City of Bellevue

Transportation Commission Study Session

DATE: May 23, 2019

TO: Chair Wu and Members of the Transportation Commission

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SUBJECT: Potential Main Street Bike Lane Project

DIRECTION REQUESTED

X Action (Endorsement)
X Discussion
___ Information

At its May 23 meeting, staff seeks Transportation Commission endorsement to incorporate rapid-build bicycle facilities on Main Street between 108th Avenue Northeast and Bellevue Way as the next logical element of a downtown bicycle network (implementation through Fall 2019).

Attached is a draft transmittal letter for Commission discussion and action (Attachment A). Staff requests Commission representation at the City Council's July 8 study session meeting to share insights and the transmittal letter.

BACKGROUND

At its May 13 meeting, the City Council received an update on the Transportation Commission's assessment and proposed next steps on the 108th Avenue NE bikeway and discussed a potential Main Street bike lane project. Materials shared with Council include: Agenda Memo; A. Project Timeline; B. Transmittal letter from the Transportation Commission (February 5, 2018); C. Downtown Demonstration Bikeway Assessment Report; D. Downtown Demonstration Bikeway Technical Appendix Report; E. Transmittal letter from the Transportation Commission (May 13,

2019); and, F. Preliminary Assessment of Main Street Bike Lane Alternatives. Additionally, Council received letters from Bellevue Downtown Association, Bellevue Chamber of Commerce, REI, Cascade Bicycle Club, and emails from residents on both Downtown Bikeway projects.

As follow-up to the May 13 presentation by staff and Chair Lei Wu, Council expressed appreciation for the Transportation Commission's oversight of Bellevue's Pedestrian and Bicycle Implementation Initiative and implementing the 2009 Pedestrian and Bicycle Transportation Plan. Council concurred with Commission's determination to retain the 108th Avenue Northeast Demonstration Bikeway with refinements to the design per community feedback and staff observations. Finally, Council directed the Transportation Commission to evaluate a potential Main Street bike lane project, followed by an update to Council.

MAIN STREET BIKE LANE PROJECT

Reflected in this memo are ***comments/questions*** posed by Councilmembers during their May 13 deliberations on the potential Main Street bike lane project followed by staff responses. [Note: These comments/questions are not documented verbatim as the video recording from the meeting was not posted in time to verify exact wording].

Provide additional details on the existing Main Street bike lane and explain whether the decision to incorporate these bike lanes resulted in an adverse impact to traffic operations at the Bellevue Way intersection.

The following provides a synopsis of 2016 and 2017 road configuration changes at the Main Street and Bellevue Way intersection that resulted in the current layout (a westbound striped bike lane on Main Street between 103rd Avenue and 106th Avenue, and an eastbound buffered bike lane between 103rd Avenue and 105th Avenue):

- In 2016, redevelopment in Old Bellevue on the west side of Bellevue Way converted the two eastbound through travel lanes on Main Street to one right turn lane and one through lane. This change was made at the request of the city's traffic signal operation engineers to improve intersection capacity for vehicles due to the volume of eastbound, right turning traffic using the intersection during the evening commute. New development on both the north and south sides of Main Street west of Bellevue Way made possible an improved walking environment in this area, with wide sidewalks, curb ramps that made travel easier for people with disabilities, and wider crosswalks across Main Street and Bellevue Way.
- In 2017, the City improved the pedestrian facilities on the east side of Bellevue Way and added bicycle lanes on Main Street on both sides of Bellevue Way. The city also replaced aging segments of the curb, gutter and sidewalk to provide upgraded curb ramps, new pedestrian pushbuttons, better lighting, and a wider crosswalk. Since there was only one eastbound vehicle travel lane west of the intersection after the development improvements, the second travel lane on the east side of the intersection was converted to a bicycle lane for bicyclists traveling east through the intersection. To provide space for a westbound bicycle lane and to better align travel lanes on both sides of Bellevue Way, a narrow, hard-surfaced median on the east side of Bellevue Way was removed and the landscaped median on the west side of Bellevue Way was reshaped and extended.

It has been suggested (see page 3 of Commissioner Bishop's letter) that the above road configuration changes at the Main Street and Bellevue Way intersection are responsible for the increase in V/C documented in Bellevue's 2016, 2017 and 2018 Concurrency Update Reports.

Upon a close examination by Bellevue's Modelling Analysis Group (MAG) staff, it was found that *the refinement to the intersection LOS analysis tool made in 2018 and increase in traffic volume were the two causes of the V/C change; the introduction of the bike lane caused little or no change in V/C*.

In 2018, based on feedback from the public and the Transportation Commission, MAG staff updated the LOS analysis tool to more closely reflect congestion observed in the real world. The refinements made some intersection LOS results worse than those calculated using the old version of the tool. Had the tool been updated and used in 2017, the V/C ratio at the Bellevue Way and Main Street intersection would have been 0.84 as opposed to 0.74 calculated using the old tool.

To isolate the V/C change caused by the introduction of the bike lane project exclusively, MAG staff re-analyzed the V/C ratios using 2016 and 2017 counts with and without the bike lane using the updated tool. The traffic counts used are reflected in Figure 1 and the updated V/C ratios are reflected in Table 1.

Figure 1: Vehicle Movements at Main Street and Bellevue Way (2016 and 2017)

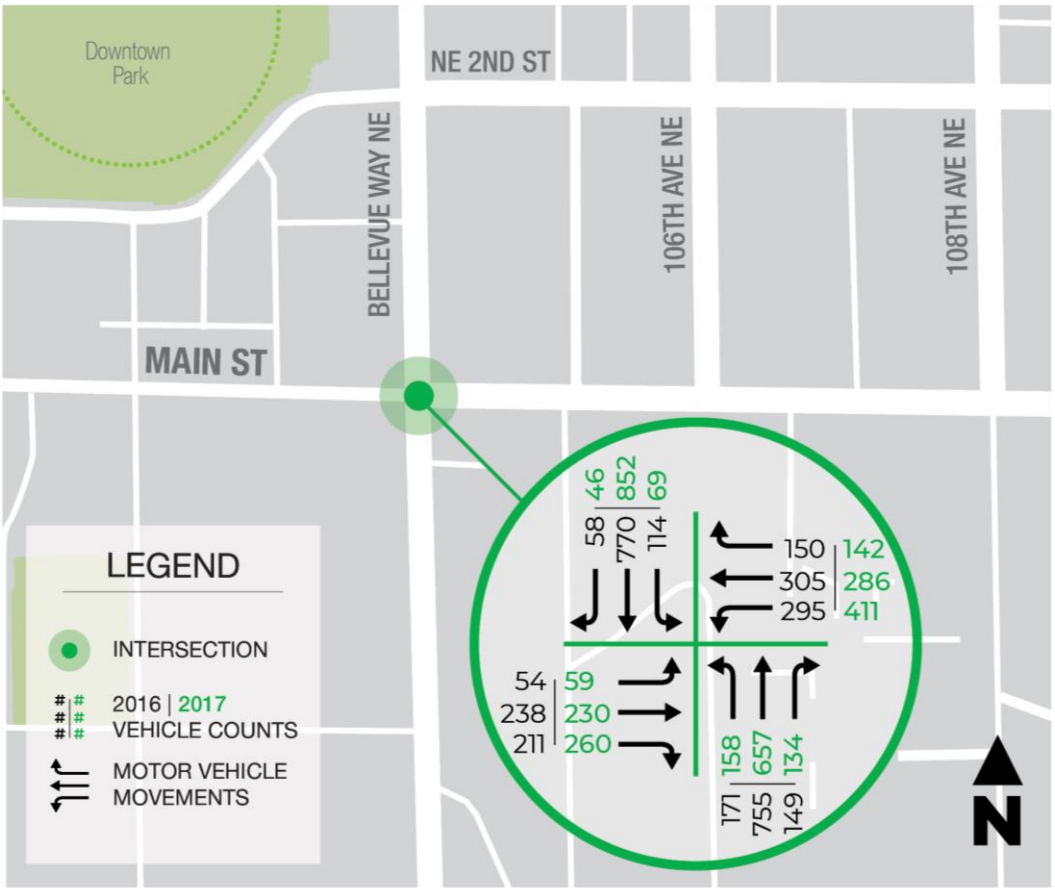

Table 1: Calculated V/C Ratio with Updated LOS Tool (2016 and 2017)

Count Year	V/C Ratio with Updated LOS Tool	
	Without bike lane	With bike lane
2016	0.84	0.84
2017	0.96	0.94

Note: During this review, MAG staff discovered that the eastbound configuration at the Bellevue Way and Main Street intersection was changed in February 2016 and the bike lane on the east leg was added in July 2017. But the configuration was inadvertently left unchanged in the past two Concurrency updates.

As shown in Table 1, using the updated tool and 2016 counts as input, with and without the bike lane, the calculated V/C results are the same. Using 2017 counts, with the bike lane in place, the V/C result is slightly better than without. This is because the eastbound right turn volume is higher than the eastbound through volume. With the dedicated right turn lane, the right turn movement could run concurrently with the northbound left turn movement, improving the LOS.

As noted, the V/C did increase from 2016 to 2017; however, this change was unrelated to the bike lane. Rather it was a result of traffic diverted from other north-south arterials that were impacted by East Link construction. Lane restrictions on 112th Ave SE and cut-through traffic management on 108th Ave SE were implemented within months of the bike lane modifications on the east leg of the Main Street/Bellevue Way intersection. This construction impact resulted in a 28% increase in westbound left turn volumes onto Bellevue Way.

Are there opportunities to modify the Main Street bike lane alternatives to reduce projected vehicle delay experienced at the 108th Avenue NE intersection?

At its March 28 meeting, staff shared with the Transportation Commission two potential Main Street bike lane design concepts and traffic operation evaluations conducted in SimTraffic. As noted in the Preliminary Assessment of Main Street Bike Lane Alternatives, Alternative 2 is projected to increase the delay experienced by people driving in the PM Peak Hour from 17.6 seconds/vehicle to 24.5 seconds/vehicle. Staff is evaluating alternative design ideas and signal operations and will be prepared to share this information with the Transportation Commission at its May 23 meeting. Additionally, staff will be prepared to share the corresponding impacts of alternative designs on bicycle mobility on this corridor.

Provide an assessment of NE 2nd Street as an alternative east-west bicycle connection through Downtown; as compared to Main Street.

- **Policy:** Bellevue's 2009 Pedestrian and Bicycle Transportation Plan identifies Main Street as a component of the Lake-to-Lake Trail, a bicycle priority corridor that completes a continuous east-west route between Lake Washington and Lake Sammamish. Although NE 2nd Street is identified as being part of the bike network, it is not a component of the bicycle priority corridor network (see page 92 of the 2009 Plan).

- **Bike network connectivity:** The Lake-to-Lake Trail connects parks, schools, neighborhoods, and urban areas with separated pathways, bike lanes, boardwalks and gravel trails as one traverses the City through 800 acres of interconnected park and open space property. In Downtown, it connects the new Meydenbauer Bay Park to the 108th Avenue bikeway and the Lake Washington Loop—two north-south bike routes connecting the I-90 and 520 Trails. Along Main Street, this is a direct connection (2,700 feet) through Old Bellevue. To provide a comparable connection, a project on NE 2nd Street would also include bicycle improvements to one block of 100th Avenue NE and to NE 1st Street from 100th to Bellevue Way NE, connecting to Downtown Park but skirting Old Bellevue. This indirect connection (3,800 feet) is about 40 percent longer.

- **Bike facility comfort:** Improvements to Main Street would provide an eastbound buffered bike lane (uphill) and a westbound striped bike lane (downhill) from Bellevue Way NE to 108th Avenue NE. With a speed limit of 30 mph and traffic volumes exceeding 15,000 daily vehicles, these result in a Bicycle Level of Traffic Stress (LTS) rating of 3. Adding shared lane markings west to 100th Avenue would maintain the LTS 3 conditions through Old Bellevue. Improvements to NE 2nd Street would provide striped bike lanes in both directions from Bellevue Way NE to 106th Avenue NE and buffered bike lanes in both directions from 106th to 108th Avenue NE. With a speed limit of 30 mph and traffic volumes less than 15,000 daily vehicles, these result in a Bicycle Level of Traffic Stress (LTS) rating of 2. Adding shared lane markings west along NE 1st Street and south along 100th Avenue would result in an LTS rating of 3 for the remainder of the route.

- **Bicycle route grade:** The above LTS ratings do not account for terrain; however, this is also a significant factor in rider experience. Traveling west to east, Main Street climbs gradually from 88 feet to 144 feet, a 43-foot gain. By comparison, the alternative route climbs along two segments: from 88 feet to 129 feet along 100th Avenue NE and again from 94 feet to 163 feet between 106th and 108th Avenue NE, a total gain of 84 feet over two steep climbs.

- **Travel lanes repurposed:** Main Street currently has two general purpose travel lanes in each direction plus a two-way center left turn lane from 105th Avenue NE to 108th Avenue NE. One eastbound travel lane would be repurposed along these blocks to provide bike lanes on both sides. NE 2nd Street currently has one general purpose travel lane in each direction plus a two-way center left turn lane from Bellevue Way NE to 112th Avenue NE. None of these lanes would be repurposed; however, dedicated right turn lanes would be repurposed westbound at Bellevue Way NE and westbound at 106th Avenue NE.

- **Parking Impacts:** Main Street does not have any on-street parking within the project limits. Earlier design concepts that would have created new on-street parking along portions of the corridor by repurposing one westbound travel lane are no longer being considered. NE 2nd Street has on-street parking along the north side of every block from Bellevue Way NE to 108th Avenue NE, totaling 460 feet of curb lane providing about 25 on-street parking spaces. The curb lane on the north side from 105th to 106th Avenue NE would be repurposed to provide bike lanes on both sides, resulting in the displacement of about 25 percent of the existing on-street parking.

- **Construction Activity:** Private construction projects are ongoing and planned along both corridors. Along Main Street, construction of Alamo Manhattan II (10655 Main Street, east of 106th Avenue on the south side) will be complete later this summer, and construction will begin on Main Street Apartments (10777 Main Street, west of 108th Avenue on the south side) is expected to begin later in 2019. Relative to current conditions—wherein Alamo Manhattan II construction has occupied the curb lane from 105th to 107th Avenue during daytime work hours continuously for over a year—there is effectively no change to the roadway by repurposing that lane to provide bike lanes on both sides. Along NE 2nd Street, construction of One88 (188 Bellevue Way NE, east of Bellevue Way on the south side) will continue through early 2020, and construction of Bellevue Plaza (139 106th Ave NE, west of 106th on the south side) is expected to begin in the 2020–21 timeframe. The construction of One88 will preclude installation of an eastbound bike lane until construction is complete.

- **Community support:** Among the four candidate corridors considered during the 2017-2018 Downtown Bicycle Rapid Implementation Program engagement process, Main Street stood out as the second highest ranked bike lane improvement after 108th Avenue NE. Community input received at the bikeway open house, online questionnaire, and letters of support were shared with the Transportation Commission at its January 11, 2018 meeting (see slides 9, 10, and 15 of the staff presentation; page 2 of additional communications; and, page 6 of the minutes).

Does WSDOT's I-405 Bellevue to Renton project impact the viability of implementing a rapid build bicycle lane on Main Street between Bellevue Way and 108th Avenue NE?

WSDOT's I-405 Renton to Bellevue Widening and Express Toll Lane Project was designed with forward compatibility in mind and includes a number of design considerations for accessing Downtown Bellevue, including a potential new bridge and a half diamond interchange at NE 2nd Street. Additionally, WSDOT could begin replacement of the Main Street bridge over I-405 as early as 2020 (note: schedule is dependent on the Design-Builder who won't be selected until August) This project includes a 14-foot-wide multi-purpose path on the southside of the new bridge (a component of the Lake-to-Lake Trail). These I-405 related projects are not impediments to moving forward with a low-cost (estimate: less than $50K), rapid implementation (completion: Summer 2019) bicycle lane project on Main Street between Bellevue Way and 108th Avenue NE.

Will Bellevue staff conduct a before-and-after assessment of the Main Street bike lane project?

Bellevue staff does not intend on conducting an assessment of a potential Main Street bike lane project equivalent to the Downtown Demonstration Bikeway Assessment Report. Recognizing that there are efficiency concerns related to motor vehicle travel time along the corridor, Bellevue staff is proposing to mount bluetooth travel time collection hardware at four locations along the length of Main Street and monitor for one year. As with all signalized intersections,

city staff will monitor operations and adjust as needed to ensure travel lanes operate safely and efficiently. Additionally, staff will monitor bicycle collisions as part of Bellevue's Vision Zero safety program.

When the 108th Avenue NE bike lanes and Main Street bike lanes (Alternative 2) are considered together; what is the total impact to travel lane mileage in Downtown Bellevue?

The 108th Avenue NE bike lane project between Main Street and NE 12th Street is 2.0 miles (in both directions). The project repurposed 0.5 miles of travel lanes.

The potential Main Street bike lane project limits (Alternative 2) between Bellevue Way and 108th Avenue NE is 0.9 miles (in both directions). However, the project would repurpose 0.2 miles of travel lanes.

In Downtown there are an estimated 41 travel lanes miles (excludes turn lanes). When combined, 108th Avenue NE and the potential Main Street bike lane project (Alternative 2) would repurpose 1.7% of the total general purpose lane miles in Downtown.

What are the implications of the new Vulnerable user/Safe passing legislation on vehicle capacity?

The vulnerable road user and safe passing bill passed the legislature with bipartisan support and was signed by Governor Inslee; the law has an enactment date of 1/1/2020.

Here's a summary from WA Bikes; at its core, this law does two things:

- Increases the penalty for specific infractions involving people biking, walking, rolling, etc. (The increased fine will go towards education of law enforcement, the courts and the public regarding safe interactions with people who are vulnerable on the roadway. For more detail on what's included in the new law, see here.)
- Establishes a strengthened safe passing law (give a lane or provide at least three feet, depending on roadway context)

Our staff interpretation (*note: not a legal interpretation*) of the second component of the bill means that people driving on Main Street (were it not reconfigured with a buffered bike lane) would have to move over into the next lane for people bicycling as there are 2+ lanes traveling in a single direction.

ATTACHMENTS

A. Transmittal Letter from the Transportation Commission