

MEMORANDUM

DATE: May 27, 2014

TO: John Burrell, City of Oregon City

FROM: Carl Springer, PE, DKS Associates
Robert Spierling, DKS Associates

SUBJECT: **Washington Street/12th Street Curb Extensions** **P14014-000**

This memorandum reviews the purpose of the existing curb extensions that project onto Washington Street located on the northwest and southwest corners of the Washington Street/12th Street intersection in Oregon City, and identifies options for retaining or removing the extensions.

Background

This section of the memorandum covers the existing transportation conditions at the intersection of Washington Street/12th Street, including intersection geometry and traffic control, vehicle speeds, and conditions leading to installation of the existing curb extensions.

Intersection Geometry and Control

The intersection of Washington Street/12th Street is currently stop controlled for the east-west legs (12th Street), and uncontrolled for the north-south legs (Washington Street). Dedicated left turn lanes are provided for the northbound and southbound approaches on Washington Street, and single lanes are provided on the remaining approaches. An overhead flashing beacon signal is provided over the intersection for motor vehicles traveling along both roadways. The flashing beacon signal displays flashing red for 12th Street and flashing amber for Washington Street.

85th Percentile Speed Survey

An 85th percentile speed survey was conducted on Washington Street by the City of Oregon City in January, 2010. The survey revealed that the 85th percentile speed for northbound and southbound vehicles was 33 mph and 31 mph, respectively. The posted speed on Washington Street is 25 mph for both northbound and southbound directions at the study intersection.

Sight Distance, Bicycle lanes, Pedestrian Enhancements and Curb Extensions

The intersection sight distance for the eastbound movement at this intersection was previously improved as part of a project in 2003, in part by the installation of bicycle lanes along Washington Street. The bicycle lanes have the effect of moving the “edge of traveled way” for Washington Street away from the curb by a distance equal to the width of the bicycle lane (sight distance is measured from the edge of the traveled way¹). Moving the edge of traveled way on Washington Street away from the curb allows a vehicle entering the intersection from 12th Street an improved position at the intersection to see vehicles approaching the intersection along Washington Street. The required intersection sight distance to the north for the eastbound approach is 365 feet². In November 2003, after the completion of the project, sight distance was measured to be approximately 370 feet.³

The existing curb extensions projecting onto Washington Street at the northwest and southwest corners of the intersection were also constructed in 2003, they each extend on to Washington Street approximately 4 feet. The purpose of their installation was twofold; first, to reduce the roadway width in order to enhance the pedestrian crossings of Washington Street and second, to serve as a visual queue for drivers on the west leg to take advantage of additional approach space provided by the bicycle lanes (i.e. new edge of vehicle traveled way).

Summary/Options

Based on a review of the current conditions at the intersection of Washington Street/12th Street, the curb extensions still serve their main purpose today (to reduce the distance for pedestrians crossing Washington Street). The following are options and considerations for retaining or removing the existing curb extensions from the intersection.

¹ A *Policy on Geometric Design of Highways and Streets*, 2011 American Association of State Highway and Transportation Officials, page 9-36, Case B1—Left Turn from the Minor Road.

² A *Policy on Geometric Design of Highways and Streets*, 2011 American Association of State Highway and Transportation Officials, page 9-38, Table 9-6 Design intersection sight distance – Case B1, Left Turn from Stop.

³ DKS Associates Memorandum-Intersection Sight Distance at the Washington/12th Intersection, to Nancy Kraushaar, City of Oregon City, January 6, 2004.

Retaining the curb extensions:

Pros:

- Shorter roadway crossing of Washington Street for pedestrians
- Provides visual queue to drivers on west leg to approach the intersection for better view of traffic on Washington Street

Cons:

- Creates a tighter turning radius for vehicles turning right from eastbound 12th Street onto southbound Washington Street.
- Southbound bicycles on Washington Street must leave the bike lane to circumvent the curb extensions.

Remove the curb extensions:

Pros:

- Improved turning movement for vehicles turning right from eastbound 12th Street onto southbound Washington Street.
- Improved southbound bike movement through the intersection

Cons:

- Longer roadway crossing of Washington Street for pedestrians. If the intersection is signalized, this would be added to the necessary Flashing Don't Walk time for the side street phase.
- Reducing the available area on the corners may hinder the placement of traffic control devices if/when the intersection is signalized.

Recommendations

- Maintain curb extension on the northwest corner in the short-term. This serves the function of maintaining safe sight distance as long as this is a stop controlled intersection.
- The curb extension on the southwest corner could be removed to improve the turning radius for that corner, but it may require an unconventional signal pole location / treatment when it becomes signalized.
- After the signal is installed, consider removing both curb extensions. This would open back up the southbound bike lane which seems like a good benefit.