

## 9.0 Conclusions

Based on the analyses contained herein, the following transportation improvements are recommended as developer mitigation:

### **US 521 and River Road/Collins Road**

- Construction of a southbound right-turn lane along US 521 with 125 feet of storage.
- Implementation of Dallas Permitted + Protected phasing on the westbound approach during the PM peak hour.

### **US 521 and Ridgeline Lane/Shelley Mullis Road**

- Reconfiguration of the westbound through lane to an additional left-turn lane along Shelley Mullis Road to create dual left-turn lanes with 250 feet of storage and conversion of the right-turn lane to a shared through-right lane.

### **US 521 and Del Webb Boulevard**

- Reconfigure the westbound dual-left approach to include an exclusive left-turn lane, through lane, and right-turn lane and remove the associated dual-left protected phase if conditions allow permissive phasing.

### **US 521 and Halifax Drive/Access 1**

- Construction of Access 1 to include a single right-in ingress lane, single right-out egress lane, and a 270-foot minimum IPS with stop control.

### **US 521 and Laurel Hills Road (Access 2)**

- Construction of Access 2 to include dual ingress lanes, dual left-turn lanes with 175 feet of storage each and a right-turn lane, and a 180-foot minimum IPS.
- Construction of a northbound right-turn lane along US 521 with 100 feet of storage.
- Construction of dual southbound left-turn lanes along US 521 with 275 feet of storage.
- Installation of a traffic signal.

### **US 521 and Access 3**

- Construction of Access 3 to include a single right-in ingress lane, single right-out egress lane, and a 130-foot minimum IPS with stop control.
- Construction of a northbound right-turn lane along US 521 with 100 feet of storage.

It is noted that a future traffic signal is also proposed at the main US 521 access point for the Shelley Mullis Mixed-Use development to the north (Access D). Therefore, an alternative access scenario was also studied based on SCDOT and County request, involving a combined singular traffic signal to serve both developments located at Halifax Drive. Results of the alternative build scenario render the same recommendations above with the following exceptions:

### **US 521 and Halifax Drive/Access 1**

- Construction of Access 1 to include dual ingress lanes, dual left-turn lanes with 275 feet of storage each and a shared through-right lane, and a 275-foot minimum IPS.
- Construction of a northbound left-turn lane along US 521 with 150 feet of storage.
- Construction of dual southbound left-turn lanes along US 521 with 225 feet of storage each.
- Construction of an eastbound left-turn lane along Halifax Drive with 125 feet of storage.
- Installation of a traffic signal.

### **US 521 and Laurel Hills Road (Access 2)**

- Construction of Access 2 to include a single ingress lane, a single right-out egress lane, and a 250-foot minimum IPS with stop control.
- Construction of a northbound right-turn lane with 100 feet of storage along US 521.

- Extension of the existing southbound left-turn lane along US 521 from 175 feet to 350 feet.

A cycle length increase was accounted for at the US 521 intersections of River Road/Collins Road, Ridgeline Lane/Shelley Mullis Road, and US 521 and Del Webb Boulevard. System adjustments are assumed to be performed by SCDOT; therefore, it is not recommended as a developer mitigation.

In the alternative build scenario, the construction-related costs for the US 521 and Halifax Drive/Access 1 intersection would be shared between the Promenade Phase II and Shelley Mullis Mixed-Use developments. The Shelley Mullis Mixed Use Access D would be limited to stop-controlled RIRO operation with a 250-foot northbound right-turn lane on US 521.

The recommended developer mitigation is shown in **Figure 9.1**. The recommended developer mitigation for the alternative build-out scenario is shown in **Figure 9.2**.

The transportation improvements for the study intersections are subject to approval by SCDOT and Lancaster County. All additions and attachments to State and County roadway system shall be properly permitted, designed, and constructed in conformance to standards maintained by the agencies.