City of Bellevue



# Transportation Commission Study Session

DATE: May 2, 2019

**TO:** Transportation Commission

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**SUBJECT:** Eastgate Transportation Study

# DIRECTION REQUESTED

- X Actions: Approve project concepts; prepare final report
- X Discussion
- X Information

At the study session on May 9, 2019, City staff and the consultant team will review the final evaluation results and recommended project concepts. Staff seeks Transportation Commission approval of project concept packages and direction to develop the final report.

# **PROJECT CONCEPTS AND PERFORMANCE RESULTS**

Project concepts along the 148<sup>th</sup> - 150<sup>th</sup> Avenue SE and Richards Road - Factoria Boulevard SE corridors were developed and presented at the March 14, 2019 Transportation Commission meeting. Those concepts have been slightly refined based on additional analysis and the development of planning-level design.

One new project concept has been added for consideration:

• [C101 & C102] –150<sup>th</sup> Avenue SE / SE Eastgate Way: northbound right turn lane: Added a new right turn pocket in the northbound direction. (Added to C101 and C102 concepts)

Three project concepts have been removed from consideration:

- [C104] 150<sup>th</sup> Avenue SE / SE Eastgate Way Roundabout: Removed due to its operational performance relative to project costs, right-of-way requirements, and (in)ability to reasonably accommodate pedestrians and bicycles.
- [C501] 150<sup>th</sup> Avenue SE / SE Newport Way second southbound left turn pocket: Operational performance is low relative to project costs. High cost of right-of-way acquisitions reduces the benefit/cost for the project concept.

[C1101/C1102] – 142<sup>nd</sup> Place SE / I-90 direct access ramp improvements: Removed due to operational performance relative to project costs. Both concepts require widening the bridge over I-90.

# Project Concept Packages

For traffic analysis and evaluation purposes, the project concepts were grouped into packages. Conceptual design plans are provided in Attachment A and detailed cost estimates are provided in Attachment B.

<u>148<sup>th</sup> – 150<sup>th</sup> Avenue SE Corridor</u>

Along the 148<sup>th</sup> - 150<sup>th</sup> Avenue SE corridor, project concept packages A1 and A2 were developed to compare results. Table 1 and Figure 1 summarize the traffic congestion relief elements in each package. A1 includes 3 southbound lanes for 150<sup>th</sup> Avenue SE across I-90, whereas A2 provides 4 southbound lanes across I-90.

ID	Project Concept Description	Planning Level Cost	Project Concept Package	
		(\$ Thousands)	A1	A2
N/A	Southbound # of lanes at 150 <sup>th</sup> Avenue SE Overcrossing/I-90	N/A <sup>1</sup>	3-lane	4-lane
C101	148 <sup>th</sup> - 150 <sup>th</sup> Avenue SE / SE Eastgate Way: Add a second NB left, Extend SB Left turn lane and add NB right turn pocket	\$2,380	х	x
C102	148 <sup>th</sup> - 150 <sup>th</sup> Avenue SE / SE Eastgate Way: C101 + SB through lane from north of SE Eastgate Way to EB I-90 loop ramp	\$5,040		x
C201	150 <sup>th</sup> Avenue SE / 37 <sup>th</sup> Street-I-90 EB Off: Add a second eastbound right (EBR), Extend SB left turn pocket, Extend SB through lane from loop ramp to SE 38 <sup>th</sup> Street	\$1,620	х	x
C202	150 <sup>th</sup> Avenue SE / SE 37 <sup>th</sup> Street-I-90 EB Off: Restrict eastbound left (EBL) on the west approach	\$25 <sup>3</sup>	х	х
C203	150 <sup>th</sup> Avenue SE / SE 37 <sup>th</sup> Street-I-90 EB Off: Add a second westbound left (WBL) and westbound right (WBR) turn pocket	\$920	х	x
C302	SE 37 <sup>th</sup> Street / I-90 EB On-Ramp: Modify channelization between 150 <sup>th</sup> Avenue SE and I-90 EB on-ramp and Traffic signal at EB on-ramp	\$450	х	x
C401	150 <sup>th</sup> Avenue SE / SE 38 <sup>th</sup> Street: Extend NB receiving lane / right turn pocket between SE 38 <sup>th</sup> Street and SE 37 <sup>th</sup> Street	\$520 <sup>2</sup>		x
C402	150 <sup>th</sup> Avenue SE / SE 38 <sup>th</sup> Street: Adjust signal timings to remove split phasing and optimize green time	\$25 <sup>3</sup>	х	х
	Total Planning Level Cost		\$5.4 Million	\$8.6 Million

Table 1. Pro	ject Concept Packages:	: 148 <sup>th</sup> - 150 <sup>th</sup>	Avenue SE Corridor
		140 130	

Notes:

<sup>1</sup>Additional southbound lane on 150<sup>th</sup> Avenue SE is included within project concept C102.

<sup>2</sup> Additional project costs beyond the estimated costs will be incurred by future redevelopment

<sup>3</sup> Cost estimate for implementation



Figure 1. Project Concepts – 148<sup>th</sup> – 150<sup>th</sup> Avenue SE Corridor

# Richards Road - Factoria Boulevard SE Corridor

Project Concept package B1 analyzed the Richards Road – Factoria Boulevard SE corridor. Project concepts at other isolated intersections were not included in project packages since their performance improvements would not affect the major corridors. Table 2, Figure 2 and Figure 3 summarize the project concepts included within package B1 and other study intersections.



## Figure 2

Table 2. Project Concept Packages: Richards Road - Factoria Boulevard SE and Other Intersections

ID	Project Concent Description	Planning Level Cost	Project Concept Package	
שו	Project Concept Description	(\$ Thousands)	B1	Other Projects <sup>4</sup>
C701	Factoria Boulevard SE / SE 36 <sup>th</sup> Street-I-90 EB Off: Add variable channelization for EB approach (1 EBT and 1 EBT/R in AM), plus 1 additional EB receiving lane	N/A <sup>1</sup>	X1	
C801	Factoria Boulevard SE / SE 38 <sup>th</sup> Street: Add second WB left (maintain right turn pocket)	\$175²	х	
C802	Factoria Boulevard SE / SE 38 <sup>th</sup> Street: C801+ additional channelization modifications (Add two exclusive EB left turn lanes)	\$950 <sup>3</sup>	X <sup>3</sup>	
C901	SE Eastgate Way / SE 37 <sup>th</sup> Street: Add traffic signal and modify channelization	\$1,150		х
C1001	142 <sup>nd</sup> Place SE / SE 36 <sup>th</sup> Street: Add SBR and remove west crosswalk	\$810		х
C1201	139 <sup>th</sup> Avenue SE / SE 32 <sup>nd</sup> Street: Add traffic signal at this location	\$930		х
	Total Planning Level Cost		\$1.1 Million⁵	\$2.9 Million

Notes:

<sup>1</sup>C701 – further field reconnaissance required to determine accurate planning level cost estimate

<sup>2</sup>C801 – early implementation project

<sup>3</sup> Additional project costs beyond the estimated costs will be incurred by future redevelopment

<sup>4</sup> Other projects include locations off the corridor

<sup>5</sup> Total B1 package cost does not include C701 project concept



Figure 2. Project Concepts – Other Study Intersections



Figure 3. Project Concepts - Richards Road - Factoria Boulevard SE Corridor

# **Corridor Analysis Results**

Corridor travel speed in the PM peak period along the southbound 148<sup>th</sup> - 150<sup>th</sup> Avenue SE corridor would improve by 60% compared to the 2035 baseline under Alternative A1 and over 90% under Alternative A2 compared to the 2035 baseline. In the AM peak, corridor travel speed along northbound 148<sup>th</sup> - 150<sup>th</sup> Avenue SE corridor would improve by over 30% compared to Alternative A1 and over 40% under Alternative A2 when compared to the 2035 baseline.

Table 3, Figure 4 and Figure 5 summarize the corridor travel speed along 148<sup>th</sup>-150<sup>th</sup> Avenue SE.

ID	Segment	Peak/ Speed Direction Typica	Posted 2035 Speed/ Baseline		2035 Alternative A1		2035 Alternative A2	
			on Typical Urban Speed	Speed (mph)	Speed (mph)	% Change	Speed (mph)	% Change
	SE 24 <sup>th</sup> Street to SE Newport Way	PM/SB	30 mph/ 13.3 mph	4.9	7.9	+60%	9.5	+93%
	A: SE 24 <sup>th</sup> Street to SE 38 <sup>th</sup> Street	PM/SB	30 mph/ 12.4 mph	4.1	6.8	+66%	8.6	+109%

Table 3. 2035 Corridor Travel Speed: 148<sup>th</sup> - 150<sup>th</sup> Avenue SE Corridor

Table 3. 2035 Corridor Travel Speed: 148<sup>th</sup> - 150<sup>th</sup> Avenue SE Corridor

ID	Segment	Peak/	Posted Speed/	2035 Baseline		2035 Alternative A1		2035 Alternative A2	
	Segment	Direction	Typical Urban Speed	Speed (mph)	Speed (mph)	% Change	Speed (mph)	% Change	
	B: SE 38 <sup>th</sup> Street to SE Newport Way	PM/SB	30 mph/ 12 mph	16.4	16.4	+0%	15.0	-8%	
	SE Newport Way to SE 24 <sup>th</sup> Street	AM/NB	30 mph/ 13.3 mph	11.0	15.0	+37%	16.3	+48%	
2	A: SE Newport Way to SE 38 <sup>th</sup> Street	AM/NB	30 mph/ 12 mph	5.5	9.0	+65%	11.3	+106%	
	B: SE 38 <sup>th</sup> St. to SE 24 <sup>th</sup> Street	AM/NB	30 mph/ 12.4 mph	15.8	18.8	+19%	19.4	+23%	
3	I-90 WB off-ramp to SE 24 <sup>th</sup> Street via 156 <sup>th</sup> Avenue SE	AM/NB	30 mph/ 13.2 mph	16.3	16.3	0%	15.3	-6.0%	

#### Notes:

Travel speed color gradient indicates relationship to typical urban speed: Dark Green: >110%, Light Green: 90%-110%, Yellow: 75%-90%, Orange: 50%-75%, Red: <50%



Figure 4. Corridor Travel Speed - 2035 PM Peak - 148<sup>th</sup> - 150<sup>th</sup> Avenue SE Corridor



Figure 5. Corridor Travel Speed - 2035 AM Peak - 148<sup>th</sup> - 150<sup>th</sup> Avenue SE Corridor

Table 4 and Figure 4 summarize the corridor travel speed along the Richards Road - Factoria Boulevard SE corridor. Corridor travel speed in the PM peak period along the southbound Richards Road - Factoria Boulevard SE corridor would improve by over 10% compared to the 2035 baseline under Alternative B1.

Table 4. 2035 Corridor Travel Speed: Richards Road - Factoria Boulevard SE

ID	Segment	Peak/	Posted Speed/ Typical Urban	2035 Baseline	_	2035 Alternative B1	
	Segment	Direction	Speed	Speed (mph)	Speed (mph)	% Change	
	SE 26 <sup>th</sup> Street to SE 38 <sup>th</sup> Street	PM/SB	35 mph/ 14 mph	3.6	4.0	+12%	
4	A: SE 26 <sup>th</sup> Street to SE 32 <sup>nd</sup> Street	PM/SB	35 mph/ 14 mph	3.3	3.6	+11%	
	B: SE 32 <sup>nd</sup> Street to SE 38 <sup>th</sup> Street	PM/SB	35 mph/ 14 mph	4.0	4.5	+13%	

Notes:

Travel speed color gradient indicates relationship to typical urban speed: Dark Green: >110%, Light Green: 90%-110%, Yellow: 75%-90%, Orange: 50%-75%, Red: <50%



Figure 4. Corridor Travel Speed - 2035 PM Peak - Richards Road - Factoria Boulevard SE Corridor

# **EVALUATION METHODS AND RESULTS**

This section summarizes the evaluation methodology and results. A key evaluation metric was the traffic congestion reduction benefit relative to the cost of the project. Each of the project concepts was also evaluated using metrics, standards, and guidelines for all modes to ensure that congestion relief does not come at the expense of pedestrian, bicycle, and transit mobility.

# Benefit/Cost Analysis

A calculation of the traffic congestion reduction benefit relative to project cost was performed to evaluate project concept packages and the individual project concepts. This section describes how the benefit/cost analysis was calculated and presents the conclusions of the analysis.

# **Traffic Congestion Relief Benefit**

Using the output of the traffic analysis models, vehicle hours of delay (VHD) was calculated for the 2035 baseline (embedded with currently funded projects) and for the project concepts. The difference between the 2035 baseline VHD and the project concept VHD is the delay savings

(traffic congestion reduction benefit) for each project concept. Note that VHD was calculated for project concept packages along the two corridors in the study area: 148<sup>th</sup> - 150<sup>th</sup> Avenue SE between SE 28<sup>th</sup> Street and SE Newport Way and Factoria Boulevard SE between SE 32<sup>nd</sup> Street and SE 38<sup>th</sup> Street. VHD was also calculated individually for each of the projects that make up the concept packages and for the other isolated intersection projects.

To calculate the benefit/cost ratio, the VHD was divided by the project cost per \$1 million to develop a ratio of benefit to cost:

Vehicle Hours of Delay Project Concept Cost \$M = Benefit to Cost Ratio

The results of the benefit/cost calculations are presented in Attachment C. In addition to the benefit/cost ratios, the project team considered the total congestion relief benefit that would be achieved by the different project concepts. Using both the benefit/cost ratio and the total traffic congestion reduction reveals a more holistic evaluation of both value per dollar and total congestion reduction. The benefit/cost analysis helps to draw out the differences between project concept packages A1 and A2 on the 148<sup>th</sup> – 150<sup>th</sup> Avenue SE corridor:

Concept package A1 has a slightly higher benefit/cost ratio than A2. However, concept package A2 has a higher total delay reduction. Concept package A2 provides more total benefit, but at a slightly higher cost per VHD reduced than A1. Overall, A2 would likely provide traffic congestion relief for more vehicles, further into the future and for longer periods throughout the day as compared to project concept package A1.

The benefit/cost results are also presented for all the other project concepts in Attachment C. This study does not prioritize projects for implementation, therefore comparing the benefit/cost results is not always relevant. The Next Steps section describes how the recommended projects would advance to implementation.

# **Evaluating Project Concepts through a Multimodal Lens**

The Transportation Commission's Multimodal Level of Service (MMLOS) final report describes the recommended metrics, standards and guidelines for facilities that support people walking, riding a bicycle, using the transit system, or driving. The vehicle level of service standards and guidelines have been used to identify traffic congestion issues and potential traffic congestion relief projects. Standards and guidelines reflect the land use context for pedestrian facilities, whether a facility is part of the adopted bicycle network, and the type of transit service. This section provides a level of service screening and evaluation for these modes.

In each project concept, LOS standards and guidelines for each mode can be achieved either now or in the future with redevelopment. A summary of the LOS evaluation follows:

# 148<sup>th</sup> Avenue SE - 150<sup>th</sup> Avenue SE / SE Eastgate Way Intersection

LOS guidelines for bicycle facilities identify 148<sup>th</sup> - 150<sup>th</sup> Avenue SE as LOS 1, which could be provided by a protected bicycle facility. A multipurpose path exists on the east side of 150<sup>th</sup> Avenue SE, north of SE Eastgate Way. Although the path does not meet the current standards, right-of-way exists on the east side of 150<sup>th</sup> Avenue SE to allow for an upgrade to the path to meet standards. An upgraded multipurpose path would concurrently meet the sidewalk standard, which is 16 feet.

On 150<sup>th</sup> Avenue SE south of SE Eastgate Way, the existing I-90 crossing meets the LOS 1 guideline (although it is narrower than the standard for a multipurpose path).

LOS guidelines for bicycle facilities identify SE Eastgate Way as LOS 3, which can be met by the planned bicycle facilities (under construction in 2019). The project concepts at this intersection would incorporate the bicycle facilities on SE Eastgate Way. These designs would modify the existing "porkchop" island that currently acts as a pedestrian/ bicycle refuge. The porkchop must remain in some dimension to accommodate bicycles, and the crossing distance for pedestrians would likely be lengthened. The crosswalk would also be lengthened with the new southbound lanes. To mitigate for the increase in crossing distance, the traffic congestion relief project may incorporate elements of an enhanced intersection. In addition, bike intersection improvements to meet the LOS 3 guideline along SE Eastgate Way could include lane markings through the intersection and automatic signal actuation.

# 150<sup>th</sup> Avenue SE / SE 37<sup>th</sup> Street Intersection and I-90 On-ramp / SE 37<sup>th</sup> Street Intersection

LOS guidelines for bicycle facilities identify 150<sup>th</sup> Avenue SE as LOS 1, which is met with the existing I-90 crossing. On SE 37<sup>th</sup> Street, the planned Mountains to Sound Greenway Trail would provide the LOS 1 facility. The traffic congestion relief project concepts would not impact or preclude components of the Mountains to Sound Greenway Trail.

The area around the SE 37<sup>th</sup> Street / 150<sup>th</sup> Avenue SE intersection is considered an "activity center", where a 16-foot sidewalk is intended. Along SE 37<sup>th</sup> Street, the project concept would include the 16-foot sidewalk. The current sidewalks along 150<sup>th</sup> Avenue SE do not meet the sidewalk standard. However, the project concept would not impact the existing sidewalks and redevelopment would implement the sidewalk standards along 150<sup>th</sup> Avenue SE.

# 150<sup>th</sup> Avenue SE / SE 38<sup>th</sup> Street Intersection

The project concept includes a new northbound lane along the gas station property. However, there is not adequate right-of-way for the travel lane or the sidewalk. Therefore, this lane extension and the sidewalk would be pursued only upon redevelopment of the gas station property. No other pedestrian facilities would be impacted or precluded by the project concept at this intersection.

The project concept would have no impact south of the intersection, which is recommended as bicycle LOS 2. Given the posted speed and forecasted traffic volume, 150<sup>th</sup> Avenue SE would

need a physically separated bikeway. Additional right of way would be needed to accommodate this facility. This bicycle LOS guideline would not be impacted or precluded by this project.

## Factoria Boulevard SE / SE 36<sup>th</sup> Street – SE 38<sup>th</sup> Street Intersections

There would be no pedestrian or bicycle LOS impacts to the intersection of Factoria Boulevard SE / SE 36<sup>th</sup> Street or at the intersection of Factoria Boulevard SE / SE 38<sup>th</sup> Street. There is adequate right-of-way for the channelization improvements that would not impact nor preclude achieving the bicycle facility guideline of LOS 1 along SE 36<sup>th</sup> Street. The standard of 16 feet for sidewalks would not be impacted or precluded from future construction.

Sidewalks would be constructed on SE 38<sup>th</sup> Street east of Factoria Boulevard SE with redevelopment. The project concept would occur only with redevelopment because adequate right-of-way does not exist. The bicycle facility guideline of LOS 3 on SE 38<sup>th</sup> Street west of Factoria Boulevard SE could be met with sharrow lane markings. The project concept would not impact nor preclude construction of 16-foot sidewalks with redevelopment.

# 142<sup>nd</sup> Place SE / SE 36<sup>th</sup> Street Intersection

An in-kind replacement of 8-foot sidewalks would be attainable with construction of this congestion relief project. Given the available right-of-way and topography, 16-foot sidewalks are not feasible. The current sidewalks on the 142<sup>nd</sup> Place SE overpass of I-90 are 7-8 feet wide. If this bridge were to be replaced, wider sidewalks could be included.

King County Metro is planning to add bus stops just north of SE 36<sup>th</sup> Street on 142<sup>nd</sup> Place SE as part of a future RapidRide project. The proposed 8-foot sidewalks would meet the transit stop guidelines.

# SE Eastgate Way / SE 37th Street Intersection

A bicycle LOS 3 on SE 35<sup>th</sup> Place and on the west leg of SE Eastgate Way could be met with no markings or sharrow markings. On SE 37<sup>th</sup> Street, the planned Mountains to Sound Greenway Trail meets the bicycle LOS 1 guideline. There is adequate right of way to accommodate the pedestrian LOS standard 12-foot sidewalk.

# 139<sup>th</sup> Avenue SE / SE 32<sup>nd</sup> Street Intersection

There would be no pedestrian or bicycle LOS impacts to the intersection of 139<sup>th</sup> Avenue SE / SE 32<sup>nd</sup> Street. The project concept (a new traffic signal) could include a striped or protected bike lane on 139<sup>th</sup> Avenue SE. Signal poles would be set to accommodate future bicycle lanes. The intersection would meet the bicycle facility LOS guidelines on SE 32<sup>nd</sup> Street with no markings. The existing sidewalks meet LOS standards.

#### STAFF RECOMMENDATION

## Concept Package A2: 148<sup>th</sup> Avenue SE – 150<sup>th</sup> Avenue SE Corridor

Project concept A2 is of a larger scale than A1, therefore it would provide more total traffic congestion relief, serving a larger number of vehicles and reducing more total vehicle delay. Project concept package A2 would likely provide traffic congestion relief for more vehicles, further into the future and for longer periods throughout the day as compared to project concept package A1. Included in concept package A2 are the following individual projects:

**C101** - 148th - 150th Avenue SE / SE Eastgate Way: Add a second NB left, Extend SB Left turn lane and add NB right turn pocket

**C102** - 148th - 150th Avenue SE / SE Eastgate Way: C101 + SB through lane from north of SE Eastgate Way to EB I-90 loop ramp

**C201** - 150<sup>th</sup> Avenue SE / 37<sup>th</sup> Street-I-90 EB Off: Add a second eastbound right (EBR), Extend SB left turn pocket, Extend SB through lane from loop ramp to SE 38<sup>th</sup> Street

**C202** - 150<sup>th</sup> Avenue SE / SE 37<sup>th</sup> Street-I-90 EB Off: Restrict eastbound left (EBL) on the west approach

**C203** - 150<sup>th</sup> Avenue SE / SE 37<sup>th</sup> Street-I-90 EB Off: Add a second westbound left (WBL) and westbound right (WBR) turn pocket

**C302** - SE 37th Street / I-90 EB On-Ramp: Modify channelization between 150th Avenue SE and I-90 EB on-ramp and traffic signal at EB on-ramp

**C401** - 150<sup>th</sup> Avenue SE / SE 38<sup>th</sup> Street: Extend NB receiving lane / right turn pocket between SE 38<sup>th</sup> Street and SE 37<sup>th</sup> Street

**C402** - 150th Avenue SE / SE 38th Street: Adjust signal timings to remove split phasing and optimize green time

## Concept Package B1: Factoria Boulevard SE / SE 36th Street – SE 38th Street Intersections

The benefit/cost analysis supports project concept package B1. Included in concept package B1 are the following individual projects:

**C701** - Factoria Boulevard SE / SE 36<sup>th</sup> Street-I-90 EB Off: Add variable channelization for EB approach (1 EBT and 1 EBT/R in AM), plus EB receiving lane

**C801** - Factoria Boulevard SE / SE 38<sup>th</sup> Street: Add second WB left (maintain right turn pocket)

**C802** - Factoria Boulevard SE / SE 38<sup>th</sup> Street: C801+ additional channelization modifications (Add two exclusive EB left lanes)

Other Intersection Traffic Congestion Relief Project Concepts

Smaller scale project concepts that would provide congestion relief at minor intersections include:

C901 - SE Eastgate Way / SE 37th Street Intersection

# C1001 - 142nd Place SE / SE 36th Street Intersection

# C1201- 139th Avenue SE / SE 32nd Street Intersection

#### Travel Demand Management

In addition to physical infrastructure improvements, the City should continue evolving the Transportation Demand Management (TDM) program to reduce drive alone trips especially in the PM peak hour. The current program, updated in 2017, promotes/requires strategies such as carpooling, vanpooling, transit, unbundled parking costs, active transportation subsidies/incentives, teleworking, flexible work hours, and reporting/monitoring. The program should continue to evolve over time with periodic improvements to address travel behavior trends and impacts to capacity.

## **Bellevue College Connection**

Although the Bellevue College Connection is not a congestion relief project, it is important to have an efficient transit system to support the effectiveness of TDM programs. The City should continue to support the Bellevue College Connection Multimodal Transportation Corridor project to improve transit speed, reliability, and overall connectivity in the Eastgate activity center.

#### **Early Implementation Projects**

Additional analysis was conducted on the recommended project concepts to determine candidates for potential construction in the next 5 - 7 years. Based on traffic analysis conducted for 2024, the project concepts provided in Table 6 may be candidates for early implementation.

ID	Project Concept Description
C101	148 <sup>th</sup> - 150 <sup>th</sup> Avenue SE / SE Eastgate Way:
	Add a second NB left, Extend SB left turn lane and add NB right turn pocket
	150 <sup>th</sup> Avenue SE / SE 37 <sup>th</sup> Street-I-90 EB Off:
C201	Add a second eastbound right (EBR), Extend SB left turn pocket, Extend SB through lane from
	loop ramp to SE 38 <sup>th</sup> Street
C202	150 <sup>th</sup> Avenue SE / SE 37 <sup>th</sup> Street-I-90 EB Off:
0202	Restrict Eastbound Left (EBL) on the west approach
C203	150 <sup>th</sup> Avenue SE / SE 37 <sup>th</sup> Street-I-90 EB Off:
C205	Add a second Westbound Left (WBL) and Westbound Right (WBR) turn pocket
C302	SE 37 <sup>th</sup> Street / I-90 EB On:
C302	Modify channelization between 150 <sup>th</sup> Avenue SE and I-90 EB on ramp & signal at EB on-ramp
C402	150 <sup>th</sup> Avenue SE / SE 38 <sup>th</sup> Street:
C402	Adjust signal timings to remove split phasing and optimize green time
C801	Factoria Boulevard SE / SE 38 <sup>th</sup> Street:
001	Add second WB left (maintain right turn pocket)
C802	Factoria Boulevard SE / SE 38 <sup>th</sup> Street:
C802	C801 + Additional channelization modifications (Add second exclusive EBL)
C901	SE Eastgate Way / SE 37 <sup>th</sup> Street:
C901	Add signal and modify channelization

Table 6.	Early Imp	lementation	Project	Concepts
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# PROJECT CONCEPTS STUDIED AND NOT RECOMMENDED

The following project concepts are not recommended to advance toward implementation. Attachment D includes conceptual plans for the project concepts not recommended.

# 150<sup>th</sup> Avenue SE / SE Newport Way Intersection Expansion

A southbound left turn lane at the intersection of 150<sup>th</sup> Avenue SE and SE Newport Way is not recommended due to the high cost relative to low operational benefit. A major cost driver for this project is right-of-way acquisition. The project would require the acquisition of at least five single family homes. Additional right-of-way may be needed from eight other parcels.

The benefit/cost ratio associated with this project concept is expected to be less than 15.0, which is considerably lower than the other project concepts along the 148<sup>th</sup> - 150<sup>th</sup> Avenue SE corridor.

## 148<sup>th</sup> Avenue SE - 150<sup>th</sup> Avenue SE / SE Eastgate Way Roundabout

A roundabout at the intersection of 148th Avenue SE - 150th Avenue SE / SE Eastgate Way intersection is not recommended because the footprint would be substantially larger than the current intersection and would require substantial new right-of-way including some of the parking lot at Michael's Toyota. To adequately serve pedestrian and bicycle mobility would likely require signalization on the north leg of the roundabout. Signalization would counteract the traffic congestion relief benefits of the roundabout. Although there would be some off-peak intersection delay reductions, the cost of the roundabout is substantially higher than other project concepts.

## POTENTIAL FUTURE FACTORIA BOULEVARD SE CORRIDOR STUDY

As the Transportation Commission noted at its March 14 study session, Factoria Boulevard SE presents a challenge to expeditious vehicle travel in peak hours. To analyze and address the existing and forecast vehicle delay along this corridor, a comprehensive corridor study may be needed. Smaller-scale isolated projects may just shift the location of congestion rather than improve corridor travel speed. A comprehensive Factoria Boulevard SE corridor study could analyze potential congestion relief projects that may reduce vehicle delay.

## **NEXT STEPS**

## **Transportation Commission Actions on May 9**

Staff requests two separate Commission actions:

- 1. Approval of project concepts, and
- 2. Direction to prepare the final report for approval on June 27.

Note: The June 27 Transportation Commission meeting will be held at the South Bellevue Community Center.

# **Final Report**

The Eastgate Transportation Study final report will compile all of the information and graphics reviewed by the Transportation Commission. All technical data will be provided as appendices to the report. The Transportation Commission will receive the draft report prior to the June 27 meeting. Commissioners may request an off-line briefing with staff and the consultants to learn details prior to this study session. On June 27, staff will ask the Transportation Commission to approve the final report and prepare for its transmitted to the City Council.

## **Project Implementation and Funding**

This study identifies traffic congestion relief projects that would benefit vehicle mobility. However, funding is not allocated to design or construct these specific projects. All project concepts endorsed in the final report will be included in updates of the Transportation Improvement Program, the Transportation Facilities Plan, and the Comprehensive Transportation Project List. Eastgate/Factoria traffic congestion relief projects will then be eligible for funding in the Capital Improvement Program Plan.

Transportation Commission Study Session	Information	Commission Action/Direction
December 13	Evaluation framework 2018 baseline conditions	Approved evaluation framework
January 24	2035 modeling results Preliminary project concepts	Reviewed modeling results Direction to define and evaluate project concepts
March 14	Preliminary evaluation results	Reviewed and evaluated project concepts
May 9	Final evaluation results and project recommendation	Approve project concepts Direct staff to prepare final report
June 27 South Bellevue Community Center	Final Report	Approve final report Direct staff to prepare for transmittal to City Council

## ATTACHMENTS

Attachment A. Conceptual Design Layouts for All Recommended Project Concepts

Attachment B. Planning Level Cost Estimates for All Recommended Project Concepts

Attachment C. Benefit/Cost Calculations

Attachment D. Conceptual Design Layouts for Project Concepts Not Recommended