

Matters from Staff Agenda Item # 2

Meeting Date: 09/16/14

Presenter: Sean O'Malley

Submitting Dept: T.C. Engineering

Subject: Spring Gulch Intersection

Statement / Purpose: Review and select one of two options to improve the Spring Gulch County Road and Wyoming Highway 22 intersection.

Background / Description (Pros & Cons):

As part of the West Broadway / Highway 22 Pathway project, the intersection of Spring Gulch Road and Highway 22 was reconstructed during spring 2014 to maximize safety for cyclists and pedestrians. This re-configuration included the removal of the high-speed "slip-lane" from Highway 22, the installation of a northbound turn lane from Highway 22 onto Spring Gulch Road (SGR) and the construction of a consolidated intersection. The intersection was designed to accommodate a WB-40 design vehicle. The WB-40 configuration typically includes a 12' cab and 34' trailer – but it is also equivalent to a typical fire truck or an 84-passenger school bus. The design was created by Loris & Associates and reviewed and approved by Jorgensen Associates, the County Engineer, and the Wyoming Department of Transportation.

Following construction, it became apparent that some vehicles used by Spring Gulch ranchers, Spring Creek Ranch delivery trucks, and other occasional users exceeded the WB40 design vehicle. Though infrequent, some vehicles were as large as a WB-67 design vehicle (cab plus trailer for a total length of 73'). The intersection is difficult to traverse for these vehicles except during low/no traffic periods.

A separate project, to install a turn lane for southbound Spring Gulch Road vehicles turning westbound onto Highway 22 (SGR/22), was scheduled for construction during the 2014-15 fiscal year budget. The intersection design alternatives presented in this staff report both include construction of this right turn lane.

Design Alternatives:

Two alternatives have been developed to address the needs for all users of the intersection. Alternative 1 includes re-installation of a slip-lane and Alternative 2 includes installation of a low, mountable curb with truck apron. Alternative 2 was presented in detail at the August 26th BCC meeting. Staff proposes utilizing the Broadway Phase 1 Pathway project manual and supplementing the manual with any project-specific technical specifications.

Additional information about the two alternatives is outlined below:

1. Alternative 1: Re-install a slip-lane from Highway 22 onto Spring Gulch Road. Of the two alternatives, this alternative is most similar to the historic configuration of the Spring Gulch/Highway 22 intersection. The initial design, which included traffic calming/speed reduction elements, was rejected by WYDOT due to concerns that these elements could reduce roadway capacity on Highway 22 and generate safety issues. Staff was initially concerned, that without these traffic-calming elements, this alternative potentially reintroduces the dangerous, high-speed conflict zone for cyclists that existed prior to the most recent construction. Following additional evaluation and design efforts, this alternative now includes a defined turn lane to enter the slip-lane, reduced lane width, and two options for cyclists to cross the slip lane. These changes should reduce vehicle speeds and minimize potential vehicle/cyclist conflicts. In addition to the cycle track to bike lane

configuration outlined in Alternative 2 below, cyclists may choose to follow a separated cycle track that crosses the slip lane closer to Spring Gulch Road.

2. Alternative 2: This alternative increases the radius of the turn lane from Highway 22 onto Spring Gulch with the installation of a low, mountable curb and truck apron on the inside of the curb. With this alternative, the northbound cycle track transitions to an on-street bike lane adjacent to the Highway 22 turn lane. The turn lane reduces vehicle speeds while the bike lane configuration minimizes the time cyclists are exposed to vehicular traffic and maximizes inter-visibility between cyclists and drivers. The majority of vehicles turning onto Spring Gulch Road will be safely accommodated on the existing pavement and within the new curb lines. Larger vehicles that require additional maneuvering room will be able to roll over the mountable curb, across the truck apron and then back onto to Spring Gulch Road without conflict with southbound vehicles. Large, eastbound vehicles turning onto to Spring Gulch Road may also benefit from the mountable curb and apron.

In a recent conversation with the County Engineer, WYDOT District Engineer John Eddins stated he supports either alternative but believes Alternative 1 is the better solution.

Sequence of Construction:

The Wyoming Department of Transportation (WYDOT) Standard Specifications for Road and Bridge Construction specifies October 15th as the cut-off date for accepting plant mix pavement as a permanent road surface. WYDOT may extend this date, weather permitting, however due to the risk of deteriorating construction conditions, it is likely that plant mix pavement installed after October 15th will be accepted as temporary pavement (only) and will require replacement in the spring. Since the majority of this project is within WYDOT right-of-way, Teton County must adhere to this WYDOT specification.

Additional time constraint items include WYDOT plan approval of the selected alternative, and approval of the traffic signalization system. Both items require plan and shop drawing submittals to WYDOT with minimum review time of 14 days.

Based on these identified conditions, Staff feels that attempting to complete the entire project this fall (regardless of the alternative selected) will result in additional project cost. Therefore, Staff recommends installation of key components, based on the alternative selected, to provide more efficient vehicle turn movements through the winter month and completing the majority of the project by May 29, 2015. As well, splitting the project into several phases gives the County the opportunity to select a contractor for the majority of the project through a competitive bid process, in early 2015.

Proposed construction for each alternative, this construction season (Fall 2014), includes the following:

1. Slip-Lane: Place permanent pit-run, permanent crushed base, and install either permanent pavement or a temporary 3" plant mix surface (depending on weather/WYDOT). Defer installation of curb and gutter until spring 2015. Construct as much of the right turn lane from SGR onto Highway 22 as feasible, without disturbing existing signal poles and boxes. As with the slip-lane, pit-run and base will be a permanent installation with 3" of plant mix pavement (temporary if necessary).
2. Mountable Curb/Truck Apron: Construct as much of the right turn lane from SGR onto Highway 22 without disturbing existing signal poles and boxes. The right turn lane construction will include permanent placement of pit-run and base with installation of 3" of plant mix pavement (temporary if necessary). Delay installation of the mountable curb and apron until spring 2015.

As stated above, installation of these infrastructure items, this construction season, will enhance the turning movements for vehicles from both Highway 22 and SGR, until construction can resume next spring. Because Alternative 2 includes only the SGR/Highway 22 turn lane installation this fall and delays the truck apron and mountable curb until next spring, this alternative will not initially resolve all vehicle conflicts.

Waiting until spring 2015 to complete the majority of construction (Phase 2) reduces the risk associated with uncertain weather conditions after October 15th. Initiating the entire project this construction season could result in the additional cost of \$75,000 to \$100,000 to replace temporary plant mix pavement. Waiting until spring 2015 will create an additional mobilization charge to the project, possibly \$5,000 to \$10,000; however this charge is significantly less than replacing temporary pavement.

Cost:

Owen Construction, contractor for the Broadway Phase 1 Pathway project, provided a firm proposal for each alternative based on bid schedules developed by Staff. The overall bid for Alternative 1 (assuming contractor performs all phases) is \$277,501.50. The overall bid for Alternative 2 (all phases) is \$234,978.00.

If the project is split into two phases, the bid costs for Fall 2014 work is as follows:

Alternative 1, Phase 1 - \$67,217.75

Alternative 2, Phase 1 - \$43,975.00

Under this phased approach, the remaining work for the selected alternative would be bid in early 2015 for spring 2015 completion.

Statement of Strategic Intent addressed by this item (Identify BCC goals accomplished/addressed):

The project supports the following Teton County Statements of Strategic Intent:

1. Environmental Stewardship – this project helps to support an integrated and efficient multi-modal transportation system.
2. Vibrant Community – this project will provide facilities to ensure personal and community safety and will help foster a well-planned and livable community.

Attachments:

Option 8 (Alternative 1)

Option 7a (Alternative 2)

Fiscal Impact: Staff recommends using the County Road Fund, Fund 18, for project funding. The County Road Fund balance, factoring in the 2014-15 approved projects, is approximately \$850,000. Projected fund revenue for 2014-15 is approximately \$450,000. Dependent on Board alternative selection and possible approval of proposed construction sequence, Staff will finalize a contract with Owen Construction to implement construction activities for this construction season. The benefit to using Owen Construction is Owen is mobilized on site and has pledged to maintain current unit costs bid for the Phase 1 Pathway project.

Based on the prices received to date, County Road Fund guidelines dictate competitive bids will be required for the remaining Phase 2 elements.

Staff Impact: Teton County Engineering staff (including Road & Levee and Pathways) will perform field observation and construction contract administration for the project.

Legal Review: The draft contract has been submitted to the Deputy County Attorney for review and approval.

Recommendation: Staff feels either option provides a good balance between safety for cyclists and safety and convenience for motorists. Both alternatives improve intersection efficiency.

Staff recommends approving construction sequencing to minimize additional costs associated with late season construction activities. If the proposed construction sequence is approved, Staff feels Alternative 1 is clearly a better short term solution – and potentially the best long term solution as well.

Suggested Motion: Based on the alternative selected by the BCC, staff will finalize the contract with Owen Construction LLC for Fall 2014 construction. Anticipating Board approval for construction sequencing, three motions for the Board’s consideration are as follows (choose either 1 or 2 – and 3):

1. *Slip Lane Approval* - I move to approve installation of Alternative 1, Phase 1, Slip-lane alternative.
2. *Mountable Curb/Truck Apron Approval* - I move to approve installation of Alternative 2, Phase 1, Truck Apron and Mountable Curb alternative.
3. *Sole Source Contract with Owen Excavation* – I move to instruct staff to finalize a sole-source contract with Owen Construction LLC and bring the contract back to the BCC for final approval.