

Staff Assessment of Alternatives and Recommendation on Main Street Bike Lane Project

With Transportation Levy funding available to build on the downtown bikeway network in 2019, staff brought forward a preliminary assessment of two Main Street alternatives for Transportation Commission consideration at its March 28 meeting. A third alternative was developed for Transportation Commission consideration at its May 23 meeting in response to concerns about potential impacts to eastbound motor vehicle travel at the 108th Avenue intersection.

Currently, a westbound bike lane on Main Street exists between 103rd Avenue and 106th Avenue, and an eastbound buffered bike lane exists between 103rd Avenue and 105th Avenue. Both directions feature bike lanes through the Bellevue Way intersection today. The Main Street bike lane project alternatives build upon these existing bike lanes on Main Street and would establish a continuous east-west connection to the 108th Avenue NE bikeway.

Alternative 1:

- In the eastbound direction, Alternative 1 extends the existing buffered bike lane on Main Street from 105th Avenue to 108th Avenue by repurposing one eastbound travel lane. (Note: This second eastbound lane has been closed during peak periods since 2017 due to Alamo Manhattan II construction.)
- In the westbound direction, Alternative 1 installs a parking-protected bike lane on Main Street from 108th Avenue to 106th Avenue and enhances the existing striped bike lane into a buffered bike lane between 106th Avenue and Bellevue Way. This alternative involves repurposing a westbound travel lane from Bellevue Way to 108th Avenue.

Alternative 2:

- In the eastbound direction, Alternative 2 extends the eastbound buffered bike lane on Main Street from 105th Avenue to 108th Avenue by repurposing one eastbound travel lane. (Note: This second eastbound lane has been closed during peak periods since 2017 due to Alamo Manhattan II construction.)
- In the westbound direction, Alternative 2 extends the existing striped bike lane on Main Street from 106th Avenue NE to 107th Avenue and installs a buffered bike lane between 107th Avenue and 108th Avenue. Alternative 2 maintains two westbound travel lanes.

Alternative 2.1 – Staff Recommendation:

- In the eastbound direction, Alternative 2.1 extends the eastbound buffered bike lane on Main Street from 105th Avenue to 107th Avenue by repurposing one eastbound travel lane. (Note: This second eastbound lane has been closed during peak periods since 2017 due to Alamo Manhattan II construction.) At 107th Avenue, the eastbound buffered bike lane begins tapering away from the curb, becoming a striped bike lane (no buffer) for

about 200 feet between the eastbound travel lane and a new right turn lane being added for eastbound-to-southbound turns onto 108th Avenue.

- In the westbound direction, Alternative 2.1 extends the existing striped bike lane on Main Street from 106th Avenue NE to 108th Avenue. Alternative 2 maintains two westbound travel lanes.

All three alternatives would also include modifications to the east leg of the intersection of Main Street and 108th Avenue to ensure safe lane alignment through the intersection. This may include repurposing approximately 250 feet of the eastbound curb lane east of 108th Avenue to reinforce the lane revisions on the west leg.

Each alternative was evaluated in SimTraffic to determine the PM Peak Hour impacts to intersection delay (seconds/vehicle) and Level of Service.

| Intersection | Existing | Alternative 1 | Alternative 2 | Alternative 2.1 |
|----------------------|----------|---------------|---------------|-----------------|
| Bellevue Way/Main St | 54.6 sec | +0.4 sec | -2.8 sec | -2.8 sec |
| 106th/Main St | 21.7 sec | +18.0 sec | -0.7 sec | -2.0 sec |
| 108th/Main St | 17.6 sec | +17.9 sec | +6.9 sec | +4.9 sec |

As noted in the above table, there are more significant impacts on intersection LOS with Alternative 1 than with Alternatives 2 and 2.1. Removal of one westbound travel lane in Alternative 1 would increase intersection delay at both 106th Avenue NE and 108th Avenue NE. In Alternatives 2 and 2.1, impacts to intersection LOS are limited to 108th Avenue; intersection LOS would improve at both Bellevue Way and 106th Avenue.

In addition to intersection delay, staff assessed the impact of each alternative on travel time along Main Street. This effort evaluated travel times in both directions from just west of Bellevue Way to just east of 108th Avenue. Compared to existing conditions, travel times in Alternative 1 increased in both directions during the PM peak hour, while travel times in Alternatives 2 and 2.1 stayed the same.

| Direction | Existing | Alternative 1 | Alternative 2 | Alternative 2.1 |
|-------------------------------------|-------------------------|-------------------------|---------------|------------------------|
| Eastbound (Bellevue Way - 108th) | 2.3 mins 138 seconds | +0.1 min +6 seconds | No Change | -0.1 min -6 seconds |
| Westbound (108th - Bellevue Way) | 1.7 mins 102 seconds | +0.9 min +54 seconds | No Change | No Change |