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TECHNICAL MEMORANDUM

Date: April 23, 2012

To: Peter Hahn, Director

From: Dongho Chang, PE, PTOE
City Traffic Engineer

Subject: Technical Review of Burke-Gilman Trail along Shilshole Ave NW



I have reviewed the design details of Shilshole segment of the Burke-Gilman Trail extension project. This design constructs a pedestrian and bicycle trail on the south side of Shilshole Avenue NW from 17th Avenue NW to NW Vernon Place (known as the "Shilshole Segment"), which is approximately a third of a mile in length. Shilshole Avenue is a minor arterial street with a 30 mph posted speed limit.

Driveways:

The design maintains all existing 16 driveways. Fifteen out of the 16 driveways are designed per City of Seattle's 2011 Standard Plans for Municipal Construction as type 430A driveways. Driveway number 13, which serves the Ballard Mill Marina, is type 430B and exceeds in driveway maximum width of 30 feet. I have approved the driveway width of 40 feet for this driveway in order to serve the existing business need of large boat deliveries. Driveway number 13 will operate safely with the wider driveway width.

Driveway Sight Distance:

Fourteen driveways (driveways 1 through 14) have approximately 30 feet of driveway length from the property line to the trail. The additional driveway length helps exceed visibility requirement for roadway intersection sight distance, which is not required for driveways. Two of the driveways (driveway 15 and driveway 16) have the trail located approximately three feet from the property line. Although steps could be taken through negotiation with the property owners to increase visibility at those two driveways, even without any increase in visibility, all these driveways will operate safely and accordingly with the rules of the road. Seattle Municipal Code 11.58.230 provides the rules of the road for drivers emerging from driveways.

SMC 11.58.230 Emerging from alley, driveway, private property, or building.

"Except as directed otherwise by official traffic-control devices, the driver of a vehicle emerging from any alley, driveway, private property, or



building shall stop such vehicle immediately prior to driving onto a sidewalk or onto the sidewalk area extending across any alley or driveway, or onto a public path, and shall yield the right-of-way to any pedestrian or bicyclist as may be necessary to avoid collision, and upon entering the roadway of a street shall yield the right-of-way to all vehicles approaching on the roadway.”

All driveways designed in this project meet or exceed city design guidelines and will operate safely.

Rail track crossing:

There is one rail track crossing in this project. The design provides a right angle (90 degree) crossing of the track, which is the most desirable design treatment.

Trail/Truck Safety:

Trails located along industrial areas in Seattle have operated safely and my expectation is the same for this section of the trail. There are trucking companies along the Northlake Way section of the Burke-Gilman Trail, including the Lakeside Asphalt plant, and a railroad that operates near the Burke-Gilman Trail from 6th Avenue NW to 11th Avenue NW . There is approximately two miles of West Marginal trail that cross many industrial driveways and is next to the railroad that has operated for ten years without a reported bicycle collision. The design of the Shilshole Segment uses the standard signing and trail marking that we currently use in other similar trail segments with similar driveway and truck usage. Property owners may install private owned signs on their private property or work with SDOT Street Use Division to install additional signs on city right of way.

Traffic Barrier:

The design provides a traffic barrier on the north side of the trail along Shilshole Avenue NW. The traffic barrier provides separation between the trail users and eastbound Shilshole vehicle traffic. The barrier will be 42 inches in height, have barrier end transitions and delineated for visibility. There will not be a barrier along some parts of the Shilshole Segment where driveways and crosswalks require the need for access crossings. In those portions of the Shilshole Segment, the curb and transition to concrete, as opposed to the asphalt trail, will provide sufficient separation between the trail users and eastbound Shilshole vehicle traffic.

Conclusion:

The proposed trail design meets city design standards and is consistent with practices the City has followed in designing other mixed use trails throughout the City, including adjoining portions of the Burke-Gilman Trail . Based on the use of best engineering practices and my experience as an engineer, I do not have concerns with this project.