

## 1.2 Purpose and Need for Project

The interchange at I-95 and SR 90/SW 8<sup>th</sup> Street and SW 7<sup>th</sup> Street experiences substantial operational deficiencies with extensive queueing and delays at the terminal intersections and neighboring intersections. The southbound terminal intersection is most critical. Currently this terminal intersection operates at level of service (LOS) F during the PM peak with extensive delays and long queues which spillback onto the I-95 mainline. This causes congestion on the mainline and is also a safety concern. The population growth within the City of Miami, along with new developments in the downtown Miami and Brickell areas, will result in a significant increase in surface transportation demand and will worsen operating conditions at the already congested I-95/SW 8<sup>th</sup> Street/SW 7<sup>th</sup> Street Interchange. In addition, the subject interchange and neighboring intersections along SW 8<sup>th</sup> Street and SW 7<sup>th</sup> Street have historically experienced abnormally high crash rates. FDOT's crash records indicate that the I-95 terminal intersections have consistently experienced abnormal high crash rates in every year from 2011 through 2015. Many fatal crashes have occurred within the project limits, and several of these crashes have involved pedestrians. If no action is taken, these safety and operational concerns will continue.

The purpose of this project is to develop recommendations for the proposed modifications to the SR 9 / I-95 and SR 90 /SW 8<sup>th</sup> Street and SW 7<sup>th</sup> Street interchange, as well as along the one-way pair arterials. The proposed project will improve traffic operations at the interchange and study area roadways / intersections by implementing operational and capacity improvements to meet the future travel demand projected as a result of Miami-Dade County population and employment growth. The project will further enhance safety conditions at the interchange, improve multimodal interrelationships, promote economic development by improving connectivity between I-95 and the service arterials, and enhance accommodations for bicycle and pedestrian activities. An expanded discussion of the Need for the project is included under Section 4.0 of this report.

## 1.3 Related Projects within the Study Area

The 2045 Long Range Transportation Plan (LRTP) Plan includes the following projects:



## 4.0 NEED

### 4.1 Congestion Relief and Transportation Demand

**CAPACITY/TRANSPORTATION DEMAND (Improve Traffic Operations and Level of Service).** A 2013 traffic analysis performed as part of the Planning Study indicates that very few intersections were operating at a LOS that meets the City of Miami requirements for this type of facility. Results from this planning study indicate that by year 2040 traffic operations at the intersections and segments along the corridor will further degrade and continue to experience heavy delays during peak hours if no improvements are made. While this project will not focus on widening the existing roadways, it will evaluate operational alternatives to address the 2045 transportation demands by improving all modes of transportation.

Miami-Dade County is the fastest growing county in Florida. According to the US Census, the County experienced a population growth from 2,496,435 in 2010 to 2,617,176 in 2013, representing an increase of 4.8%. The City of Miami has grown from a population of 399,457 in 2010 to 417,650 in 2013, representing an increase of 4.5%. The population growth within the City of Miami, along with new developments in the downtown Miami and Brickell areas, will result in a significant increase in surface transportation demand and will worsen the already congested SR 90/SW 7<sup>th</sup> Street and SR 90/SW 8<sup>th</sup> Street corridors. Additionally, the Brickell area has seen significant growth in the last decade with the addition of high density, high-rise developments, which will increase traffic along the corridor and further degrade the LOS. Based on the Southeast Florida Regional Planning Model (SERPM), a 0.89% to 1.90% annual growth rate for the study area roadways has been identified. The PD&E Study will evaluate alternatives to accommodate the anticipated transportation demand.

**SAFETY (Improve Safety):** Crash data for SR 90/SW 7<sup>th</sup> Street and SR 90/SW 8<sup>th</sup> Street from SR 9/SW 27<sup>th</sup> Avenue to SR 5/US 1/Brickell Avenue has been evaluated for the five-year period between 2011-2015. This data indicates that a total of 4,252 crashes occurred on the project corridor (2,593 along SW 8<sup>th</sup> Street and 1,659 along SW 7<sup>th</sup> Street). The predominant types of crashes on SR 90/SW 7<sup>th</sup> Street (westbound) were, angle (35.1%), rear-end crashes (24.1%) and sideswipe crashes (22.7%). Similarly, the most prevalent crashes along SR 90/SW 8<sup>th</sup> Street (eastbound) included rear-end (29%), sideswipe crashes

(23.6%) and angle crashes (22.4 %). Crashes of this type are typically attributed to the congested conditions during peak periods.

In analyzing the severity of these crashes, it was determined that seven (7) fatal crashes occurred on the study corridor during the 5-year period. Six (6) of these fatal crashes occurred on SR 90/SW 8<sup>th</sup> Street. Furthermore, there were 657 collisions involving injuries between 2011 and 2015. This high incidence of severe crashes underscores the need for an in-depth or formal safety review of the corridor. The PD&E study will develop alternatives that will help address safety concerns by minimizing pedestrian and vehicular conflicts, providing bicycle amenities, and ensuring that the project corridor meets FDOT's safety and mobility goals as travel demand continues to grow.

**SOCIAL DEMANDS AND ECONOMIC DEVELOPMENT (Improve Access to Urban Central Business Districts).** Currently, the existing land use adjacent to the project corridor is predominantly multi-family residential and commercial. The land use along SR 90/SW 8<sup>th</sup> Street consists of commercial uses, while SR 90/SW 7<sup>th</sup> Street consists of residential areas west of I-95 and commercial use with scattered residential areas east of I-95. The residential areas within the study area are composed predominantly of multi-family buildings, with high-rise establishments located east of I-95 in the Brickell area. The commercial uses vary and include various shopping plazas, food and entertainment establishments, supermarkets, pharmacies, gas stations, and car dealerships.

According to the City of Miami 2020 Future Land Use Map, the areas east of I-95 are designated as the Little Havana and Brickell Urban Central Business Districts (UCBD) and Residential Density Increase Areas (RDIA). These districts include restricted commercial, allowing residential uses to a maximum density equivalent to 'High Density Multifamily Residential' with small sections of general commercial and public facilities/recreation. West of I-95 is predominantly planned to be restricted commercial uses, with medium density multi-family and single-family residential use as the project corridor approaches SR 9/SW 27<sup>th</sup> Avenue.

The Brickell UCBD is home to one of South Florida's major financial districts with one of the largest concentrations of international banks located along Brickell Avenue. Various consulates and foreign trade

offices are located in Brickell, as well. The Little Havana UCBD will house the Brickell City Centre, a 5.4-million square foot mixed-use urban development. East of SR 5/US 1/Brickell Avenue, the project corridor continues as SE 8<sup>th</sup> Street (Brickell Key Drive) which connects to Brickell Key, a gated island of upscale high-rise developments and hotel towers. The project improvements will support the City of Miami's plans for future development and economic growth by improving access to these areas

### **MODAL INTERRELATIONSHIPS (Improve Multimodal Connectivity)**

Currently, there are sidewalks along both sides of SR 90/SW 7<sup>th</sup> Street and SR 90/SW 8<sup>th</sup> Street. There are no bicycle accommodations present; however, the 2015 Bicycle Master Plan has designated bicycle routes on these facilities. In addition, several cross-streets in the study area including SW 2<sup>nd</sup> Avenue, SW 1<sup>st</sup> Avenue and South Miami Avenue currently have designated or planned bicycle lanes. The M-Path Trail is a paved multi-use trail in Miami-Dade County that begins at SW 1<sup>st</sup> Avenue near the Miami River and crosses the SR 90/SW 7<sup>th</sup> Street and SW 8<sup>th</sup> Street corridor. There are several mass transit facilities serving the corridor, such as the Miami-Dade Transit bus routes 8, 6, 24, 48, 95, 207, and 208, and the Eighth Street Metromover Station. The Eighth Street Metromover Station connects to the Brickell Metromover Station and Brickell Metrorail Station. The Metromover provides free service around the downtown Miami area and to the Government Center Metrorail Station. The Brickell Metrorail Station offers service to the Palmetto Expressway, south to Dadeland Mall and to Miami International Airport via the Miami Intermodal Center (MIC). The project will improve intermodal connectivity by providing enhanced pedestrian/bicycle and transit accommodations.