No Build Alternative

The no build (i.e. do nothing) alternative was considered and dismissed because it does not address the project's purpose and need to reduce congestion and improve traffic flow at the interchange. This alternative would construct no improvements at the interchange. Traffic studies completed for the project's Interchange Operations Study (IOS) indicate that, without any improvements, traffic flow at the interchange will degrade to level of service (LOS) F for multiple intersection movements. See the Level of Service (LOS) Explained handout for more information regarding LOS and the project's LOS projections.

Roundabouts Alternative

The Department considered the option of installing roundabouts at the I-70 interchange ramp intersections. The interchange is heavily traveled by tractor-trailer trucks largely due to the presence of commercial truck stops on the south side of the interchange. Trucks comprise nearly 30% of the average daily traffic on State Route149 between the interchange ramps and the truck stops. The overall traffic volume present would necessitate two-lane roundabouts at both ramp intersections. Typically, modern roundabouts are designed to adequately accommodate tractor-trailer turning movements. Research conducted by the National Cooperative Highway Research Program (NCHRP) observed that tractor-trailers can satisfactorily traveling through roundabouts side-by-side with passenger vehicles. However, there is a lack of evidence in the research to support that tractor-trailers can travel through roundabouts side-by-side with other tractor-trailers. The circulatory lanes of roundabouts are generally designed wide enough to accommodate the paths of truck trailers, but their encroachment into adjacent lanes or center islands is not uncommon. Due to these potential encroachment conflicts and lack of research evidence showing that large trucks can and will travel side-by-side in multi-lane roundabouts, the Department is not confident that two-lane roundabouts will function satisfactorily at this location.

The close proximity of Reco Drive to the south and Bond Drive to the north also creates concerns for the roundabout option. Closely spaced intersections inhibit the free flow of roundabouts, especially if those intersections are signalized. Signalized intersections can create queues that could potentially back-up into the roundabouts causing traffic standstills within the roundabouts and adjacent approaches.

Roundabouts also inherently require a larger construction footprint than signalized intersections. This results in greater property and environmental impacts as compared to signalized intersections.

Therefore, for the reasons stated above, this alternative was eliminated from further study.

State Route 149 Add Lanes Alternative

The preliminary preferred alternative would construct the following drive and lane changes at and around the I-70State Route 149 interchange (see exhibit for a graphical representation of these improvements):

- Add a I-70 westbound exit ramp left turn lane
- Add a State Route 149 northbound left turn lane under the I-70 bridges
- Add a State Route 149 southbound left turn lane under the I-70 bridges
- Add a State Route 149 southbound through lane under the I-70 bridges
- Replace the I-70 bridges over State Route 149 to provide room for additional State Route 149 lanes

State Route 149 Add Lanes Alternative (*Continued*)

- Relocate Reco Drive south to align with the existing Pilot Travel Center automobile entrance
- Install a new traffic signal at the relocated Reco Drive location
- Add a State Route 149 southbound through lane between the I-70 eastbound exit ramp and Reco Drive
- Add State Route 149 southbound left and right turn lanes at the relocated Reco Drive intersection
- Add a State Route 149 northbound through lane at the relocated Reco Drive intersection
- Add a State Route 149 northbound continuous right turn lane onto the I-70 eastbound on ramp
- Relocate the Pilot Travel Center truck entrance to align with the future Love's Travel Stop truck entrance
- Install a new traffic signal at the relocated truck entrance location
- Add State Route 149 southbound and northbound through lanes and left and right turn lanes between Reco Drive and the travel centers' truck entrances
- Add a State Route 149 northbound left turn lane south of the travel centers' truck entrances

Traffic studies completed for the project's Interchange Operations Study (IOS) indicate that these proposed improvements will better traffic flow throughout the interchange area to acceptable levels of service (LOS). See the Level of Service (LOS) Explained handout for more information regarding LOS and the project's LOS projections.

PID: 120547