Modern Urban Roundabouts

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Staff assessed the draft land use/transportation alternatives against the CAC evaluation criteria, Council principles, and environmental considerations.
For Illustrative Purposes Only: Applicable to Any Alternative

Roundabout Concept
"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
Transportation Stress Test

Determine Issues & Constraints

Develop Alternatives

Transportation Project List

Transportation Strategies Report

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

Eastgate/I-90 Land Use & Transportation Project
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)
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)**

<table>
<thead>
<tr>
<th>(ID) Intersection</th>
<th>Existing (2009) LOS</th>
<th>2030 No Action LU on 2009 Network</th>
<th>2030 Preferred Land Use Without Transportation Improvements</th>
<th>2030 Preferred Land Use With Transportation Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOS</td>
<td>% Change from Existing (2009)</td>
<td>LOS</td>
<td>% Change from Existing (2009)</td>
</tr>
<tr>
<td>(86) 156th Ave SE and SE Eastgate Way</td>
<td>54 sec/veh LOS D</td>
<td>11% increase</td>
<td>64 sec/veh LOS E</td>
<td>19% increase</td>
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</tbody>
</table>

Arterial Improvement

Eastgate/I-90
Land Use & Transportation Project
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)

<table>
<thead>
<tr>
<th>ID Intersection</th>
<th>Existing (2009) LOS</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOS</td>
<td>% Change from Existing (2009)</td>
<td>LOS</td>
<td>% Change from Existing (2009)</td>
</tr>
<tr>
<td>(227) 150th Ave SE and EB I-90 Off-Ramp</td>
<td>79 sec/veh LOS E</td>
<td></td>
<td>139 sec/veh LOS F</td>
<td>73% increase</td>
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</table>

Arterial Improvement
Update:

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

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.

Legend

- Newly constructed lanes/pavement

Existing Roundabout
Expand the existing single-lane roundabout to a two lane roundabout to address the existing and future PM peak period queues in the southbound direction that can extend back up to Valley Park. In addition, it will accommodate any future projected traffic growth in the area.
Currently unfunded and needed by 2030.

New Roundabout
A new roundabout at this ramp terminal intersection will address an existing and future queueing and delay for left turning vehicles at the I-90 westbound off-ramp terminal. For many hours each day it is difficult to make this left turn from this stop controlled approach. A new roundabout will also facilitate left turns onto westbound I-90. Additional ramp widening is required to assure that ramp meter queues do not extend back to this new roundabout.
Currently unfunded and needed by 2030.

City of Bellevue Project
Bike Lane
W Lake Sammamish Pkwy SE to SE Newport Way

City of Bellevue Project
Sidewalk & Planter Strip
Sunset Elementary School to SE Newport Way

New Slip Ramp
A proposed new slip ramp off the eastbound to northbound loop ramp will provide a more direct connection for traffic traveling to eastbound Newport Way. This will reduce both existing and future congestion and delay at the eastbound to southbound ramp terminal as well as at the SE Newport Way/Lakemont Blvd. SE intersection.
Currently unfunded and needed by 2030.

Signal Modification/Reconstruction

Legend

- Newly constructed lanes/pavement