2.1 Purpose and Need

The purpose of the project is to improve safety and mobility within the I-275 at Ashley Drive/Tampa Street and I-275 at I-4 interchanges by providing additional capacity for three critical movements: Southbound I-275 to eastbound I-4 flyover ramp, westbound I-4 to northbound I-275 ramp, and westbound I-4 to southbound I-275 ramp. I-275 and I-4 provide vital regional links between the counties Pasco, Polk, Pinellas, Hillsborough, and Manatee. The study area along I-275 and I-4 represents the spine of the transportation network for the City of Tampa and Hillsborough County and provides access to employment, residential neighborhoods, tourist and recreational destinations, and services. Forecasts from the Tampa Bay Regional Planning Model (TBRPM) project employment to increase 110 percent in Downtown Tampa and 64 percent in the Westshore area from 2015 to 2045. Maintaining access to key business, residential, and activity centers, such as Downtown Tampa and the Westshore area, and improving freeway capacity that will provide reliable travel times along these roadways is crucial to economic development and vitality in the Tampa Bay Region. This SIMR will document the existing conditions in the study area, the future year travel demand forecasts and the analysis of future conditions for the freeway mainlines and ramps within the study area.

The need for this project is to improve safety and alleviate existing traffic congestion and excessive vehicle delays on I-275 and I-4 and the adjacent interchanges. The existing conditions analysis shows that the I-275 southbound and northbound experiences significant congestion and queuing during both the AM and PM peak periods resulting in low travel speeds. Capacity constraints and high traffic demand from single-lane ramp from I-275 southbound to I-4 eastbound causes heavy congestion with low travel speeds and excessive I-275 southbound mainline queuing in the two outermost lanes. Similarly, I-4 westbound experiences significant congestion from the Selmon Expressway off-ramp to I-275 during both AM and PM peak hours. In addition to the I-275 and I-4, several intersections are operating at failing conditions (LOS E or F) along Scott Street, Dr. MLK, Jr. Boulevard, Hillsborough Avenue, and 22nd Street due to the inadequate capacity to accommodate peak hour demand volumes, especially during the PM peak hour.

In addition, the segments of I-275 from Ashley Drive/Tampa Street to north of Dr. MLK, Jr. Boulevard and I-4 from I-275 to the Selmon Expressway Connector exhibit crash rates of 2.007 and 1.236, respectively. These crash rates are above the statewide average of 0.924 for similar interstate facilities across the State of Florida. Ensuring safe and efficient operations along I-275 and I-4 is critical given that these interstates are on the SIS and the Florida Division of Emergency Management has designated I-275 and I-4 as evacuation routes to be used during a disaster.

In summary, the proposed improvements relieve congestion and improve safety for a rapidly growing region in a manner that improves various aspects of the transportation system. These improvements are needed to meet future travel demand that will occur with projected population and employment growth, provide access to economic activity centers, enhance existing and future travel safety, address local arterial traffic congestion, provide system linkages and multimodal connections, while improving regional and interstate travel and mobility.

2.2 Location and Area of Influence

The I-275 at I-4 SIMR study limits extend from the Ashley Drive/Tampa Street interchange to north of Dr. MLK, Jr. Boulevard along I-275 and from I-275 to the Selmon Expressway Connector along I-4. The area of influence (AOI) along I-275 extends south of the interchange influence area of Ashley Drive/Tampa Street to north of the interchange influence area of Hillsborough Avenue interchange, a distance of approximately 4.5 miles and along I-4 from I-275 to the Selmon Expressway Connector west ramps, a distance of approximately 2.0 miles. The AOI was extended to incorporate the adjacent signalized intersections along the cross streets on each side of the interchange ramp terminals. The project location and AOI are shown in **Figure 2-3.**

As per the approved Methodology Letter of Understanding (MLOU), the study area adopted for microsimulation limits along I-275 extends from west of Ashley Drive/Tampa Street to north of Hillsborough Avenue and along I-4 from I-275 to the Selmon Expressway Connector west ramps and includes the following eight interchanges:

- Ashley Drive/Tampa Street
- Orange Avenue/Jefferson Street
- I-4
- Floribraska Avenue
- Dr. Martin Luther King, Jr. Boulevard
- Hillsborough Avenue
- 21st/22nd Street
- I-4/Selmon Connector

Further, as per the approved MLOU, 38 intersections along the crossroads on each side of the interchange ramp terminals are also included in the study area and are as follows:

- Tyler Street at Ashley Drive