



City of Bellevue

# Potential Main Street Bike Lane Project

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May 23, 2019



# Direction Needed

Staff seeks Commission consensus on a potential Main Street bike lane project between Bellevue Way and 108<sup>th</sup> Avenue Northeast.

# AGENDA



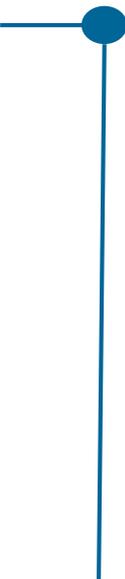
May 13 Council Direction



Discussion Topics 1-7

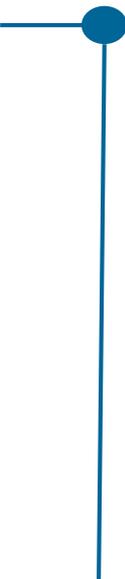


Transportation Commission Letter



## **City Council Direction (5/13)**

Council directed the Transportation Commission to evaluate a potential Main Street bike lane project; followed by an update to Council.



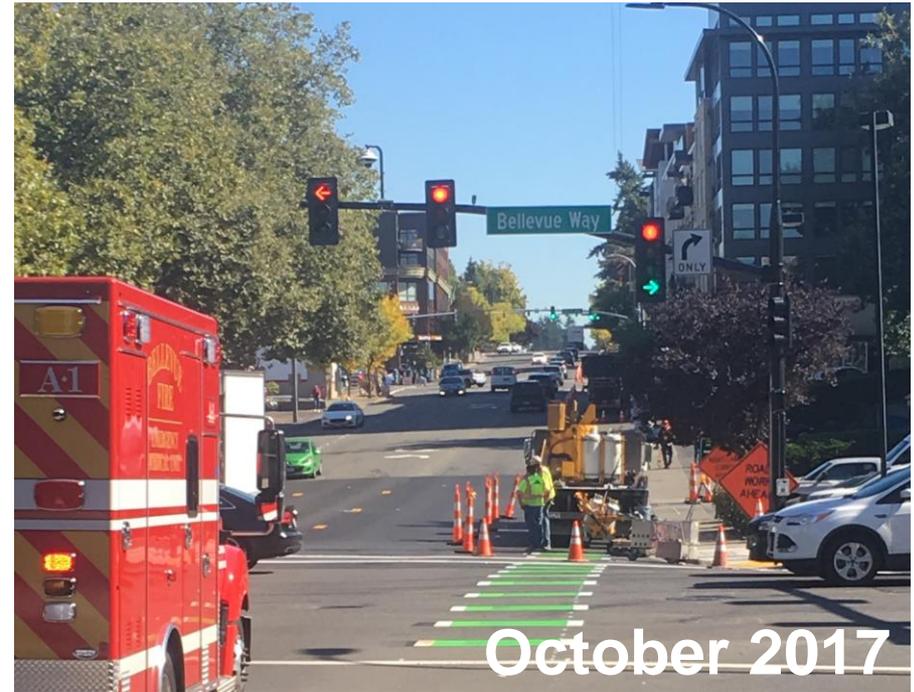
# **Discussion Topic: Bellevue Way**

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.

# Channelization Projects (2016-17)



**Redevelopment in Old Bellevue; converted 2 EB thru lanes to 1 rt and 1 thru lane.**



**Pedestrian and bicycle improvements on east side of Bellevue Way.**

# Level of Service (2016-18)

<b>Concurrency Report Year</b>	<b>Count Year</b>	<b>Level of Service (V/C)</b>	<b>Letter Grade</b>
<b>2016</b>	2015	0.74	C
<b>2017</b>	2016	0.74	C
<b>2018</b>	2017	0.96	E+

**Source: Bellevue Concurrency Update Report**

# Updated Level of Service Tool

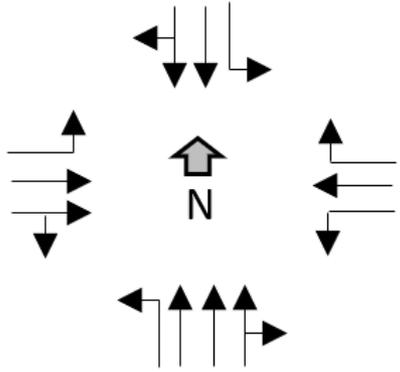
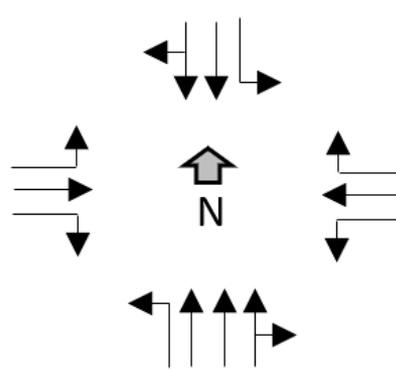
In 2018, based on feedback from the Transportation Commission, staff updated the LOS analysis tool to more closely reflect observed “real world” conditions.

<b>Pedestrian Volume/Hour of all Crosswalks Combined</b>	<b>% Reduction of the Intersection Capacity</b>
<b>0 - 50</b>	0.5
<b>51 - 100</b>	1
<b>101 - 200</b>	2
<b>201 - 300</b>	4
<b>301 - 400</b>	6
<b>401+</b>	8

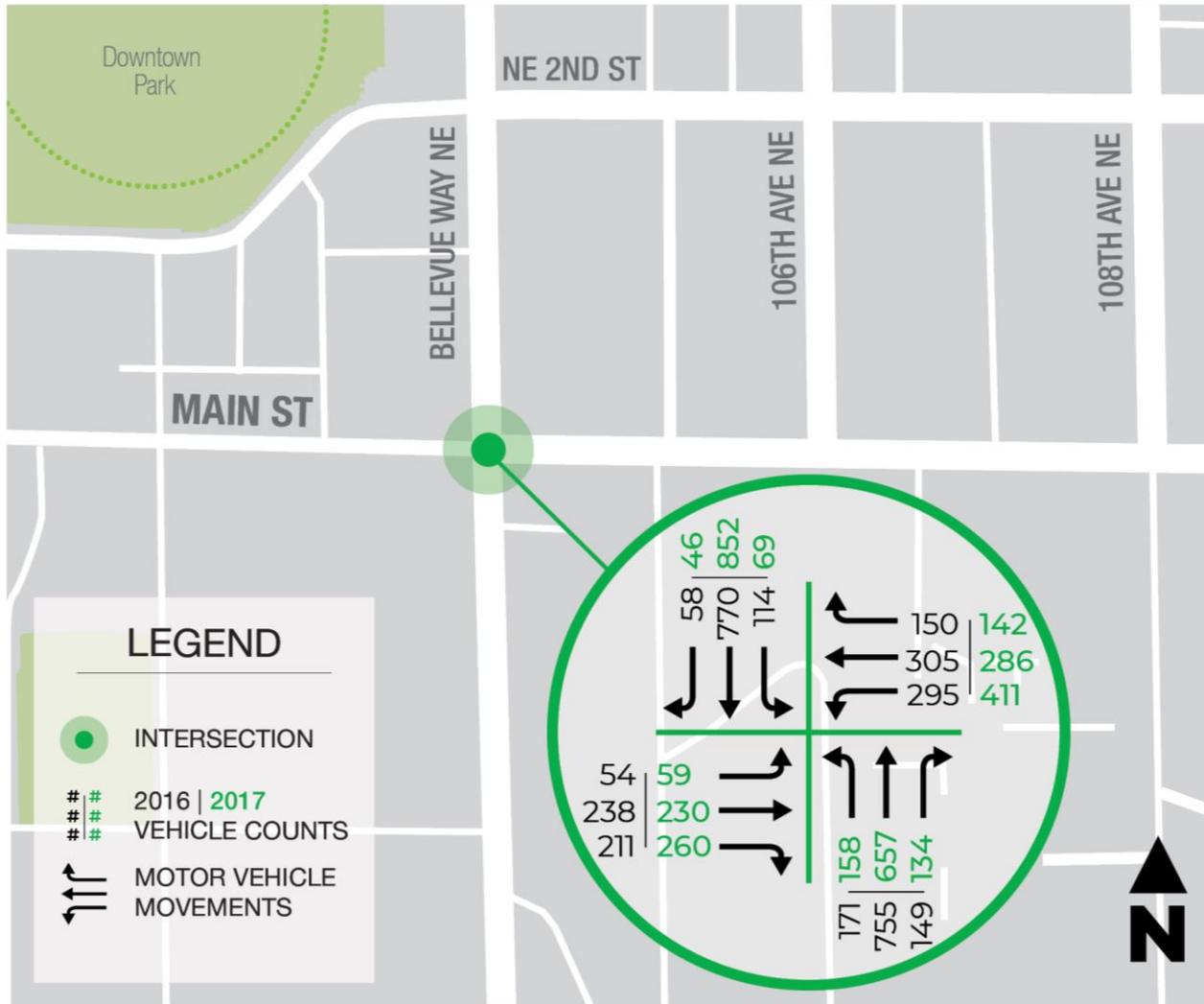
*Note: At the intersection of Bellevue Way and Main Street there were 242 pedestrians crossing per hour recorded in 2017 counts. So the percent reduction of the intersection capacity would be 4%. That is equivalent to 56 veh/hr reduction for the 1,410 veh/hr capacity.*

# Updated V/C Ratios

To isolate the V/C change caused by the redesign of the Bellevue Way intersection, staff reanalyzed V/C for before-and-after channelization using the updated tool.

Concurrency Report Year	Count Year	V/C Ratio with Updated LOS Tool	
		Before (without bike lane)	After (with bike lane)
			
2017	2016	0.84	0.84
2018	2017	0.96	0.94

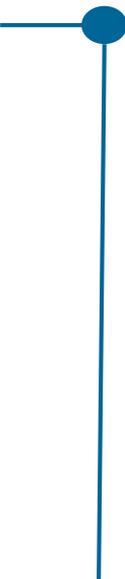
# Turning Movement Counts (2016-17)



# Takeaways

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- The refinement to the intersection LOS analysis tool made in 2018 and an increase in the westbound left turn volume were the two causes of the V/C change.
- The introduction of the bike lane caused little or no change in V/C.



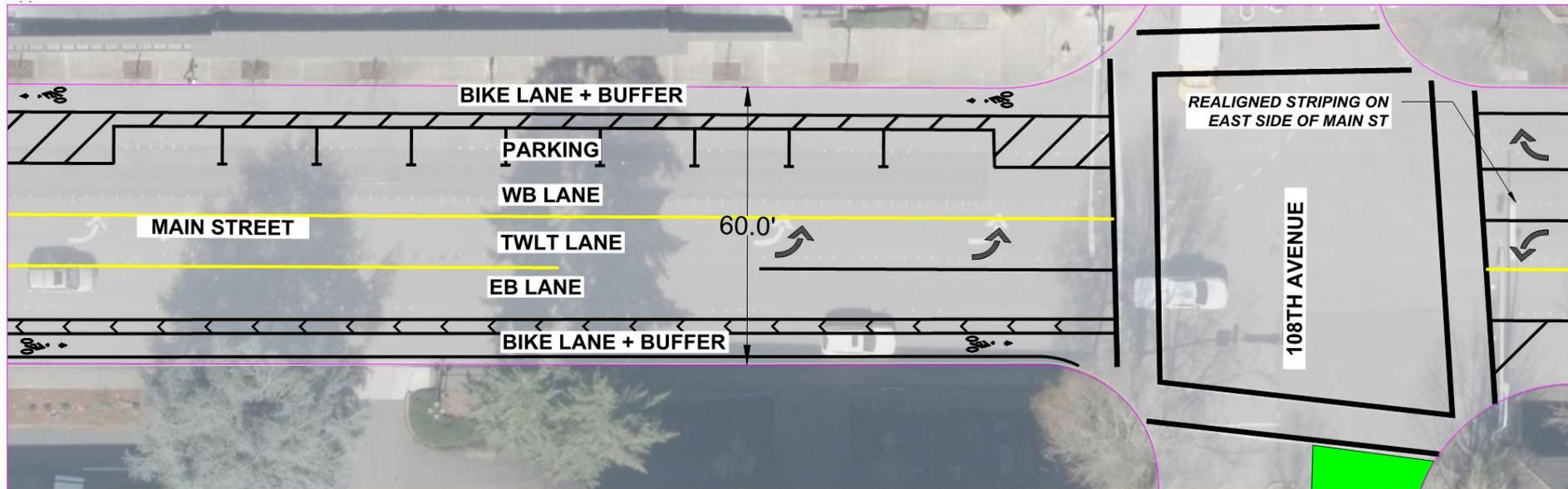
## **Discussion Topic: 108<sup>th</sup> Ave NE**

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

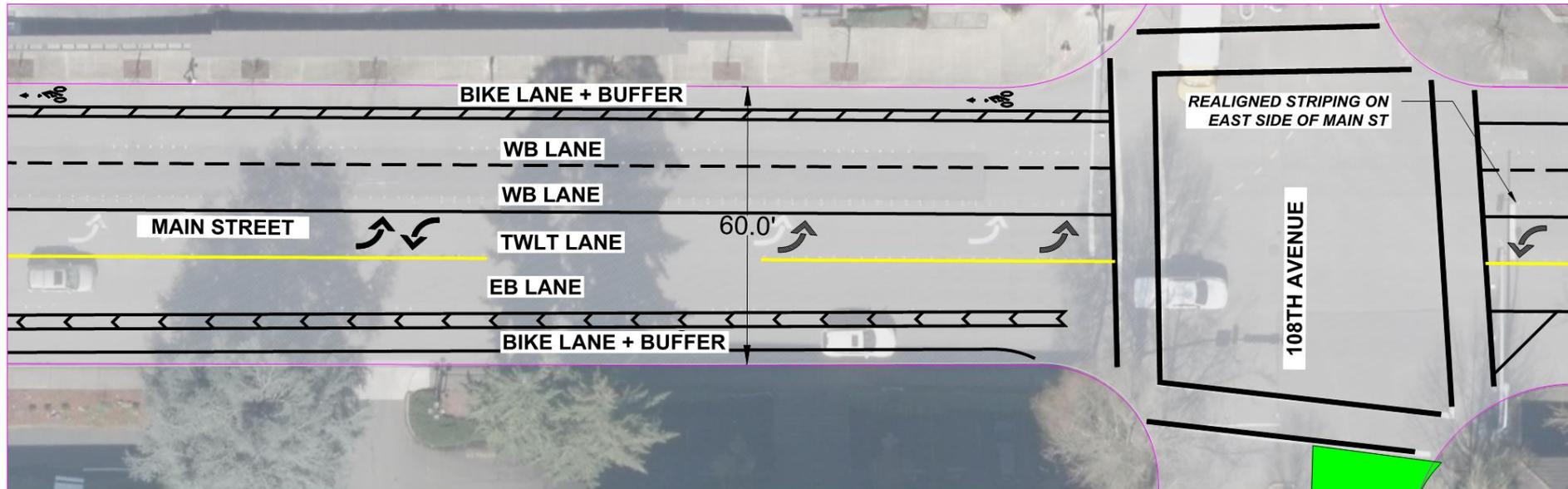
# Alternatives Development



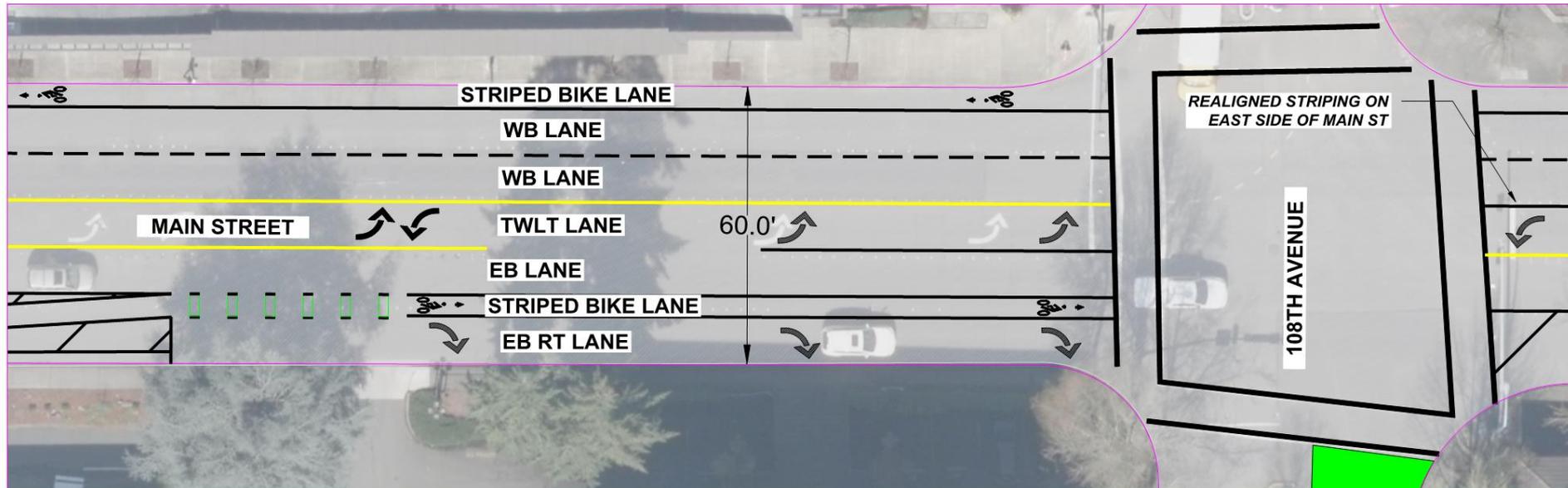
# Alt 1 – Buffered Both



# Alt 2 – Buffered EB



# Alt 2.1 – Buffered EB, with RT Pocket



# Travel Time (PM Peak)

Direction	Existing	Alternative 1	Alternative 2	Alternative 2.1
Eastbound (Bellevue Way to 108th)	2.3 mins	2.4 mins	2.3 mins	2.2 mins
Westbound (108th to Bellevue Way)	1.7 mins	2.6 mins	1.7 mins	1.7 mins

1. Cycle length and signal timing splits were kept the same across alternatives.
2. Existing conditions include EB bike lane from Bellevue Way to 105th Ave NE.

# Travel Time (AM Peak)

Direction	Existing	Alternative 1	Alternative 2	Alternative 2.1
Eastbound (Bellevue Way to 108th)	1.6 mins	1.8 mins	1.8 mins	1.7 mins
Westbound (108th to Bellevue Way)	1.4 mins	1.4 mins	1.4 mins	1.4 mins

1. Cycle length and signal timing splits were kept the same across alternatives.
2. Existing conditions include EB bike lane from Bellevue Way to 105th Ave NE.

# Level of Service (PM Peak)

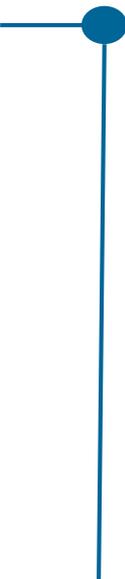
Intersection	Existing		Alt 1		Alt 2		Alt 2.1	
Bellevue Way/ Main St	54.6 secs	D	55 secs	D	51.8 secs	D	51.8 secs	D
106th/Main St	21.7 secs	C	39.7 secs	D	21 secs	C	19.7 secs	B
108th/Main St	17.6 secs	B	35.5 secs	D	24.5 secs	C	22.5 secs	C

1. Cycle length and signal timing splits were kept the same across alternatives.
2. Existing conditions include EB bike lane from Bellevue Way to 105th Ave NE.

# Level of Service (AM Peak)

Intersection	Existing		Alt 1		Alt 2		Alt 2.1	
Bellevue Way/ Main St	37.7 secs	D	38 secs	D	37.5 secs	D	38 secs	D
106th/Main St	8.8 secs	A	10.9 secs	B	10 secs	A/B	9.9 secs	A
108th/Main St	20 secs	B	24.8 secs	C	23.8 secs	C	21.1 secs	C

1. Cycle length and signal timing splits were kept the same across alternatives.
2. Existing conditions include EB bike lane from Bellevue Way to 105th Ave NE.



## **Discussion Topic: NE 2<sup>nd</sup> Street**

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

# Policy



- **Main Street:** Component of the Lake-to-Lake Trail, a bicycle priority corridor.
- **NE 2nd Street:** Part of the bike network; not a component of a bicycle priority corridor.

# Bike Network Connectivity

- **Main Street:** Connects Meydenbauer Bay Park to the 108th Avenue bikeway and the Lake Washington Loop. Along Main St, this is a direct connection (2,700 feet) through Old Bellevue.
- **NE 2nd Street:** To provide a comparable connection on NE 2nd St would necessitate 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

- **Main Street:** EB buffered bike lane and WB bike lane (Alternative 2) from Bellevue Way to 108<sup>th</sup> Ave NE + shared lane markings west to 100<sup>th</sup> Ave through Old Bellevue (LTS 3).
- **NE 2nd Street:** Bike lanes from Bellevue Way to 106<sup>th</sup> and buffered bike lanes from 106<sup>th</sup> to 108<sup>th</sup> Ave NE (LTS 2). Shared lane markings along NE 1<sup>st</sup> St and south along 100<sup>th</sup> Ave NE (LTS 3).

# Bike Route Grade

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- **Main Street:** Traveling west to east, Main Street climbs gradually from 88 feet to 144 feet, a 43-foot gain.
- **NE 2nd Street:** Traveling along 100<sup>th</sup> Ave NE (from 88 feet to 129 feet) and then between 106<sup>th</sup> Ave NE and 108<sup>th</sup> Ave NE (from 94 feet to 163 feet). A total gain of 84 feet over two steep climbs.

# Travel Lanes Repurposed

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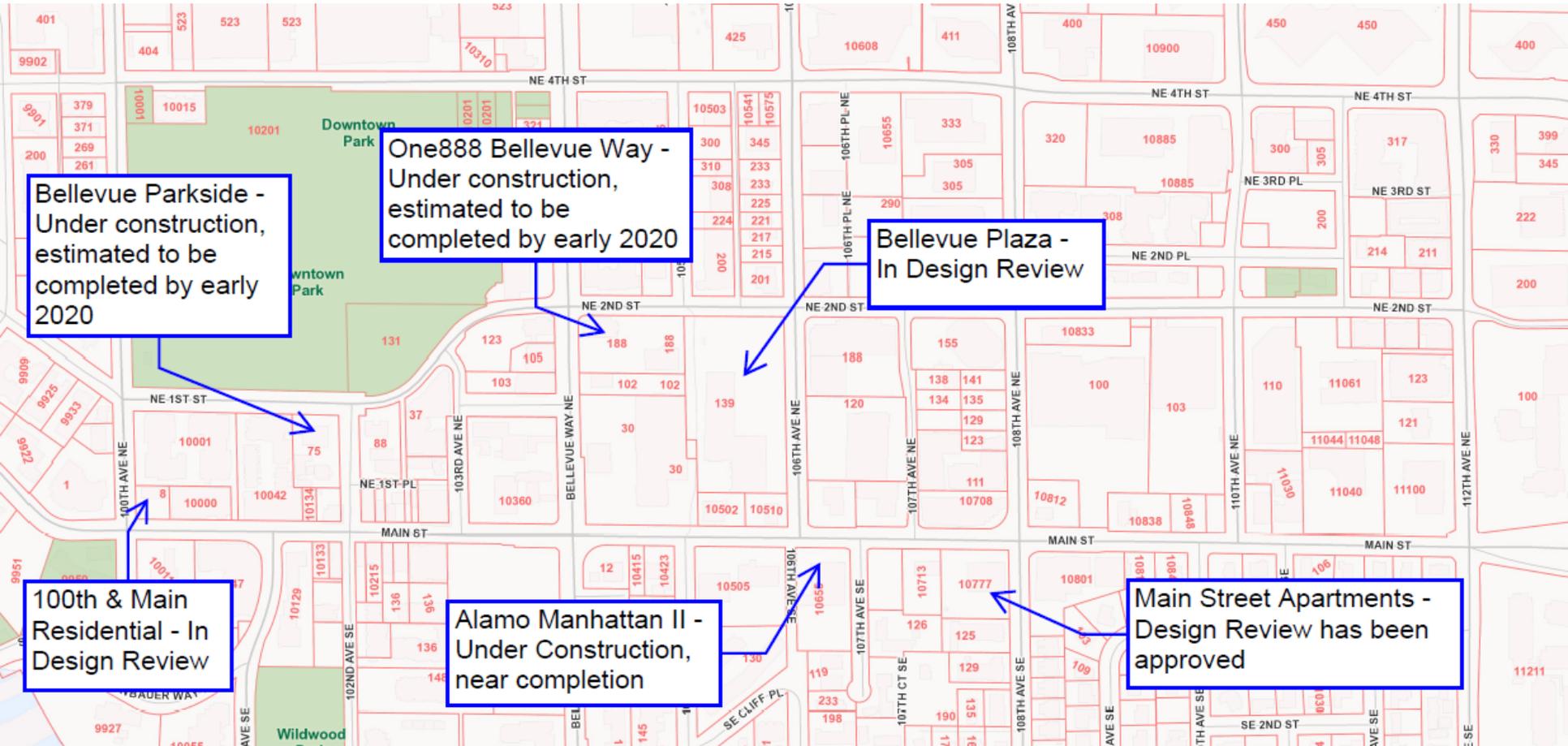
- **Main Street:** One eastbound lane would be repurposed between 105<sup>th</sup> Ave NE and 108<sup>th</sup> Ave NE.
- **NE 2nd Street:** None of the lanes between Bellevue Way SE and 112<sup>th</sup> Ave NE would need to be repurposed; however, dedicate right turn lanes would be repurposed westbound at Bellevue Way NE and westbound at 106<sup>th</sup> Ave NE.

# Parking Impacts

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- **Main Street:** No on-street parking within the project limits.
- **NE 2nd Street:** An estimated 25 on-street parking spaces (460 feet of curb lane) would be repurposed between Bellevue Way NE and 108<sup>th</sup> Ave NE to provide bike lanes on both sides of the street. Represents 25% of existing on-street parking.

# Construction Activity

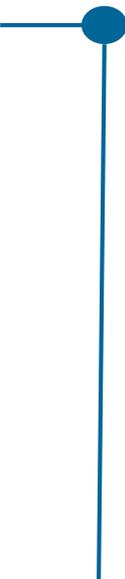


# Community Input

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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 comment letters were shared with the Transportation Commission at its January 11, 2018 meeting.



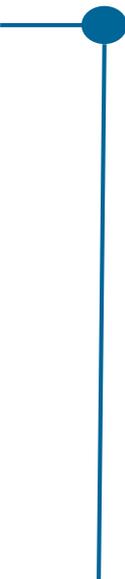
## **Discussion Topic: I-405**

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

# I-405 Renton to Bellevue Project



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.



# **Discussion Topic: Assessment**

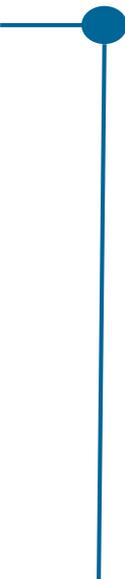
Will Bellevue staff conduct a before-and-after assessment of the Main Street bike lane project?

# Before-and-After Assessment

Bellevue staff does not intend on conducting an assessment equivalent to the Downtown Demonstration Bikeway Assessment Report. Staff does plan on monitoring operations, travel time, and collisions.



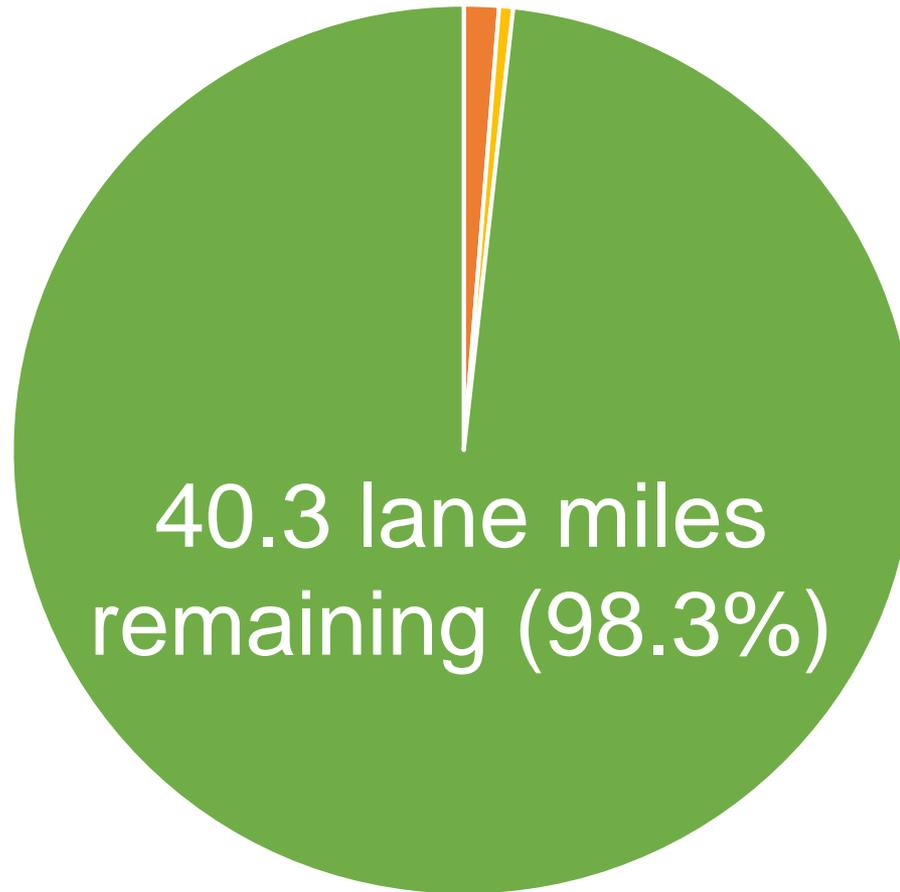
*Bluetooth travel time collection hardware will be installed at four locations on Main Street.*



# Discussion Topic: Lane Miles

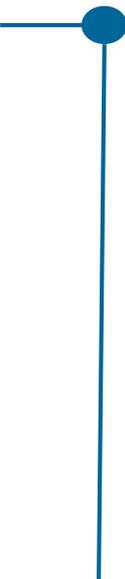
When 108<sup>th</sup> Avenue NE bike lanes and Main Street bike lanes (Alternative 2) are considered together; what is the total impact to travel lane mileage in Downtown Bellevue?

# Lane Miles in Downtown = 41 miles



■ 108th Ave NE Bike Lane

■ Main Street Bike Lane



# **Discussion Topic: Legislation**

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

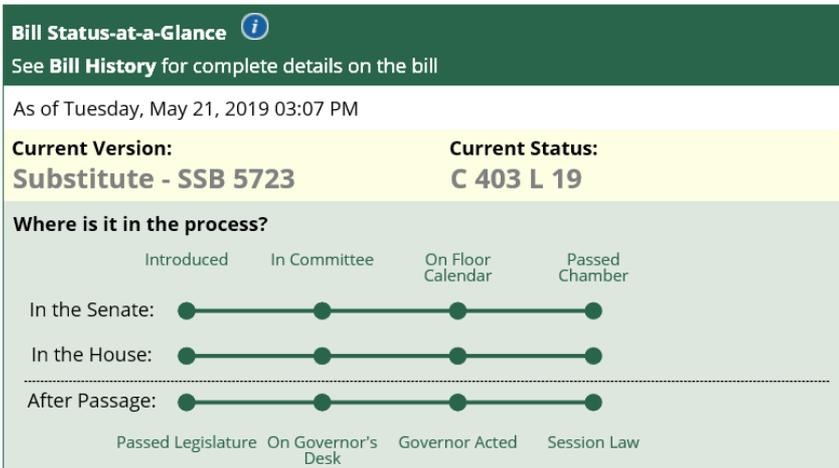
# VRU & Safe Passing Law

## SB 5723 - 2019-20

Increasing safety on roadways for pedestrians, bicyclists, and other roadway users.

Sponsors: **Randall, Saldaña, Liias, Rolfes, Billig, Nguyen**

Companion Bill: **HB 1966**



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.



# Direction Needed

Staff seeks Commission consensus on a potential Main Street bike lane project between Bellevue Way and 108<sup>th</sup> Avenue Northeast.

# Commission Action



Transportation Commission

## TRANSMITTAL

Attachment A

**DRAFT**

May 23, 2019

RE: Main Street Bike Lane Project

Honorable Mayor Chelminiak and City Councilmembers:

Transportation Commission members are honored by your trust and confidence in selecting us to oversee the Pedestrian and Bicycle Implementation Initiative (PBII). In this capacity, we have been guided by Council's program principles, Comprehensive Plan policies, and 2009 Pedestrian and Bicycle Transportation Plan as we collaborate with staff and the community to advance the PBII scope of work.

At our March 28, 2019 meeting, with a vote of \_\_\_ in favor and \_\_\_ opposed, the Transportation Commission to implement a bicycle lane on Main Street that establishes a continuous east-west connection to the 108<sup>th</sup> Avenue NE bikeway. The Commission recommendation is informed by the \_\_\_\_\_. To assist the Commission in its evaluation of Main Street alternatives, staff addressed the following considerations:

- Provided additional details on the existing Main Street bike lane and explained that the decision to incorporate these bike lanes did not result in an adverse impact to traffic operations at the Bellevue Way intersection.
- Described opportunities to modify the Main Street bike lane alternatives to reduce projected vehicle delay experienced at the 108<sup>th</sup> Avenue NE intersection.
- Provided an assessment of NE 2<sup>nd</sup> Street as an alternative east-west bicycle connection through Downtown as compared to Main Street.
- Explained that WSDOT's I-405 Bellevue to Renton project would not impact the viability of implementing a rapid build bicycle lane on Main Street between Bellevue Way and 108<sup>th</sup> Avenue NE.
- Confirmed that Bellevue staff will conduct a limited before-and-after assessment of the Main Street bike lane project.
- Presented analysis that showed that the 108<sup>th</sup> Avenue NE bike lanes and the proposed Main Street bike lanes when considered together represent a repurposing of 1.7% of the total lane miles in Downtown (total: 41 miles).
- Explained the implications of the new Vulnerable user/Safe passing legislation on vehicle capacity.

Commissioners voting in favor of the Main Street bike lane determined that: \_\_\_\_\_.

Commissioners voting against the Main Street bike lane determined that: \_\_\_\_\_.

Sincerely,

Lei Wu  
Chair, Transportation Commission

- Direct staff to incorporate edits as recommended at the May 23 meeting.
- Approve the transmittal to Council via online vote.
- Confirm Commission representation at the update to Council.

# Timeline Considerations

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- June 5 – BDA Transportation Committee
- June 18 – BDA Board
- June 27 – Transportation Commission
- July 8 – City Council
- July 16 – BDA Board
- July 25 – Transportation Commission
- \*August 5\* – City Council