City of Bellevue



# Transportation Commission Study Session

**DATE:** March 7, 2019

TO: Transportation Commission

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SUBJECT: Eastgate Transportation Study

## DIRECTION REQUESTED

- X Action Provide direction on the project concept refinements and preliminary recommendation for Commission consideration on May 9, 2019
- X Discussion
- X Information

At the study session on March 14, 2019, city staff and the consultant team at Concord Engineering will match the 2035 Baseline (reviewed with the Transportation Commission on January 24, 2019) with project concepts intended to provide congestion relief at intersections and along arterial corridors within the Eastgate Transportation Study area. Project concepts will be described and then further evaluated for consideration at the May 9 Commission meeting.

Staff seeks Transportation Commission input on the project concepts to carry forward into the next evaluation phase. Evaluation will be in accordance with the Evaluation Framework the Commission approved on December 14, 2018.

# Transportation Modeling – 2035 Baseline

Transportation modeling results for the 2035 Baseline were presented at the January 24, 2019 Transportation Commission meeting. The 2035 Baseline represents the future conditions under the adopted land use for 2035 with planned transportation system improvements included in the analysis. We have analyzed project concepts and alternatives for 2035 and compared them to the 2035 Baseline to determine if a project concept provides a vehicle congestion reduction, and by how much.

## **Project Concept Development**

We developed project concepts to address vehicle congestion in the Eastgate and Factoria areas and refined them using the following steps.

## Step 1: Review of Current Transportation Plans

We reviewed the current City of Bellevue, WSDOT, Sound Transit, and King County Metro transportation plans to identify planned and unfunded projects within the study area. In addition, we considered other potential projects based on the findings of the 2035 Baseline.

## Step 2: Project Concept Workshop

After compiling an initial list of project concepts, City of Bellevue staff and the consultant team held a workshop on February 4, 2019 to further refine the list of project concepts to consider.

## Step 3: Individual Project Concept Testing

After further refinement from the workshop, we analyzed the project concepts using Synchro and SIDRA traffic analysis software to determine their independent performance. We used <u>Volume/Capacity (v/c) as the primary measure</u> to determine the performance of a project concept. We then compared the v/c ratio at each study intersection to the 2035 Baseline to determine benefits.

## Step 4: System-Wide Alternative Analysis

When combined, individual project concepts can potentially provide an integrated benefit to a corridor. Using analysis results from the project concept testing, we developed analysis alternatives that group individual project concepts based on performance. We then tested those alternatives using the VISSIM traffic simulation analysis tool. <u>Corridor speed</u> and <u>intersection vehicle delay</u> are the metrics that are used to describe the corridor performance. Using the corridor speed and intersection delay metric generated out of VISSIM helps to quantify system-wide impact and is an important measure in assessing and quantifying the vehicle congestion-relief benefits. The VISSIM tool and the delay metric provides a more complete picture of the corridor performance.

## Project Concepts and Performance Results: 148<sup>th</sup>-150<sup>th</sup> Avenue SE Corridor

#### Project Concepts Considered

We considered a variety of project concepts along the 148<sup>th</sup>-150<sup>th</sup> Avenue SE Corridor. There are ten (10) project concepts that we identified and assessed individually or system-wide. Table 3 provides a description of the project concepts as well as a brief summary of the performance.

Intersection	ID	Project Description	Performance Summary
	C101	Add a second Northbound (NB) Left, Extend Southbound (SB) Left turn lane	<ul> <li>Second NBL benefits vehicles in the AM peak by adding capacity in peak direction</li> <li>Adds vehicle queue storage for SB approach</li> </ul>
148 <sup>th</sup> -150 <sup>th</sup> Ave. SE/	C102	C101 + SB Through lane from north of Eastgate to south of intersection	<ul> <li>Adds SB capacity to accommodate vehicle demand</li> </ul>
Eastgate Way	C104	Construct 2-Lane roundabout	<ul> <li>Potential conflicts with level-of-service and safety for bicycles and pedestrians</li> <li>2-Lane roundabout does not increase vehicle capacity or travel speed over current conditions</li> <li>Provides travel speed benefit during off-peak operations</li> </ul>
	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	<ul> <li>Adds vehicle capacity in SB and NB direction during peak conditions</li> <li>Reduces vehicle queuing impacts along 150<sup>th</sup> Avenue SE</li> </ul>
150 <sup>th</sup> Ave. SE/ SE 37 <sup>th</sup> Street	C202	Restrict Eastbound Left (EBL) in PM w/Variable Channelization	<ul> <li>Reroutes EB traffic from I-90 to loop ramp destined for NB 150<sup>th</sup> Avenue SE</li> <li>Adds vehicle capacity and reduces queuing along 150<sup>th</sup> Avenue SE</li> </ul>
	C203	Add a second Westbound Left (WBL) and Westbound Right (WBR) turn pocket	<ul> <li>Adds vehicle capacity on east approach and reduces queuing along SE 37<sup>th</sup> Street</li> </ul>
I-90 On-ramp/ SE 37 <sup>th</sup> Street	C302	Modify channelization between 150 <sup>th</sup> Avenue SE and I-90 EB on ramp & Signal at EB on-ramp	<ul> <li>Reduces vehicle weaving movements along SE 37<sup>th</sup> Street between 150<sup>th</sup> Avenue SE and I-90 EB on-ramp</li> <li>Traffic signal at the EB on-ramp facilitates traffic flow and reduces vehicle congestion</li> </ul>
150 <sup>th</sup> Ave. SE/	C401	Extend NB receiving lane/right turn pocket between SE 38 <sup>th</sup> Street and 37 <sup>th</sup> Street	<ul> <li>Adds vehicle capacity along 150<sup>th</sup> Avenue SE and accommodates traffic flow better between SE 38<sup>th</sup> Street and SE 37<sup>th</sup> Street.</li> </ul>
SE 38 <sup>th</sup> Street	C402	Adjust signal timings to remove split phasing and optimize green time	<ul> <li>Increases intersection capacity at 150<sup>th</sup> Avenue SE/SE 38<sup>th</sup> Street</li> </ul>
150 <sup>th</sup> Ave. SE/ Newport Way	C501	Add a second Southbound Left (SBL)	<ul> <li>Adds vehicle capacity and reduces queuing on</li> <li>SB approach at Newport Way</li> </ul>

Table 3. Project Concepts: 148<sup>th</sup>-150<sup>th</sup> Avenue SE Corridor



Figure 2. Project Concepts – 148<sup>th</sup>-150<sup>th</sup> Avenue SE Corridor

# Individual Project Performance

We analyzed each of the 10 project concepts along the  $148^{th}$ - $150^{th}$  Avenue SE corridor using the Synchro or SIDRA traffic analysis tool in the 2035 Baseline. Table 4 provides a summary of the v/c findings comparing the 2018 Existing and 2035 Baseline.

Based on the analysis results, we considered 8 of the 10 project concepts for further analysis under the system-wide VISSIM analysis. We did not advance the 2-lane roundabout at 148<sup>th</sup>-150<sup>th</sup> Avenue SE/Eastgate Way (#C104) due to our assessment of its cost (high) and performance (poor) and we also did not advance the double left turn lane for the southbound left movement (#C501) due to high cost and geometric constraints at that location.

Intersection	Concept ID	148 <sup>th</sup> -150 <sup>th</sup> Ave. SE/Eastgate Way	150 <sup>th</sup> Ave. SE/ SE 37 <sup>th</sup> Street	I-90 EB on- ramp/ SE 37 <sup>th</sup> St.	150 <sup>th</sup> Ave.SE/ SE 38th Street	150 <sup>th</sup> Ave SE/ Newport Way
MMA Star	ndard	0.90	0.90	No Standard	0.85	0.85
2018 Exis Performa	ting Ince	0.92 (0.95)**	0.79	N/A*	0.79	0.89
2035 Base Performa	eline Ince	1.14 (1.20)**	1.05	N/A*	0.97	0.99
148 <sup>th</sup> -150 <sup>th</sup>	C101	1.12 (1.20)**				
Ave. SE/	C102	0.93				
Eastgate way	C104	N/A^				
150 <sup>th</sup> Ave. SE/	C201		0.94			
SE 37 <sup>th</sup> St I-90 FB	C202		0.89			
off-ramp	C203		0.75			
I-90 EB on -ramp/ SE 37 <sup>th</sup> Street	C302					
150 <sup>th</sup> Ave. SE/	C401			0.78	0.97	
SE 38 <sup>th</sup> Street	C402				0.95	
150 <sup>th</sup> Ave. SE/ Newport Way	C501					0.72

Notes:

-Grey shaded cells represent intersections not affected by the project concept

-Red shaded cells represent intersections that do not meet MMA V/C standard

^ v/c not reported. C104 roundabout option is expected to exceed MMA v/c standard in 2035

\*Synchro results not available for intersection due to lane configuration

\*\*AM results shown in parentheses

## System-Wide Corridor Performance

#### Alternatives Analyzed

Based on the results from the individual project performance, we created two analysis alternatives from the 8 project concepts advanced from the individual project analysis.

Alternative (A1) includes 6 of the 8 project concepts. It does not include the 3<sup>rd</sup> southbound lane on 150<sup>th</sup> Avenue SE (#C102) and the extension of northbound receiving lane/right turn pocket between SE 38<sup>th</sup> and 37<sup>th</sup> Streets. Alternative A1 assumes that the 150<sup>th</sup> Avenue SE overcrossing at I-90 remains as a 6-lane facility.

Alternative (A2) includes both the 3<sup>rd</sup> southbound lane and the restriping of the 150<sup>th</sup> Avenue SE overcrossing at I-90 to a 7-lane section. Alternative A2 also includes the additional northbound receiving lane/right turn pocket between SE 38<sup>th</sup> and 37<sup>th</sup> Streets.

We analyzed the two alternatives using VISSIM to assess system-wide operations and the interaction of vehicle queuing and congestion between study intersections along the 148<sup>th</sup>-150<sup>th</sup> Avenue SE corridor. Table 5 provides a summary of the alternatives and the project concepts included within each alternative.

Intersection/Location	Project Concept ID	Alternative A1	Alternative A2
150 <sup>th</sup> Avenue SE overcrossing at I-90	n/a	6-Lane Section (3 SB/3 NB)	7-Lane Section (4 SB/3 NB)
149th 150th Avenue SE/ Festante May	C101	X	Х
148 -150 Avenue SE/ Easigale Way	C102		X
	C201	X	X
150 <sup>th</sup> Avenue SE/ SE 37 <sup>th</sup> StI-90 EB off-ramp	C202	X	X
	C203	X	X
I-90 EB On-ramp/ SE 37 <sup>th</sup> Street	C302	X	X
	C401		X
150 <sup>cm</sup> Avenue SE/ SE 38 <sup>cm</sup> Street	C402	X	Х

Table 5. Year 2035	– System-wide	<b>VISSIM Analysis</b>	Alternatives
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## Corridor Travel Speeds

Corridor travel speeds in the PM peak period along the southbound 148<sup>th</sup>-150<sup>th</sup> Avenue SE corridor improves by over 80% under 2035 Alternative A1 and over 130% under Alternative A2 when compared to the 2035 Baseline. Under AM peak conditions, corridor travel speeds along northbound 148<sup>th</sup>-150<sup>th</sup> Avenue SE corridor remain similar or slightly slower under both 2035 Alternatives A1 and A2 when compared to the 2035 Baseline.

Table 6 and Figures 3 and 4 summarize the results of the corridor travel speeds along the 148<sup>th</sup>-150<sup>th</sup> Ave. SE corridor.

ID	Segment	Peak/	Posted Speed/	2035 Baseline	20 Altern	2035 Alternative A1		2035 Alternative A2	
		Direction	Urban Speed	Speed (mph)	Speed (mph)	% Change	Speed (mph)	% Change	
	SE 24 <sup>th</sup> St. to Newport Way	PM/SB	30 mph/ 12 mph	5.0	9.2	+82%	11.6	+131%	
1	A: SE 24 <sup>th</sup> St. to SE 38 <sup>th</sup> St.	PM/SB	30 mph/ 12 mph	4.2	8.2	+97%	10.7	+157%	
	B: SE 38 <sup>th</sup> St. to Newport Way	PM/SB	30 mph/ 12 mph	16.4	16.4	+0%	16.4	+0%	
2	Newport Way to SE 24 <sup>th</sup> St	AM/NB	30 mph/ 12 mph	11.3	11.6	+3%	11.3	0%	
2	A: Newport Way to SE 38 <sup>th</sup> St.	AM/NB	30 mph/ 12 mph	4.6	5.6	+22%	5.5	+20%	

Table 6. Corridor Travel Speed – 2035 Baseline & Alternative: 148<sup>th</sup>-150<sup>th</sup> Avenue SE Corridor

Table 6. Corridor Travel Speed – 2035 Baseline & Alternative: 148<sup>th</sup>-150<sup>th</sup> Avenue SE Corridor

ID	Segment	Peak/	Posted Speed/	2035 Baseline	2035 Alternative A1		2035 Alternative A2	
		Direction	Urban Speed	Speed (mph)	Speed (mph)	% Change	Speed (mph)	% Change
	B: SE 38 <sup>th</sup> St. to SE 24 <sup>th</sup> St.	AM/NB	30 mph/ 12 mph	15.8	16.7	+6%	16.7	+6%
3	I-90 WB off-ramp to SE 24 <sup>th</sup> St. via 156 <sup>th</sup> Avenue SE	AM/NB	30 mph/ 13.2 mph	16.3	16.3	0%	16.3	0%

Notes:

- Travel speed color gradient, as a percentage of typical urban speed:

- Dark Green: >110%, Light Green: 90%-110%, Yellow: 75%-90%, Orange: 50%-75%, Red: <50%



Figure 3. Corridor Travel Speed – 2035 PM Peak – 148<sup>th</sup>-150<sup>th</sup> Avenue SE Corridor



Figure 4. Corridor Travel Speeds – 2035 AM Peak – 148<sup>th</sup>-150<sup>th</sup> Avenue Corridor

#### Intersection Vehicle Delay

Average intersection vehicle delay along 148<sup>th</sup>-150<sup>th</sup> Avenue SE improves at 3 of 4 study intersections under 2035 Alternative A1, and at 4 of 4 study intersections under 2035 Alternative A2 when compared to the 2035 Baseline in both the AM and PM peak period. Vehicle delay reductions of over 50% occur at the intersections of 148<sup>th</sup>-150<sup>th</sup> Avenue SE/Eastgate Way and 150<sup>th</sup> Avenue SE/SE 37<sup>th</sup> Street under Alternative A2. Under Alternative A1 and A2, delay reductions of up to 22% occur when compared to the 2035 Baseline.

Table 7 and 8 provide summaries of the PM and AM peak period results.

	148 <sup>th</sup> -150 Eastga	<sup>th</sup> Ave. SE/ te Way	150 <sup>th</sup> A SE 37 <sup>th</sup>	ve. SE/ Street	150 <sup>th</sup> Ave. SE/ SE 38 <sup>th</sup> Street		150 <sup>th</sup> Ave. SE/ Newport Way	
Alternative	Avg. Vehicle Delay (sec)	% Change	Avg. Vehicle Delay (sec)	% Change	Avg. Vehicle Delay (sec)	% Change	Avg. Vehicle Delay (sec)^	% Change
2035 Baseline	122	n/a	125	n/a	54	n/a	45 (78)	n/a
2035 Alternative A1	74	-39%	51	-59%	64	19%	44 (66)	-2% (-15%)
2035 Alternative A2	44	-64%	59	-53%	52	-4%	43 (61)	-4% (-22%)

 Table 7. 2035 PM Intersection Delay: 148<sup>th</sup>-150<sup>th</sup> Avenue SE
 148<sup>th</sup>-150<sup>th</sup> Avenue SE

Notes:

^Average vehicle delay is reported for both total intersection and southbound left delay (in parentheses)

	148 <sup>th</sup> -150 Eastga	<sup>th</sup> Ave. SE/ Ite Way	150 <sup>th</sup> A SE 37 <sup>th</sup>	ve. SE/ Street	150 <sup>th</sup> Av SE 38 <sup>th</sup> S	e. SE/ Street	150 <sup>th</sup> A Newpo	ve. SE/ ort Way
Alternative	Avg. Vehicle Delay (sec)	% Change	Avg. Vehicle Delay (sec)	% Change	Avg. Vehicle Delay (sec)	% Change	Avg. Vehicle Delay (sec)	% Change
2035 Baseline	106	n/a	75	n/a	131	n/a	99	n/a
2035 Alternative A1	94	-11%	37	-51%	102	-22%	91	-8%
2035 Alternative A2	52	-51%	35	-53%	105	-20%	91	-8%

 Table 8. 2035 AM Intersection Delay: 148<sup>th</sup>-150<sup>th</sup> Avenue SE

## Project Concepts and Performance Results: Richards Road-Factoria Boulevard Corridor

#### **Project Concepts Considered**

We identified and assessed 4 project concepts individually or system-wide along the Richard Road-Factoria Boulevard corridor. Table 9 provides a description of the project concepts as well as a brief summary of the performance.

Intersection	ID	Project Description	Performance Summary
Factoria Blvd./ SE 36 <sup>th</sup> StEB off-ramp	C701	Add variable channelization for EB approach (second EBT in AM)	<ul> <li>Improves traffic flow for AM traffic destined to SE 36<sup>th</sup> Street from I-90</li> <li>Includes drop lane east of on SE 36<sup>th</sup> St from the intersection to 131<sup>st</sup> Ave SE (Easternmost T-Mobile Driveway)</li> </ul>
	C801	Add a second WB Left	<ul> <li>Increases vehicle capacity for westbound approach</li> </ul>
Factoria Blvd./ SE 38 <sup>th</sup> Street	C802	C801 + Channelization modifications – Adds a second EBL and an EBR turn pocket	<ul> <li>Increases vehicle capacity for eastbound approach</li> <li>Requires some ROW acquisition on south side</li> </ul>
Corridor-Wide	TDM	Various travel demand management strategies	<ul> <li>Reduces traffic demand - and may improve vehicle LOS - through methods including carpool, vanpool, telecommuting and other options</li> </ul>

Table 9. Potential Project Concepts: Richards Road- Factoria Boulevard Corridor

## Individual Project Performance

We analyzed three geometric project concepts along Factoria Boulevard using the Synchro traffic analysis tool under 2035 Baseline. Table 10 provides a summary of the v/c findings comparing the 2018 Existing and 2035 Baseline.

Intersection Conce ID		Factoria Boulevard/ SE 36 <sup>th</sup> Street- EB off-ramp	Factoria Boulevard/ SE 38 <sup>th</sup> St
MMA Standard (V/C)		0.95*	0.95
2018 Existing V/C		0.90 (AM)	0.94 (PM)
2035 Baseline V/C		1.03 (AM)	1.12 (PM)
Factoria Boulevard/ SE 36 <sup>th</sup> Street-EB Off-ramp	C701	0.98 (AM)	
Factoria Boulevard/	C801		1.03 (PM)
SE 38 <sup>th</sup> Street	C802		0.99 (PM)

Table 10. Project Concept Performance –	2035 AM/PM Peak: Intersection	v/c – Factoria Boulevard
		.,

#### Notes:

\* MMM v/c standard for PM peak

-Grey shaded cells represent intersections not affected by the project concept -Red shaded cells represent intersections that do not meet MMA standard

#### System-Wide Corridor Performance

#### Alternatives Analyzed

Due to the relatively minor project concepts that may be implemented along Richards Road/Factoria Boulevard, we developed only 1 system-wide alternative. Alternative B1 includes both project concepts at Factoria Boulevard/SE 38<sup>th</sup> Street (#C801, #C802) and we analyzed Aternative B1 in VISSIM for the 2035 PM peak conditions. We did not analyze the project concept at Factoria Boulevard/SE 36<sup>th</sup> Street with VISSIM.

#### Corridor Travel Speeds

Corridor travel speeds in the PM peak period along the Richards Road-Factoria Boulevard corridor improve slightly (12%-13%) under Alternative B1 when compared to the 2035 Baseline.

Table 11 and Figure 5 summarize the results of the corridor travel speeds along the Richards Road-Factoria Boulevard corridor.

Table 11. Corridor Travel Speeds – 2035 Baseline & Alternative: Richards Road -Factoria Boulevard Corridor

п	Segment	Peak/	Posted Speed/ Typical Urban	2035 Baseline	2035 Alternative B1	
	Segment	Direction	Speed (mph)	Speed (mph)	Speed (mph)	% Change
	SE 26 <sup>th</sup> Street to SE 38 <sup>th</sup> Street	PM/SB	35 mph/ 14 mph	3.5	4.0	+13%
4	A: SE 26 <sup>th</sup> Street to SE 32 <sup>nd</sup> Street	PM/SB	35 mph/ 14 mph	3.2	3.5	+12%
	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 travel speed color gradient, as a percentage of typical urban speed:

Dark Green: >110%, Light Green: 90%-110%, Yellow: 75%-90%, Orange: 50%-75%, Red: <50%



Figure 5. Corridor Travel Speeds – 2035 PM Peak – Richards Road - Factoria Boulevard Corridor

# Intersection Vehicle Delay

Average intersection vehicle delay at study intersections along Richards Road-Factoria Boulevard is reduced at 3 of the 4 intersections under 2035 Alternative B1 when compared to the PM peak 2035 Baseline. Under Alternative B1, delay reductions of up to 27% occur when compared to the 2035 Baseline. Vehicle delay at Richards Road/Eastgate Way increases slightly due to the removal of congestion to the south of that intersection. Table 12 provides a summary of the PM peak period results.

Altornativo	Richards Road/ SE 32 <sup>nd</sup> Street		Richards Road/ Eastgate Way		Factoria Boulevard/ SE 36 <sup>th</sup> Street- EB off-ramp		Factoria Boulevard/ SE 38 <sup>th</sup> Street	
Alternative	Avg. Vehicle Delay (sec)	% Change	Avg. Vehicle Delay (sec)	% Change	Avg. Vehicle Delay (sec)	% Change	Avg. Vehicle Delay (sec)	% Change
2035 Baseline	319	n/a	60	n/a	101	n/a	92	n/a
2035 Alternative B1	302	-5%	68	13%	97	-4%	67	-27%

Table 12. 2035 PM Intersection Delay: Richards Road - Factoria Boulevard Corridor

## Project Concepts and Performance Results: Other Study Area Intersections

## Project Concepts Considered

We identified and assessed six project concepts individually for five study area intersections that are not along the Richards Road/Factoria Boulevard corridor or 148<sup>th</sup>/150<sup>th</sup> Avenue SE corridor. Table 13 provides a description of the project concepts as well as a brief summary of the performance.

Intersection	ID	Project Description	Performance Summary		
Eastgate Way/ SE 37 <sup>th</sup> Street	C901	Add a new signal and modify channelization.	<ul> <li>Adds vehicle capacity</li> <li>Expected to meet signal warrants in 2035</li> <li>Reduces vehicle queue length at 161<sup>st</sup> Avenue SE/Eastgate Way</li> </ul>		
142 <sup>nd</sup> Pl. SE/ SE 36 <sup>th</sup> St.	C1001	Add a SBL or SBR and remove pedestrian crosswalk on the north or south legs	<ul> <li>Provides vehicle queue storage and improves vehicle LOS</li> </ul>		
142 <sup>nd</sup> Pl. SE/	C1101	Add NBL and SBL turn pockets	<ul> <li>Provides vehicle queue storage and improves vehicle LOS</li> <li>Requires bridge widening</li> </ul>		
1-90 Direct Access	C1102	Transit only ramps, remove HOV left turns at intersection	<ul> <li>Additional analysis required to determine impacts of HOV traffic rerouting from ramps</li> </ul>		

Table 13. Potential Project Concepts: Other Study Intersections

Table 13. Potential Project Concepts: Other Study Intersections

Intersection	ID	Project Description	Performance Summary
139 <sup>th</sup> Ave. SE/ SE 32 <sup>nd</sup> Street	C1201	Signalize intersection	- Adds vehicle capacity
Somerset Blvd./ Newport Way	C1301	Align Somerset and Allen Road to consolidate the two adjacent intersections into a single signalized intersection	<ul> <li>Provides similar vehicle operational benefits to expected 2035 Baseline</li> </ul>

## Individual Project Performance

We analyzed the six geometric project concepts related to other study intersections using the Synchro traffic analysis tool under year 2035 Baseline. Table 14 provides a summary of the v/c findings comparing 2018 Existing and 2035 Baseline.

Intersection	Concept ID	Eastgate Way/ SE 37 <sup>th</sup> St	142 <sup>nd</sup> Place SE /SE 36 <sup>th</sup> St	SE 142 <sup>nd</sup> Place/ I-90 DAR	139 <sup>th</sup> Ave SE/ SE 32 <sup>nd</sup> St	Somerset Boulevard/ Newport Way
MMA V/C Standard		0.90*	0.90*	0.90*	0.90*	0.85
2018 Existing Performance		N/A^	0.78	0.54	0.52	0.62/0.66
2035 Baseline Performance		N/A^	0.95	1.03	1.25	0.72/0.74
Eastgate Way/ SE 37 <sup>th</sup> Street	C901	0.72				
142 <sup>nd</sup> Pl. SE/ SE 36 <sup>th</sup> St.	C1001					
142 <sup>nd</sup> Pl. SE/	C1101			0.62		
Access	C1102			0.44		
139 <sup>th</sup> Ave. SE/ SE 32 <sup>nd</sup> Street	C1201				0.53	
Somerset Boulevard/ Newport Way	C1301					0.76

Table 14. 2035 PM Intersection Delay: Other Study Intersections

Notes:

-Grey shaded cells represent intersections not affected by the project concept

-Red shaded cells represent intersections that do not meet MMA standard

\*Non-system intersection, intersection v/c compared to MMA v/c standards for informational purposes only

\*\*Synchro results not available for intersection due to lane configuration

## Non-Infrastructure and Travel Demand Management Strategies

In addition to the infrastructure project concepts discussed in the sections above, we are also assessing non-infrastructure and travel demand management (TDM) strategies to determine their impacts on relieving traffic congestion in the Eastgate and Factoria areas.

Example of employer-related TDM strategies that have been shown to moderately reduce travel demand include:

- Expansion of employee shuttles to major transit hubs and remote park-and-ride lots
- Employee-provided ORCA cards at smaller companies
- Employee-paid/provided bike share to access transit stations and stops
- Alternative work schedules/telecommuting

Examples of more extensive TDM strategies related to employer and residential trips include:

- Market parking pricing for office workers and employees
- Transit agency/city sponsored shuttle connections to transit hubs (e.g., *Ride2 Eastgate*)
- On-street parking restrictions
- ORCA cards bundled with monthly rent for multifamily properties
- Expansion of pedestrian and bicycle networks within Eastgate and Factoria

Based on the number and breadth of TDM strategies implemented, marginal to moderate traffic congestion relief can be expected. Depending upon the level of TDM strategies, vehicle delay at intersections and corridor travel speed may improve by up to 3-5 percent within the area of implementation.

A full assessment of TDM strategies will be incorporated into the final analysis after the full evaluation of project concepts is completed.

## **Next Steps**

For the May 9, 2019 meeting, staff and consultants will present detailed analysis and evaluation of project concepts discussed on March 14, 2019 and will describe a preliminary recommendation that includes groupings of projects and priorities, and potential transportation demand management strategies.

Also included in the packet of information will be a detailed spreadsheet that lists every project in the Eastgate/Factoria Study Area that is on any adopted transportation plan (Transportation Facilities Plan, Transportation Improvement Program, Comprehensive Transportation Project List) with a recommendation for each project that describes if it should be retained for detailed analysis, modified into a current project concept, or repealed. The results of this exercise will be embedded in the final recommendation for the Eastgate Transportation Study and will inform subsequent updates of the adopted Comprehensive Transportation Project List.

Commissioners may request briefings with staff and the consultants to learn details prior to any of the upcoming study sessions. Staff will offer available times for such briefings within one week prior to each study session. For the March 14 study session, a briefing is planned for

March 11, from 11:00 to 1:00 at the Concord Engineering office in Downtown Bellevue (corner of NE 10<sup>th</sup> Street and 106<sup>th</sup> Avenue NE, across from Top Pot Donuts).

TC Study Session	Information	Commission Action/Direction		
December 13	Evaluation framework 2018 baseline conditions	Approved evaluation framework		
January 24	2035 modeling results Preliminary project concepts	<b>Reviewed</b> modeling results <b>Direction</b> to pursue defining and evaluating project concepts		
March 14	Preliminary Project Concepts	Review descriptions and evaluation of project concepts, direction to refine project concepts and develop preliminary recommendation		
May 9	Evaluation results and recommended projects	Preliminary recommendation to approve project concepts, further direction toward final recommendation		
June 13 or 27	Final documentation of projects	Final recommendation to approve project concepts. Direct staff to prepare a final report for transmittal to City Council		

#### Eastgate Transportation Study Transportation Commission Schedule