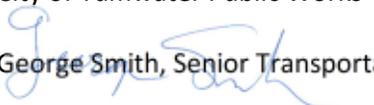




## TECHNICAL MEMORANDUM

**TO:** Jay Eaton, PE, Director  
City of Tumwater Public Works

**FROM:**  George Smith, Senior Transportation Planner

**DATE:** March 13, 2015

**PROJECT #:** SCJ# 625.13

**SUBJECT:** Deschutes River Valley Crossing Alternatives – Comparison Summary

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### BACKGROUND

The E Street Extension was identified in the City of Tumwater Brewery District Plan (2014) as the foundation for improving traffic flow through the area in ways that simultaneously support the creation of vibrant, pedestrian scale clusters in the district, while addressing the regional movement of people and goods for the greater Thurston County.

A significant amount of commute traffic uses Custer Way to travel to Capitol Boulevard or Cleveland Avenue, primarily to/from Interstate 5. This “pinch-point” creates extended periods of congestion along Custer Way. A majority of vehicles traveling on Custer Way are regional trips with destinations as far east as East Olympia, Lacey and Yelm. A new crossing of the Deschutes River Valley would provide an alternative route for these regional trips, removing them from Custer Way and allowing more capacity for local trips with an origin or destination in the immediate area.

The City of Tumwater has been studying opportunities to construct an east-west roadway across the Deschutes River Valley connecting Capitol Boulevard and Cleveland Avenue/Yelm Highway. Analysis conducted for the Brewery District study has confirmed the benefit of constructing a new east-west connection. A new five-lane roadway built between Capitol Boulevard and Cleveland Avenue would draw up to 25,000 vehicles per day by the 2035 horizon. Many of these trips would otherwise be traveling through the Custer Way corridor. This significant shift in traffic creates the opportunity for repurposing some of the existing right-of-way that is currently used for vehicle travel lanes and using that area for bike and pedestrian improvements.

Construction of a new crossing of the Deschutes River Valley is a critical component of the Brewery District Plan. This improvement’s primary purpose is to provide an additional east/west crossing to divert traffic away from Custer Way. There are multiple locations where a potential valley crossing could be constructed. The following is a summary of the analysis of the crossing options performed to



determine the alternative that would best meet the goal of the project (reducing traffic demand on Custer Way) with the lowest cost and impact.

## DESCHUTES RIVER VALLEY CROSSING OPTIONS

Currently there are two routes available to drivers wishing to travel east/west between Tumwater and south Olympia and/or south Lacey; Custer Way at the north end of Tumwater and Tumwater Boulevard via Henderson Boulevard at the southern end of Tumwater. To help lessen the burden placed on the Custer Way route, an additional Deschutes River Valley crossing has been proposed. Three existing roadways have been identified as possible locations for this additional valley crossing. These three conceptual crossing locations are shown on **Figure 1**. Each one is described below:

### E Street

E Street is a two-lane roadway connecting Deschutes Parkway to Capitol Boulevard. The E Street/Capitol Boulevard intersection is a four-way intersection under traffic signal control. The east leg of the intersection provides access to the properties on the valley floor between the river and Cleveland Avenue.

An E Street extension would divert approximately 1,450 vehicles from the Custer Way corridor during the evening peak hour. It provides direct access to Deschutes Parkway, which provides access to/from NB I-5 and to WB US 101. The property impacts at this location are less than any of the other proposed locations. As the crossing location moves south, the distance required to connect Capitol Boulevard and Cleveland Avenue becomes greater. As such, this location minimizes the extension length needed.

While the property impacts would be less than the other crossing locations, properties at the E Street/Capitol Boulevard intersection would be impacted. The diversion of traffic traveling to/from I-5 and US 101 to this roadway would result in a major increase in volume along Deschutes Parkway.

#### Pros:

- Aligns with an existing intersection that provides access to I-5 and US 101.
- Provides the shortest crossing distance between Capitol Boulevard and Cleveland Avenue of the three alternatives.
- Located close enough to Custer Way to attract a large volume of traffic traveling between Capitol Boulevard and Cleveland Avenue.
- Has minimal impacts to existing developments.
- Has zero impact to the Tumwater Valley Golf Course.

#### Cons:

- May impact properties along Capitol Boulevard.
- Adds significant traffic to Deschutes Parkway, currently a low volume two lane roadway, which provides access to I-5 and US 101, as well as providing access to Tumwater's historic parks.



## Linwood Avenue

Linwood Avenue is a two-lane roadway serving the residential areas east of I-5 and north of Trospen Road. It crosses under Interstate 5 just west of Capitol Boulevard. The Linwood Avenue/Capitol Boulevard intersection is a tee intersection under traffic signal-control.

A Linwood Avenue extension, while diverting less traffic away from Custer Way than the E Street extension, would still provide enough relief to the Custer Way corridor to accomplish the goals stated in the Brewery District Plan. This valley crossing is located closer to the Trospen Road interchange, which is the nearest access point to SB I-5.

A Linwood Avenue extension would require an additional 1,000 feet of roadway to span the distance between Capitol Boulevard and Cleveland Avenue compared to the E Street extension. While not directly connected to Deschutes Parkway, this extension would still result in a large increase of traffic traveling along Deschutes Parkway. It would also likely result in additional traffic along 2<sup>nd</sup> Avenue, a low speed roadway providing access to neighborhoods on Tumwater Hill. This extension will not provide the same level of benefit to Custer Way west of Capitol Boulevard, drawing away 150 less PM peak hour trips than the E Street extension. This location would result in significant property impacts along the east side of Capitol Boulevard, where construction is underway for a new La Quinta Inn. It would also have impacts to the Tumwater Valley Golf Course along the valley floor. These impacts are likely greater than the property impacts of the E Street extension.

### Pros:

- The difference in attractiveness between this alternative and the E Street alternative along the critical stretch of Custer Way between Capitol Boulevard and Cleveland Avenue is negligible.
- This river valley crossing is located closer to the I-5 interchange at Trospen Road (this is the nearest access point providing access to southbound I-5).
- This location allows for the possibility of avoiding impacts to the Tumwater Valley Golf Course.

### Cons:

- The distance between Capitol Boulevard and Cleveland Avenue at this location is greater than the E Street alternative (3,225 feet vs 2,150 feet).
- This alternative would attract 150 fewer vehicles off of Custer Way west of Capitol Boulevard compared to the E Street alternative.
- There would be significant impacts to the properties along Capitol Boulevard and potentially to residences on Cleveland Avenue.
- Diverts freeway traffic to Deschutes Parkway and 2<sup>nd</sup> Avenue
- There would be additional property impacts along the valley floor - including the Tumwater Valley Golf Course - compared to the E Street alternative.

## Trospen Road

Trospen Road is a four/five-lane arterial with an I-5 interchange. The Trospen Road/Capitol Boulevard intersection is a four-way intersection under traffic signal-control. Currently the east leg of this intersection is a low volume two-lane approach serving a small collection of commercial uses.



A Trospen Road extension would provide a centrally located Deschutes River Valley crossing, halfway between the current options of Custer Way and Tumwater Boulevard via Henderson Boulevard. This extension would also provide direct access to the Trospen Road interchange.

The primary purpose of an additional valley crossing is to divert traffic away from the Custer Way corridor. This extension location performs much worse at drawing traffic than the other locations. An extension of Trospen Road would draw 500 fewer trips away from Custer Way between Capitol Boulevard and Cleveland Avenue. This would make it unlikely to meet the goals of the Brewery District Plan. Additionally, introducing a fourth major volume approach to the Trospen Road/Capitol Boulevard intersection would cause an already congested intersection to perform much worse. The distance of this extension would be significantly longer than either of the other two location options, reaching over 4,800 feet from Capitol Boulevard to Cleveland Avenue/Yelm Highway. This location would also result in more property impacts. The properties east of the Trospen Road/ Capitol Boulevard intersection would be impacted, as well as single family residences along Cleveland Avenue. This extension would also require crossing the Tumwater Valley golf course.

Pros:

- Provides a central river valley crossing between the existing options of Custer Way and Henderson Avenue.
- Provides direct access to the I-5 interchange at Trospen Road.

Cons:

- The distance for this crossing location is much greater than either of the other two alternatives. (4,850 feet).
- Requires crossing the Tumwater Valley Golf Course.
- Creates a high volume 4<sup>th</sup> approach to the Capitol Boulevard/Trospen Road intersection that already has operational difficulties.
- Draws significantly less traffic away from Custer Way compared to the other two alternatives:
  - 500 less than E Street between Capitol Boulevard and Cleveland Avenue
- There are additional property impacts at Trospen Road and along Yelm Highway/Cleveland Avenue.

## RECOMMENDATION

A new crossing of the Deschutes River Valley was identified as a critical component of the overall transportation strategy required to meet the goals of the Brewery District Plan. Three potential locations have been considered for this improvement. Each of the three location alternatives under consideration would be projected to draw at least 1,800 PM peak hour trips. The E Street and Linwood Avenue extension both provide similar benefit to the Custer Way corridor, while the Trospen Road extension provides significantly less benefit. For this reason alone Trospen Road should not be considered a viable location for this Deschutes River Valley crossing.

While both E Street and Linwood Avenue extensions provide similar vehicular benefit, there are several reasons to believe a Linwood Avenue extension would result in higher costs. The distance between Capitol Boulevard and Cleveland Avenue is 1,000 feet greater for the Linwood Avenue extension than the E Street extension. Additionally, there will be greater property impacts associated with the Linwood



Avenue extension, including golf course properties on the valley floor and the La Quinta Inn under construction on Capitol Boulevard. For these reasons, it is recommended that the E Street extension be carried forward as the preferred location for the new roadway crossing between Capitol Boulevard and Cleveland Avenue.



Figure 1  
Conceptual Crossing Locations

E Street Extension Corridor Study  
Tumwater, Washington