



# MEMORANDUM

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DATE: October 15, 2014

TO: Transportation Commission

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SUBJECT: Comprehensive Plan Update: Transportation Element maps, figures and tables

## **Purpose**

At the October 23, 2014 meeting, staff will review amendments to the maps and tables of the Comprehensive Plan Transportation Element and will seek a recommendation.

## **Background**

Bellevue is undergoing an update to the Comprehensive Plan that was last updated in 2004. The update addresses changes and new opportunities as the City has grown over the last 10 years. At previous Transportation Commission meetings, staff has reviewed proposed amendments and policy updates for the Transportation Element. The maps, tables and figures in Transportation Element (pages 163-182) ([Click here for link](#)) provide additional data to support the policies discussed previously.

At the September 25, 2014 Transportation Commission meeting, staff presented amendments to the Transportation Element maps and tables. Members of the Transportation Commission commented on the changes and identified items in the maps and tables where more changes were needed to ensure clarity and consistency with Transportation Element policy.

At this meeting, staff will outline changes and clarifications in response to comments by members of the Transportation Commission at the September 25, 2014 meeting.

## **Amendments**

Amendments to the maps and tables of the Comprehensive Plan Transportation Element are summarized below. A more detailed listing of changes is provided in the attached table and draft copies of the maps & tables. The attached packet contains only the maps and tables for which changes and clarifications were requested by the Transportation Commission at the September 25, 2014 meeting.

## Maps

Transportation Commission comments highlighted the need for clarity and consistency in the maps; this has been addressed by changes to the titles, legends and various components across several of the maps.

While the discussion of the maps has been primarily about map content, the maps shown have been formatted to match the overall design and layout of the updated Comprehensive Plan. The final maps of the updated plan are expected to be in a similar format with minor changes.

Where dynamic or electronic links to most current maps are proposed, up-to-date hard copies of those maps should be made available to the public.

## Tables & Figures

The Intersection Vehicular Level of Service Standards table has been modified to address comments by Commissioners concerning the clarity of information displayed.

Staff will also address comments by Commissioners on the Commute Mode Split Targets table. Issues to be addressed include:

- Purpose of the commute mode split targets
- Methodology for developing the proposed target levels
- Data sources used for developing proposed targets and to be used for ongoing monitoring of progress

## **Next Steps**

Based upon recommendations, the amended maps and tables will be included in the updated Comprehensive Plan Transportation Element. Transportation staff will continue to work with staff from other departments, including Information Technology's Geographic Information Systems (GIS) group, to ensure consistency and clarity of the maps.

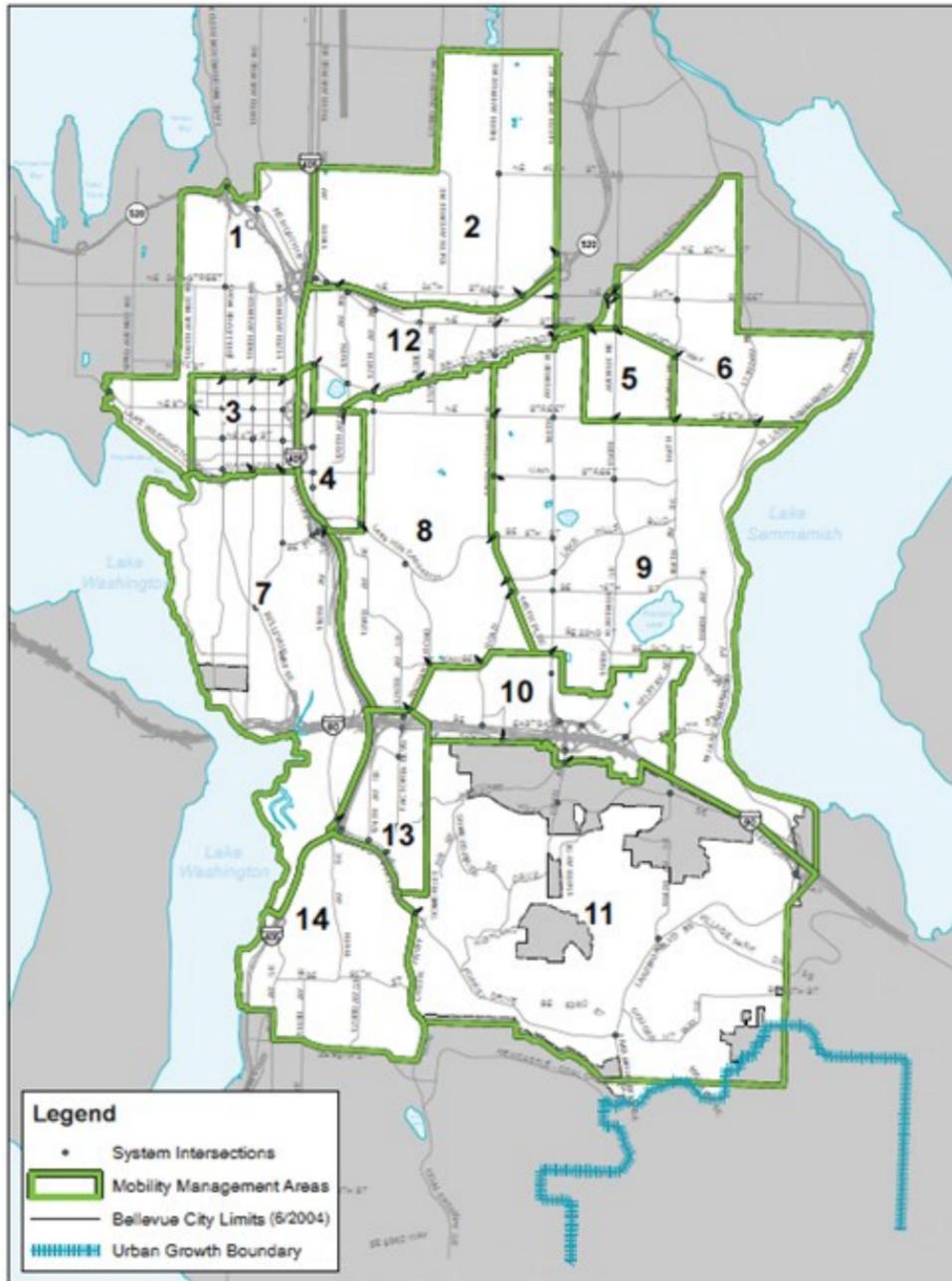
## **Attachments**

- Summary table of comments and amendments to Transportation Element maps and tables
- Copy of Transportation Element maps and tables with amended items

Comprehensive Plan Transportation Element 2004		Comprehensive Plan Transportation Element Update 2014			
Figure	Name	Format	Update?	Notes	Edits Requested by Transportation Commission 09/25/2014 & Response
	General Comments	Maps	Yes	Update City limits to incorporate areas annexed since 2004; make map extent consistent across maps; figure and table numbers will need to be updated to be consistent with policy items. Update MMA boundaries to match southern and eastern portions of the City boundary	Consistency - Make sure that the UGA Boundary is shown on all map legends. What is the "UGA" Boundary? - <i>The maps are now formatted to match the overall design of the updated Comprehensive Plan, the Urban Growth Area Boundary or UGA is not included on the new maps. Add titles to maps for presentation (at the top rather than them being part of the legend). Where dynamic links to the latest maps are proposed, we must acknowledge that some may not have or desire internet access and that hard copies of the latest maps or figures will be made available to the public.</i>
TR.1	Mobility Management Areas (MMAs)	Map	Yes	Update Mobility Management Areas (MMA) 10,11 and 13 and System Intersections per Transportation Commission direction	Legend should include the arrows indicating which MMAs system intersections belong to - <i>Arrows have been added to the map legend.</i> It is hard to see which MMA the triangular area at BelRed Rd, NE 20th st and 156th Ave NE belongs to - <i>Map now includes an inset/close-up of this area which belongs to MMA #12.</i>
TR.2	2020 Travel Demand Forecasts	Map	Yes	Change title to " <b>2035 Travel Demand Forecasts</b> ". Amend Mobility Management Areas (MMA) 10,11 and 13 per Transportation Commission direction, update to 2035 travel demand forecasts. Update MMA boundaries to match southern and eastern portions of the City boundary	Map title needs to be resolved - 2035 Travel Demand Forecasts or 2035 Trip Density by MMA (which is in the legend)? <i>Change title to: 2035 Trip Density Forecasts.</i> Add information on Total Trips per MMA and consistency with Land Use Element. <i>Total Trips per MMA information currently incomplete - this will be added to the map along with text about consistency with Land Use Element when ready.</i>
TR.3	Existing Arterials and freeways with classifications	Map	Yes	Include new/planned arterial roadways in Bel-Red and Wilburton subareas Include new roadway classifications Remove pedestrian corridor from map of arterials Inset map highlights for Bel-Red and Wilburton subareas	Add growth boundary to the legend - <i>Urban Growth Area Boundary not included on updated map format.</i> Why is Spring Blvd (NE 15th/16th) only classified as a Collector Arterial rather than a Minor Arterial east of 124th Ave NE? <i>The service class and design capacity is consistent with a collector arterial as adopted through the Bel-Red Sub-area planning process.</i> <i>Alignment of Spring Blvd/NE15th/16th has been corrected between 120th Ave NE and 130th Ave NE</i>
TR.5	Existing transit facilities	Map	Yes	Update facilities, show public transit facilities only, add direct access ramp to SR 520 at 108th Ave NE/112th Ave NE	Can a dynamic link be provided to the Metro website for the location of private facilities (e.g. at churches)? - <i>Yes, a screen shot of the King County Metro webpage will be shown at the Transportation Commission presentation.</i> Labels for Overlake P&R, Overlake Transit Center and Overlake TC at NE 40th P&R are confusing. <i>Overlake Transit Center and Overlake TC at NE 40th St P&amp;R now shown as "Overlake Transit Center and P &amp; R".</i>
New	Frequent Transit Network	Map	New	New map - include content from Transit Master Plan update Frequent Transit Network map but in format consistent with other Transportation Element maps	<i>Incorporate "2030 Growing Resources Scenario" as part of map title.</i> <i>Call-out labels have been made consistent (some had arrows, some didn't).</i>
TR.11	Pedestrian network	Map	Yes	Replace with map from 2009 Pedestrian & Bicycle Transportation Plan	Map should differentiate between the different types of pedestrian facility e.g. sidewalks and trails - <i>A modified map will show existing inventory of sidewalks, trails and off-street facilities - the modified maps is not included in this package but will be provided to The Commission before the meeting on October 23, 2014.</i>
TR.12	Bicycle network	Map	Yes	Replace with map from 2009 Pedestrian & Bicycle Transportation Plan	Is there a better way of differentiating between bicycle facilities rather than just "primary" and "other"? Priority corridors should be identified - <i>A modified map will show existing inventory of bicycle lanes, off-street facilities and other bicycle facilities (including shared lanes, widened shoulders, sharrows etc.) - the modified map is not included in this package but will be provided to The Commission before the meeting on October 23, 2014.</i>
TR.13	Highways of statewide significance	Map	Yes	Add traffic counts to map (Average Daily Traffic) as call outs – this can replace some information found in Table TR.3 in the current Comprehensive Plan Transportation Element	Move the label showing the traffic count on I-405 south of I-90 so that it does not overlap I-90 and the adjacent traffic count label - <i>Labels updated so that they do not overlap.</i> Can this map have an online dynamic link to WSDOT's traffic counts? - <i>Yes, can link to appropriate WSDOT web page although some manipulation required to get the traffic information.</i>
New	Truck Routes	Map	New	New map	How were these truck routes decided? Is there an ordinance? <i>Yes, an ordinance is required. City Ordinance No. 4652 &amp; Bellevue City Code, Chapter 11.70.</i> Why aren't Richards Rd and the Lake Hills Connector truck routes? <i>These roadways were not included in the original ordinance in 1994 - it is not clear why. Adding these or any other roadways would require an amendment to the ordinance; developing the ordinance would involve working with Traffic Engineering staff.</i> Truck routes should be shown all the way to the relevant freeway intersection (e.g. to NE 40th St in Redmond) - <i>Truck routes have been modified to go all the way to freeway ramps in Bellevue, they are not being shown outside the city boundary.</i> In the legend change truck routes to truck/haul routes, add freeways - <i>Haul routes will not be included in the legend or title as they considered temporary and are typically project based.</i>

Comprehensive Plan Transportation Element 2004				Comprehensive Plan Transportation Element Update 2014	
Figure	Name	Format	Update?	Notes	Edits Requested by Transportation Commission 09/25/2014 & Response
Table TR.2	Average Intersection LOS Definitions	Table	Yes	Update title to read "Average Intersection <b>Vehicular</b> Level of Service (LOS) Definitions (Range of Volume to Capacity Ratios with User <b>Driver</b> Impressions)" Update language Table will be located closer to text and maps where Level of Service is discussed	Add column showing which MMAs correspond to different levels of service. <i>This table defines the Level of Service (LOS) categories used to measure the City's Vehicular LOS standards, the table showing Intersection Vehicular LOS by Mobility Management Area (MMA) will follow this table. Move this table so that it precedes the Intersection Vehicular Level of Service Standards table.</i>
New	Vehicular Level of Service (LOS) Standards	Table	New	Replaces portion of Table TR.1 showing Roadway Level of Service (LOS)	Spell out MMA (Mobility Management Area) on table, show how many system intersections are in each MMA. <i>A column showing how many system intersections are in each MMA has been added - Also text defining the congestion allowance has been added as a footnote to the table.</i>
New	Commute Mode Split Targets	Table	New	Replaces portion of Table TR.1 showing Non-Single Occupancy Vehicle (SOV) Mode Share	Include indication these proportions are of "daily" work trips. <i>Source note for "2035 Target" specifies the figure is based on daily commute trips by motorized modes. New correction to table: For Citywide (Residents) 2012 Existing figure revised to 34% (previously, it showed 35%, owing to a rounding error).</i>

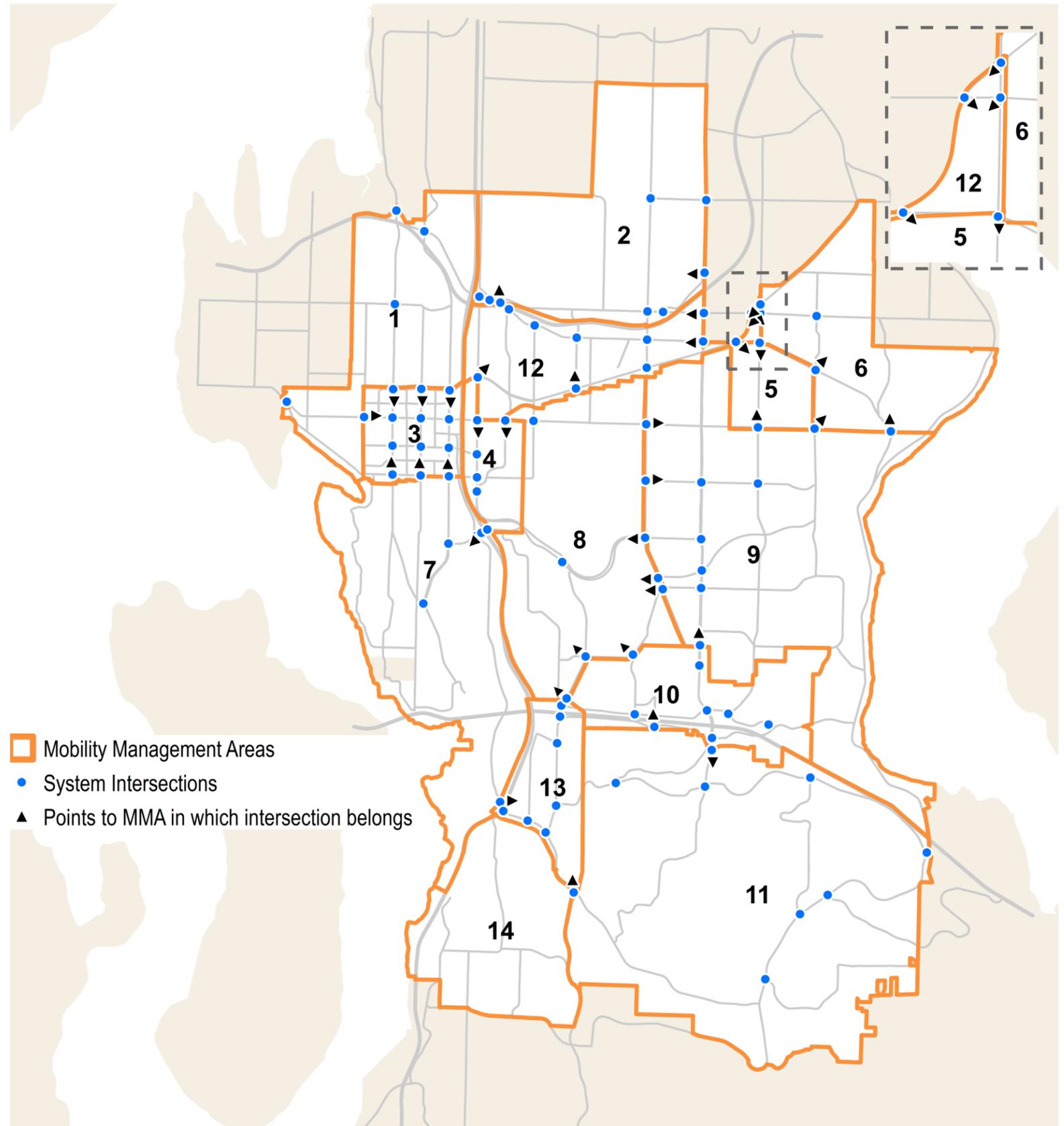
Fig. TR.1 Mobility Management Areas



**Amendments**

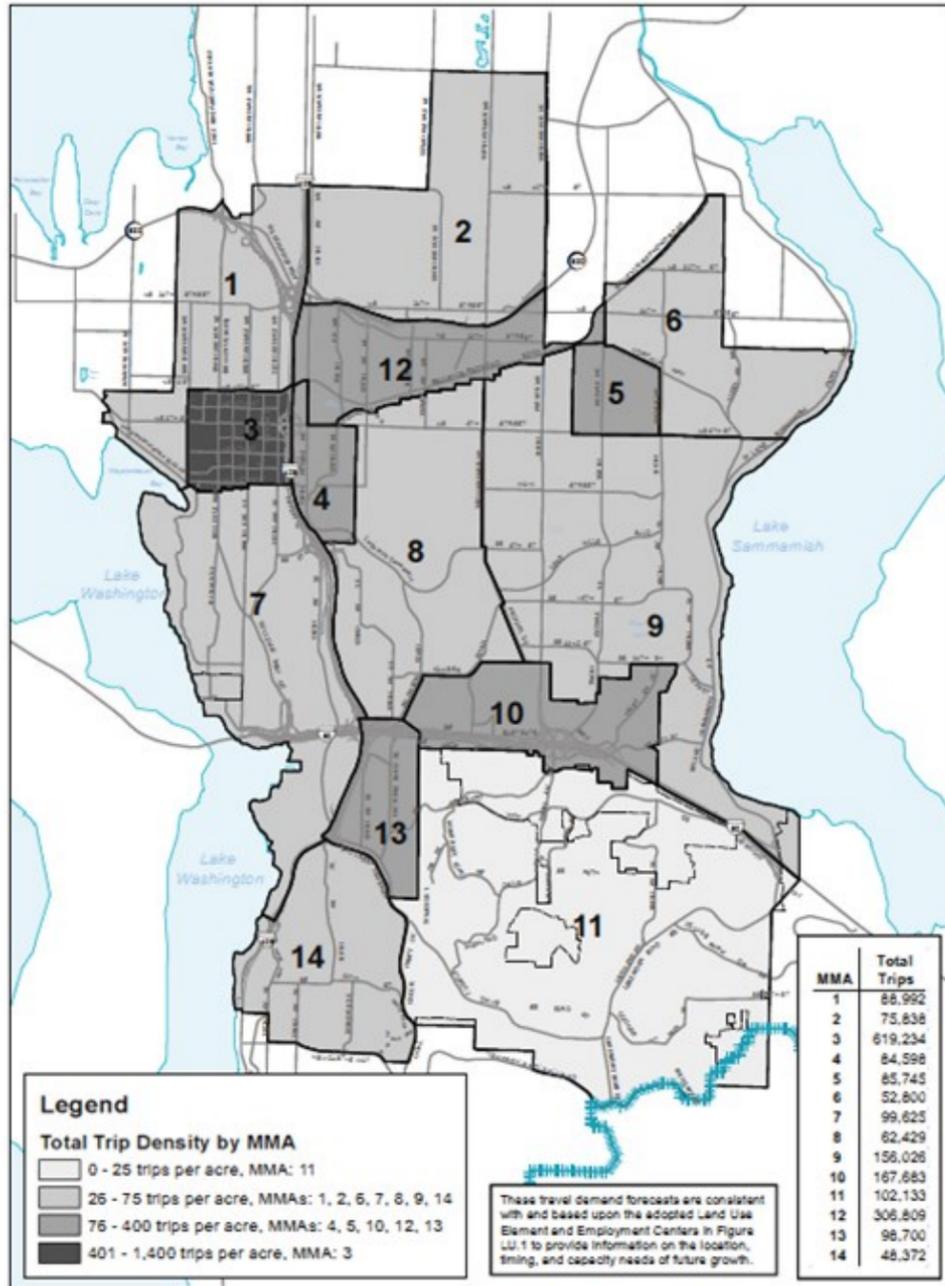
- Update Mobility Management Area (MMA) boundaries for MMAs 10, 11 and 13 and changes to system intersections as recommended by Transportation Commission in January, 2014
- Update MMA boundaries to match southern and eastern portions of City boundary
- Inset map shows easternmost portion of MMA #12

Mobility Management Areas

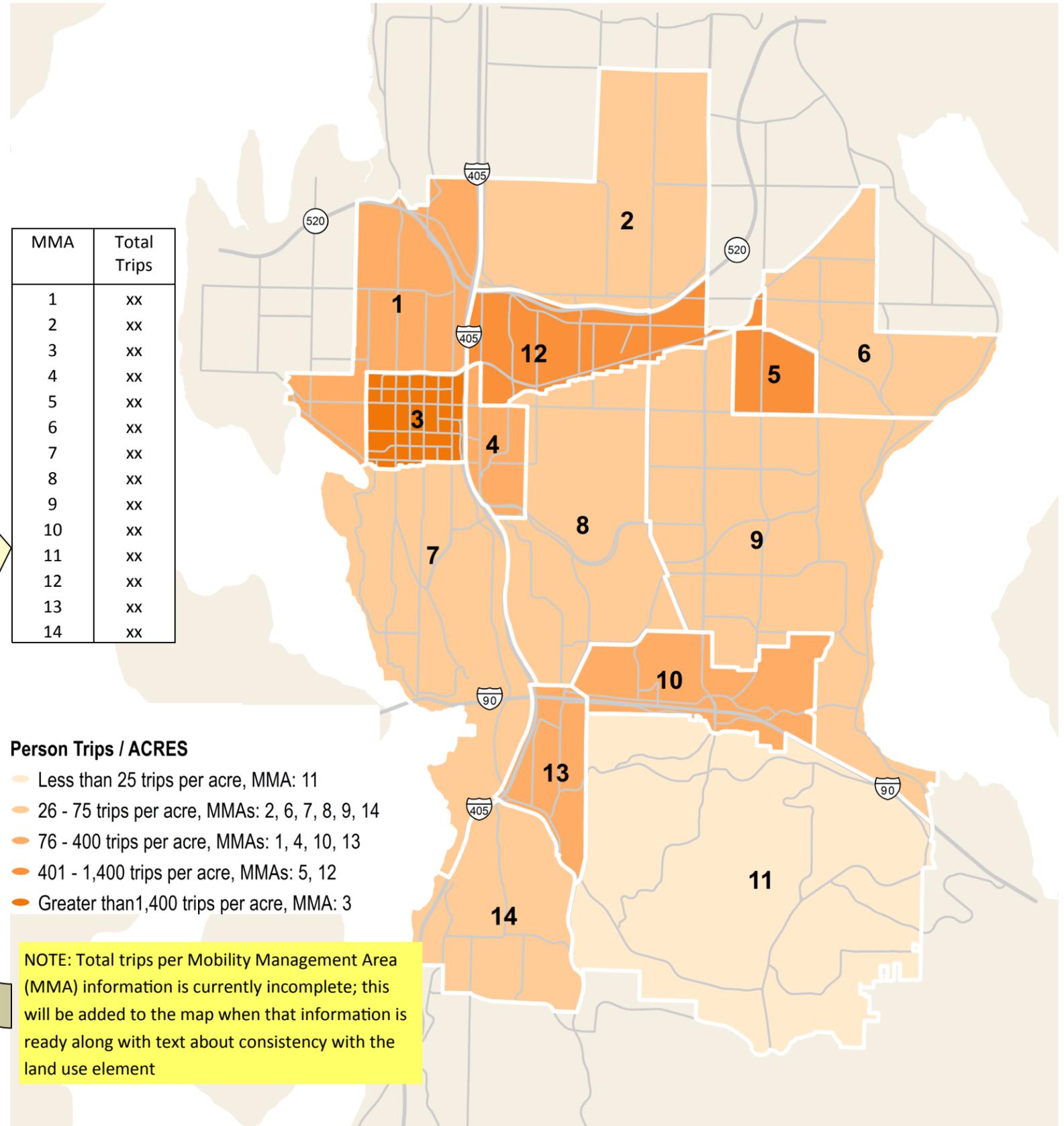


- Mobility Management Areas
- System Intersections
- ▲ Points to MMA in which intersection belongs

Fig. TR.2 2020 Travel Demand Forecasts



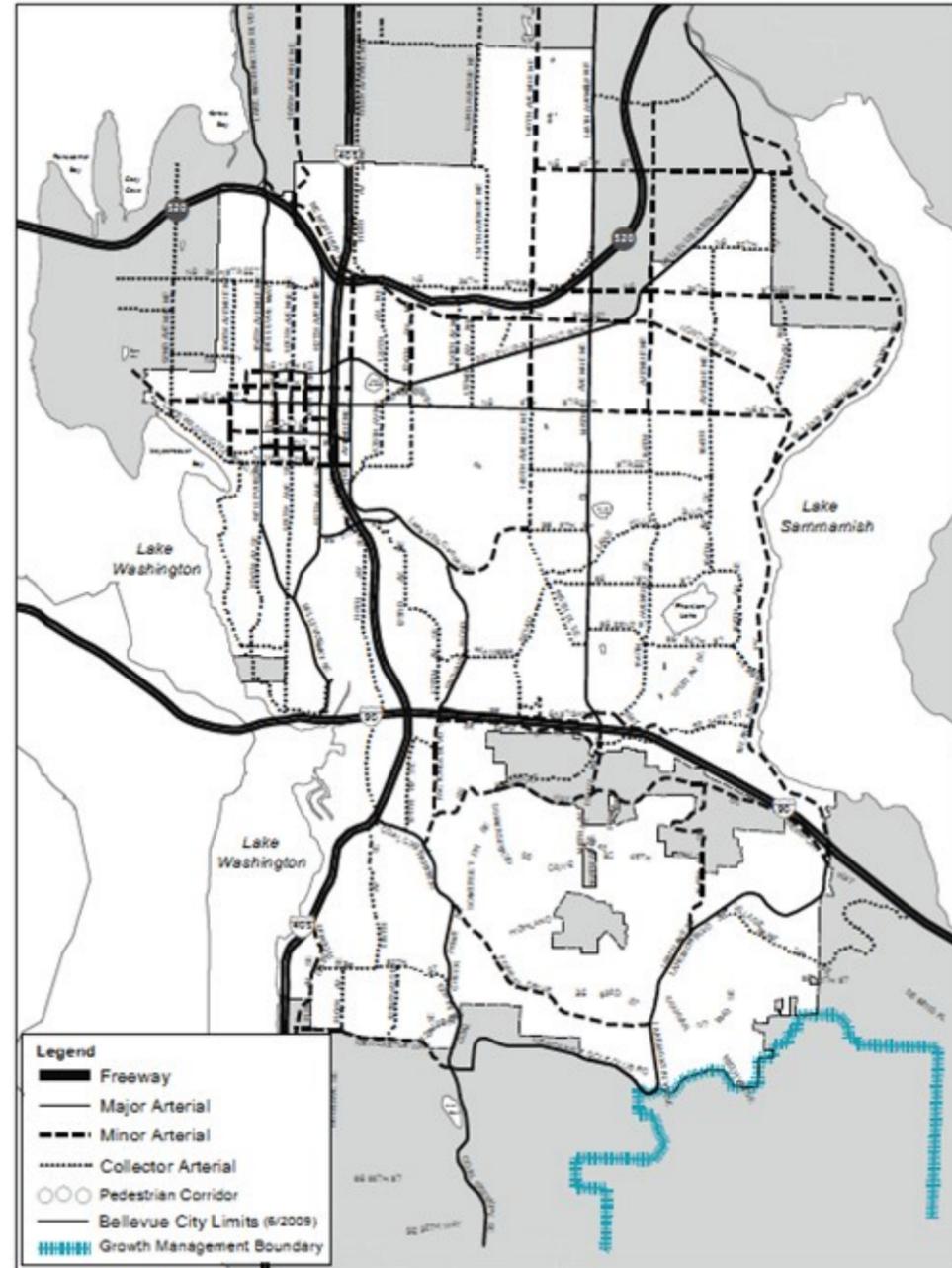
2035 Trip Density Forecasts



Amendments

- Change title to “2035 Travel Demand Forecasts” to reflect new forecast year
- Update boundaries for MMAs 10, 11 and 13 as recommended by Transportation Commission
- Update MMA boundaries to match southern and eastern portions of City boundary

Fig. TR.3 Existing Arterials and Freeways with Street Classifications



**Amendments**

- Include new/planned arterial roadways in Bel-Red and Wilburton subareas
- Include new roadway classifications
- Remove pedestrian corridor from map of arterials
- Inset map highlights for Bel-Red and Wilburton subareas

Existing Arterials and Freeways with Street Classifications

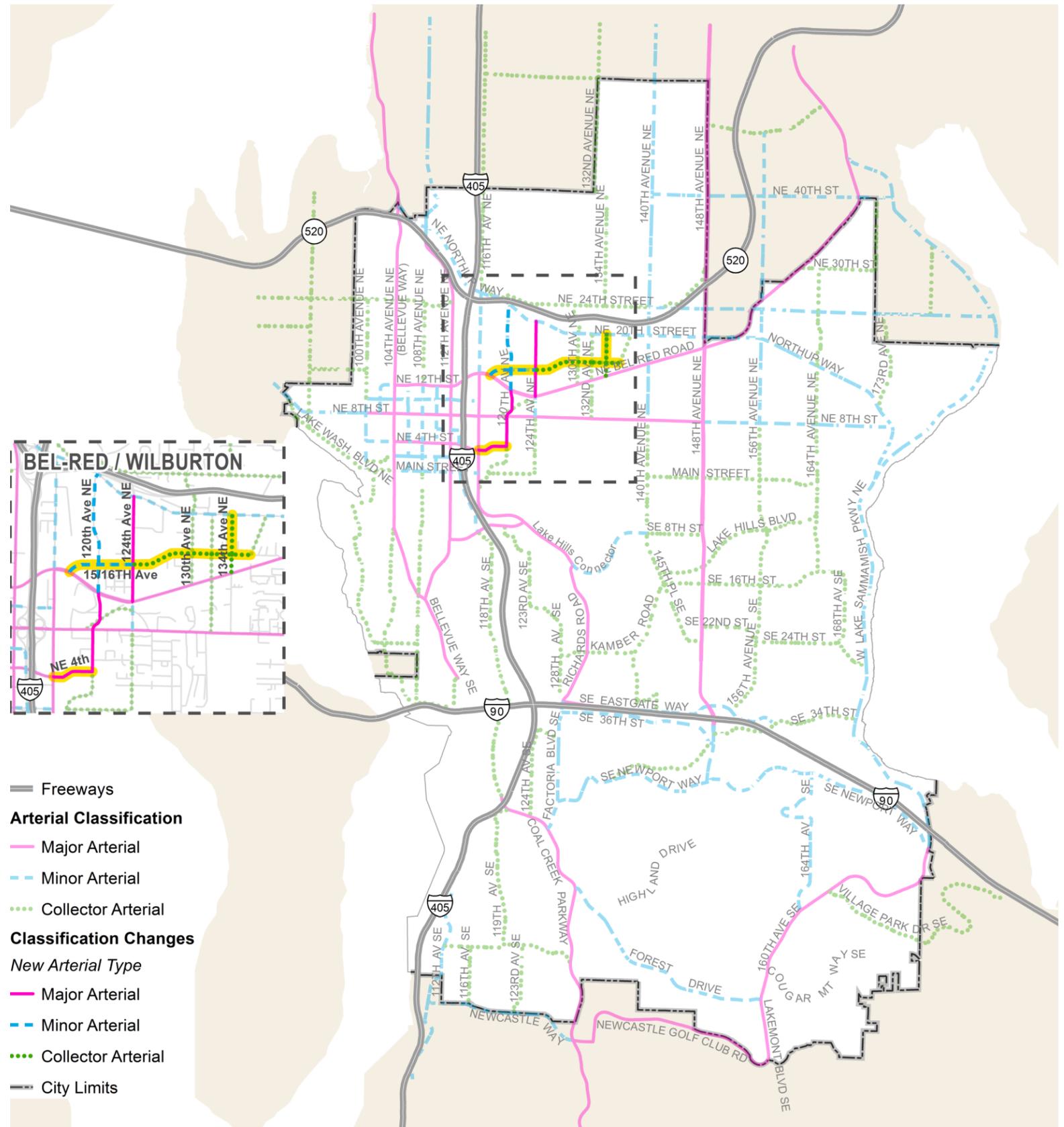
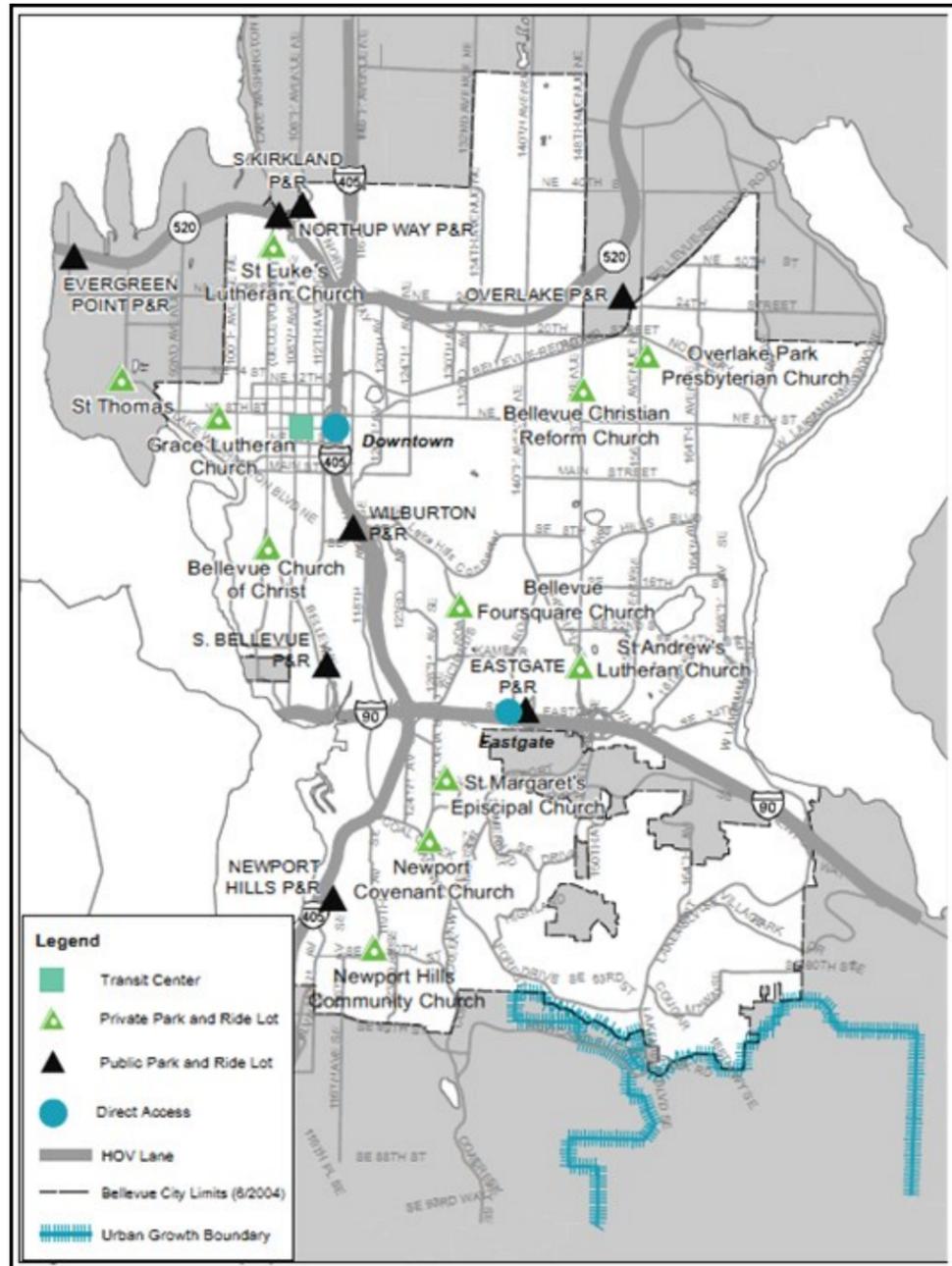


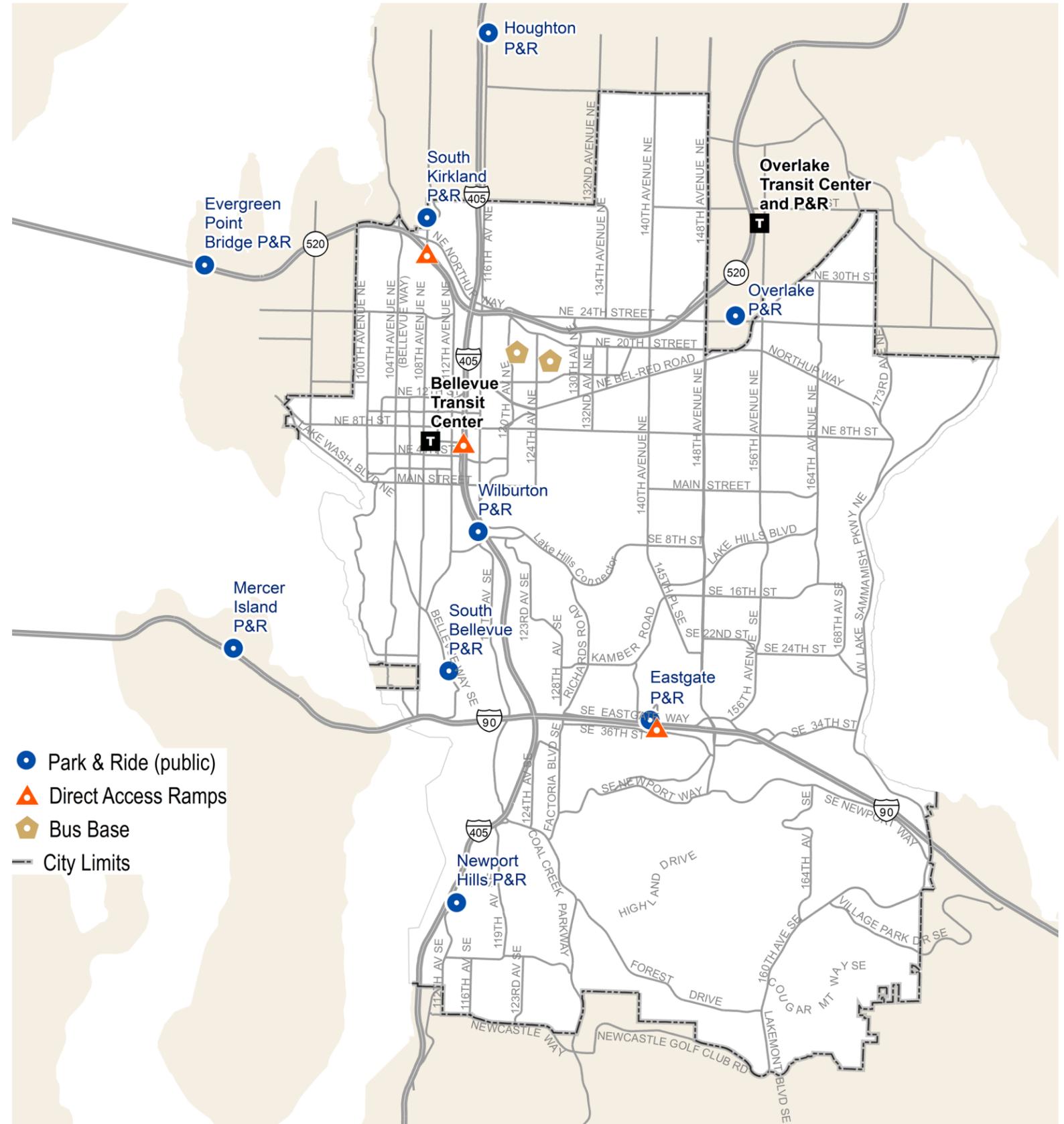
Fig. TR.5 Existing Transit Facilities



**Amendments**

- Update map, show public transit facilities only
- Add new direct access ramp SR 520 at 108th Ave NE/112th Ave NE to map
- Link to Metro webpage with information on Park & Rides: -  
<http://www.metro.kingcounty.gov/tops/parknride> or:  
<http://www.soundtransit.org/Rider-Guide/Parking/Parking-facilities>

Existing Transit Facilities



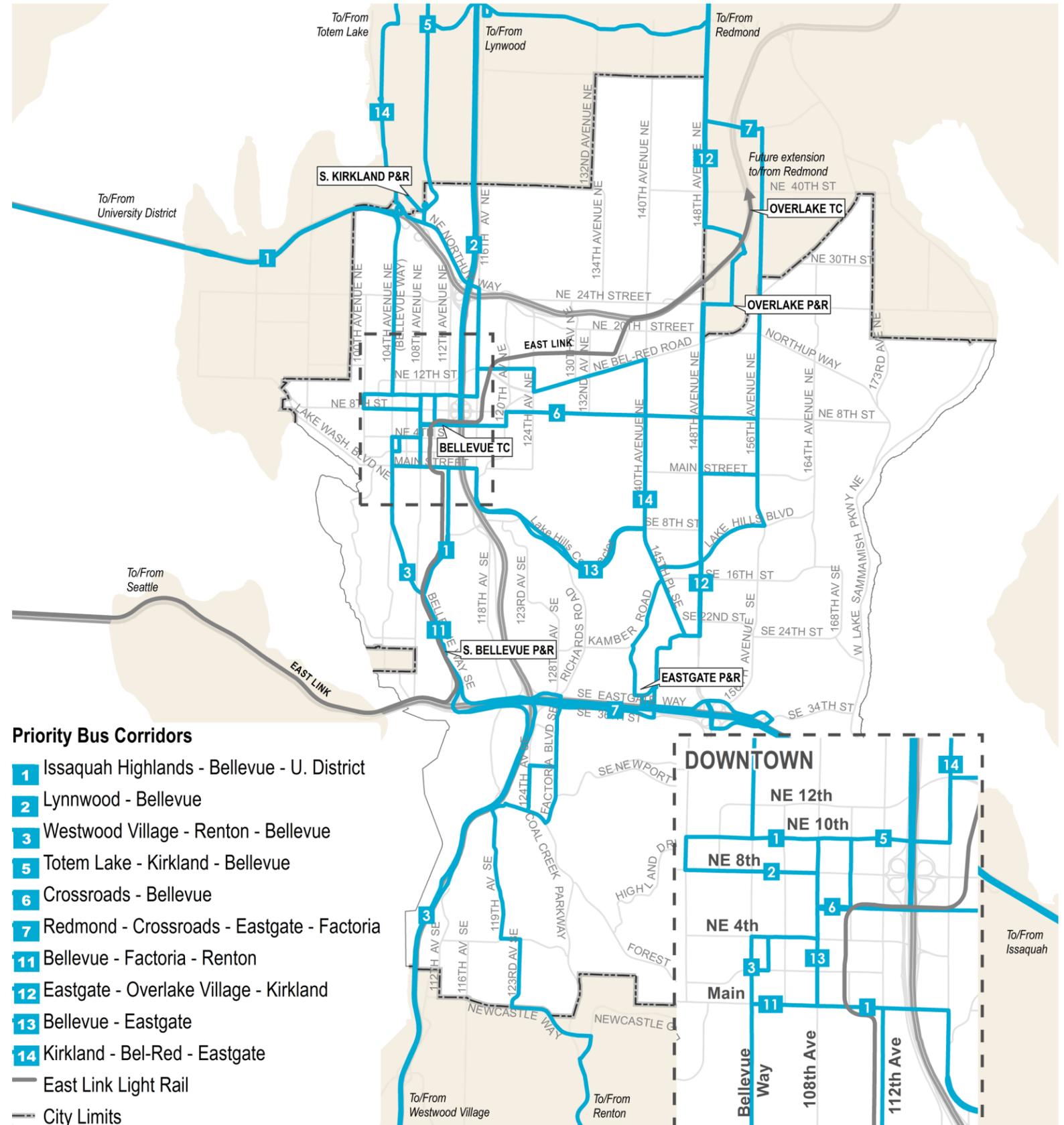
- Park & Ride (public)
- Direct Access Ramps
- Bus Base
- City Limits

### Planned Frequent Transit Network

- New map incorporates information from the Transit Master Plan Update based on 2030 Growing Resources Scenario

Source: Bellevue Transit Master Plan 2014

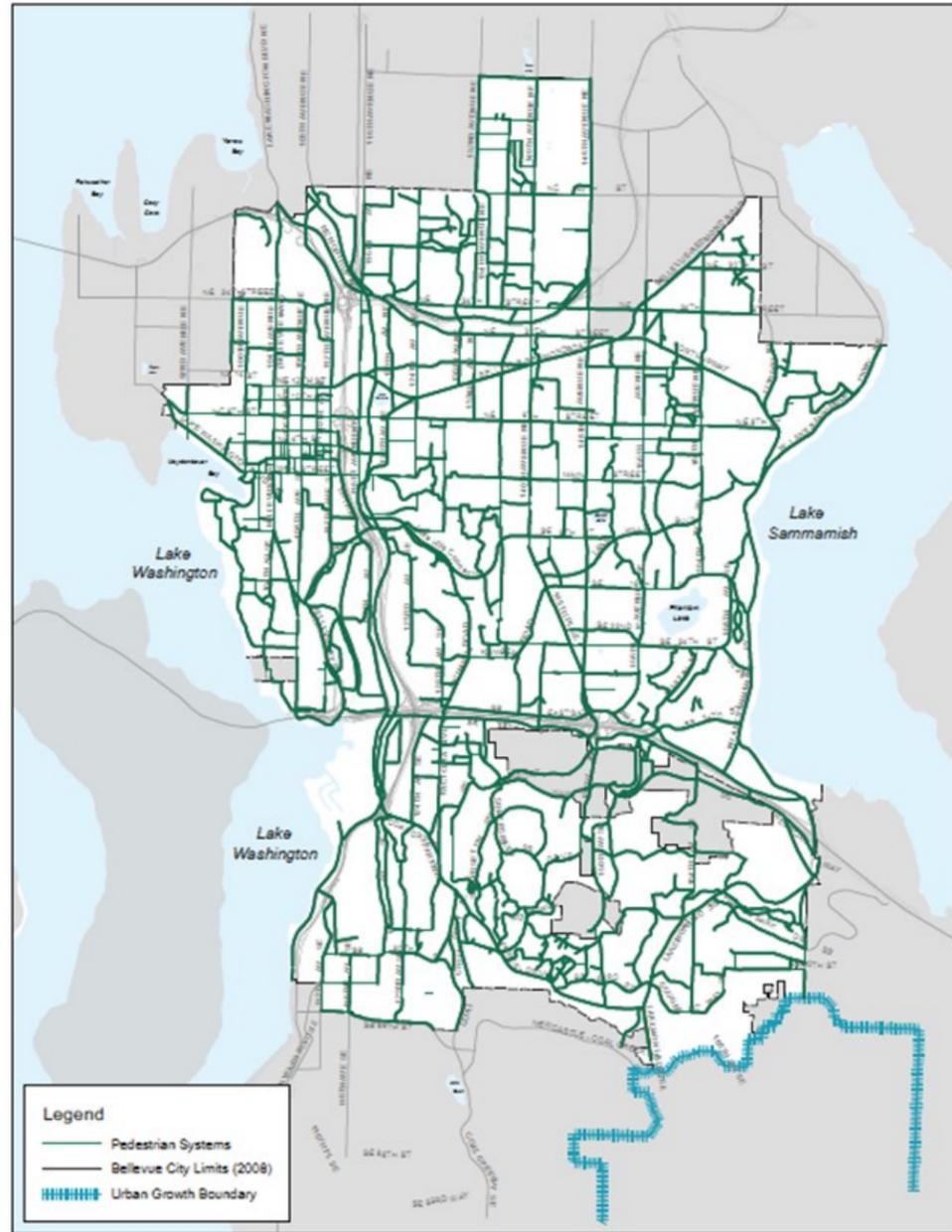
### Frequent Transit Network - 2030 Growing Resources Scenario



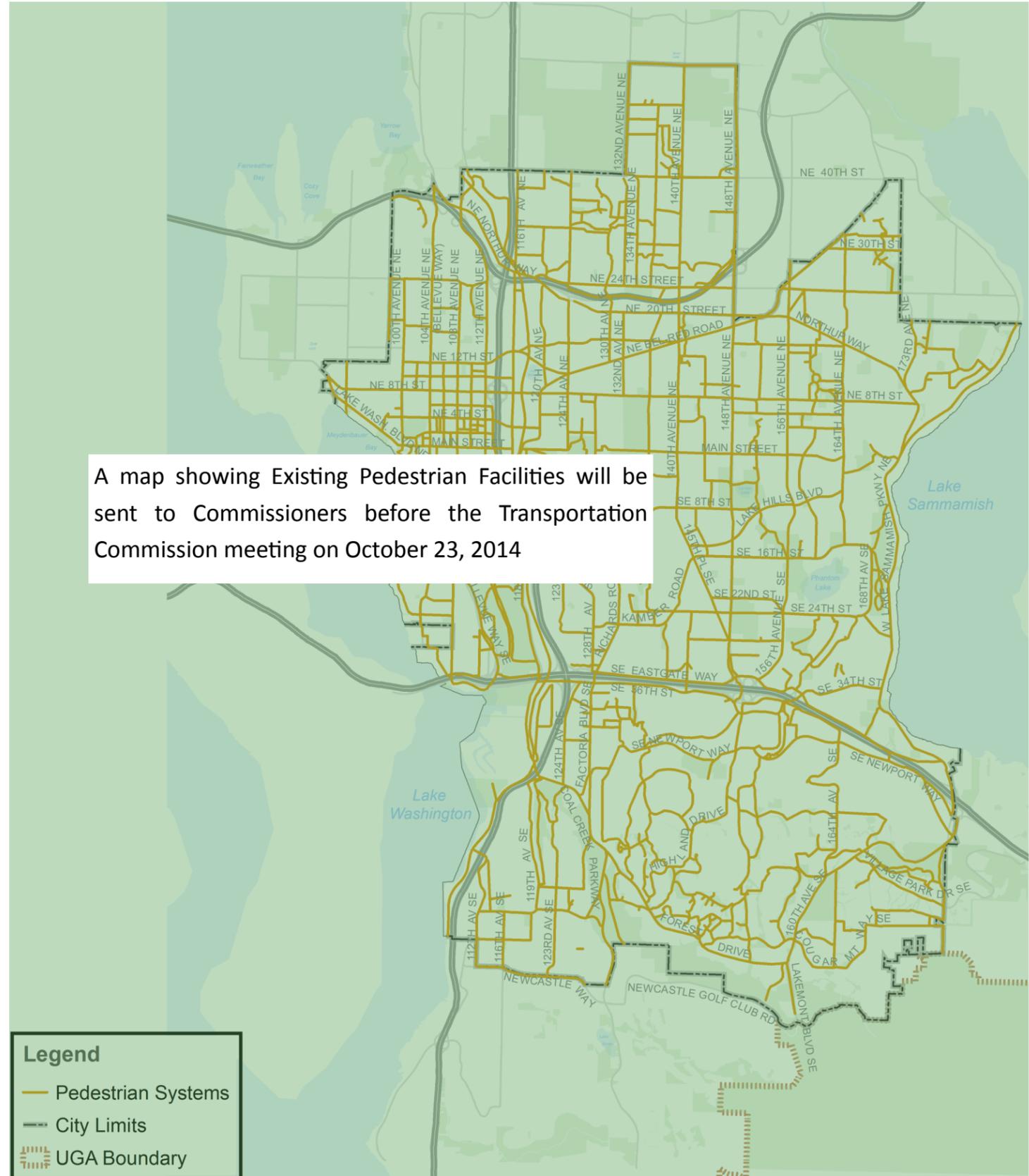
#### Priority Bus Corridors

- 1** Issaquah Highlands - Bellevue - U. District
- 2** Lynnwood - Bellevue
- 3** Westwood Village - Renton - Bellevue
- 5** Totem Lake - Kirkland - Bellevue
- 6** Crossroads - Bellevue
- 7** Redmond - Crossroads - Eastgate - Factoria
- 11** Bellevue - Factoria - Renton
- 12** Eastgate - Overlake Village - Kirkland
- 13** Bellevue - Eastgate
- 14** Kirkland - Bel-Red - Eastgate
- East Link Light Rail
- - - City Limits

Fig. TR.11 Pedestrian Network



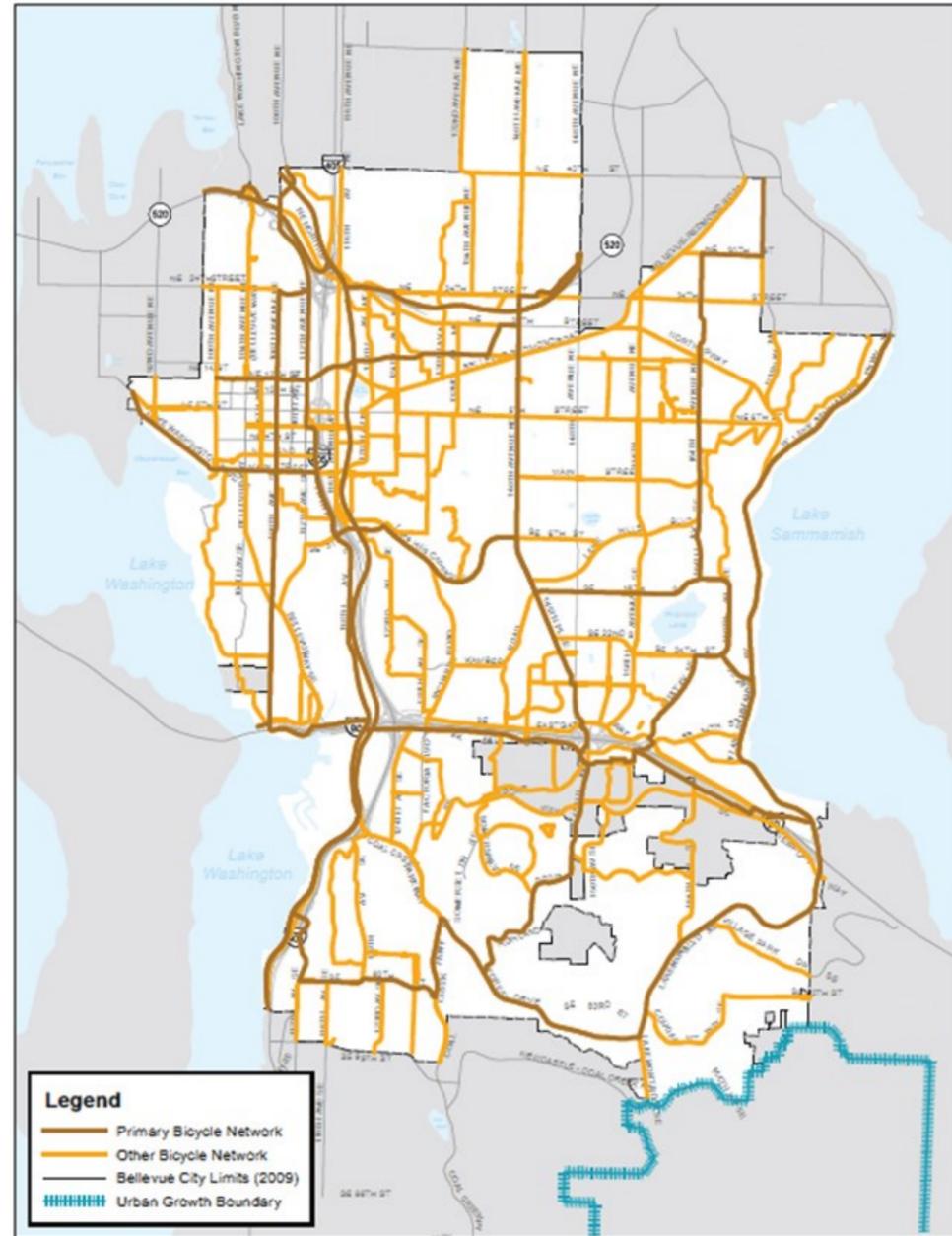
Existing Pedestrian Facilities



Amendments

- Replace with map from 2009 Pedestrian and Bicycle Transportation Plan
- Source: *Pedestrian & Bicycle Transportation Plan 2009*

Fig. TR.12 Bicycle Network



Amendments

- Replace with map from 2009 Pedestrian and Bicycle Transportation Plan

Source: *Pedestrian & Bicycle Transportation Plan 2009*

Existing Bicycle Facilities

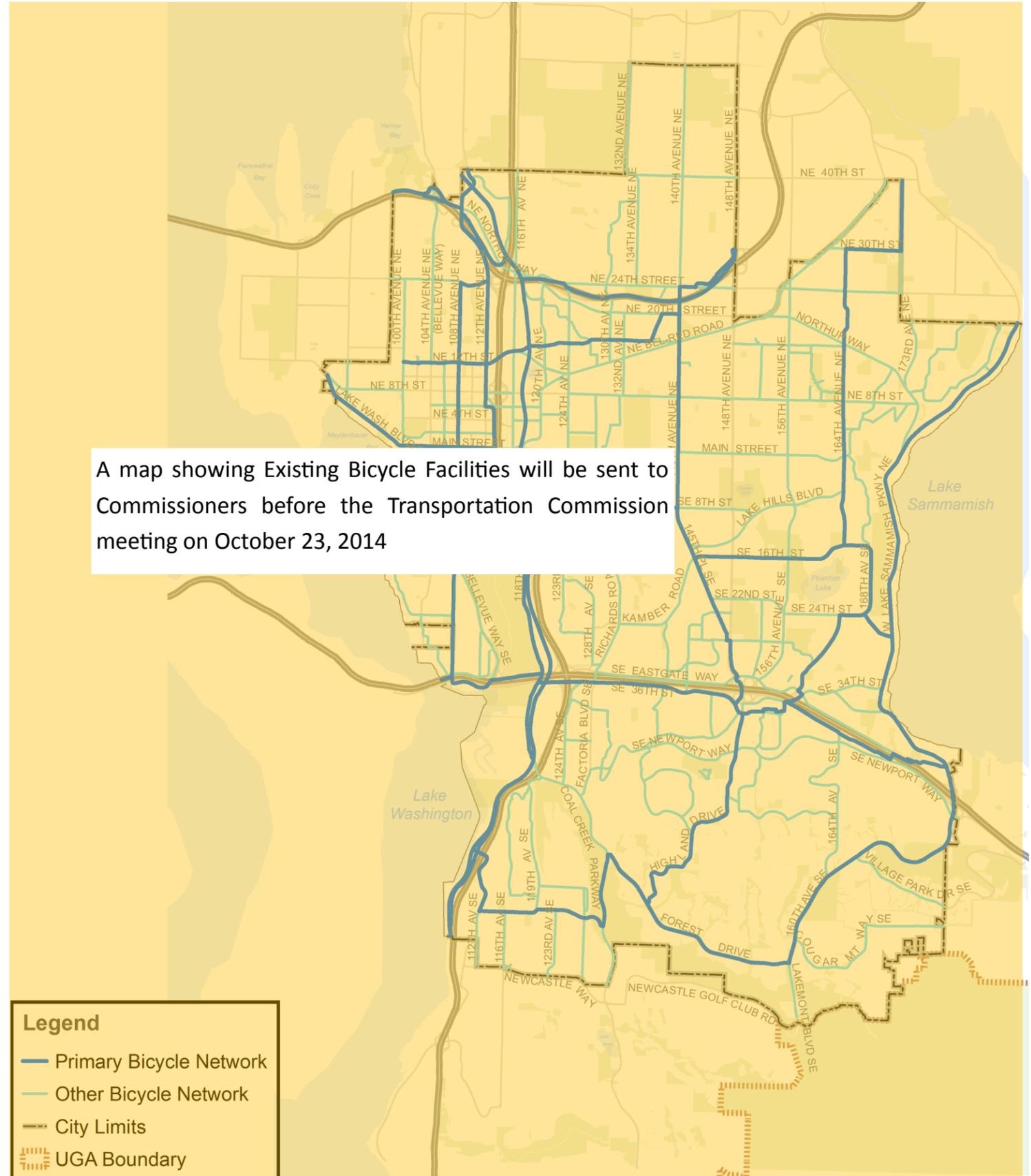
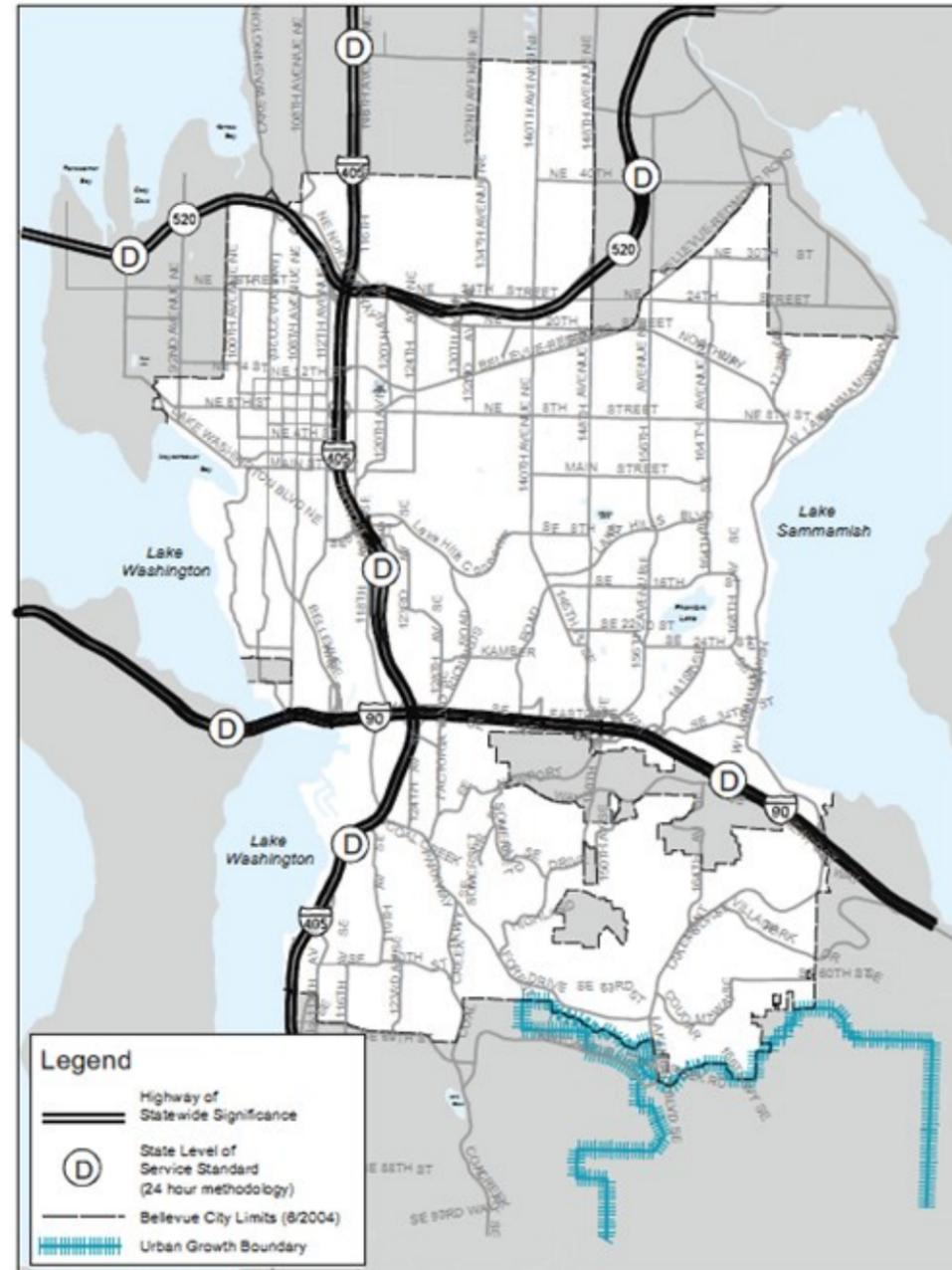
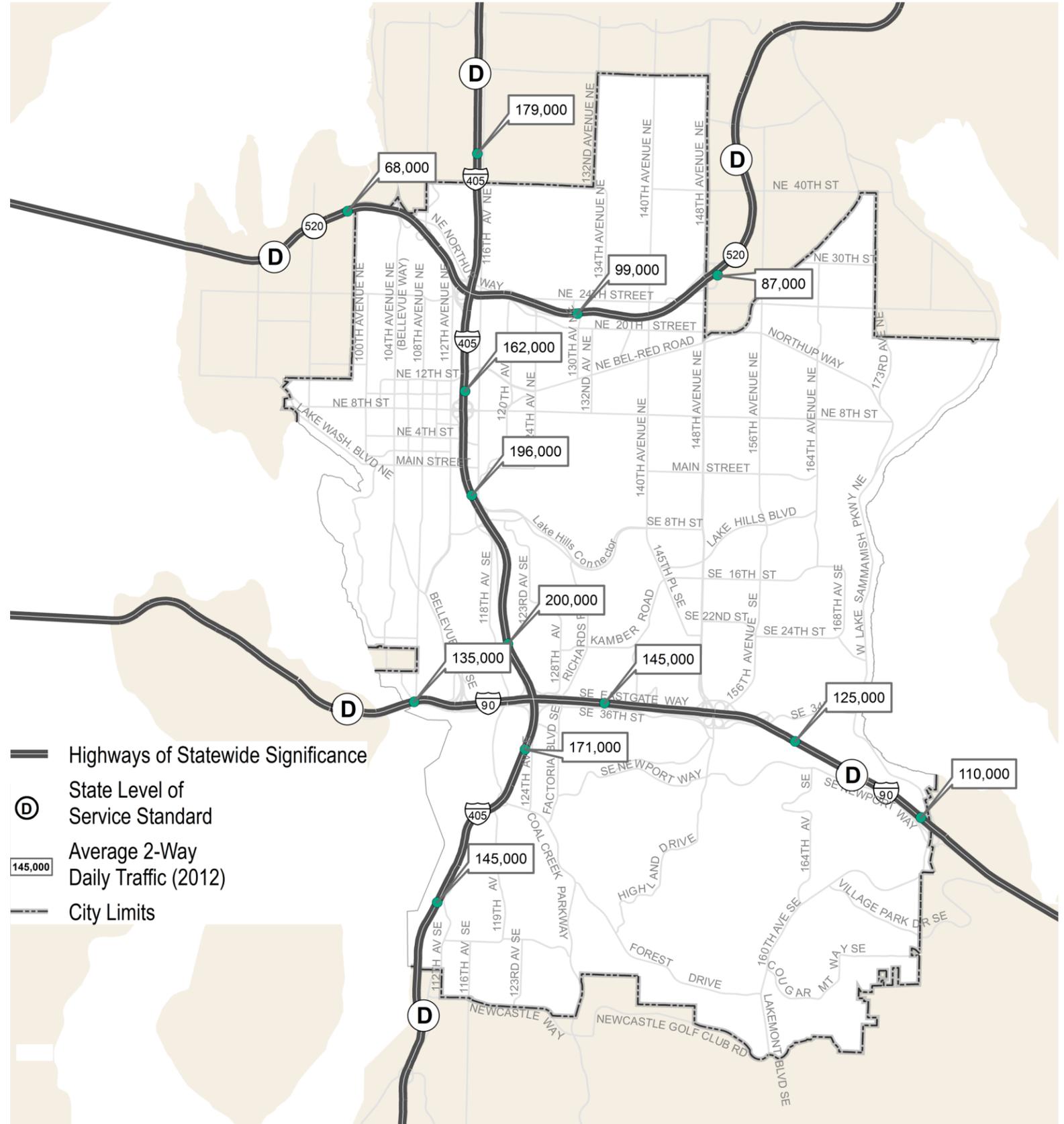


Fig. TR.13 Highways of Statewide Significance



Highways of Statewide Significance



**Amendments**

- Add traffic counts to map (Average two-way Daily Traffic) as call outs – this replaces information found in Table TR.3 in the existing Comprehensive Plan Transportation Element

Source: WSDOT for traffic count information



**Table TR.2 Average Intersection Levels Of Service (LOS) Definitions**  
*[Range of Volume-to-Capacity Ratios with User Impressions]*

<b>LOS Categories</b>	<b>Average Volume-to-Capacity Ratios</b>	<b>Description (Subjective Impression of User)</b>
LOS A	Less than or equal to 0.600	Highest drive comfort. Little delay. Free flow.
LOS B	0.601 - 0.70	High degree of drive comfort. Little delay.
LOS C	0.701 - 0.80	Some delays. Acceptable level of driver comfort. Efficient traffic operation.
LOS D	LOS D+ (High D) 0.801 - 0.85	Some driver frustration. Efficient traffic operation.
	LOS D- (Low D) 0.851 - 0.90	Increased driver frustration. Long cycle length.
LOS E	LOS E+ (High E) 0.901 - 0.95	Near capacity. Notable delays. Low driver comfort. Difficulty of signal progression.
	LOS E- (Low E) 0.951 - 1.00	At capacity. High level of congestion. High level of driver frustration.
LOS F	Greater than or equal to 1.001	Breakdown flow. Excessive delays.

Source:

*Volume to Capacity ratios derived from Highway Capacity Manual Circular #212, with adjustments to include high and low categories for Level of Service (LOS) D and E*

**Average Intersection Vehicular Levels of Service (LOS) Definitions**  
 [Range of Volume-to-Capacity Ratios with Driver Impressions]

<b>LOS Categories</b>	<b>Average Vehicular Volume-to-Capacity Ratios</b>	<b>Description (Subjective Impression of Driver)</b>
LOS A	Less than or equal to 0.600	Highest drive comfort. Little delay. Free flow.
LOS B	0.601 - 0.70	High degree of drive comfort. Little delay.
LOS C	0.701 - 0.80	Some delays. Acceptable level of driver comfort. Efficient traffic operation.
LOS D	LOS D+ (High D) 0.801 - 0.85	Some driver frustration. Efficient traffic operation.
	LOS D- (Low D) 0.851 - 0.90	Increased driver frustration. Long cycle length.
LOS E	LOS E+ (High E) 0.901 - 0.95	Near capacity. Notable delays. Low driver comfort. Difficulty of signal progression.
	LOS E- (Low E) 0.951 - 1.00	At capacity. High level of congestion. High level of driver frustration.
LOS F	Greater than or equal to 1.001	Breakdown flow. Excessive delays.

**Amendments**

- Update language in table
- The Levels-of –Service for Mobility Management Areas (MMA) are shown in the table on the following page—Intersection Vehicular Levels of Service

## Intersection Vehicular Level of Service (LOS) Standards

Motor Vehicle Based Standards									
Based on existing 2-hour PM peak average counts									
Area Hierarchical Type	Mobility Management Area (MMA)		Standards				2012 Existing		
	MMA#	MMA Name	LOS Standard (Volume/ Capacity Ratio)	LOS	System Inter- sections	Congestion Allowance	Average V/C Ratio	LOS	No of Intersections Over the Standard
Regional Center	3	Downtown	0.95	E+	13	9	0.70	B	1
Mixed Commercial-Residential Area	12	Bel-Red	0.95	E+	15	7	0.65	B	0
Mixed Commercial-Residential Area	13	Factoria	0.95	E+	8	5	0.79	C	1
Mixed Commercial-Residential Area	4	Wilburton	0.90	D-	5	3	0.78	C	0
Mixed Commercial-Residential Area	5	Crossroads	0.90	D-	3	2	0.63	B	0
Mixed Commercial-Residential Area	10	Eastgate	0.90	D-	8	4	0.68	B	0
Residential Group 1	1	North Bellevue	0.85	D+	4	3	0.46	A	0
Residential Group 1	7	South Bellevue	0.85	D+	5	4	0.55	A	0
Residential Group 1	8	Richards Valley	0.85	D+	9	5	0.61	A	0
Residential Group 1	9	East Bellevue	0.85	D+	9	5	0.72	B	0
Residential Group 2	2	Bridle Trails	0.80	C	8	4	0.60	B	1
Residential Group 2	6	North-East Bellevue	0.80	C	4	2	0.63	A	0
Residential Group 2	11	South-East Bellevue	0.80	C	6	3	0.54	B	1
Residential Group 2	14	Newport Hills	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	<b>Total</b>				<b>97</b>	<b>56</b>			<b>4</b>

Notes:

- Mobility Management Area (MMA) #14 Newport Hills has no signalized intersections.
- Assumes modified MMA boundaries and intersections per Transportation Commission, January 2014
- The “Congestion Allowance” means the number of signalized system intersections allowed to exceed the Level-of-Service standard adopted for a Mobility Management Area - *Source: Bellevue Traffic Standards Code Chapter 14.10, 14.10.010 Definitions*
- The number of signalized system intersections per MMA is also specified in the *Traffic Standards Code - 14.10.030 Level-of-Service Standard*
- MMA 11 was previously named "Newcastle"
- Replaces portion of Table TR.1 showing Roadway Level of Service (LOS)
- See preceding table (p. 10) for Level of Service definitions

## Commute Mode Split Targets

<b>All Non-Drive-Along Modes</b>				
Including transit, carpool, walk, bicycle, worked at home*				
Area	MMA #	MMA Name	2012 Existing	2035 Target
Regional Center (Workers)	3	Downtown	29%	65%
Citywide (Workers)	N/A	N/A	26%	40%
Citywide (Residents)	N/A	N/A	34%	45%

*Sources*

2012 Existing:

*U.S. Census Bureau, Journey to Work, all modes except "Car, truck, or van - drove alone."*

*Downtown (Workers): Census Transportation Planning Package based on data from the 2006-2010 American Community Survey 5-year estimates for census tracts 238.03 and 238.04.*

*Citywide (Workers) and Citywide (Residents): American Community Survey 2010-2012 3-year estimates.*

2035 Target:

*Rounded values, derived from City of Bellevue travel demand model forecast for average daily commute trips by motorized modes, with adjustment to include non-motorized and work from home modes (proportion for these modes assumed to be same as in existing surveys).*

\*Transit includes public transit and private commuter buses.

Replaces rightmost column of Comp plan: Table TR.1 Area Mobility Targets, Bellevue Comprehensive Plan Transportation Element, p.176