## 7.4. Safety Analysis

The project team evaluated the potential entry and exit points for express lanes. Approximate locations of potential entry and exit locations, crash frequency and crash rates for the safety analysis years (2008-2012) are summarized for the North Section in **Figure 46**.

### *7.4.1. Preliminary Safety Evaluation of Express Lanes Entry and Exit Locations*

Most of the express lanes entry and exit locations are within the low crash rate locations when compared to district averages. Based on the existing conditions crash analysis, predominant crash types are rear-end, angle and sideswipe collisions in those areas. Typically, these crash types are associated with traffic congestion. Only one potential location is located within a high crash rate area associated with congestion:

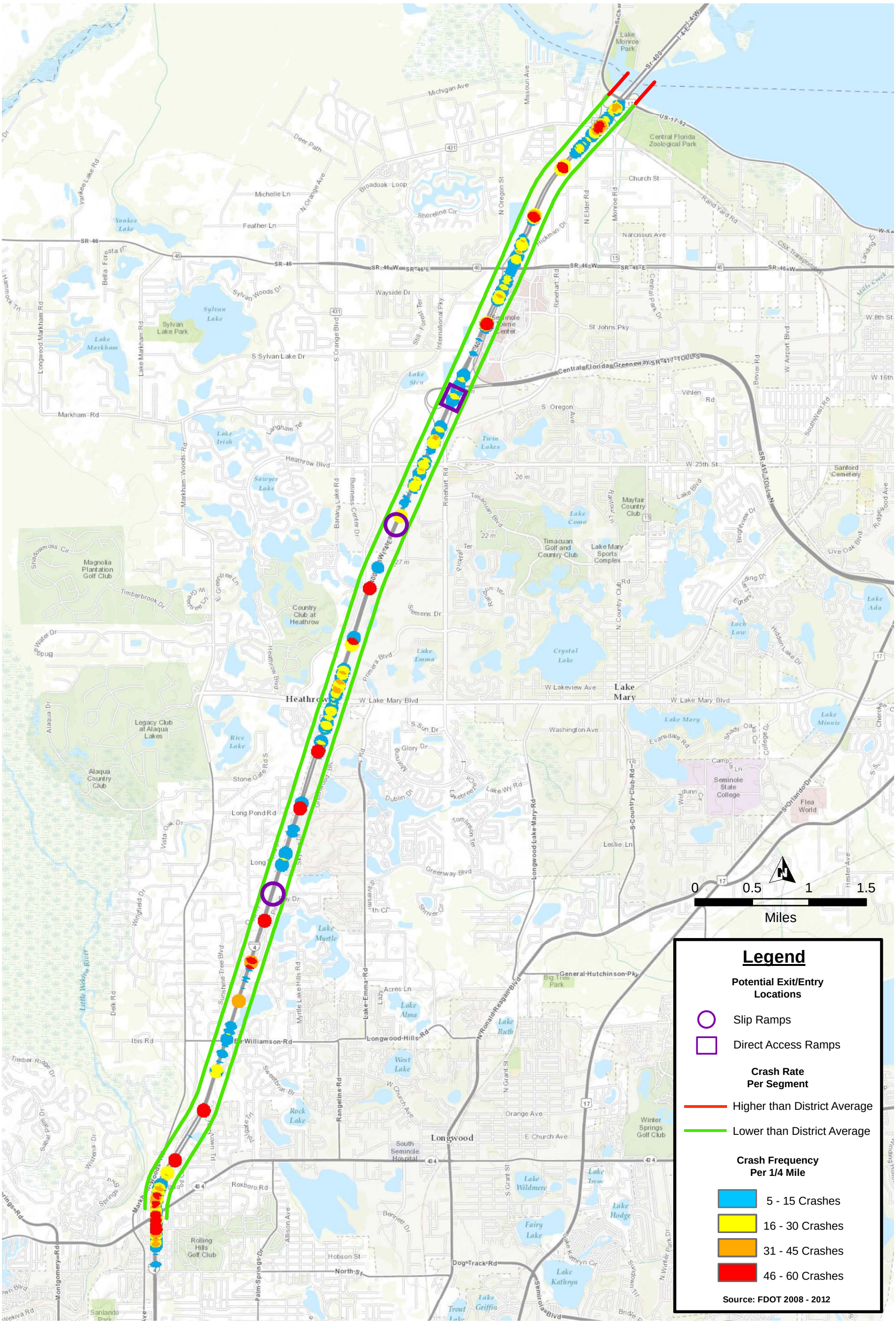
- SR 472 interchange area:
  - The crash rate is high for the I-4 eastbound segment near the SR 472 interchange.
  - Congestion is the primary cause for the high number of crash occurrences.

### *7.4.2. Countermeasures*

The conceptual design plans for I-4 interchange improvements were developed in accordance with the FDOT's Design Standards and Plans Preparation Manual and FHWA's Policy on Geometric Design of Highways and Streets. Adherence to these standards will facilitate safe and efficient traffic operations along the corridor. As discussed in previous sections of the report, a large portion of the crashes experienced along I-4 and the arterials were associated with congested traffic conditions. In addition, it was determined that several high crash spots/segments along the corridor were concentrated at or near the interchanges. The improvements proposed will increase capacity along the mainline and at the interchanges. These capacity improvements will correspondingly improve traffic flow and reduce congestion related crashes along the corridor. The corridor level improvements expected to improve safety along the interstate mainline are as follows:

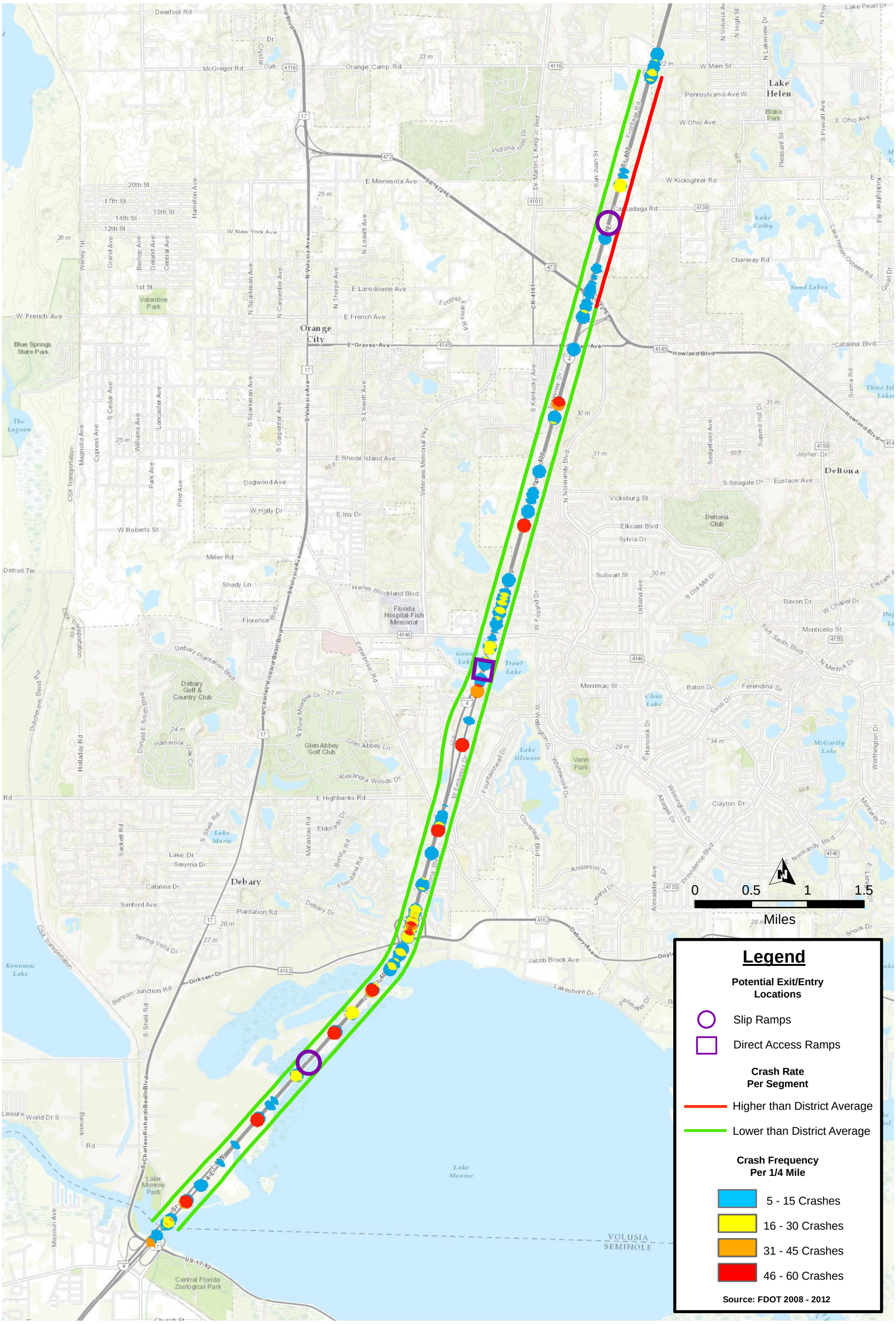
1. Improvements were considered at a systems level so congestion at one location would not adversely impact operations at another. Reduction in congestion is expected to reduce occurrences of rear end crashes.
2. Improvement to all interchanges along the corridor resulting in fewer congestion bottleneck locations. Reduction in congestion is expected to reduce occurrences of crashes.
3. Additional Advanced Signage – understanding that many in the corridor are visitors and are unfamiliar with the corridor, additional signage will be provided.

**Table 28** summarizes specific countermeasures at the locations where crash rates are higher than the average FDOT District Five crash rates for similar facilities.




# I-4 SAMR Re-evaluation
# North Section

*Figure 46 (Sheet 1 of 2)*
*I-4 Mainline Crash Summary*
*Seminole County*




# I-4 SAMR Re-evaluation North Section

*Figure 46 (Sheet 2 of 2)*
*I-4 Mainline Crash Summary*
*Volusia County*

**Table 28 Potential Safety Countermeasures**

| Potential Crash Locations | Issue | Predominant Crash Type | Countermeasures |
|---|---|---|---|
| **I-4 Mainline** | | | |
| SR 472 interchange area | The crash rate is high for the I-4 eastbound segment near the SR 472 interchange. | Rear End | Improved operations along the I-4 mainline are expected to improve operations of express lane merge and diverge near SR 472 interchange area. |
| **Arterials** | | | |
| Lake Mary Blvd | The injury rates are greater than 1.0 | Rear End | Intersection improvements at ramp terminals reduce congestion and occurrences of rear end crashes. |
| SR 46 | The injury rates are greater than 1.0 | Rear End | Intersection improvements at ramp terminals reduce congestion and occurrences of rear end crashes. |
| US 17/92 | The injury rates are greater than 1.0 | Rear End | The interchange configuration for US 17/92 will be modified to a Diamond configuration with better traffic operations. Improved operations in the modified interchange configuration is expected to positively impact occurrences of rear end crashes. |
| Dirksen Dr, Saxon Blvd and SR 472 are greater than 1.0 | The injury rates are greater than 1.0 | Rear End | Intersection improvements at ramp terminals reduce congestion and occurrences of rear end crashes. |
| Saxon Blvd and SR 472 are greater than 1.0 | The injury rates are greater than 1.0 | Rear End | Intersection improvements and widening of Saxon Blvd to six lanes will reduce congestion and occurrences of rear end crashes. |
| SR 472 | The injury rates are greater than 1.0 | Rear End | The interchange configuration for SR 472 will be modified to a DDI. DDI configuration reduces number of conflict points and improves traffic operations. Reduction is conflict points and congestion is expected to positively impact occurrences of rear end crashes. |