August 27, 2024

**452864-1: SR 507 (Babcock St) Resurfacing** **from Palm Bay Rd (CR 516) to SR 500 (US 192)**

State Road Number: 507

Section Number: 70012-000

County: Brevard

Project Limits: From north of Palm Bay Rd (CR 516) to Melbourne Ave

Begin MP/End MP: 2.773 to 5.347 (Project Exception MP 3.512 to MP 3.553)1, Net Length: 2.533 MI

FM: 452864-1 (replaces existing candidate 447097-1)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Existing R/W Map Project Numbers: | Brevard Co Maint Map 35894 (1981): MP 2.773 to MP 5.367, 70-ft LT & 50-ft RT Min.  Brevard Co Maint Map 2184852 (1981): MP 2.773 to MP 5.035, 70-ft LT & 50-ft RT Min. | | | | | | |
| 1. Old Construction Project Numbers: | Brevard Co Project 204001 (2021); MP 3.025, Intersection Imp  238002-5-52-03 (2020); MP 4.033, Intersection Imp (Pushbutton)  237650-2 (2015); MP 5.380 to MP 5.927, Intersection Imp  270012-3507 (1996); MP 2.625 to MP 5.520 Mill & Resurface  70012-3506 (1988); MP 4.533 to MP 4.750 Signalized Ped Crossing | | | | | | |
| 1. Additional R/W Required? | Easement required for sidewalk. **(Optional Services)** | | | | | | |
| 1. Level of Community Awareness Plan: | CAP Level 3, urban resurfacing with proposed pedestrian signals, driveway modifications, and access management changes. | | | | | | |
| 1. Agreements Required? | No | | | Yes | | | |
| Yes, including Local Funds. | | | | | | |
| 1. Are there any bridges within the limits? | 700186 over Crane Creek. | | | | | | |
| 1. Are there any RR Crossings within the project limits or in the vicinity? | No. | | | | | | |
| 1. Are there any Airports within 10 nautical miles? | Yes. | | | | | | |
| 1. Storm Water Management Jurisdiction: | SJRWMD. | | | | | | |
| 1. Is the Project within CCCL (*Coastal Construction Control Line*)? | No. | | | | | | |
| 1. Existing Utilities:   (per SS1C, as-builts, and field markers) | AT&T Florida  Bright House Networks, LLC dba Charter/Spectrum  CenturyLink / Lumen  City of Melbourne - Reuse/Sewer/Water  City of Palm Bay - Sewer/Water  Florida City Gas  Florida Institute of Technology  Florida Power & Light (Distribution)  Florida Power & Light (Transmission)  Smart City Telecom  Uniti Fiber  ZAYO Group | | | | | | |
| 1. Any special MOT concerns? | Proximity to Schools and Colleges, high volume seasonal access points and pedestrian detours.  The City of Melbourne Fire Stations 75 and 78 are adjacent to the project corridor, coordinate lane closures. | | | | | | |
| 1. Any construction concerns? | Structures monitoring is anticipated per FDM 307.5 due to adjacent medical facilities.  Signal work in proximity to utilities, including overhead electric.  Contamination sites have been identified on the corridor. | | | | | | |
| 1. Design/Posted/Target Speeds (mph): | Location (MP) | | Design Speed | | Posted Speed | Target Speed | |
| 2.773 to 4.419 | | 45 | | 45 | 40 | |
| 4.419 to 5.226 | | 45 | | 40 | 40 | |
| 5.226 to 5.347 | | 40 | | 35 | 35 | |
| 1. Design Criteria and Context Classification: | SHS, FDM (2024), RRR | | | | | | |
| Location (MP) | Context Classification | | | | | Access Class |
| 2.773 to 4.033 | C3C “Suburban Commercial” | | | | | 05 |
| 4.033 to 5.347 | C4 “Urban General” | | | | | 05 |
| 1. Lump Sum or Pay Item | Pay Item. | | | | | | |
| 1. Proposed Design Schedule: | 24 months, sidewalk agreements and Public Hearing requirements. | | | | | | |

# 1Exception limits due to FPID: 451247-1. LRE includes milling and resurfacing through intersection for estimating purposes.

# 270012-3507 milling and resurfacing plans were not obtained.

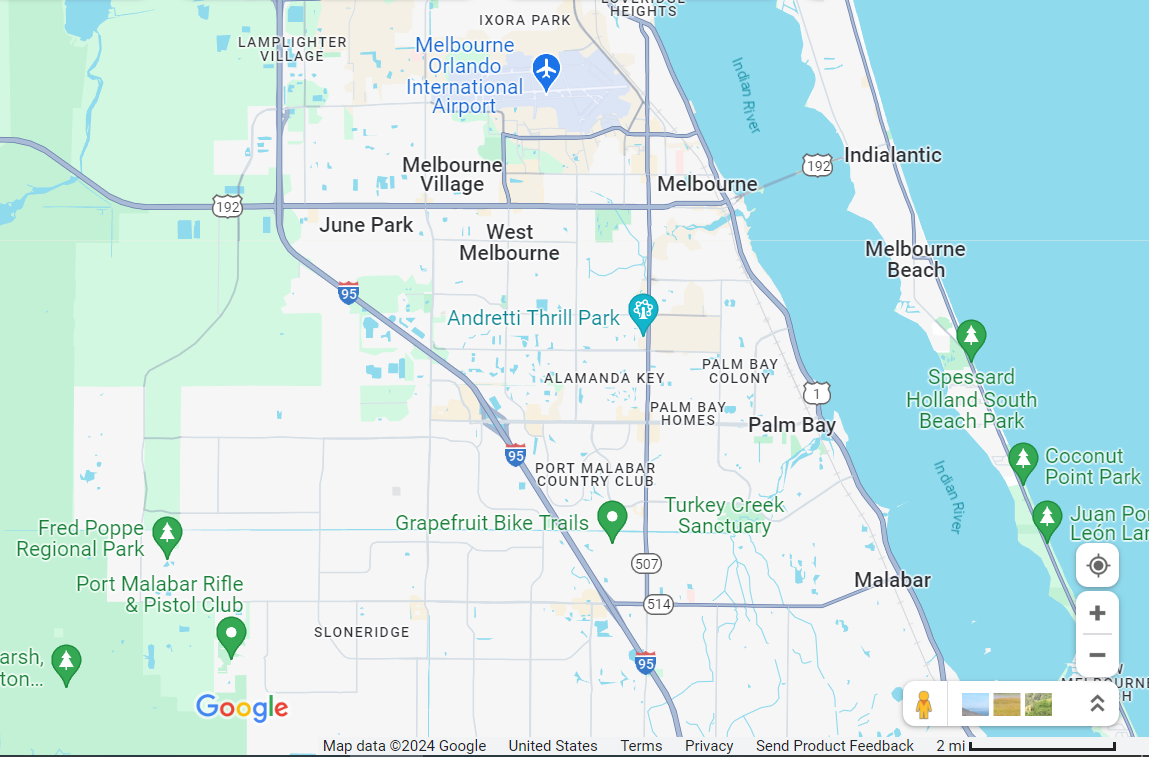
# Local Agency Coordination:

Conduct a Stakeholder meeting during the design phase to confirm the proposed scope remains consistent with

the expectations set during scoping, close the loop on what will be included in the project and learn of any changes that may have occurred since the Scopes development.

The Engineer shall coordinate to obtain an agreement with Brevard County, the City of Melbourne, the City of Palm Bay, and/or the Florida Institute of Technology (FIT) for maintenance related to proposed improvements, including intersection lighting, signal modifications, etc.

**Project Location Map:** [**(Google Maps Link)**](https://www.google.com/maps/dir/28.0387273,-80.6216832/28.0765095,-80.6214517/@28.0486355,-80.6296786,2409m/data=!3m1!1e3!4m2!4m1!3e0?entry=ttu)

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END PROJECT

BEGIN PROJECT

**Project Abstract**

Mill and resurface SR 507 and provide targeted corridor safety enhancements including Study recommended access management and pedestrian improvements. **(Optional Services)**

The Engineer is responsible for verifying all items in the proposed scope and shall review the project for conformance with all applicable criteria and standards.

# Intent and Nature of Project:

The purpose of the project is to rehabilitate the asphalt pavement to extend the service life of the existing roadway, including necessary roadside improvements, in accordance with FDOT Design Manual Section 114. The nature of the project is asphalt resurfacing and associated safety, pedestrian, bicycle, and functional improvements. The project is based on a request from the FDOT District 5 Pavement Management and Maintenance Office for a RRR review of Roadway 70012-000 from MP 2.803 to MP 5.528. The Scope includes targeted short term safety improvement recommendations from the FPID: 439858-1 *SR 507 (Babcock St) Corridor Planning Study* (Study) **(Optional Services)**, completed in September 2021, appropriate for inclusion in a resurfacing project. The begin project limit has been adjusted to MP 2.773 to match the Study. The end project limit has been adjusted to and MP 5.347 to match an existing pavement joint.

* The Concept and Scope are provided to convey the general overall intent of the project and to establish the estimated cost for programming. These documents are not intended to serve as detailed design level directives but are to communicate the projects primary objectives as approved by District staff. The Engineer is responsible for developing the final design within the constraints of the project budget while meeting the project’s needs.

# Project Description:

* Project is in southern Brevard County, within the city limits of Melbourne and Palm Bay.
* SR 507 is classified as an urban principal arterial and is a designated evacuation route per the Florida Division of Emergency Management.
* The following projects have been identified within the vicinity of this resurfacing project. The FDOT PM is to confirm limits and status of these projects prior to advertisement.
  + FPID: 451247-1 intersection improvements for Pirate Ln/Eber Blvd currently in design and anticipated to be let to construction in January 2026 which will address the deflection through the intersection for vehicles traveling east/west. The FDOT PM is Tyler Burgett.
  + Pirate Ln widening is a City of Melbourne project to widen Pirate Ln from 2 to 4 lanes east of SR 507. This project is currently in design and is not funded for construction. The City contact is Tami Gillen.
  + This project (FPID: 452864-1) replaces the previously completed FPID: 447097-1 RRR candidate resurfacing project for the same limits with a slightly different scope of work. The original project was not funded or adopted. The FDOT PM is Celine Bounds.

# Typical Sections:

* The project includes 2 typical sections. As built plans are not available. Dimensions are approximate, vary slightly from the Study, and are based on limited information and observations.
  + MP 2.773 to MP 4.933: 4 lane curb and gutter section with two 12-ft travel lanes, type F curb and gutter separated by 16-ft curbed raised median (type E curb and gutter), 5-ft sidewalk RT and 8-ft asphalt and concrete sidewalk LT. No changes are proposed except as noted.
    - The existing 8-ft asphalt path and concrete sidewalk is to be replaced with a 10-ft concrete sidewalk LT. **(Optional Services)**
    - A short section of flush shoulder, MP 2.790 to MP 2.860 RT, is proposed to be curbed to match the adjacent sections and to accommodate a sidewalk. **(Optional Services)**
  + MP 4.933 to MP 5.347: 4 lane curb and gutter section with two 12-ft NB travel lanes, two 11-ft SB travel lanes, a 14-ft two-way left turn/paved median, type F curb and gutter, 5-ft sidewalk RT and 8-ft sidewalk LT. Provide 12-ft outside travel lanes and 11-ft inside travel lanes with a 14-ft raised median to provide sufficient width for the proposed access management changes and traffic calming measures recommended in the Study. **(Optional Services)** The 12-ft outside travel lanes are proposed to maintain existing spread.
* Type F curb and gutter to Miami curb transition details are anticipated.
* Based on 2023 Traffic Data:

|  |  |  |  |
| --- | --- | --- | --- |
| **MP** | **TMS Site No.** | **AADT** | **T%** |
| 2.895 | 700345 (TTMS) | 30,591 | 2.5 |
| 5.442 | 7051311 | 34,500 | 1.8 |

# 1Not within the project limits, data provided for traffic characteristics only.

# Roadway Scope Items:

* A Pavement Condition Assessment was completed by FDOT on April 8, 2020. The pavement is in fair to poor condition with minor to moderate friction course raveling, moderate longitudinal cracking, and moderate block cracking. 4 pavement designs have been assumed for estimating purposes; 1) milling and resurfacing the travel and turn lanes, 2) full depth pavement widening and repair, 3) deeper rehabilitation, and 4) bridge deck overlay.
  + Existing bridge deck overlay thicknesses are to be maintained and not increased. Replace bridge joint seals on overlaid deck. Include milling details to address work across the bridge and interfaces with roadway approaches. A Bridge Load Rating analysis is not required.
  + The bridge deck will need to be drilled in a couple of locations to measure the thickness of asphalt overlay prior to milling and resurfacing.
* MPSV data was collected March 30, 2020. Cross slope correction is not anticipated, deficiencies are to be documented to remain, correction will require reconstruction of the existing curb line and drainage system.
* Median openings and access management changes shown in the Concept are for estimating purposes and to convey the overall intent of the project. The locations and configurations displayed are carried forward from the Study and have not been confirmed through the Access Management Decision Process. **(Optional Services)**
* Coordinate the removal of obsolete or abandoned driveways and drop curb aprons with property owners at the following locations, reconstructing the type F curb and gutter, restoring the utility strip, and reconstructing the sidewalk.
  + MP 3.719 LT
  + MP 4.744 LT & MP 4.758 LT (Asphalt connection and drop curb with steel bollards. This connection provides pedestrian and service vehicle access only. The Florida Institute of Technology requested the removal of these entrances) **(Optional Services)**
  + MP 5.139 RT
  + MP 5.150 RT
  + MP 5.350 RT
* Extend the existing raised median and traffic separators to convert full median openings to directional openings at the following locations: **(Optional Services)**
  + - MP 2.860
    - MP 2.945
    - MP 3.665
* MP 2.773: Remove the raised median and widen to provide a left turn lane with traffic separator. **(Optional Services)**
* MP 2.942 RT: Reconstruct the existing damaged asphalt driveway with a standard concrete driveway to provide a suitable pedestrian way.
* MP 3.311 RT: Existing curb and gutter has settled. Reconstruct to restore flow line.
* MP 3.460 LT: Reduce the existing driveway width and restore the curb and gutter, sidewalk and utility strip.
* MP 3.775: The existing median opening does not meet the minimum spacing requirements, and the leading driveway is abandoned. Eliminate the northbound left turn lane and provide a raised median. **(Optional Services)**
* MP 3.777 to MP 3.804: Widen to extend the existing northbound left turn lane to Misty Oak Dr. **(Optional Services)**
* MP 4.470 LT: Reduce the existing frontage wide driveway to provide a standard width and restore the curb and gutter, sidewalk and utility strip.
* MP 4.765: Extend the existing traffic separator to the Southgate Blvd intersection.
* MP 4.850: Evaluate the existing roadway guardrail for conformance to current Standards and design criteria; reset and replace as needed to correct deficiencies. Guardrail meeting the 2013 Design Standards is to remain. For LRE purposes, 10% of the guardrail was assumed to be reset.
  + - Provide Thrie-beam connections at the bridge approaches.
* MP 4.933 to MP 5.347: Add raised median and left turn lanes per the access management recommendations presented in the Study. **(Optional Services)**
  + - Remove the existing pavement structure through the bottom of the base course to facilitate future landscaping establishment and drainage.

# Drainage Scope Items:

* The primary goal for improvements along this corridor is to utilize the existing drainage system where feasible. Based on field observations the existing drainage system appears to be functioning properly except as noted.
* MP 2.773 to MP 2.790 RT: Maintain roadside conveyance and offsite drainage to accommodate the proposed sidewalk and curb and gutter section. 4 structures are assumed for estimating purposes. **(Optional Services)**
* MP 2.790 to MP 2.865 RT: Maintain roadside conveyance to accommodate the proposed sidewalk and curb and gutter section. Confirm longitudinal grade and spread requirements are met. Special gutter grade, closed flume inlets, etc. may be required. 3 structures are assumed for estimating purposes. **(Optional Services)**
* MP 4.975 RT: Subsidence in the northbound travel lanes has developed adjacent to the curb inlet and storm lateral pipe. The issue is to be addressed by the Engineer as requested by the District Maintenance Office. The cause was unknown at the time of scope development. Coordinate investigation and feasible solutions with the District Design Office prior to initiating design.

# Utility Scope Items:

* Adjust all valve covers, utility pull boxes, fire hydrants, utility manholes, etc. to be flush with proposed sidewalk, ramps, roadside, and roadway pavement as necessary to complete the proposed improvements.
* Quality Level A “QL A” utility information is anticipated. Construction activities that involve underground work within proximity to noted utilities include mast arms, drainage structures, light poles, sidewalk, and pedestrian signal structures. Some relocation or adjustment is anticipated.
* Above ground utilities are to be located and shown in the plans.
* Utility poles were noted to be within the clear zone. The Engineer is to re-evaluate the crash data during the design phase and address relocation need during utility coordination if warranted.
* Any proposed drainage, light poles, pedestrian poles, signal structures, etc. must be Vvh’d, completed, and shown in the plans prior to the Phase II plans ERC submittal.

# Multimodal Scope Items:

* The Engineer shall include a project-specific pedestrian/bicyclist temporary traffic control plan.

## Transit:

* Space Coast Area Transit (SCAT) routes 25, 27, 29, and 30 currently service the SR 507 corridor. Coordinate temporary and permanent changes that may affect this route.
* 16 bus stops were designated with signpost within or adjacent to the project limits. Provide minimum stop requirements per the FDOT Accessing Transit Design Handbook. Coordinate proposed final locations and stop disposition with SCAT during design and provide sidewalk connections from existing or proposed sidewalks where applicable. Locations shown on the Concept are intended to show intent only and have not been coordinated.
  + The bus stop at MP 3.015 RT is outside the apparent Right of Way. Coordinate with SCAT and the property owner for the relocation within FDOT Right of Way.

## Bicycles:

* Bicycle lanes are not present in the existing condition and cannot be provided due to limited available pavement width (24-ft per direction). There are bicycle lanes north and south of the project.

Pedestrians:

* Pedestrian accommodations are inconsistent on the corridor. Sidewalk widths, types and gaps vary. The Study recommended filling existing sidewalk gaps, widening the existing sidewalk on the Crane Creek Bridge, adding raised crosswalks, and providing a shared use path where viable. **(Optional Services)**
* The Engineer is to review the existing sidewalk condition in sections to remain and restore damaged locations.
  + Reconstruct existing curb ramps that do not comply with minimum ADA criteria. 45 ramps have been assumed to require reconstruction for estimating purposes.
* This project includes gaps in the sidewalk connectivity that are to be filled per the Study. Proposed sidewalk is 10-ft wide LT and 6-ft wide RT. **(Optional Services)**
  + Replace existing southbound 8-ft asphalt/concrete sidewalk with a 10-ft concrete sidewalk;
    - MP 2.814 LT to MP 3.187 LT
    - MP 4.530 LT to MP 5.030 LT
  + MP 2.770 to MP 3.025 RT: Construct 6-ft sidewalk to fill a gap and provide connectivity between existing sections.
  + The proposed improvements, modifications, or existing pedestrian ways noted below are outside the apparent maintained Right of Way. If an Agreement, Easement, Right of Way, etc. cannot be obtained, the work is to be omitted and documented accordingly. **(Optional Services)**
    - MP 2.975 RT to MP 3.021 RT: The proposed sidewalk is outside the apparent maintained Right of Way and crosses Housing Authority of Brevard County property which is subject to a FP&L Transmission Easement.
    - MP 3.190 LT (Cinnamon Lake Cir): The existing curb ramps are deficient. If an agreement cannot be reached, the deficient curb ramps are to remain with documentation.
    - MP 3.145 RT to MP 3.205 RT (*Trillium Apartments*): The existing sidewalk was developer constructed and, per site plans and the Brevard County Property Appraiser, Right of Way was donated to the Department for the sidewalk. No changes are proposed, the Engineer is to verify the donated Right of Way and have Maps updated.
    - MP 4.104 RT to MP 4.140 RT (*Melbourne Central Catholic High School*): The existing sidewalk is outside the apparent maintained Right of Way and is to remain without change.
* Provide signalized pedestrian mid-block crossings as recommended in the Study; **(Optional Services)**
  + MP 4.339 (proposed signalized)
  + MP 5.067 (proposed signalized)
* MP 4.850: Replace blunt end pedestrian/bicycle bullet railings with tapered end transitions.
* MP 4.936 RT (Vida Wy): remove the existing unsignalized pedestrian mid-block crossing curb ramp.

# Permitting Scope Items:

* Coordinate with FDOT, submitting a permit determination letter to the Environmental Permits Office, Attention District Five Permits Coordinator, for review and concurrence during the design process, considering the below descriptions of work and conditions.
  + This project is anticipated to exceed one acre of soil disturbing activities and will require NPDES coverage under the FDEP Generic Permit for Stormwater Discharge from Large and Small Construction Activities.
  + Wetlands were noted within and adjacent to the Right of Way and are not to be impacted. The apparent wetland lines shown on the Concept are from the Florida Geographic Data Library and are for informational purposes only.
  + There are floodplains adjacent to and within the project limits. The current scope of work is not anticipated to have impacts; however, if there are any changes to the scope of work, coordination with the FDOT Environmental Permits Office will be necessary for evaluation to determine if additional documentation must be provided.
  + USGS flow gauge station #02249510 is attached to the Crane Creek Bridge (700186) and the associated instrumentation may be vibration sensitive. Coordinate construction activities and monitoring with the maintaining agency. This station is currently inactive.
  + Crane Creek is listed as an impaired waterbody.

**Environmental Scope Items:**

* Complete an environmental assessment:
  + A protected species assessment is required for the project. The level of assessment should be commensurate with the scope of work. The assessment should focus on species applicable to the project area with consideration given to consultation areas, habitats, and known occurrence data.
  + A contamination assessment is required for the project. The level of documentation required will be dependent on the contamination sites in the area, scope of work proposed, and previous assessments conducted. Coordinate with the District Contamination Impact Coordinator to determine project needs.
* A Cultural Resources Assessment is required and is to be conducted by Cultural Resources Professionals as outlined in 36 CFR Part 61 and set forth in the Professional Qualifications Standards section of the Secretary of the Interior’s Standard and Guidelines for Archaeology and Historic Preservation.

# Structural Scope Items:

* A structural design and analysis will be required for 2 mast arm assemblies. Standard assemblies are anticipated. **(Optional Services)**
* Complete analysis for the modification to the existing signal structures as described in the Traffic Operations and Multimodal Scope Items. A preliminary structural review has not been completed for any of the intersections. If there is insufficient structural capacity for the structures to accommodate the modifications noted below, the existing signal configuration is to remain. The Engineer is to confirm the existing capacity and vertical clearance requirements before initiating the design.
* Construction activities including earthwork and asphalt compaction are expected to require the monitoring of existing structures per FDM 117 and FDOT Standard Specifications 108 due to adjacent medical facilities.

# Traffic Operations (Includes Signing, Signals, ITS) Scope Items:

Signing and Pavement Markings

* Signing and pavement markings shall be completed for the project limits. Inventory all signing including evaluation for compliance with all applicable criteria. Any existing signs that conflict with the proposed signs or pavement markings, and non-compliant signs or pavement markings, are to be addressed in the plans.
* Reestablish the school zone signing and pavement markings in accordance with the FDOT Speed Zoning Manual.
  + Complete calculations for approximately 11 multi-post sign relocations/installations.
  + Include appropriate begin/end bicycle lane signage.

Signals

* The Engineer is to evaluate all existing pedestrian detector assemblies, pedestrian signals, etc. for compliance with criteria and standards. All features added or modified should be designed “Accessible Pedestrian Signal Ready” to permit future upgrades without reconstructing curb ramps or relocating pedestrian poles to meet spacing requirements.
* The project includes 7 signalized intersections (5 existing, 2 proposed), not including the Pirate Ln/Eber Blvd intersection which is to be reconstructed under a separate project, and the Melbourne Ave signal which is north of the end project limit.
  + A preliminary structural review has not been completed for any of the intersections, proposed or existing. If there is insufficient structural capacity for the existing structures to accommodate the modifications noted below, the existing signal configuration is to remain. The Engineer is to confirm the existing capacity and vertical clearance requirements before initiating the design.
  + Proposed pole locations on the Concept have not been cleared and are shown only to convey intent. The Engineer is to determine the final locations.

|  |  |
| --- | --- |
| **MP 3.025 – Sun Lane Rd/Lake in the Woods Dr (Mast Arm)** | |
| Detection | Loop detection and video monitoring. Provide video detection. |
| Backplates | Existing reflectorized. |
| Left Turns | Protected-permissive NB & SB with 4 section FYA’s. Permissive EB & WB. |
| **MP 3.025 – Sun Lane Rd/Lake in the Woods Dr (Mast Arm)** | |
| Ped Signals | Existing standard. Provide APS ready assemblies for all approaches. |
| Lighting | Mast arm mounted in the NE quadrant. Provide intersection lighting retrofit. |
| Other | Provide new south leg pedestrian crosswalk. |

| **MP 3.528 – Pirate Ln/Eber Blvd (Box Span Strain Pole) to be reconstructed under FPID: 451247-1 (NO WORK).** | |
| --- | --- |
| Detection | Loop detection for EB & WB approaches and left turns for NB & SB approaches. Video monitoring. |
| Backplates | None. |
| Left Turns | Protected-permissive, all approaches. |
| Ped Signals | Existing standard assemblies strain pole mounted. |
| Lighting | Roadway lighting present. |
| Other | No work. |

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| --- | --- |
| **MP 4.033 – Florida Ave (Box Span Strain Pole)** | |
| Detection | Loop detection for EB & WB approaches, left turns for NB & SB approaches and advance loops for thru lanes. Provide video detection. |
| Backplates | None existing, provide flexible retroreflective. |
| Left Turns | Protected-permissive, all approaches. Remove existing 5-section signal heads and replace with 3-section and 4-section FYA provided there is sufficient structural capacity. |
| Ped Signals | Existing assemblies replaced under FPID: 238002-5-52-03; however, no APS. No work. |
| Lighting | Utility pole mounted or strain pole mounted in northeast and southwest quadrants. Provide intersection lighting retrofit. |
| Other | None. |

| **MP 4.339 – Pedestrian Crossing (Mast Arm) Proposed - (Optional Services)** | |
| --- | --- |
| Detection | Pedestrian actuated. |
| Backplates | Provide reflective. |
| Left Turns | N/A. |
| Ped Signals | Provide 2 APS ready assemblies. |
| Lighting | Provide mid-block pedestrian lighting. |
| Other | None. |

|  |  |
| --- | --- |
| **MP 4.519 – University Blvd (Box Span Strain Pole)** | |
| Detection | Loop detection for EB & WB approaches and left turns for NB & SB approaches. Video monitoring. Provide video detection. |
| Backplates | None, provide flexible retroreflective. |
| Left Turns | Protected-permissive, all approaches. Remove existing 5-section signal heads and replace with 3-section and 4-section FYA provided there is sufficient structural capacity. |
| Ped Signals | Existing pedestrian signals mounted on strain poles or on posts. Provide APS ready assemblies. |
| Lighting | Roadway lighting present. Provide intersection lighting retrofit. |
| Other | None. |

| **MP 4.622 – Pedestrian Crossing (Single Span Strain Pole)** | |
| --- | --- |
| Detection | Pedestrian actuated. |
| Backplates | None, provide flexible retroreflective. |
| Left Turns | N/A. |
| Ped Signals | Existing mounted on strain poles. Provide APS ready assemblies |
| Lighting | Strain pole mounted fixtures. Provide mid-block pedestrian lighting. |
| Other | None. |

| **MP 4.755 – Southgate Blvd (3 Span Box Strain Pole)** | |
| --- | --- |
| Detection | Advance detection for NB & SB thru lanes. Loop detection for SB left turn lane and WB approach. Provide video detection. |
| Backplates | None, provide flexible retroreflective. |
| Left Turns | SB protected-permissive, WB protected only. NB no left. Remove existing 5-section signal head and replace with 3-section and 4-section FYA provided there is sufficient structural capacity. |
| Ped Signals | Existing mounted on strain poles. Provide APS ready post mounted assemblies |
| Lighting | Provide intersection lighting retrofit. |
| Other | Provide new north leg pedestrian crosswalk. |

| **MP 5.067 – Pedestrian Crossing (Mast Arm) Proposed - (Optional Services)** | |
| --- | --- |
| Detection | Pedestrian actuated. |
| Backplates | Provide reflective. |
| Left Turns | N/A. |
| Ped Signals | Provide 2 APS ready assemblies. |
| Lighting | Provide mid-block pedestrian lighting. |
| Other | None. |

| **MP 5.380 – Melbourne Ave (Mast arms) OUTSIDE PROJECT LIMITS** | |
| --- | --- |
| Detection | Loop detection for NB & SB left turn lane and WB & EB approaches. Advance detection for NB thru lanes. Provide video detection. |
| Backplates | Existing reflectorized. No changes. |
| Left Turns | Protected-permissive NB & SB with 4-section FYA’s. Protected EB & WB. |
| Ped Signals | Standard assemblies, no changes. |
| Lighting | Roadway approach lighting present. No changes. |
| Other | Intersection is outside of the project limits. |

* There is one Telemetered Traffic Monitoring Site within the project limits. Coordinate TTMS work with the Transportation Data and Analytics Office in Tallahassee.

## Intelligent Transportation Systems (ITS)

* Proposed signals and modifications to the existing signals are anticipated and are to be consistent with the ITS Master Plan. The Engineer;
* Shall follow the Risk Assessment protocol, including Checklist and Systems Engineering analysis.
* Shall design the signals to be smart signal compatible with the districtwide ATSPM database and future compatibility for CV, including enhanced detection.
* Shall designate fiber in the plans, determine any conflicts and resolve.
* Additional ITS guidance can be found here: <https://www.cflsmartroads.com/projects/technical_docs.html#(Designers)>

# Lighting Scope Items:

* Existing lighting on the corridor is utility and signal pole mounted and is to remain except as noted.
* Provide Intersection Lighting Retrofit at the following signalized intersections. Adjustment or relocation of the existing lights may be required based on the results of the proposed lighting calculations and design. Coordinate an agreement modification with the maintaining agency if necessary.
* MP 3.025 – Sun Lake Rd/Lake of the Woods Dr
* MP 4.033 – Florida Ave
* MP 4.339 – Pedestrian Crossing
* MP 4.519 – University Blvd
* MP 4.622 – Pedestrian Crossing
* MP 4.755 – Southgate Blvd
* MP 5.067 – Pedestrian Crossing

# Landscaping Scope Items:

* Existing landscaping and irrigation within the Right of Way will be impacted. Coordinate removal or relocation with the maintaining agency. Any material in conflict with the proposed improvements remaining at the time of construction will be removed under standard clearing and grubbing. Landscaping to remain will be protected from construction activities.

# Survey and Mapping Scope Items:

Design Survey

* Provide 3D Topographic Survey for the areas and locations of identified and proposed improvements. Total survey area will be determined by the Engineer based on their needs for design.
  + Survey should include all above ground surface features, including, but not limited to valve covers, overhead utilities, meter boxes, manholes, etc.
  + Include items identified by the environmental assessment.
  + Include drainage structures and nearest connecting structures shall be detailed within the survey areas only, unless otherwise instructed.
* Provide quality level A “QL A” Sub-surface Utility Engineering (SUE) and survey thereof for the areas and locations of identified and proposed improvements shown on the Concept. Total SUE limits will be determined by the Engineer based on the limits of disturbance.
  + Vvh’s are anticipated. Coordinate with the Engineer for anticipated number of Vvh’s required for the project.

Right of Way Mapping

* Establish the existing Right of Way for the areas and locations of identified and proposed improvements based upon the best available evidence. The level of effort for this task is to be based on the proposed design and nature of the corridor.
* Establish a computed survey baseline (baselines if needed) and provide to the Engineer for their plans. Stationing should be adjusted to be different than any historic alignment, as it should not be misconstrued as a retracement of the existing alignment.
* The Right of Way was transferred to FDOT by Brevard County in 1984 by the recording of a Maintenance Map. The Maps are mostly illegible, and the corridor has not been surveyed by the Department nor has the Right of Way depicted thereon been verified. Right of Way and Easements shown on the Concept were provided by the District Surveying and Mapping Office and are considered approximate.

# Office of Right of Way Scope Items:

* Review existing driveways for conformance with current standards. Obsolete, abandoned, and non-conforming driveways are to be removed or modified to improve pedestrian mobility. Coordinate disposition with the property owner(s) during design.

# Geotechnical and Pavement Scope Items:

* Pavement Coring Report, including bridge overlay, and Resilient Modulus values to be provided by the FDOT District Materials Office.
* ESAL calculations to be provided by the FDOT District Planning Office.
* Perform and obtain the necessary geotechnical information as directed by the Geotechnical Office.
  + Data to support turn lane widening and signal structures.
  + Complete optional materials analysis for proposed drainage work.

# Design Documentation:

* The design documentation items noted below are necessary to implement the proposed improvements. The Engineer is responsible for verifying all items in the proposed Scope and design conform with all applicable criteria and standards, including the identification of any required Memoranda, Variations and Exceptions.

Crash information was compiled from the raw CARS data and additional analysis, review, evaluation, etc. has not been conducted. This data was included for purposes of context and magnitude for scoping only. The Engineer is responsible for reviewing crash data for conformance to FDM 114 and applicability to required design documentation: Memoranda, Variations and Exceptions.

* Design Variation Memorandum
  + *Extended Turn Lane Entrance Tapers-* 200-ft turn lane entrance tapers do not meet current criteria and are to remain.
  + *Median Width-* Per FDM Table 210.3.1, curbed roadways with 45 mph design speed are to have a 22-ft median. The existing median from MP 2.773 to MP 4.933 is 16-ft and is to remain and the proposed median from MP 4.933 to MP 5.347 is 14-ft. 14-ft median is necessary to maintain the existing outside lane spread conditions.
  + *Turn Lane Length-* Per FDM Exhibit 212-1 the minimum turn lane length is 185-ft for 45 MPH design speeds, plus 100-ft queue. The following turn lanes do not meet length requirements and are to remain. **Additional locations may be included as a result of Optional Services:**
    - MP 2.945 Med (*Habitat for Humanity*): 140-ft provided, SB left
    - MP 3.020 RT (Sun Lake Road): 230-ft provided, NB right
    - MP 3.840 (*Health First Aging Institute*): 230-ft provided, SB left
    - MP 3.955 (*Walmart Neighborhood Market*): 140-ft provided, SB right
    - MP 3.995 (*Chevron*): 110-ft provided, SB right
    - MP 4.105 (*Melbourne Central Catholic High School*): 120-ft provided, NB right tapered turnout.
    - MP 4.681 (*FIT* parking): 185-ft provided, NB left
    - MP 4.930 (Vida Way): 245-ft provided, NB left (posted 40 mph)

Per FDM Exhibit 212-1 the minimum turn lane length is 155-ft for 40 mph design speeds, plus 100-ft queue. The following turn lanes are proposed and do not meet length requirements:

MP 5.275 (Devonshire Dr): SB left

* + *Access Management-* This project includes access management recommendations from the Study.Per FDM Table 201.4.2, full median opening spacing is 1,320-ft and directional spacing is 660-ft for access classification 05 facilities. The following proposed or modified existing median openings will not meet spacing requirements. **Additional locations may be included as a result of Optional Services:** 
    - MP 2.765 (*Pinch A Penny*) to MP 2.859 (*Builders First Source*): 522-ft provided (directional)
    - MP 2.859 (*Builders First Source*) to MP 2.940 (*Habitat for Humanity*): 522-ft provided (directional)
    - MP 2.940 (*Habitat for Humanity*) to MP 3.025 (Lake in the Woods Dr): 450-ft provided (directional at MP 2.940, full at 3.025)
    - MP 3.670 (*Andretti Thrill Park*) to MP 3.831 (Misty Oaks Dr): 850-ft provided (directional at 3.670, full at 3.831)
    - MP 3.831 (Misty Oaks Dr) to MP 3.935 (*Walmart Neighborhood Market*): 550-ft provided (full at 3.831, directional at 3.935)
    - MP 4.930 (Vida Way) to MP 5.036 (Edgewood Dr): 560-ft provided (directional at 4.930, full at 5.036)
    - MP 5.036 (Edgewood Dr) to MP 5.150 (Greenway Dr): 580-ft provided (full)
    - MP 5.150 (Greenway Dr) to MP 5.170 (*Florida Department of Corrections*): 125-ft provided (full at 5.150, directional at 5.170)
    - MP 5.170 (*Florida Department of Corrections*) to MP 5.276 (Devonshire Dr): 550-ft provided (directional at 5.170, full at 5.276)
    - MP 5.276 (Devonshire Dr) to MP 5.380 (Melbourne Ave): 550-ft provided (full)
  + *Cross Slope-* Per FDM Table 210.2.3 the minimum allowable cross slope for a lane with a standard cross slope value of 2.00% is 1.50%. The average cross slope value of lane R1 from MP 2.964 to MP 3.797 is 1.33% and is to remain.
* Design Variation
  + None
* Design Exception
  + None

# Additional Items Considered During Scoping

* Existing strain pole signals within the FDOT Mast Arm Structure Boundary are to remain.
* Per direction from the District, median opening spacing that does not meet FDM Access Management criterion is not required to be documented when the existing substandard condition is to remain.
* The Study recommended both short-term and long-term corridor improvements, several of which are outside the feasibility and schedule considerations of a resurfacing projects scope of work.

Short-term Study recommendations not included in this RRR project include chicanes, raised crosswalks, shared use path (SUP) and the widening or modification of the Crane Creek Bridge for wider sidewalk. The curb line and general typical section is to be maintained for corridor consistency and an 8 to 10-ft sidewalk is proposed in lieu of a SUP. Existing sidewalk on the Crane Creek Bridge is 8-ft.

The recommended long-term improvements were not incorporated into this resurfacing project and included roundabouts, enhanced landscaping, shared use path, 2-way cycle track, and 7-ft buffered bicycle lanes. These elements will likely require Right of Way, substantial roadway and drainage reconstruction, and local agency funding participation.

* Per FDM Table 212.7.1 the maximum deflection angle through intersection with a 45 mph design speed is 3° 00’. Existing deflection angle from WB Pirate Lane to WB Eber Blvd is 6° 32” 37”. The offset of thru movements exceeds 6-ft as well. *This is to be remedied under FPID 451247-1.*
* Minor pavement subsidence was noted over the unnamed canal (MP 3.786); cause is unknown and was not identified by the Maintenance Office as an area of concern. No work proposed.
* MP 3.830 RT: The Study proposes to extend the existing curb line and reconstruct the turnout to provide a parallel pedestrian crossing and remove the dual entrance into *Health First Aging Institute*. This item has been included for estimating purposes; however, due to the impacts to existing business access and work outside the Right of Way, this item has been removed from consideration. Further coordination and determination from the District will be required for inclusion.