

# **Modern Urban Roundabouts**

July 13, 2017

*Brian Walsh*

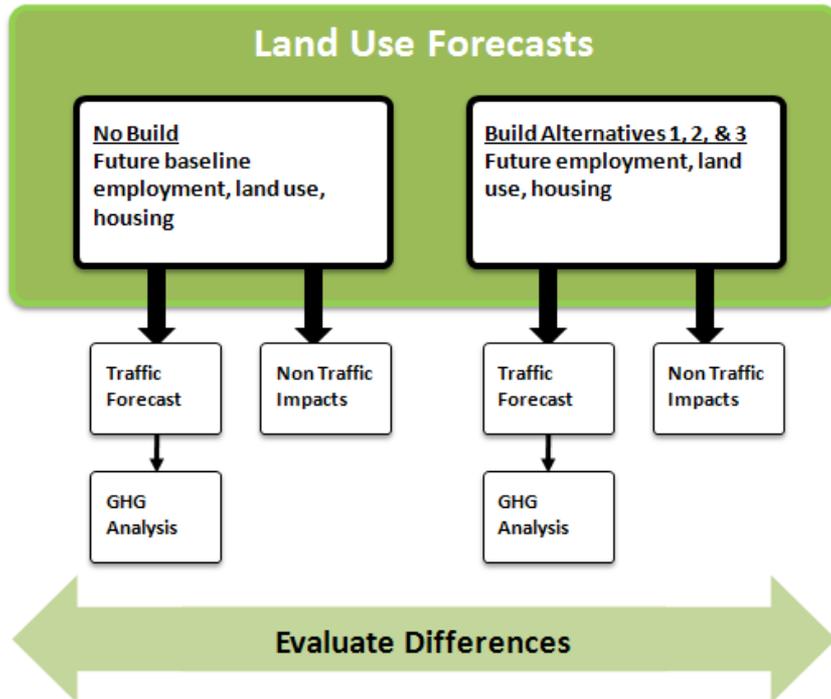
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City of Bellevue*

Staff assessed the draft land use/transportation alternatives against the CAC evaluation criteria, Council principles, and environmental considerations.

## Analysis of Alternatives



## Preferred Alternative

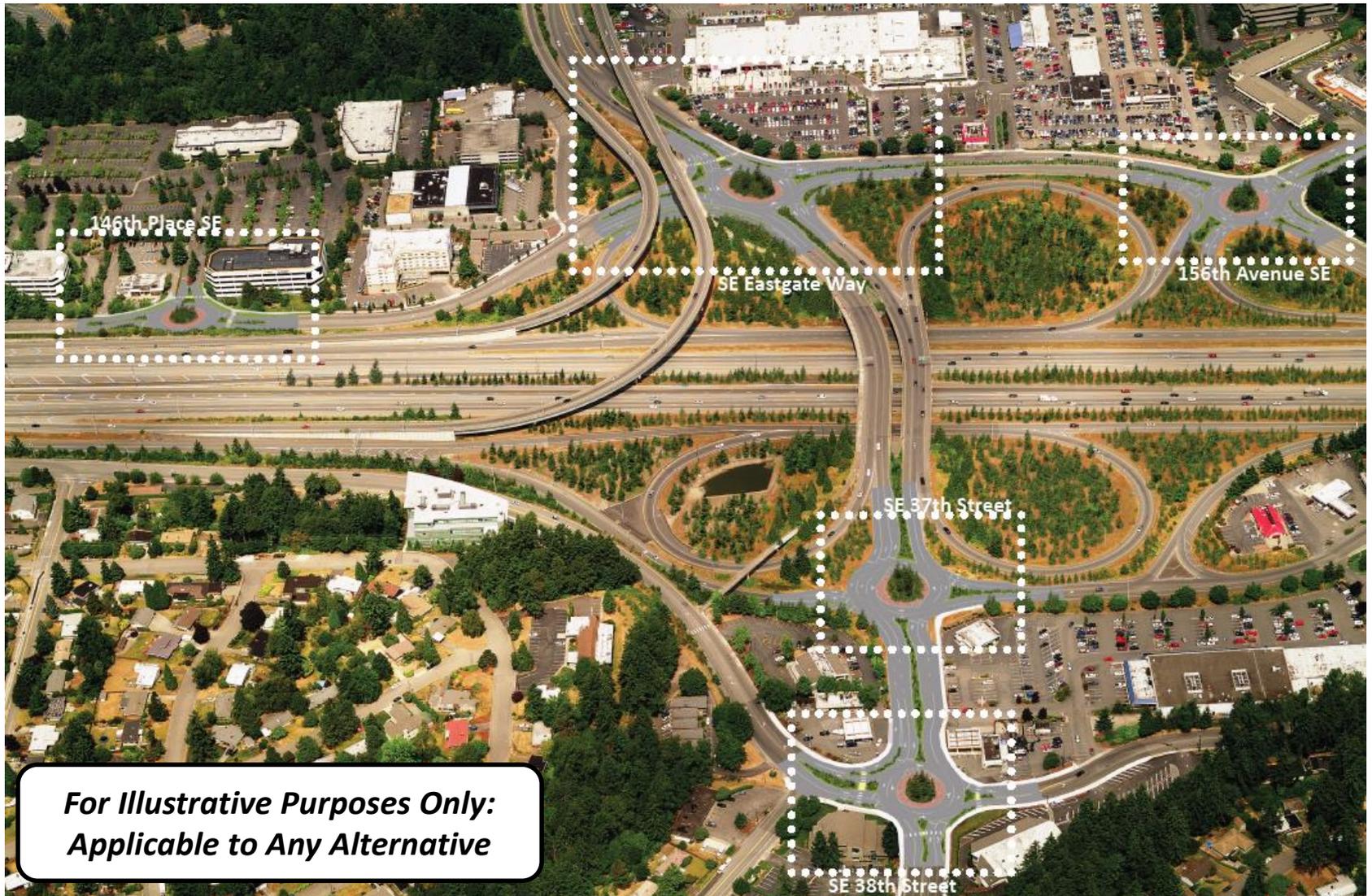




# Eastgate/I-90

Land Use & Transportation Project

# Eastgate Interchange





**For Illustrative Purposes Only:  
Applicable to Any Alternative**

**150 Ave SE and SE Eastgate Way (Looking South)**



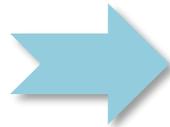
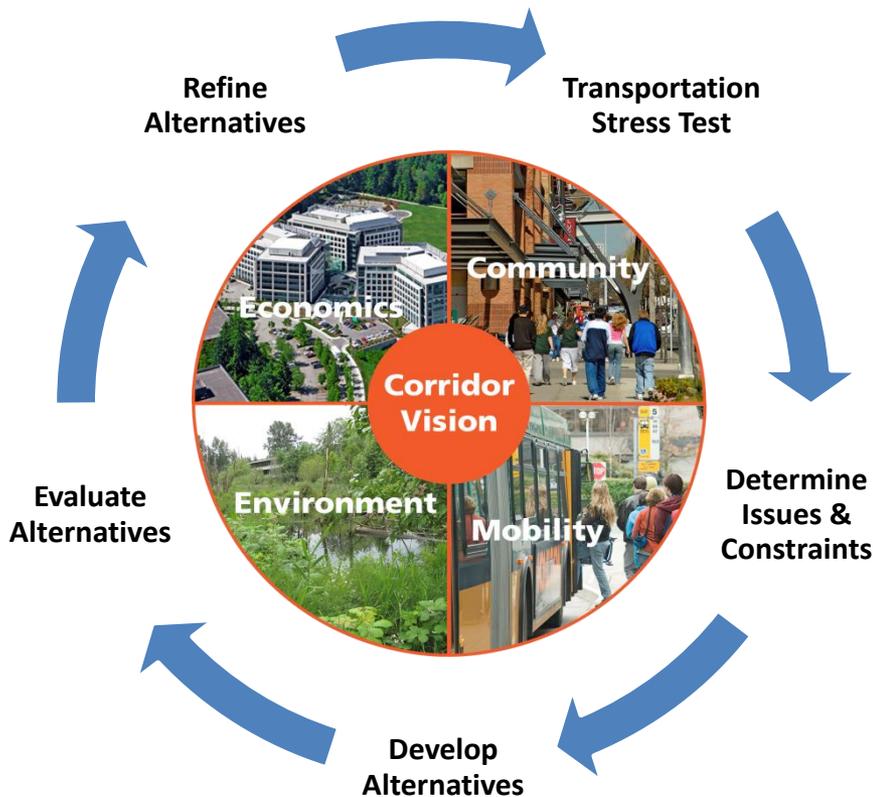
**For Illustrative Purposes Only:  
Applicable to Any Alternative**

**150 Ave SE & I-90 EB Off-Ramp & SE 38 St Intersections (Looking South)**

*“Modeled existing and future operations of roundabout intersections for the Eastgate interchange show enhanced mobility and merit further consideration as a feasible approach to finding balance between motorized/non-motorized uses and the interface between community and regional transportation needs.”*

*– WSDOT Traffic Design,  
Headquarters*

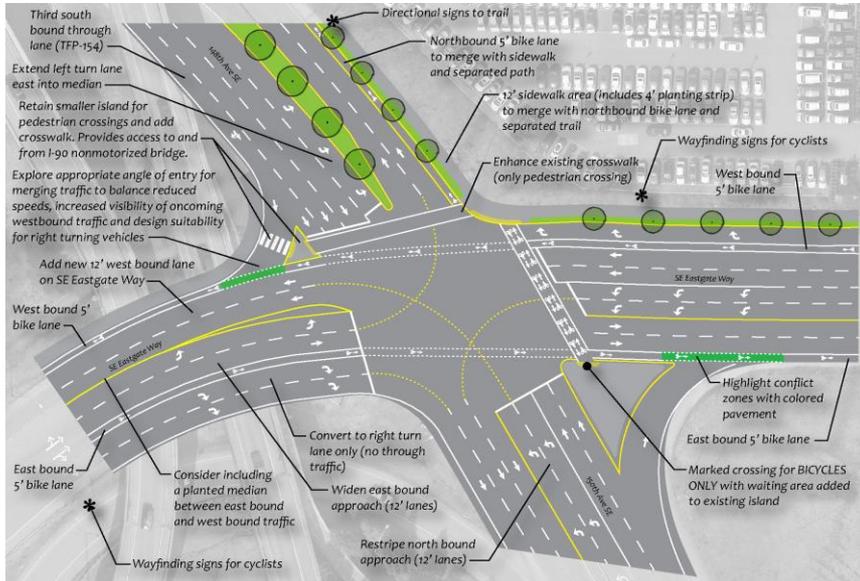




- Travel Demand Modeling
- Transportation Strategy
- Project Costs & Benefits
- Implementation Considerations

# Project I-2: Eastgate Way / 150th Avenue SE

## Transportation Strategies Report: pages 18-21 and A51-A52



**Option A: \$3,725,000 (COB estimate, 2011)**

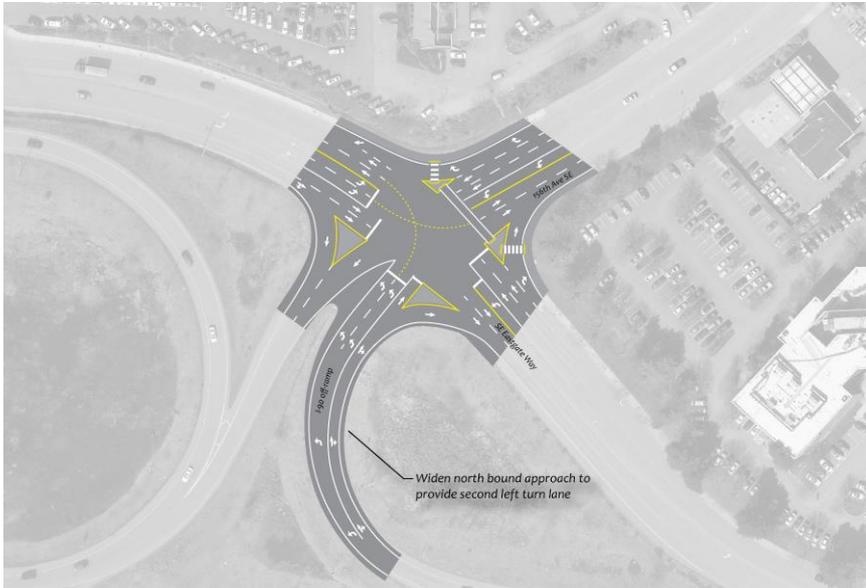


**Option B: \$5,225,000 (COB estimate, 2011)**

(ID) Intersection	Existing (2009) LOS	2030 No Action LU on 2009 Network		2030 Preferred Land Use Without Transportation Improvements			2030 Preferred Land Use With Transportation Improvements		
		LOS	% Change from Existing (2009)	LOS	% Change from Existing (2009)	% Change from 2030 No Action	LOS	% Change from Existing (2009)	% Change from 2030 No Action
(101) 150th Ave SE and SE Eastgate Way	61 sec/veh LOS E	64 sec/veh LOS E	5% increase	81 sec/veh LOS F	33% increase	27% increase	58 sec/veh LOS E	5% reduction	9% reduction

# Project I-3: 156th Avenue SE at SE Eastgate Way (I-90 WB off-ramp)

Transportation Strategies Report: pages 21-22 and A53-A54



**Option A: \$880,000 (COB estimate, 2011)**

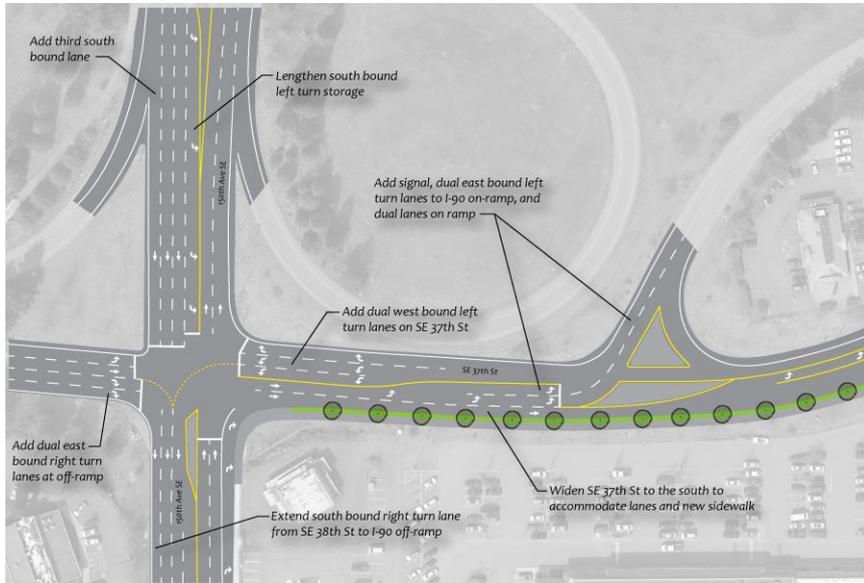


**Option B: \$3,700,000 (COB estimate, 2011)**

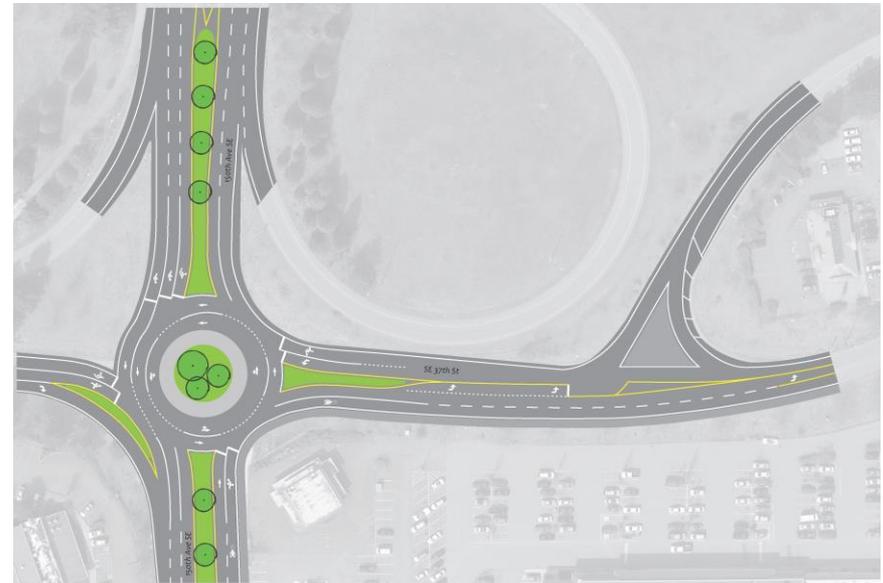
(ID) Intersection	Existing (2009) LOS	2030 No Action LU on 2009 Network		2030 Preferred Land Use Without Transportation Improvements			2030 Preferred Land Use With Transportation Improvements		
		LOS	% Change from Existing (2009)	LOS	% Change from Existing (2009)	% Change from 2030 No Action	LOS	% Change from Existing (2009)	% Change from 2030 No Action
(86) 156th Ave SE and SE Eastgate Way	54 sec/veh LOS D	60 sec/veh LOS E	11% increase	64 sec/veh LOS E	19% increase	7% increase	53 sec/veh LOS D	2% reduction	12% reduction

# Project I-4: 150th Avenue SE/ I-90 Eastbound Off-Ramp and SE 37th Street

Transportation Strategies Report: pages 22-24 and A55-A56



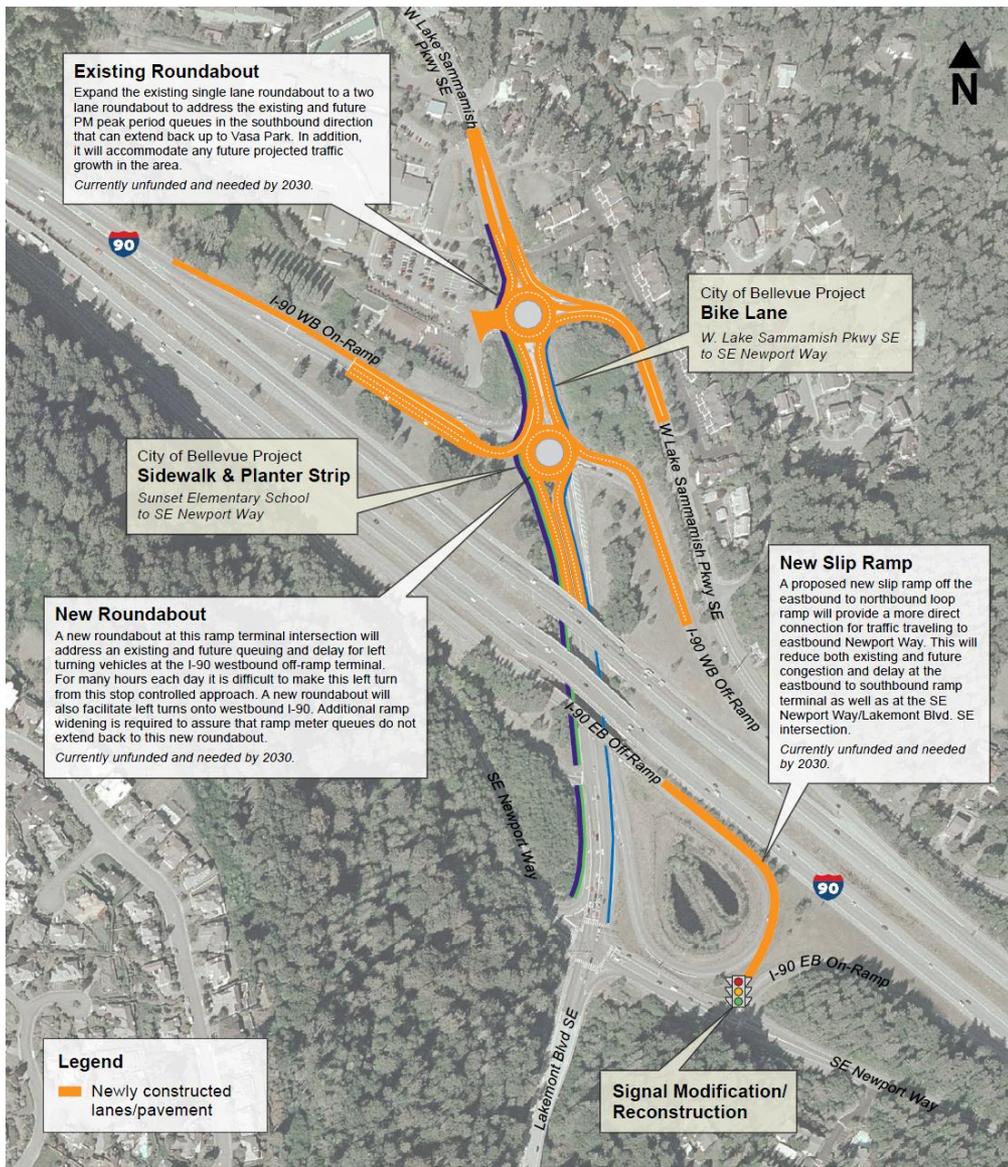
**Option A: \$3,355,000 (COB estimate, 2011)**



**Option B: \$3,255,000 (COB estimate, 2011)**

(ID) Intersection	Existing (2009) LOS	2030 No Action LU on 2009 Network		2030 Preferred Land Use Without Transportation Improvements			2030 Preferred Land Use With Transportation Improvements		
		LOS	% Change from Existing (2009)	LOS	% Change from Existing (2009)	% Change from 2030 No Action	LOS	% Change from Existing (2009)	% Change from 2030 No Action
(227) 150th Ave SE and EB I-90 Off-Ramp	79 sec/veh LOS E	137 sec/veh LOS F	73% increase	139 sec/veh LOS F	76% increase	1% increase	57 sec/veh LOS E	28% reduction	58% reduction





## Simulated Capacity:

- WSDOT I-90 Bellevue to North Bend Corridor Study found that roundabout enhancements improve LOS at both intersections from LOS F in the p.m. hour to LOS B or better in 2030.
- In the a.m. peak hour, the westbound ramps intersection operates at LOS F under its current configuration, while the existing single-lane roundabout to the north operates at LOS D.
- With roundabout improvements, both intersections will operate at LOS B in the a.m. peak hour.

## Update:

- Addition of a new roundabout at the westbound ramp terminal received WSDOT funding for design and construction (2013 completion).

