Project Background and Alternatives

SH-66 & Banner Road Intersection Improvements

JP 34752(04) Canadian County

Project Background and Alternatives

Prior to February 2020, SH-66 had four travel lanes, and eastbound and westbound traffic did not stop at the Banner Road intersection. There were flashing yellow beacons (i.e., warning beacons) facing the eastbound and westbound approaches of SH-66 to warn of crossing traffic. The northbound and southbound Banner Rd approaches to the SH-66 intersection were controlled with stop signs and flashing red beacons that signaled a stop. After February 2020, a temporary traffic control arrangement was implemented while ODOT and Canadian County determine a permanent solution. The temporary intersection arrangement currently in place is a 4-way stop, and flashing red beacons face each approach. Temporary traffic cones have been placed to close the outside lanes of SH-66 to reduce the travel lanes from four to two.

Three separate design alternatives are currently being considered: "Alternative A – Single-lane Roundabout," "Alternative B - All-way Stop Control," and "Alternative C – Signalized Intersection." All three design alternatives would be constructed within the current limits of the paved roadway. Below are additional details for each alternative being considered:

Alternatives

Alternative A – Single-lane Roundabout

Description of Alternative A – Single-lane Roundabout

Alternative A – Single-lane Roundabout would utilize the existing pavement footprint and would be milled down and overlayed with asphalt where needed. In advance of the intersection for both eastbound and westbound directions, SH-66 would be reduced from four travel lanes down to two travel lanes. Banner Road would remain two travel lanes (one northbound and one southbound). This alternative would provide traffic calming in advance of the intersection and accommodate large trucks such as semi-trucks, buses, and emergency vehicles moving through the intersection. Design elements for this alternative are intended to improve the safety of the intersection. Examples of these design elements are curved approaches to facilitate safe movement of various vehicle types, curb placement to guide drivers, a truck apron to accommodate large vehicle types, and a mounded center island to encourage reduced speeds of incoming vehicles. Additional details on roundabout safety and function are included on this website on the "Roundabout Information" webpage.

Estimated Schedule and Cost of Alternative A – Single-lane Roundabout

Alternative A – Single-lane Roundabout is scheduled to have final design completed in Spring 2021, construction would begin in Summer 2021, and construction would be completed in Winter 2021/2022. Acquisition of new right-of-way is not proposed, and access to residences and businesses would be

maintained during construction. The preliminary estimated cost of construction for Alternative A – Single-lane Roundabout is $771,000.

Pros and Cons of Alternative A – Single-lane Roundabout

- Operations* (2020 AM/PM): 10.9/8.6 sec/veh; LOS B/A
- Crash Reduction: 72% all crashes, 82% fatal/serious crashes
- Pros: Reduced severity of crashes, reduced speeds through the intersection, intersection control forced by geometry, no signal maintenance, and reduced emissions
- Cons: Unfamiliar to drivers

*Note: Intersection performance is evaluated based on seconds of delay per vehicle (sec/veh) and grouped into ranges called level of service (LOS). A is the highest level of service, followed by B, C, D, E, and then F.

Alternative B – All-way Stop Control

Description of Alternative B – All-way Stop Control

Alternative B – All-way Stop Control would keep the same lane configuration and control that was implemented with the temporary traffic control arrangement completed in February 2020. In advance of the intersection, SH-66 would reduce from four travel lanes to two travel lanes to provide traffic calming and easier navigation of the intersection. Temporary traffic cones would be removed, new pavement markings would close the outside lanes on SH-66, and advanced signage would be placed east and west of the intersection. Stop signs and red flashing beacons would face each approach to indicate a required stop for each movement at the intersection. The intent of this alternative is to stop all traffic before entering the intersection, which would result in reduced vehicular speeds traveling through the intersection.

Estimated Schedule and Cost of Alternative B – All-way Stop Control
Alternative B – All-way Stop Control would likely have project design completed by Spring 2021, construction would begin in early Summer 2021, and construction would be completed in late Summer 2021. Acquisition of new right-of-way is not proposed, and access to residences and businesses would be maintained during construction. The preliminary estimated cost of construction is $50,000.

Pros and Cons of Alternative B – All-way Stop Control

- Operations* (2020 AM/PM): 71.8/14.6 secs/veh; LOS F/B
- Crash Reduction: 68% all crashes, 77% fatal/serious crashes
- Pros: Lower construction cost
- Cons: Permissive compliance (nothing to physically stop vehicles, enforcing compliance), greater severity of crashes, greater risk of crash – increased safety risk

*Note: Intersection performance is evaluated based on seconds of delay per vehicle (sec/veh) and grouped into ranges called level of service (LOS). A is the highest level of service, followed by B, C, D, E, and then F.

Alternative C – Signalized Intersection

Description of Alternative C – Signalized Intersection

Alternative C – Signalized Intersection would utilize the existing pavement footprint and existing pavement markings. New traffic signal equipment would be installed with advanced signage warning of a traffic signal ahead. The existing beacon infrastructure (e.g. poles and mast arms) were evaluated for reuse, but it was determined they would not meet current design requirements for traffic signals. The intent of this alternative is to regulate all traffic at the intersection such that traffic can move through the intersection under predetermined phasing with separated movements.

Estimated Schedule and Cost of Alternative C – Signalized Intersection

Alternative C – Signalized Intersection would likely have project design completed by Spring 2021, construction would begin in Summer 2021, and construction would be completed in Fall 2021. Acquisition of new right-of-way is not proposed, and access to residences and businesses would be maintained during construction. This alternative would require a maintenance agreement with Canadian County for maintenance of the traffic signals. The preliminary estimated cost of construction is $350,000.

Pros and Cons of Alternative C – Signalized Intersection

- Operations* (2020 AM/PM): 11.8/13.0 secs/veh; LOS B/B
- Crash Reduction: 38% all crashes, 40% fatal/serious crashes
- Pros: Familiar to drivers, adaptable to changes in volumes
- Cons: Permissive compliance, cost of maintenance, initial capital cost to install

*Note: Intersection performance is evaluated based on seconds of delay per vehicle (sec/veh) and grouped into ranges called level of service (LOS). A is the highest level of service, followed by B, C, D, E, and then F.