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## **2.2 Purpose and Need**

The SR 524 study corridor is a core element of the Space Coast's regional transportation system. The widening project has been requested by the SCTPO to coordinate the development of a future vision for the SR 524 corridor that establishes a multi-modal approach to providing for future transportation needs. This project's purpose is to increase capacity by widening the study segment of SR 524 while improving safety along the corridor for all users. This project is part of an effort to improve the current conditions so that they will meet future targets of Level of Service (LOS), safety, traffic flow, as well as improve accessibility to not only large trucks but pedestrians and cyclists too. Therefore, the study's need is to accommodate future traffic demand (at the interchange and along SR 524), improve truck traffic accessibility, improve pedestrian/bicycle mobility, and enhance hurricane evacuation route access. The following sections further expand on the purpose and need of this IMR.

### ***2.2.1 Improve Truck Traffic Accessibility***

Along the southern portion of the corridor are a Flying J and a Walmart distribution center which bring in a heavy flow of truck traffic from I-95. One of the goals identified is to improve the accessibility from the I-95 interchange into these locations. Truck traffic should be encouraged to drive south when exiting their locations towards the interchange to connect to I-95 as opposed to driving north, through the residential portion of the corridor to enter SR 528.

### ***2.2.2 Accommodate Future Traffic Demand***

The SR 524 corridor is projected to experience a significant increase in traffic demand because of the proposed developments along the corridor. Towards the eastern end of the corridor, there will be an increase of residential traffic heading from new and existing single and multi-family neighborhoods to/from commercial activity centers at Cocoa Commons, London Cove, and Cocoa Landings. Adamson Creek and Emerald Lakes, on the west side of I-95, will also generate additional traffic along the corridor as both neighborhoods continue to develop towards build-out.

The widening of SR 524 from S. Friday Road to Industry Road and improvements to the interchange of I-95 at SR 524 were anticipated to accommodate the traffic demand and maintain the target LOS. Just east of the I-95 and SR 524 interchange, the Annual Average Daily Traffic (AADT) is projected to increase from 18,000 in the existing year (2019) to 39,000 in 2045. By the year 2045, both the ramp terminals and adjacent intersections (S. Friday Road and N. Friday Road) are projected to operate below the target LOS D. The ramp failures will impact the mainline operations with queues spilling back to the I-95 mainline. As such, the existing interchange configuration will not be able to provide a safe and operationally efficient design for the high truck and auto traffic anticipated within the study area.

### **2.2.3 Improve Pedestrian and Bicycle Mobility**

A major goal of the PD&E study is to create more paths for pedestrians and cyclists, to increase connectivity safely throughout the SR 524 corridor. There are no bicycle facilities present apart from the 4' paved shoulder that runs along the corridor. A buffered bicycle lane will be added to both westbound (WB) and eastbound (EB) directions to allow bicyclists access all through the corridor. The only existing pedestrian facility present spans from Cox Road to Coventry Court, on the north side of the corridor. Sidewalks will be added to both sides of the corridor throughout the entire project. The improvements proposed as part of this IMR will allow pedestrians and bicyclists safe access on SR 524 through the I-95 interchange from the future planned developments east and west of I-95.

### **2.2.4 Enhance Hurricane Evacuation Route Access**

Both I-95 and SR 528 are labeled as official hurricane evacuation routes and SR 524 is a vital connection between these two roadways. The SR 524 widening and improvements to the interchange at I-95 at SR 524 were anticipated to provide efficient access to the evacuation routes for all the existing and future residential areas along the corridor.

The primary purpose of the IMR is to document the benefits of the proposed PD&E improvements, facilitate the movement of freight and goods, and maintain safe operating conditions at the study interchange as well as the I-95 mainline near the study area.

The recommended alternative supported by the IMR provides consistency with the goals of providing safe and efficient travel, facilitating interstate and regional commerce, and the movement of people, freight, and goods.

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## 2.3 Methodology

The methodology used for the development of this IMR is based on the MLOU submitted by FDOT District Five to FDOT SIO. The MLOU (dated October 2019) describes the preparation of the IMR for the I-95 at SR 524 interchange in Brevard County and was developed following FDOT Policy No. 000-525-015-h and FDOT Procedure 525-030-160-i. A copy of the approved MLOU document is included in **Appendix A**.

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## 2.4 Area of Influence (AOI)

The AOI as shown in **Figure 2**, includes the following:

### **I- 95 Mainline**

- I-95 between SR 520 and SR 524
- I-95 Freeway between SR 524 and SR 528

### **I-95 Ramps**

- I-95 Northbound (NB) on-ramp from SR 520
- I-95 Southbound (SB) off-ramp to SR 520
- I-95 NB and SB ramps at SR 524
- I-95 SB On-ramp from SR 528
- I-95 NB Off-ramp to SR 528

### **Intersections along SR 524:**

- S. Friday Road
- I-95 SB Ramps
- I-95 NB Ramps
- N. Friday Road