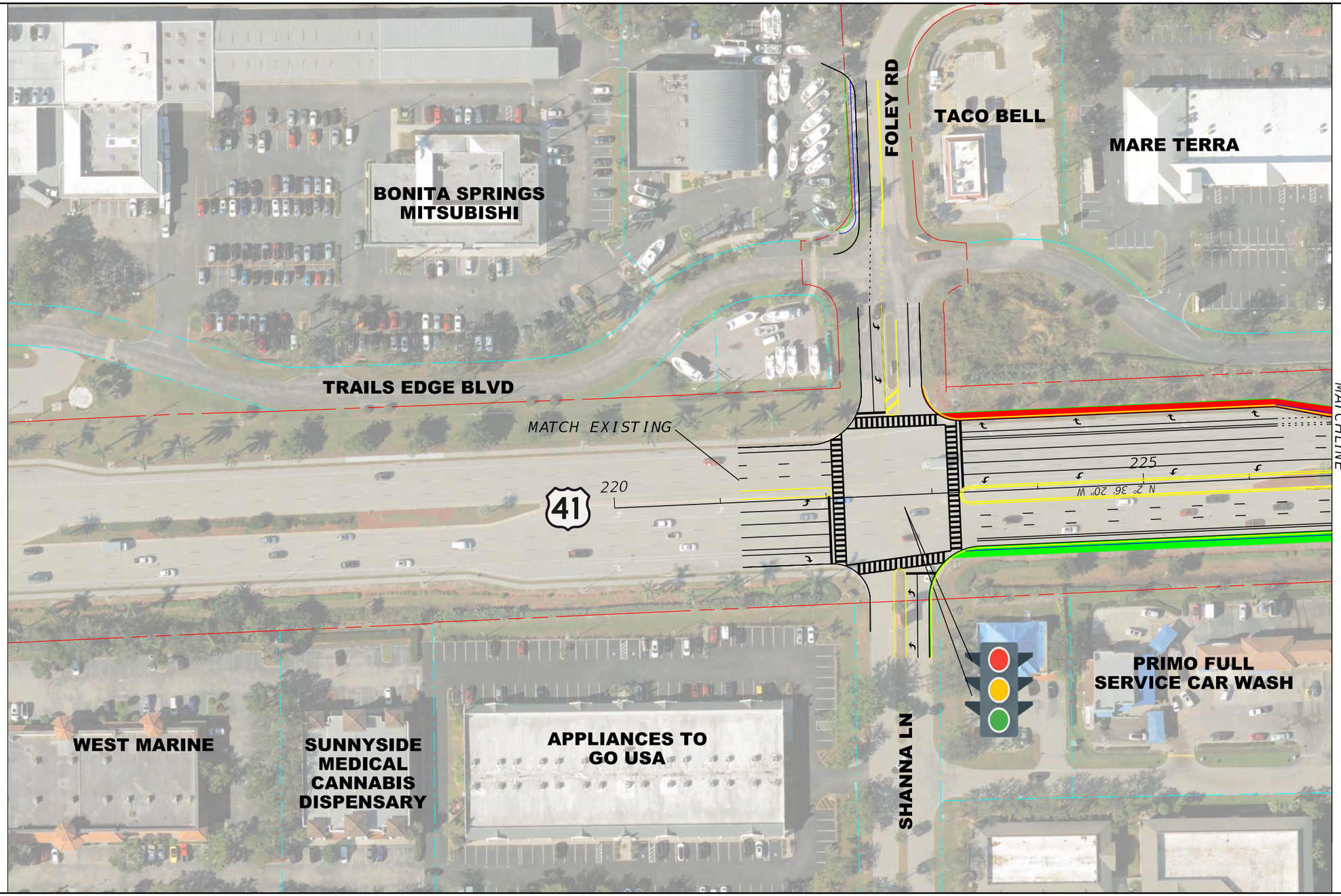
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K - 1		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 1



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

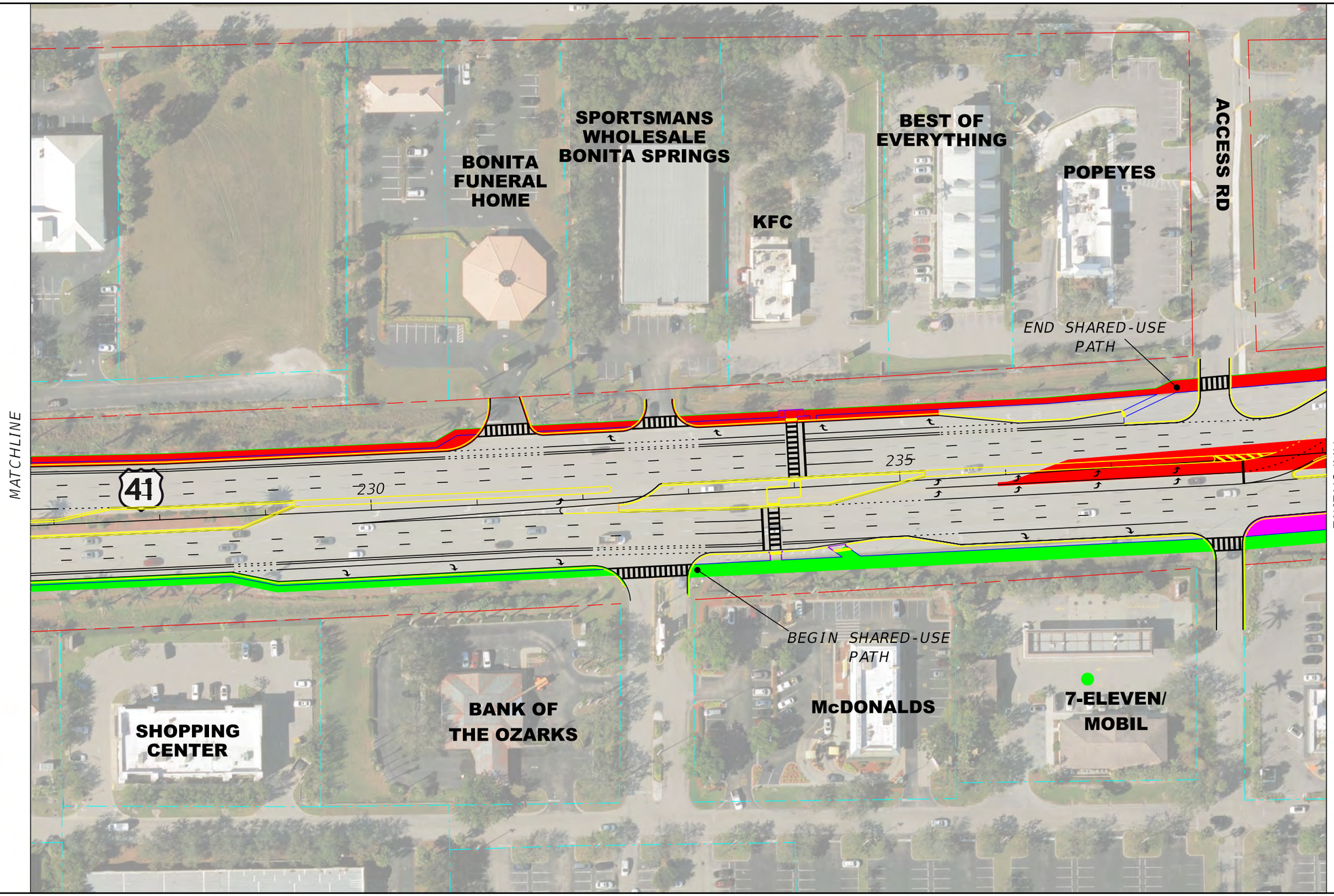
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K-2		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 2



N

0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K - 3		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 3

BEAUMONT RD

BONITA BEACH RD

WENDY'S

ASPEN DENTAL

WALGREEN'S

PAPA JOHN'S PIZZA

7-ELEVEN/ SUNOCO

CENTER OF BONITA SPRINGS TREATMENT POND

N 88° 45' 42" E

275

MATCHLINE

MATCHLINE

240

245

250

41

IGUANA MIA

280

DUNKIN' DONUTS

JIFFY LUBE

AQUA SEAFOOD, STEAKS & RAW BAR

ARROYAL MALL TREATMENT POND

N

0 20 100

Feet

PARCEL LINE

PROPERTY LINE

PROPOSED ROW

PHASE I

PHASE II

PHASE III

PHASE IV

PHASE V

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

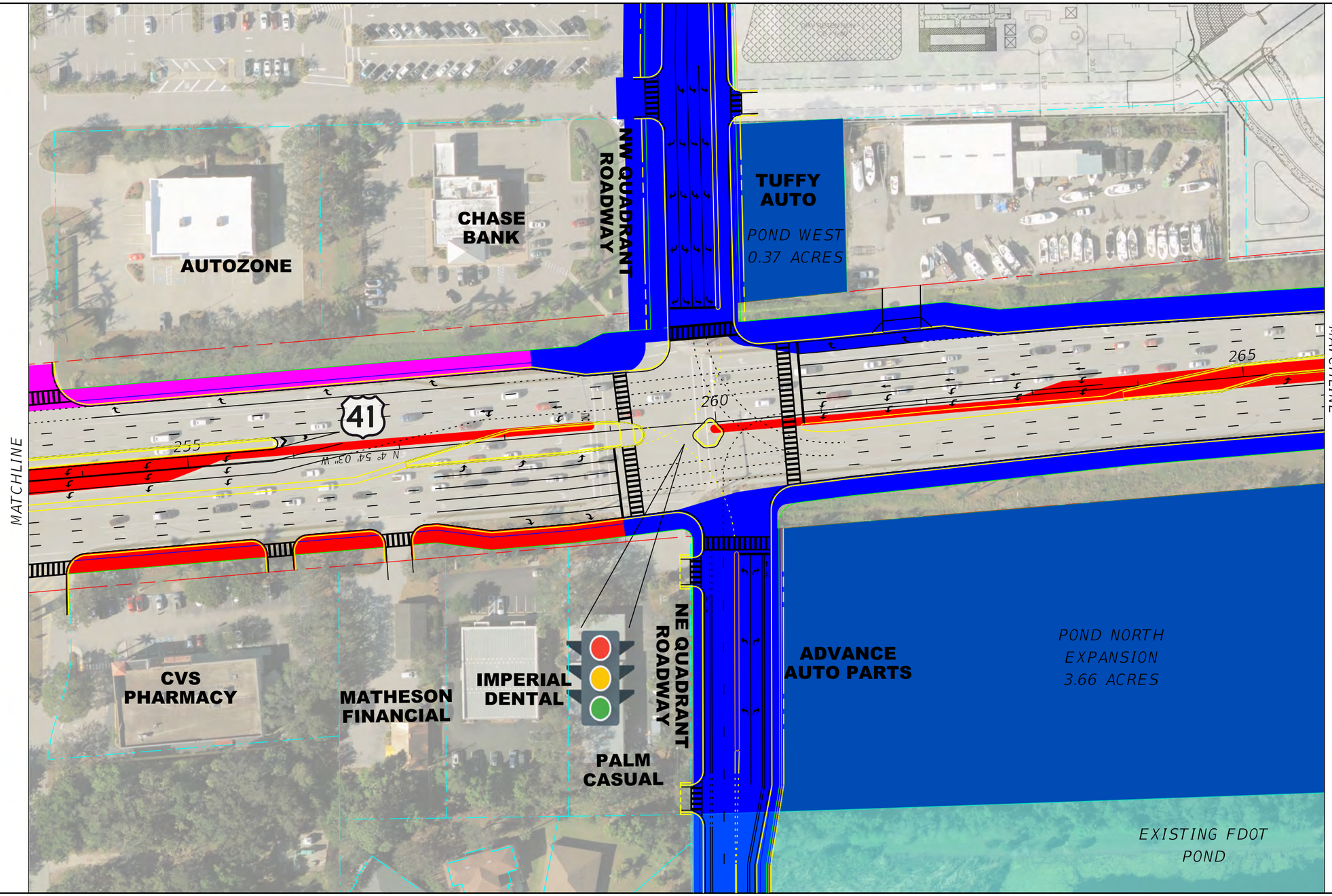
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K-4		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 4



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

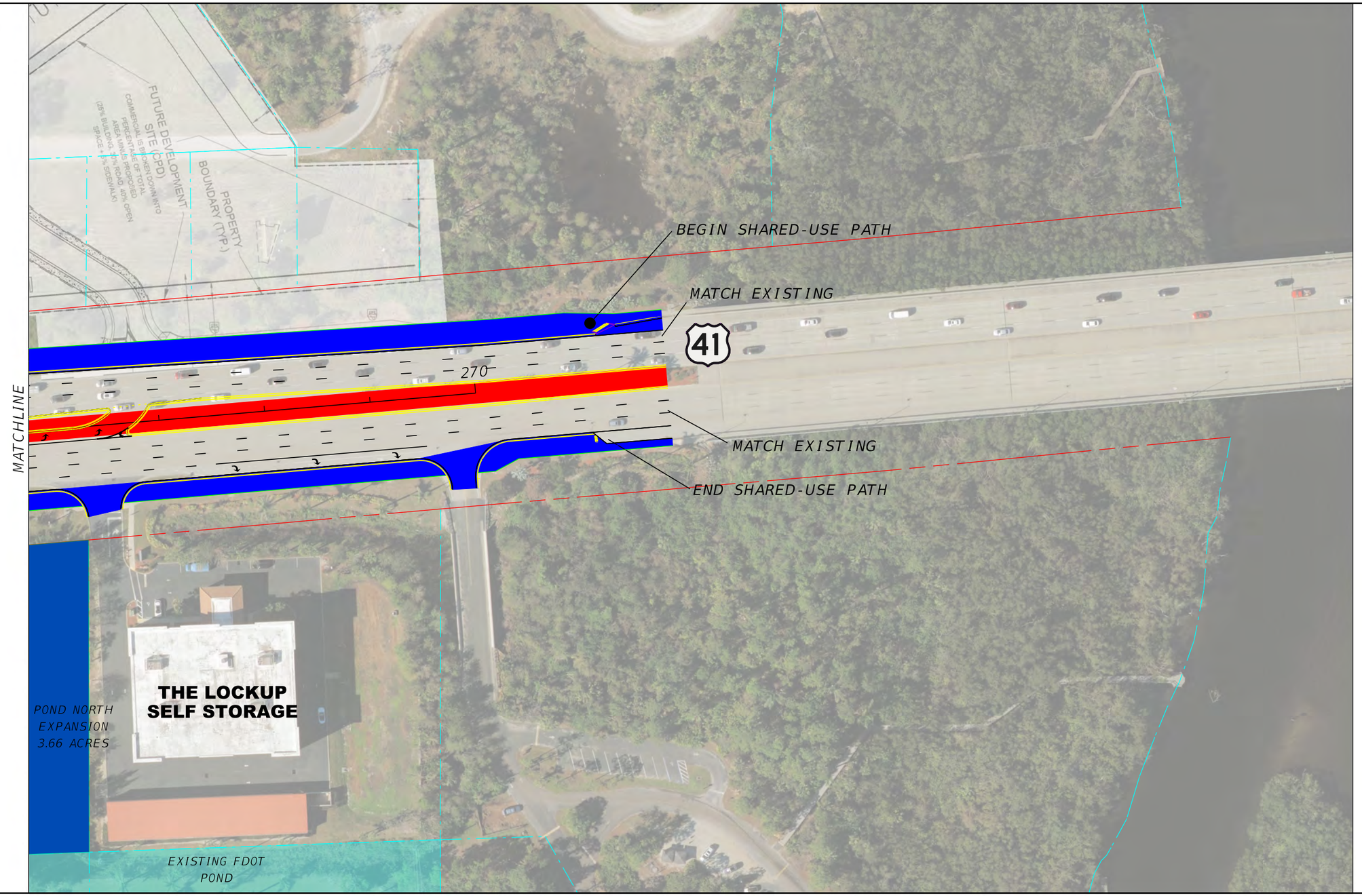
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K - 5		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 5



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

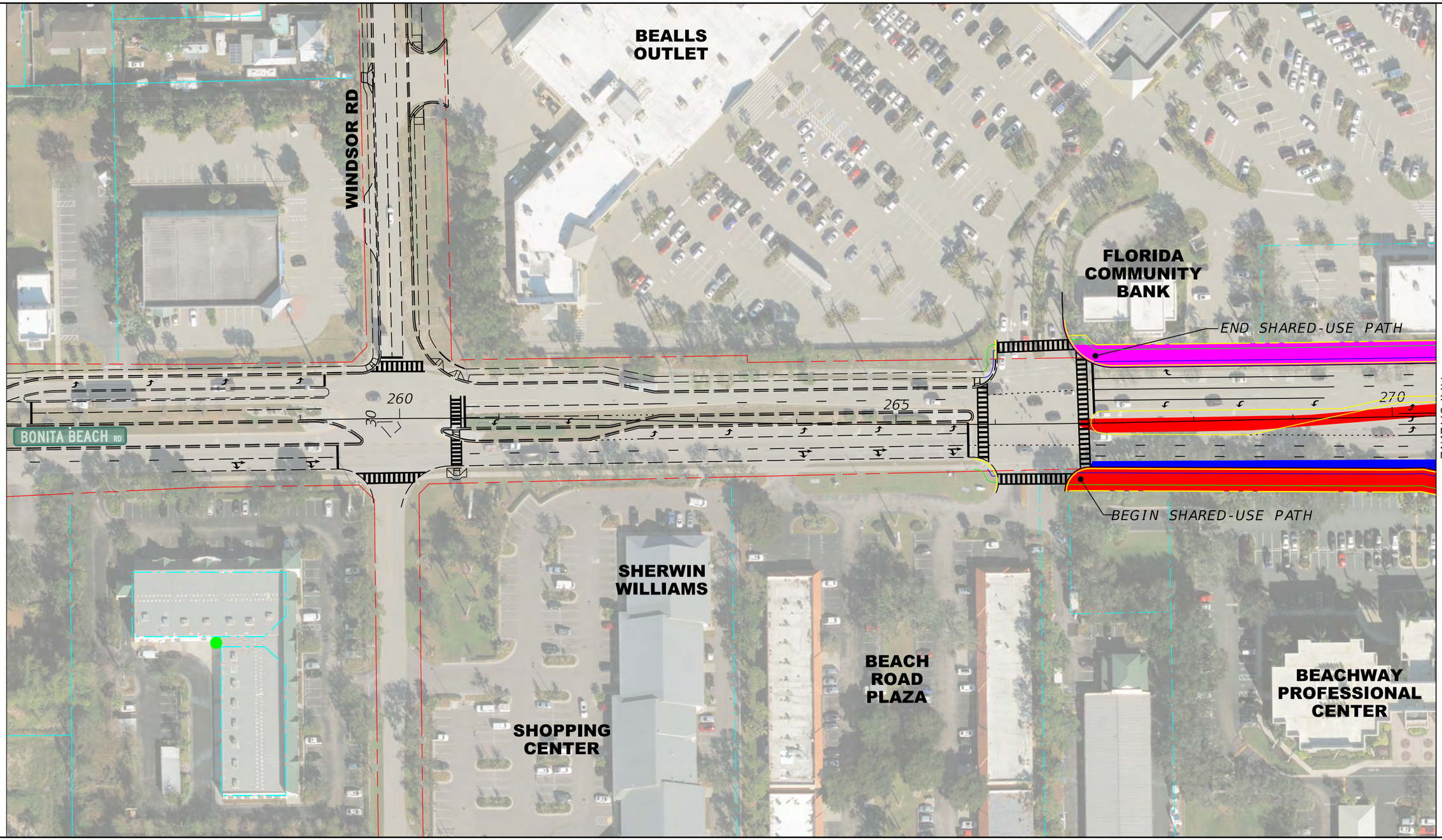
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K-6		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 6



N

0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TO BE CONSTRUCTED BY OTHERS
PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K-7		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 7

7-ELEVEN/
SUNOCO

PAPA
JOHN'S
PIZZA

VERIZON

AQUA SEAFOOD,
STEAKS & RAW BAR

CROWN LAKE RD

CROWN LAKE
BUSINESSES

MATCHLINE

MATCHLINE

BONITA BEACH RD

275

N 88° 42' 42" E

280

250

245

BEACHWAY
PROFESSIONAL
CENTER

BEAUMONT RD

WALGREEN'S

IGUANA MIA

41

N

0 20 100
Feet

PARCEL LINE

PROPERTY LINE

PROPOSED ROW

PHASE I

PHASE II

PHASE III

PHASE IV

PHASE V

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K - 8		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 8

PI STA. = 290+53.27
DELTA = 3° 41' 55" (LT)
D = 0° 34' 11"
T = 324.70
L = 649.18
R = 10,056.50
PC STA. = 287+28.57
PT STA. = 293+77.75

ARROYAL RD

BMO HARRIS BANK

BANK OF AMERICA

BONITA BEACH BALLOON

BEGIN SHARED-USE PATH

MATCHLINE

285

290

295

BONITA BEACH RD

POND EAST 0.74 ACRES

END SHARED-USE PATH

FIFTH THIRD BANK

UNITED STATES POST OFFICE

BONITA SPRINGS CITY HALL

0 20 100
Feet

PARCEL LINE

PROPERTY LINE

PROPOSED ROW

PHASE I

PHASE II

PHASE III

PHASE IV

PHASE V

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

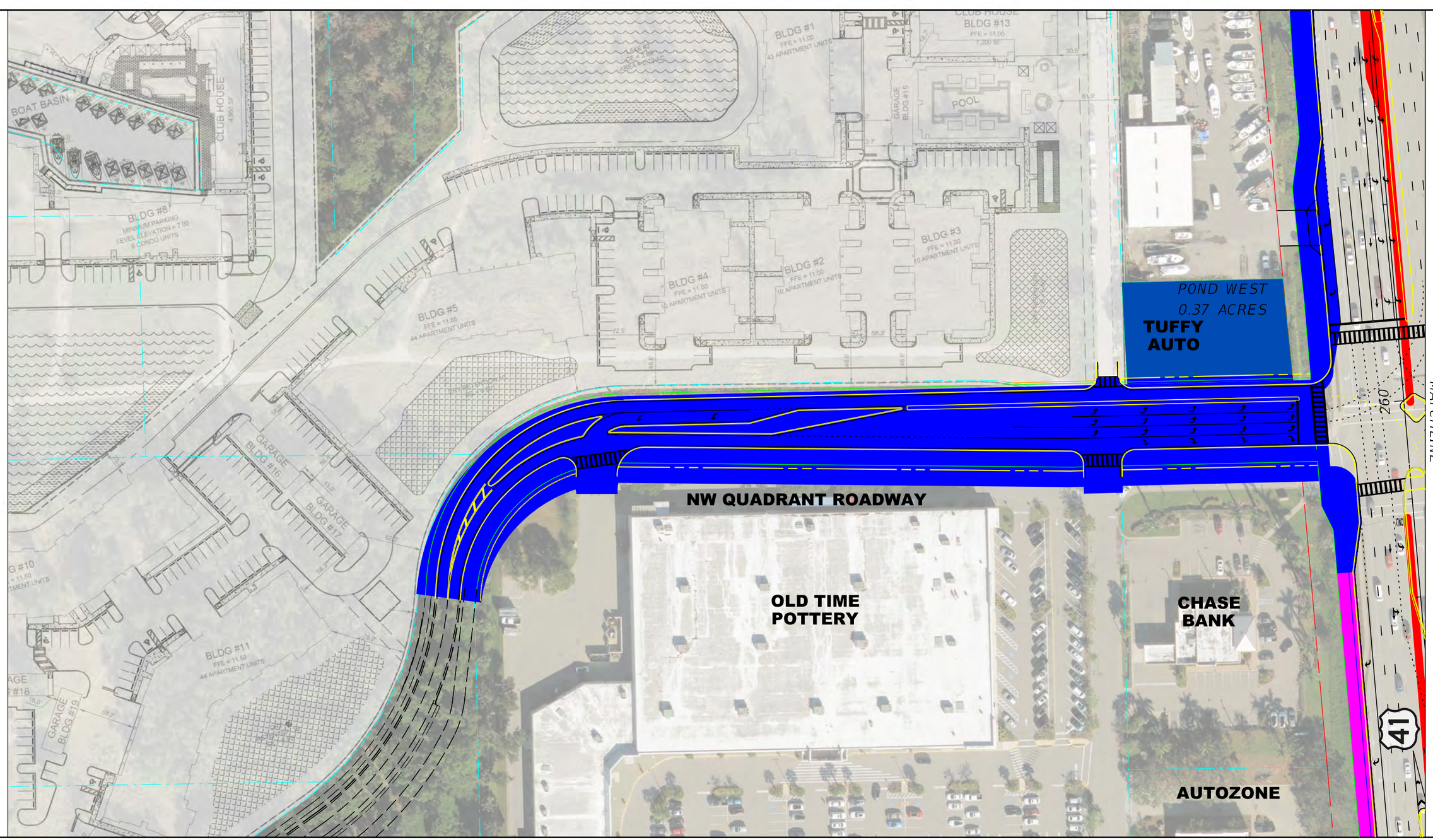
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K - 9		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 9



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
TO BE CONSTRUCTED BY OTHERS
PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

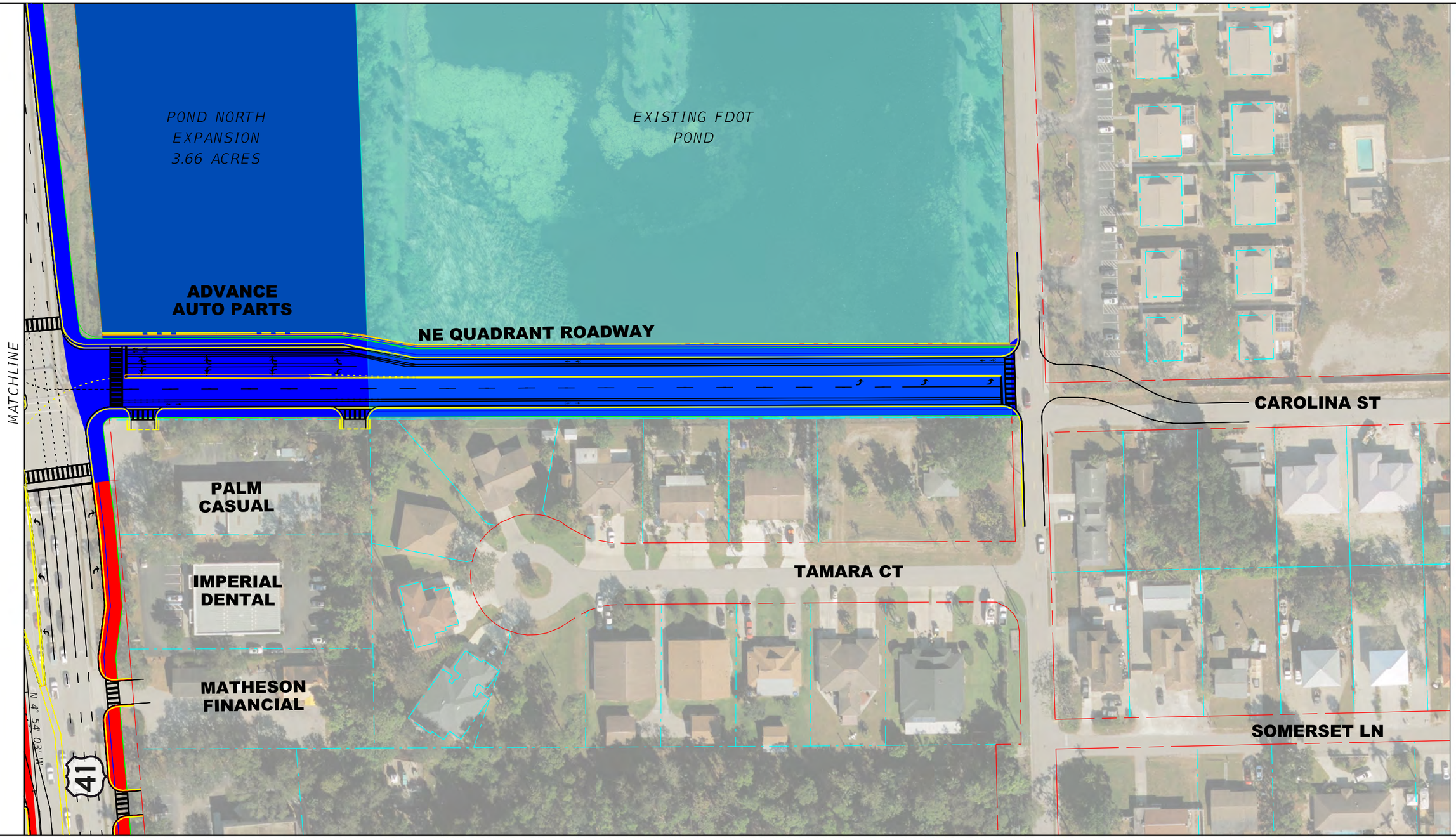
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K - 10		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 10



0 20 100
Feet

PARCEL LINE
PROPERTY LINE
PROPOSED ROW
PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V

FOR ILLUSTRATIVE PURPOSES ONLY
AERIAL PHOTO ACQUIRED 2023

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	K - 11		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
12010000	LEE	444321-1-22-01

US 41 AT BONITA BEACH ROAD
PD&E STUDY
PREFERRED ALTERNATIVE

SHEET NO. 11

Appendix L – Long Range Estimates

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 444321-1-22-01 **Letting Date:** 01/2099

Description: SR 45 (US 41) AT BONITA BEACH ROAD

District: 01 **County:** 12 LEE **Market Area:** 10 **Units:** English
Contract Class: 4 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 1.719 MI

Project Manager: NEM-AEH-PBB

Version 8 Project Grand Total **$49,614,912.65**
Description: March 2025 Unit Cost Update from Version 7P - 3/18/25

Sequence: 1 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.939 MI 4,958 LF

Description: US 41 from Foley Rd. to N. of Imperial River Boat Ramp Ent.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	25.00 / 25.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.939
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	5.69	AC	$49,426.99	$281,239.57
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	16,798.17	CY	$36.11	$606,581.92
	Earthwork Component Total				$887,821.49

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	7
Existing Roadway Pavement Width L/R	28.00 / 28.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	12.00 / 12.00

Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	16,063.66	SY	$9.18	$147,464.40
285-709	OPTIONAL BASE,BASE GROUP 09	13,584.70	SY	$23.68	$321,685.70
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	30,849.28	SY	$4.17	$128,641.50
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	2,545.07	TN	$176.63	$449,535.71
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,817.90	TN	$176.63	$321,095.68
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	1,233.97	TN	$208.79	$257,640.60
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	1,090.74	TN	$208.79	$227,735.60

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
102-2-200	SPECIAL DETOUR- TEMPORARY PAVEMENT	44,000.00	SY	$34.55	$1,520,200.00

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	5

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	761.00	EA	$4.49	$3,416.89
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	7.51	GM	$1,522.57	$11,434.50
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	9.39	GM	$559.49	$5,253.61
	Roadway Component Total				$3,394,104.19

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	12.25 / 12.25
New Total Outside Shoulder Width L/R	19.25 / 19.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	12.00 / 12.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	4,957.92	LF	$40.21	$199,357.96

520-1-10	CONCRETE CURB & GUTTER, TYPE F	4,957.92 LF	$40.21	$199,357.96
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	13,221.12 SY	$65.32	$863,603.56
570-1-1	PERFORMANCE TURF	5,508.80 SY	$4.21	$23,192.05

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	9,915.84	LF	$1.97	$19,534.20
104-11	FLOATING TURBIDITY BARRIER	93.90	LF	$13.97	$1,311.78
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	93.90	LF	$6.07	$569.97
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$3,130.10	$3,130.10
104-18	INLET PROTECTION SYSTEM	44.00	EA	$152.32	$6,702.08
107-1	LITTER REMOVAL	8.19	AC	$43.28	$354.46
107-2	MOWING	8.19	AC	$70.64	$578.54

Shoulder Component Total $1,317,692.66

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	34.00	EA	$10,230.27	$347,829.18
425-1-451	INLETS, CURB, TYPE J-5, <10'	10.00	EA	$14,713.31	$147,133.10
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	520.00	LF	$227.87	$118,492.40
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	152.00	LF	$329.66	$50,108.32
570-1-1	PERFORMANCE TURF	285.46	SY	$4.21	$1,201.79

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	32.00	LF	$397.41	$12,717.12

Comment: Arroyal Mall Treatment Pond 30' extension

Box Culvert 1

Description	Value
Size	8 x 5
Length	45.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	111.80	CY	$2,150.10	$240,381.18
415-1-1	REINF STEEL- ROADWAY	12,525.00	LB	$1.39	$17,409.75

Box Culvert 2

Description	Value
Size	10 x 6
Length	370.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	416.50	CY	$2,150.10	$895,516.65
415-1-1	REINF STEEL- ROADWAY	51,559.00	LB	$1.39	$71,667.01

Retention Basin 1

Description	Value
Size	.5 AC
Multiplier	1
Depth	6.00
Description	Retention Basin 1: Pond West

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.50	AC	$49,426.99	$24,713.50
120-1	REGULAR EXCAVATION	4,840.00	CY	$17.63	$85,329.20
425-1-541	INLETS, DT BOT, TYPE D, <10'	1.00	EA	$8,272.33	$8,272.33
425-2-71	MANHOLES, J-7, <10'	1.00	EA	$8,777.22	$8,777.22
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	56.00	LF	$355.00	$19,880.00
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	200.00	LF	$607.91	$121,582.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	600.00	LF	$30.55	$18,330.00
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	1.00	EA	$4,874.61	$4,874.61
570-1-1	PERFORMANCE TURF	2,420.00	SY	$4.21	$10,188.20

Retention Basin 2

Description	Value
Size	1 AC
Multiplier	1
Depth	6.00
Description	Retention Basin 2: Pond East Alternative 1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00	AC	$49,426.99	$49,426.99
120-1	REGULAR EXCAVATION	9,680.00	CY	$17.63	$170,658.40
425-1-541	INLETS, DT BOT, TYPE D, <10'	1.00	EA	$8,272.33	$8,272.33
425-2-71	MANHOLES, J-7, <10'	1.00	EA	$8,777.22	$8,777.22
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	56.00	LF	$355.00	$19,880.00
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	200.00	LF	$607.91	$121,582.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	840.00	LF	$30.55	$25,662.00
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	1.00	EA	$4,874.61	$4,874.61
570-1-1	PERFORMANCE TURF	4,840.00	SY	$4.21	$20,376.40

Retention Basin 3

Description	Value
Size	2 AC
Multiplier	2
Depth	6.00

Description Retention Basin 3: Pond North

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	4.00	AC	$49,426.99	$197,707.96
120-1	REGULAR EXCAVATION	38,720.00	CY	$17.63	$682,633.60
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00	EA	$8,272.33	$16,544.66
425-2-71	MANHOLES, J-7, <10'	2.00	EA	$8,777.22	$17,554.44
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	112.00	LF	$355.00	$39,760.00
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	400.00	LF	$607.91	$243,164.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	2,360.00	LF	$30.55	$72,098.00
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	2.00	EA	$4,874.61	$9,749.22
570-1-1	PERFORMANCE TURF	19,360.00	SY	$4.21	$81,505.60
	Drainage Component Total				$3,994,630.99

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	21.00	EA	$663.50	$13,933.50
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	2.00	EA	$1,901.92	$3,803.84
700-1-500	SINGLE COL GRND SIGN AS, RELOCATE	2.00	EA	$395.50	$791.00
700-1-600	SINGLE COL GRND SIGN AS, REMOVE	21.00	EA	$30.34	$637.14
700-2-114	MULTI- COLUMN SIGN, F&I GM, 30.1-50 SF	2.00	EA	$6,591.61	$13,183.22
700-2-600	MULTI- COLUMN GROUND SIGN, REMOVE	2.00	EA	$1,108.77	$2,217.54

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	8.00	EA	$663.50	$5,308.00
	Comment: From Ped Hybrid Beacon				
	Signing Component Total				$39,874.24

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	6 Lane Mast Arm
Multiplier	1
Description	New 6 Lane x 2 Lane at Foley Rd.

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	700.00	LF	$15.59	$10,913.00

630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	300.00	LF	$36.97	$11,091.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$11,823.54	$11,823.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	22.00	EA	$1,291.84	$28,420.48
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$6,328.22	$6,328.22
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$11.06	$663.60
641-2-11	PREST CNC POLE,F&I,TYP P-II,PEDESTAL	1.00	EA	$2,246.46	$2,246.46
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	6.00	EA	$119,551.74	$717,310.44
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	20.00	AS	$1,874.80	$37,496.00
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00	AS	$1,152.75	$9,222.00
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	20.00	EA	$622.41	$12,448.20
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	20.00	AS	$1,544.45	$30,889.00
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00	EA	$406.55	$3,252.40
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00	AS	$65,007.01	$65,007.01
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00	EA	$288.95	$1,155.80

Signalization 2

Description	Value
Type	6 Lane Mast Arm
Multiplier	1
Description	Reconstruct 6 lane x 6 lane at BBR

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	700.00	LF	$15.59	$10,913.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	300.00	LF	$36.97	$11,091.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$11,823.54	$11,823.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	22.00	EA	$1,291.84	$28,420.48
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$6,328.22	$6,328.22
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$11.06	$663.60
641-2-11	PREST CNC POLE,F&I,TYP P-II,PEDESTAL	1.00	EA	$2,246.46	$2,246.46
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	6.00	EA	$119,551.74	$717,310.44
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	20.00	AS	$1,874.80	$37,496.00
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00	AS	$1,152.75	$9,222.00
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	20.00	EA	$622.41	$12,448.20
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	20.00	AS	$1,544.45	$30,889.00
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00	EA	$406.55	$3,252.40

670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00	AS	$65,007.01	$65,007.01
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00	EA	$288.95	$1,155.80

Signalization 3

Description	Value
Type	6 Lane Mast Arm
Multiplier	1
Description	Reconstruct 6 lane x 4 lane at NW/NE Quad Road

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	700.00	LF	$15.59	$10,913.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	300.00	LF	$36.97	$11,091.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$11,823.54	$11,823.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	22.00	EA	$1,291.84	$28,420.48
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$6,328.22	$6,328.22
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$11.06	$663.60
641-2-11	PREST CNC POLE,F&I,TYP P-II,PEDESTAL	1.00	EA	$2,246.46	$2,246.46
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	6.00	EA	$119,551.74	$717,310.44
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	20.00	AS	$1,874.80	$37,496.00
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00	AS	$1,152.75	$9,222.00
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	20.00	EA	$622.41	$12,448.20
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	20.00	AS	$1,544.45	$30,889.00
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00	EA	$406.55	$3,252.40
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00	AS	$65,007.01	$65,007.01
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00	EA	$288.95	$1,155.80

Signalization 4

Description	Value
Type	6 Lane Mast Arm
Multiplier	1
Description	South of BBR DLT Crossover

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	700.00	LF	$15.59	$10,913.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	300.00	LF	$36.97	$11,091.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$11,823.54	$11,823.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	22.00	EA	$1,291.84	$28,420.48
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$6,328.22	$6,328.22

639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$11.06	$663.60
641-2-11	PREST CNC POLE,F&I,TYP P-II,PEDESTAL	1.00	EA	$2,246.46	$2,246.46
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	6.00	EA	$119,551.74	$717,310.44
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	20.00	AS	$1,874.80	$37,496.00
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00	AS	$1,152.75	$9,222.00
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	20.00	EA	$622.41	$12,448.20
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	20.00	AS	$1,544.45	$30,889.00
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00	EA	$406.55	$3,252.40
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00	AS	$65,007.01	$65,007.01
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00	EA	$288.95	$1,155.80

Signalization 5

Description	Value
Type	6 Lane Mast Arm
Multiplier	1
Description	North of BBR Crossover

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	700.00	LF	$15.59	$10,913.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	300.00	LF	$36.97	$11,091.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$11,823.54	$11,823.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	22.00	EA	$1,291.84	$28,420.48
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$6,328.22	$6,328.22
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$11.06	$663.60
641-2-11	PREST CNC POLE,F&I,TYP P-II,PEDESTAL	1.00	EA	$2,246.46	$2,246.46
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	6.00	EA	$119,551.74	$717,310.44
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	20.00	AS	$1,874.80	$37,496.00
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00	AS	$1,152.75	$9,222.00
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	20.00	EA	$622.41	$12,448.20
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	20.00	AS	$1,544.45	$30,889.00
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00	EA	$406.55	$3,252.40
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00	AS	$65,007.01	$65,007.01
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00	EA	$288.95	$1,155.80

Signalization 6

Description	Value
Type	Miscellaneous
Multiplier	1

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
646-1-11	ALUMINUM SIGNALS POLE, PEDESTAL	2.00	EA	$2,915.88	$5,831.76
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	2.00	EA	$119,551.74	$239,103.48
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	2.00	AS	$1,152.75	$2,305.50
654-3-10	MID: PEDESTRIAN HYBRID BEACON, F&I, COMP	6.00	AS	$2,839.62	$17,037.72
665-1-12	PEDESTRIAN DETECTOR, F&I, ACCESSIBLE	2.00	EA	$2,256.31	$4,512.62
670-5-110	TRAF CNTL ASSEM, F&I, NEMA	1.00	AS	$65,281.73	$65,281.73
	Signalizations Component Total				$5,075,408.56

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	4,957.92	LF	$15.59	$77,293.97
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	984.07	LF	$36.97	$36,381.07
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	33.00	EA	$1,291.84	$42,630.72
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	18,107.68	LF	$4.33	$78,406.25
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	33.00	EA	$11,233.58	$370,708.14
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	33.00	EA	$840.80	$27,746.40
	Subcomponent Total				$633,166.56
	Lighting Component Total				$633,166.55

BRIDGES COMPONENT

Bridge X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-8	CONC CLASS IV, BULKHEAD	371.00	CY	$1,925.59	$714,393.89
	Comment: Wall 1 - 236 Wall 2 - 135				
415-1-8	REINF STEEL- BULKHEAD	50,209.00	LB	$2.07	$103,932.63
	Comment: Wall 1 - 31,894 Wall 2 - 18,225				
455-87	ANCHOR BAR, STEEL	106.00	EA	$4,694.79	$497,647.74
	Comment: Wall 1 - 67 Wall 2 - 39				
515-4-2	BULLET RAIL, DOUBLE RAIL	825.00	LF	$79.69	$65,744.25
	Comment: Wall 1 - 525 Wall 2 - 300				
	Bridge Total				$1,381,718.51
	Bridges Component Total				$1,381,718.51

RETAINING WALLS COMPONENT

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
455-133-3	SHEET PILING STEEL, F&I PERMANENT	16,500.00	SF	$56.74	$936,210.00
	Comment: Wall 1 - 10,500 Wall 2-6,000				
521-8-3	CONC TRAF RAIL BAR,JCT SLAB,32"V SHP	825.00	LF	$490.27	$404,472.75
	Comment: Wall 1 - 525 Wall 2 - 300				
	Retaining Walls Component Total				$1,340,682.75

Sequence 1 Total $18,065,099.94

Sequence: 2 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.653 MI 3,445 LF

Description: Bonita Beach Rd. from Center of Bonita Springs to Spanish Wells Blvd.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	25.00 / 25.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.653
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.95 AC	$49,426.99	$195,236.61
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	11,681.79 CY	$36.11	$421,829.44
	Earthwork Component Total			$617,066.05

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Existing Roadway Pavement Width L/R	28.00 / 28.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	12.00 / 12.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	11,162.45 SY	$9.18	$102,471.29
285-709	OPTIONAL BASE,BASE GROUP 09	9,439.85 SY	$23.68	$223,535.65
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	21,436.80 SY	$4.17	$89,391.46
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,768.54 TN	$176.63	$312,377.22
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,263.24 TN	$176.63	$223,126.08
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	857.47 TN	$208.79	$179,031.16

337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	757.94	TN	$208.79	$158,250.29

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	440.00	EA	$4.49	$1,975.60
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	5.22	GM	$1,522.57	$7,947.82
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	5.22	GM	$559.49	$2,920.54
	Roadway Component Total				$1,301,027.11

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	12.25 / 12.25
New Total Outside Shoulder Width L/R	19.25 / 19.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	12.00 / 12.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	3,445.20	LF	$40.21	$138,531.49
520-1-10	CONCRETE CURB & GUTTER, TYPE F	3,445.20	LF	$40.21	$138,531.49
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	9,187.20	SY	$65.32	$600,107.90
570-1-1	PERFORMANCE TURF	3,828.00	SY	$4.21	$16,115.88

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
534-72-101	SOUND/NOISE BARRIER-INC FOUNDATION, PERM	2,320.00	SF	$63.81	$148,039.20

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	6,890.40	LF	$1.97	$13,574.09
104-11	FLOATING TURBIDITY BARRIER	65.25	LF	$13.97	$911.54
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	65.25	LF	$6.07	$396.07
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$3,130.10	$3,130.10
104-18	INLET PROTECTION SYSTEM	31.00	EA	$152.32	$4,721.92
107-1	LITTER REMOVAL	5.69	AC	$43.28	$246.26

107-2	MOWING	5.69 AC	$70.64	$401.94
	Shoulder Component Total			$1,064,707.88

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,044.15	SY	$4.21	$8,605.87
	Median Component Total				$8,605.87

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	24.00	EA	$10,230.27	$245,526.48
425-1-451	INLETS, CURB, TYPE J-5, <10'	7.00	EA	$14,713.31	$102,993.17
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	368.00	LF	$227.87	$83,856.16
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	112.00	LF	$329.66	$36,921.92
570-1-1	PERFORMANCE TURF	198.36	SY	$4.21	$835.10
	Drainage Component Total				$470,132.83

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	15.00	EA	$663.50	$9,952.50
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	2.00	EA	$1,901.92	$3,803.84
700-1-500	SINGLE COL GRND SIGN AS, RELOCATE	2.00	EA	$395.50	$791.00
700-1-600	SINGLE COL GRND SIGN AS, REMOVE	15.00	EA	$30.34	$455.10
700-2-114	MULTI- COLUMN SIGN, F&I GM, 30.1-50 SF	2.00	EA	$6,591.61	$13,183.22
700-2-600	MULTI- COLUMN GROUND SIGN, REMOVE	2.00	EA	$1,108.77	$2,217.54
	Signing Component Total				$30,403.20

SIGNALIZATIONS COMPONENT

Signalization 2

Description	Value
Type	4 Lane Mast Arm
Multiplier	1

Description	Reconstruct 4 lane x 4 lane at Center of Bonita Springs

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	750.00	LF	$15.59	$11,692.50
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	250.00	LF	$36.97	$9,242.50
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$11,823.54	$11,823.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	16.00	EA	$1,291.84	$20,669.44
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$6,328.22	$6,328.22
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$11.06	$663.60
649-21-10	STEEL MAST ARM ASSEMBLY, F&I, 60'	4.00	EA	$99,569.61	$398,278.44
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	12.00	AS	$1,874.80	$22,497.60
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00	AS	$1,152.75	$9,222.00
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00	EA	$622.41	$7,468.92
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00	AS	$1,544.45	$18,533.40
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00	EA	$406.55	$3,252.40
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00	AS	$65,007.01	$65,007.01
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00	EA	$288.95	$1,155.80

Signalization 3

Description	Value
Type	6 Lane Mast Arm
Multiplier	1
Description	Reconstruct 6 lane x 4 lane at Arroyal Road

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	700.00	LF	$15.59	$10,913.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	300.00	LF	$36.97	$11,091.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$11,823.54	$11,823.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	22.00	EA	$1,291.84	$28,420.48
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$6,328.22	$6,328.22
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$11.06	$663.60
641-2-11	PREST CNC POLE,F&I,TYP P-II,PEDESTAL	1.00	EA	$2,246.46	$2,246.46
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	6.00	EA	$119,551.74	$717,310.44
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	20.00	AS	$1,874.80	$37,496.00
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00	AS	$1,152.75	$9,222.00
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	20.00	EA	$622.41	$12,448.20
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	20.00	AS	$1,544.45	$30,889.00

665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00	EA	$406.55	$3,252.40
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00	AS	$65,007.01	$65,007.01
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00	EA	$288.95	$1,155.80
	Signalizations Component Total				$1,534,102.52

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	**Value**
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	3,445.20	LF	$15.59	$53,710.67
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	683.82	LF	$36.97	$25,280.83
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	23.00	EA	$1,291.84	$29,712.32
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	12,582.81	LF	$4.33	$54,483.57
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	23.00	EA	$11,233.58	$258,372.34
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	23.00	EA	$840.80	$19,338.40
	Subcomponent Total				$440,898.12
	Lighting Component Total				$440,898.13

Sequence 2 Total $5,466,943.59

Sequence: 3 NUU - New Construction, Undivided, Urban

Net Length: 0.180 MI
950 LF

Description: Northeast Quandrant Roadway

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	25.00 / 25.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.180
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.09	AC	$49,426.99	$53,875.42
120-6	EMBANKMENT	15,712.93	CY	$23.14	$363,597.20
	Earthwork Component Total				$417,472.62

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	18.00 / 29.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	5,508.10	SY	$9.18	$50,564.36
285-709	OPTIONAL BASE,BASE GROUP 09	4,963.20	SY	$23.68	$117,528.58
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	682.44	TN	$176.63	$120,539.38
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	409.46	TN	$208.79	$85,491.15

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE	200.00	LF	$75.29	$15,058.00

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	97.00	EA	$4.49	$435.53
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.72	GM	$1,522.57	$1,096.25
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.36	GM	$559.49	$201.42
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	0.72	GM	$5,832.06	$4,199.08
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	0.36	GM	$1,964.42	$707.19
	Roadway Component Total				$395,820.94

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	11.25 / 11.25
Total Outside Shoulder Perf. Turf Width L/R	3.00 / 3.00
Sidewalk Width L/R	6.00 / 6.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	950.40	LF	$40.21	$38,215.58
520-1-10	CONCRETE CURB & GUTTER, TYPE F	950.40	LF	$40.21	$38,215.58
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	1,267.20	SY	$65.32	$82,773.50
570-1-1	PERFORMANCE TURF	633.60	SY	$4.21	$2,667.46

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,900.80	LF	$1.97	$3,744.58
104-11	FLOATING TURBIDITY BARRIER	45.00	LF	$13.97	$628.65
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	45.00	LF	$6.07	$273.15
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$3,130.10	$3,130.10
104-18	INLET PROTECTION SYSTEM	10.00	EA	$152.32	$1,523.20
107-1	LITTER REMOVAL	2.18	AC	$43.28	$94.35
107-2	MOWING	2.18	AC	$70.64	$154.00
	Shoulder Component Total				$171,420.15

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	7.00	EA	$10,230.27	$71,611.89
425-1-451	INLETS, CURB, TYPE J-5, <10'	2.00	EA	$14,713.31	$29,426.62
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$9,407.99	$9,407.99
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$8,547.08	$8,547.08

430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	424.00	LF	$227.87	$96,616.88
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	40.00	LF	$329.66	$13,186.40
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	904.00	LF	$455.05	$411,365.20
570-1-1	PERFORMANCE TURF	54.72	SY	$4.21	$230.37
	Drainage Component Total				$640,392.43

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	4.00	EA	$663.50	$2,654.00
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$1,901.92	$1,901.92
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	1.00	EA	$10,839.86	$10,839.86
	Signing Component Total				$15,395.78

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	950.40	LF	$15.59	$14,816.74
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	188.64	LF	$36.97	$6,974.02
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	7.00	EA	$1,291.84	$9,042.88
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	3,471.12	LF	$4.33	$15,029.95
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	7.00	EA	$11,233.58	$78,635.06
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	7.00	EA	$840.80	$5,885.60
	Subcomponent Total				$130,384.25
	Lighting Component Total				$130,384.25

BRIDGES COMPONENT

Bridge X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-8	CONC CLASS IV, BULKHEAD	450.00	CY	$1,925.59	$866,515.50
	Comment: Wall 3				
415-1-8	REINF STEEL- BULKHEAD	60,750.00	LB	$2.07	$125,752.50
	Comment: Wall 3				
455-87	ANCHOR BAR, STEEL	232.00	EA	$4,694.79	$1,089,191.28
	Comment: Wall 3				
515-4-2	BULLET RAIL, DOUBLE RAIL	1,000.00	LF	$79.69	$79,690.00
	Comment: Wall 3				

	Bridge Total	$2,161,149.28
	Bridges Component Total	$2,161,149.28

RETAINING WALLS COMPONENT

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
455-133-3	SHEET PILING STEEL, F&I PERMANENT	20,000.00 SF	$56.74	$1,134,800.00
	Comment: Wall 3			
521-8-3	CONC TRAF RAIL BAR,JCT SLAB,32"V SHP	1,000.00 LF	$490.27	$490,270.00
	Comment: Wall 3			
	Retaining Walls Component Total			$1,625,070.00

Sequence 3 Total	$5,557,105.45

Sequence: 4 WUU - Widen/Resurface, Undivided, Urban

Net Length: 0.047 MI
250 LF

Description: Section I-I

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	37.00 / 37.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.219
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.42	AC	$49,426.99	$20,759.34
	Earthwork Component Total				$20,759.34

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Existing Roadway Pavement Width L/R	11.00 / 11.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	610.49	SY	$4.17	$2,545.74
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	50.37	TN	$176.63	$8,896.85
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	24.42	TN	$208.79	$5,098.65

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	6.00	EA	$4.49	$26.94
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.19	GM	$1,522.57	$289.29
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.05	GM	$559.49	$27.97
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	0.19	GM	$5,832.06	$1,108.09
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	0.05	GM	$1,964.42	$98.22
	Roadway Component Total				$18,091.75

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	12.25 / 12.25
New Total Outside Shoulder Width L/R	19.25 / 25.25
Total Outside Shoulder Perf. Turf Width L/R	11.00 / 11.00
Sidewalk Width L/R	6.00 / 12.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	249.74	LF	$40.21	$10,042.05
520-1-10	CONCRETE CURB & GUTTER, TYPE F	249.74	LF	$40.21	$10,042.05
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	499.49	SY	$65.32	$32,626.69
570-1-1	PERFORMANCE TURF	610.49	SY	$4.21	$2,570.16

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	499.49	LF	$1.97	$984.00
104-11	FLOATING TURBIDITY BARRIER	4.73	LF	$13.97	$66.08
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	4.73	LF	$6.07	$28.71
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$3,130.10	$3,130.10
104-18	INLET PROTECTION SYSTEM	3.00	EA	$152.32	$456.96
107-1	LITTER REMOVAL	0.22	AC	$43.28	$9.52
107-2	MOWING	0.22	AC	$70.64	$15.54
	Shoulder Component Total				$59,971.86

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	2.00	EA	$10,230.27	$20,460.54
425-1-451	INLETS, CURB, TYPE J-5, <10'	1.00	EA	$14,713.31	$14,713.31
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$9,407.99	$9,407.99
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$8,547.08	$8,547.08

430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	96.00	LF	$227.87	$21,875.52
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	240.00	LF	$455.05	$109,212.00
570-1-1	PERFORMANCE TURF	14.38	SY	$4.21	$60.54
	Drainage Component Total				$184,276.98

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	1.00	EA	$663.50	$663.50
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$1,901.92	$1,901.92
700-1-500	SINGLE COL GRND SIGN AS, RELOCATE	1.00	EA	$395.50	$395.50
700-1-600	SINGLE COL GRND SIGN AS, REMOVE	1.00	EA	$30.34	$30.34
700-2-114	MULTI- COLUMN SIGN, F&I GM, 30.1-50 SF	1.00	EA	$6,591.61	$6,591.61
700-2-600	MULTI- COLUMN GROUND SIGN, REMOVE	1.00	EA	$1,108.77	$1,108.77
	Signing Component Total				$10,691.64

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	249.74	LF	$15.59	$3,893.45
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	32.59	LF	$36.97	$1,204.85
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	1.00	EA	$1,291.84	$1,291.84
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	847.00	LF	$4.33	$3,667.51
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	1.00	EA	$11,233.58	$11,233.58
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	1.00	EA	$840.80	$840.80
	Subcomponent Total				$22,132.03
	Lighting Component Total				$22,132.03

Sequence 4 Total $315,923.60

Sequence: 5 NDU - New Construction, Divided, Urban **Net Length:** 0.080 MI 422 LF

Description: Section J-J

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	63.00 / 40.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.080
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00	AC	$49,426.99	$49,426.99
120-6	EMBANKMENT	3,053.17	CY	$23.14	$70,650.35
	Earthwork Component Total				$120,077.34

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	22.00 / 11.00
Structural Spread Rate	165
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	2,030.61	SY	$9.18	$18,641.00
285-709	OPTIONAL BASE,BASE GROUP 09	1,546.86	SY	$23.68	$36,629.64
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	127.62	TN	$176.63	$22,541.52
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	61.87	TN	$208.79	$12,917.84

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-0-11	CONC CLASS NS, GRAVITY WALL	25.00	CY	$1,323.99	$33,099.75
	Comment: New Toe Wall for Angler's Paradise				
515-4-2	BULLET RAIL, DOUBLE RAIL	25.00	LF	$79.69	$1,992.25
	Comment: New Toe Wall for Angler's Paradise				

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y

Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	11.00	EA	$4.49	$49.39
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.32	GM	$1,522.57	$487.22
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	0.32	GM	$5,832.06	$1,866.26
	Roadway Component Total				$128,224.87

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	13.25 / 19.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	6.00 / 12.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	421.87	LF	$40.21	$16,963.39
520-1-10	CONCRETE CURB & GUTTER, TYPE F	421.87	LF	$40.21	$16,963.39
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	843.74	SY	$65.32	$55,113.10
570-1-1	PERFORMANCE TURF	468.75	SY	$4.21	$1,973.44

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	843.74	LF	$1.97	$1,662.17
104-11	FLOATING TURBIDITY BARRIER	19.98	LF	$13.97	$279.12
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	19.98	LF	$6.07	$121.28
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$3,130.10	$3,130.10
104-18	INLET PROTECTION SYSTEM	5.00	EA	$152.32	$761.60
107-1	LITTER REMOVAL	2.03	AC	$43.28	$87.86
107-2	MOWING	2.03	AC	$70.64	$143.40
	Shoulder Component Total				$97,198.85

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	24.50
Performance Turf Width	5.34

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	843.74	LF	$53.61	$45,232.90
570-1-1	PERFORMANCE TURF	250.31	SY	$4.21	$1,053.81
	Median Component Total				$46,286.71

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	3.00	EA	$10,230.27	$30,690.81
425-1-451	INLETS, CURB, TYPE J-5, <10'	1.00	EA	$14,713.31	$14,713.31
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$9,407.99	$9,407.99
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$8,547.08	$8,547.08
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	216.00	LF	$227.87	$49,219.92
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	24.00	LF	$329.66	$7,911.84
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	400.00	LF	$455.05	$182,020.00
570-1-1	PERFORMANCE TURF	24.29	SY	$4.21	$102.26
	Drainage Component Total				$302,613.21

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	2.00	EA	$663.50	$1,327.00
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$1,901.92	$1,901.92
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	1.00	EA	$10,839.86	$10,839.86
700-2-116	MULTI- COLUMN SIGN, F&I GM, 100.1-200 SF	1.00	EA	$14,776.33	$14,776.33
	Signing Component Total				$28,845.11

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	421.87	LF	$15.59	$6,576.95
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	83.74	LF	$36.97	$3,095.87
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	3.00	EA	$1,291.84	$3,875.52
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	1,540.79	LF	$4.33	$6,671.62
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	3.00	EA	$11,233.58	$33,700.74

715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	3.00 EA	$840.80	$2,522.40
	Subcomponent Total			$56,443.10
	Lighting Component Total			$56,443.10
Sequence 5 Total				$779,689.19

Sequence: 6 NUU - New Construction, Undivided, Urban

Net Length: 0.096 MI
505 LF

Description: Section K-K

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	66.00 / 45.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.096
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.29	AC	$49,426.99	$63,760.82
120-6	EMBANKMENT	11,074.58	CY	$23.14	$256,265.78
	Earthwork Component Total				$320,026.60

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Roadway Pavement Width L/R	11.00 / 44.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	3,374.09	SY	$9.18	$30,974.15
285-709	OPTIONAL BASE,BASE GROUP 09	3,084.69	SY	$23.68	$73,045.46
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	424.15	TN	$176.63	$74,917.61
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	254.49	TN	$208.79	$53,134.97

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	77.00	EA	$4.49	$345.73

710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.38	GM	$1,522.57	$578.58
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.38	GM	$559.49	$212.61
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	0.38	GM	$5,832.06	$2,216.18
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	0.38	GM	$1,964.42	$746.48
	Roadway Component Total				$236,171.77

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	19.25 / 25.25
Total Outside Shoulder Perf. Turf Width L/R	11.00 / 11.00
Sidewalk Width L/R	6.00 / 12.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	504.77	LF	$40.21	$20,296.80
520-1-10	CONCRETE CURB & GUTTER, TYPE F	504.77	LF	$40.21	$20,296.80
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	1,009.54	SY	$65.32	$65,943.15
570-1-1	PERFORMANCE TURF	1,233.88	SY	$4.21	$5,194.63

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,009.54	LF	$1.97	$1,988.79
104-11	FLOATING TURBIDITY BARRIER	23.90	LF	$13.97	$333.88
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	23.90	LF	$6.07	$145.07
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$3,130.10	$3,130.10
104-18	INLET PROTECTION SYSTEM	5.00	EA	$152.32	$761.60
107-1	LITTER REMOVAL	1.16	AC	$43.28	$50.20
107-2	MOWING	1.16	AC	$70.64	$81.94
	Shoulder Component Total				$118,222.96

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	4.00	EA	$10,230.27	$40,921.08
425-1-451	INLETS, CURB, TYPE J-5, <10'	1.00	EA	$14,713.31	$14,713.31
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$9,407.99	$9,407.99
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$8,547.08	$8,547.08
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	224.00	LF	$227.87	$51,042.88
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	24.00	LF	$329.66	$7,911.84

430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	480.00	LF	$455.05	$218,424.00
570-1-1	PERFORMANCE TURF	29.06	SY	$4.21	$122.34
	Drainage Component Total				$351,090.52

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	2.00	EA	$663.50	$1,327.00
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$1,901.92	$1,901.92
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	1.00	EA	$10,839.86	$10,839.86
	Signing Component Total				$14,068.78

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	504.77	LF	$15.59	$7,869.36
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	65.87	LF	$36.97	$2,435.21
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	3.00	EA	$1,291.84	$3,875.52
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	1,711.91	LF	$4.33	$7,412.57
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	3.00	EA	$11,233.58	$33,700.74
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	3.00	EA	$840.80	$2,522.40
	Subcomponent Total				$57,815.81
	Lighting Component Total				$57,815.80

Sequence 6 Total $1,097,396.43

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 444321-1-22-01 **Letting Date:** 01/2099

Description: SR 45 (US 41) AT BONITA BEACH ROAD

District: 01 **County:** 12 LEE **Market Area:** 10 **Units:** English

Contract Class: 4 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 1.719 MI

Project Manager: NEM-AEH-PBB

Version 8 Project Grand Total **$49,614,912.65**

Description: March 2025 Unit Cost Update from Version 7P - 3/18/25

Project Sequences Subtotal			**$31,282,158.20**
102-1	Maintenance of Traffic	15.00 %	$4,692,323.73
101-1	Mobilization	10.00 %	$3,597,448.19
Project Sequences Total			**$39,571,930.12**
Project Unknowns		25.00 %	$9,892,982.53
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$150,000.00	$150,000.00
Project Non-Bid Subtotal					**$150,000.00**
Version 8 Project Grand Total					**$49,614,912.65**