

# POST ST. & MCDUFF AVENUE CSX RAIL CROSSINGS

FUNDING OPPORTUNITY NUMBER: DTOS59-23-RA-RAISE

CFDA NUMBER: 20.933

NATIONAL INFRASTRUCTURE INVESTMENTS

## PROJECT DESCRIPTION

FEBRUARY 27, 2023

SUBMITTED TO



## Project Description

### Project Background

Located in Jacksonville, Florida, the Post Street/McDuff Avenue/Old Roosevelt Boulevard (PMO) intersection includes three traffic signals, two rail crossings, seven approach roadways, seven rail-gated travel lanes, and a Class 1 Railroad all within a 270-foot circle. The existing intersection configuration results in a high number of conflict points between vehicles, bicyclists, pedestrians, and trains while also leading to vehicles getting trapped or queued on the railroad tracks between two traffic signals.

From 2015-2019, 124 crashes occurred at the PMO intersection, including a Jacksonville Transportation Authority

(JTA) bus struck by an Amtrak train in 2019. **The crash rate for the PMO intersection is almost ten times higher than the statewide average crash rate.**



*FIGURE 1 - EXISTING PMO INTERSECTION CONFIGURATION*

The Post Street (Crossing Number 621216V) and McDuff Avenue (Crossing Number 621215N) rail crossings are utilized by six Amtrak trains and four CSX trains daily, resulting in long queues on approaching roadways. Additionally, as the only transit service provided in the area, the intercity service provided by Amtrak is vital in connecting the region and avoiding operational delays to the Amtrak routes is critical.

### Detailed Statement of Work

Preliminary design work for the Post Street Innovative Crossing project is substantially complete. Final design, engineering, and associated work is capable of being completed by June 2024 (see attachment M. Project Schedule) . The steps to deliver the project are identified below. Deliverables can be found in Table 1.

#### *Task 1 – Detailed Project Work Plan, Budget, and Schedule*

FDOT will prepare a Detailed Project Work Plan, Budget, and Schedule for the tasks identified herein. The Detailed Project Work Plan will describe the activities and steps necessary to complete the tasks outlined in this Statement of Work. The Detailed Project Work Plan will also include the following:

- Information about the project management approach (i.e., team organization, team decision-making, roles and responsibilities and interaction with USDOT),
- Address quality assurance and quality control procedures,
- Project Schedule showing review durations for both FDOT and USDOT, if required and,
- Detailed Project Budget
- Agreements governing the construction, operation, and maintenance of the project will also be included, pending review by USDOT (if requested).

### *Task 2 – Design*

Preliminary Engineering plans will be developed into Final Design plans. FDOT will obtain approval of all stakeholders impacted by the Post Street Innovative Crossing project. Upon completion of Final Design, FDOT will complete and submit the following Final Design specifications to USDOT, upon request:

- Scale maps or scale aerial photography of existing conditions at a scale of one inch = 100 to 500 feet.
- Design plan drawings overlaid on maps/photography showing existing right-of-way limits along with railroad ownership, proposed improvements, and other technical requirements.
- A title sheet identified with a drawing revision number or date, an index identifying various plan sheets comprising the drawing set, and a legend of symbols or abbreviations in design submittals.
- Construction phasing plans and maintenance of rail traffic during construction.
- An updated budget, including the detailed and itemized costs (e.g., showing quantity, unit cost, and total cost for each item), and professional services broken out by discipline.
- FDOT will Ensure that all engineering design and plan submissions conform to 49 CFR Part 237, Subparts F and G.

### *Task 3 – Construction*

This project includes the replacement of a traditional intersection with a new 270-foot diameter roundabout, two modified rail crossings, ITS integration, lighting updates, and signal upgrades. Track work activities will consist of supply and installation of unique track work at each of the two crossing locations. The unique trackwork includes removal of a short segment of existing tangent track structure to facilitate installation of special track, ties, ballast and fasteners, switch machines, insulated joints, and track welds. This intersection update will be performed during a resurfacing project. The project will also involve safety enhancements such as pedestrian rail gate skirts, decreased gate lengths, and camera detection with audible sound devices.

Additional work includes the implementation of Intelligent Transportation Systems (ITS) to support safe and efficient travel within the roundabout and at-grade crossing for all travel modes. Video analytics will be included and applied to the roundabout and at-grade railroad crossings to allow system operators to merge computer visioning and machine learning. Video Analytics will facilitate the monitoring and collection of information related to interactions happening at an intersection. These systems will allow algorithms to be applied to closed circuit camera data to learn how to detect potentially dangerous situations or operational inefficiencies.

Additional steps taken under construction include maintenance of a traffic plan, mobilization of materials, and construction engineering and inspection.

### *Task 4 – Project Administration*

FDOT will provide the necessary project administration to oversee the management of this project, including grant administration activities.

FDOT will perform the close-out process for the project. This process includes making the final checks on contractor work, collecting, and verifying final documentation, and making final payment. FDOT will submit a Final Performance Report, along with other final reports as

required, to USDOT within the time period required by the grant. The Final Performance Report will describe the cumulative activities of the project, including a complete description of the project’s achievements with respect to the objectives and milestones, overall budget/financial status, benefits obtained from the grant, and service outcomes.

### Current Design Status

Preliminary design work is substantially complete. Final design, engineering, and associated work is capable of being completed by June 2024. Project stakeholders can be ready to finalize plans and begin construction within 24 months.

### Period of Performance

The period of performance for all work will span approximately 31 months, from June 2023 through December 2025. FDOT is committed to completing these deliverables to USDOT’S satisfaction to be authorized for funding reimbursement and for the project to be considered complete.

*TABLE 1 - DELIVERABLES*

Task #	Deliverable Task Name	Due Date
1	Detailed Project Work Plan, Budget, and Schedule	12/01/2023
2	Final Design Plans and Detailed Cost Estimate for Track and Civil, and Utility Coordination Package	06/01/2024
3	Construction Completed	12/27/2025
4	Final Performance Report	Due 90 days after Period of Performance end date

### Resolution of Transportation Challenges

#### *Enhances Rail and Intersection Safety*

- Reduces the number of lanes crossing the railroad tracks from seven lanes to two.
- Expected to reduce the total number of crashes at the intersection by 48%.
- Expected to reduce the number of fatal/injury crashes by 78%.
- Improves safety with pedestrian rail gate skirts, decreased gate lengths, and camera detection with audible sound devices.
- Updates crossing measures including Rapid Flashing Beacons.

#### *Includes Intelligent Transportation Systems for Real-time and Future Safety Improvements*

- Rail detection systems to provide advanced alerts to motorists via upstream dynamic signage and smart phone alerts.
- Passive pedestrian detection allows the pedestrian signal to be activated without the use of a button.
- Thermal sensors offer passive detection for bicyclists within the cone of the roundabout.
- Coordinated detection systems will generate data that can be shared with the Safety Program for future assessments.

#### *Provides Economic Value*

- Increases community equity by expanding mobility and multi-modal opportunities.
- Improves access to local businesses.

- Provides opportunities for landscaping that can improve the visual appearance of the area.

*Improves Capacity and Mobility*

- Provides a free flow single intersection that eliminates three signals.
- Roundabout reduces travel time by 50%.

*Upgrade Area Lighting*

- Incorporates cross walk lighting. Studies have shown that crosswalk lighting improves pedestrian safety by 23%.
- Increases night-time visual lighting for cars, pedestrians, and bicyclists.

*Improves Connectivity / Access*

- Increases connectivity between two communities that are physically separated by the CSX rail corridor.
- Provides better emergency access and accommodates transit.
- JFRD Station #10 is approximately 500 feet from the intersection and would benefit through decreased response times and ease of access.

**Project Location and Surrounding Community**

The project location includes two census tracts, divided by the CSX railroad. Census Tract 25.01 (Murray Hill/Avondale) is the north half and Census Tract 21.01 (Riverside) on the south side of this project. The project is in the Jacksonville Urbanized Area. Census Tract 25.01 is an Area of Persistent Poverty.

This project area is health, economically, and environmentally disadvantaged (Justice40 Tool).

The PMO intersection is a busy intersection for vehicles, pedestrians, and trains, and is a vital junction for multiple neighborhoods in the community. Residents of Murray Hill are restricted by Highway I-10 to the north and the CSX rail corridor that crosses through the PMO intersection.

Edgewood Avenue, located southwest of the community, is the only other access point into, or out of, the Murray Hill neighborhood.

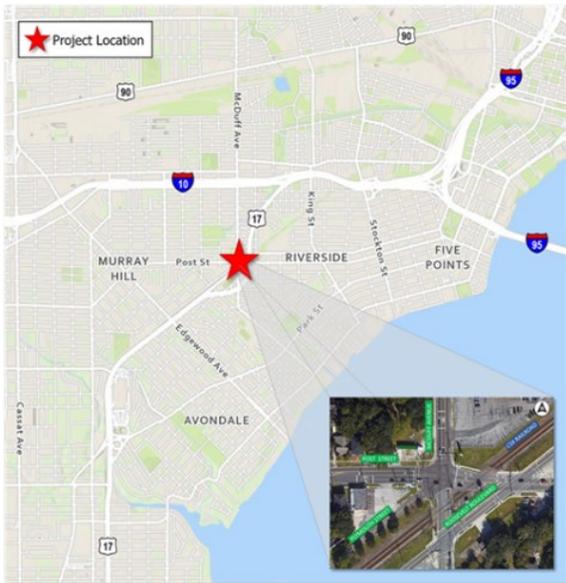


FIGURE 2 - PMO AND SURROUNDING NEIGHBORHOODS

Murray Hill has a higher-than-normal population of minorities (32%) and below poverty residents (15.5%) with 2% of the area households not owning a vehicle. According to 5-year data from the American Community Survey, Census Tract 25.01 (Murray Hill/Avondale) is located in a designated Qualified Opportunity Zone reflecting high poverty and low-income status of residents who reside there.

Surrounding the project area, residents of persistent poverty residing in Census Tract 123 (Murray Hill/Avondale) and Historically Disadvantaged Census Tract 171 (Riverside) are

