Bellevue Transit Master Plan

Transportation Commission

January 9, 2014

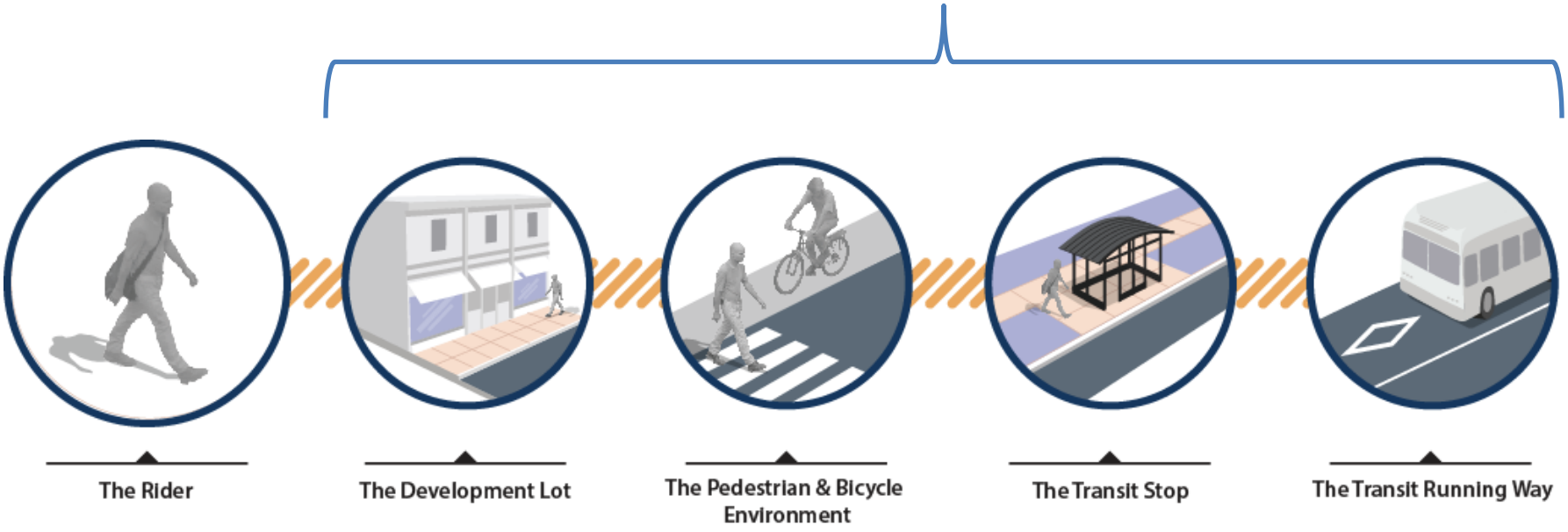
1. Commuter Park Needs Analysis Report
2. Measures of Effectiveness Report
3. Next Steps

Tonight's Agenda

Bellevue Transit Master Plan

Commuter Parking Needs Report

City of Bellevue's Influence



Park-and-Ride

Flyer Stop

Transit Center

Bus Stop

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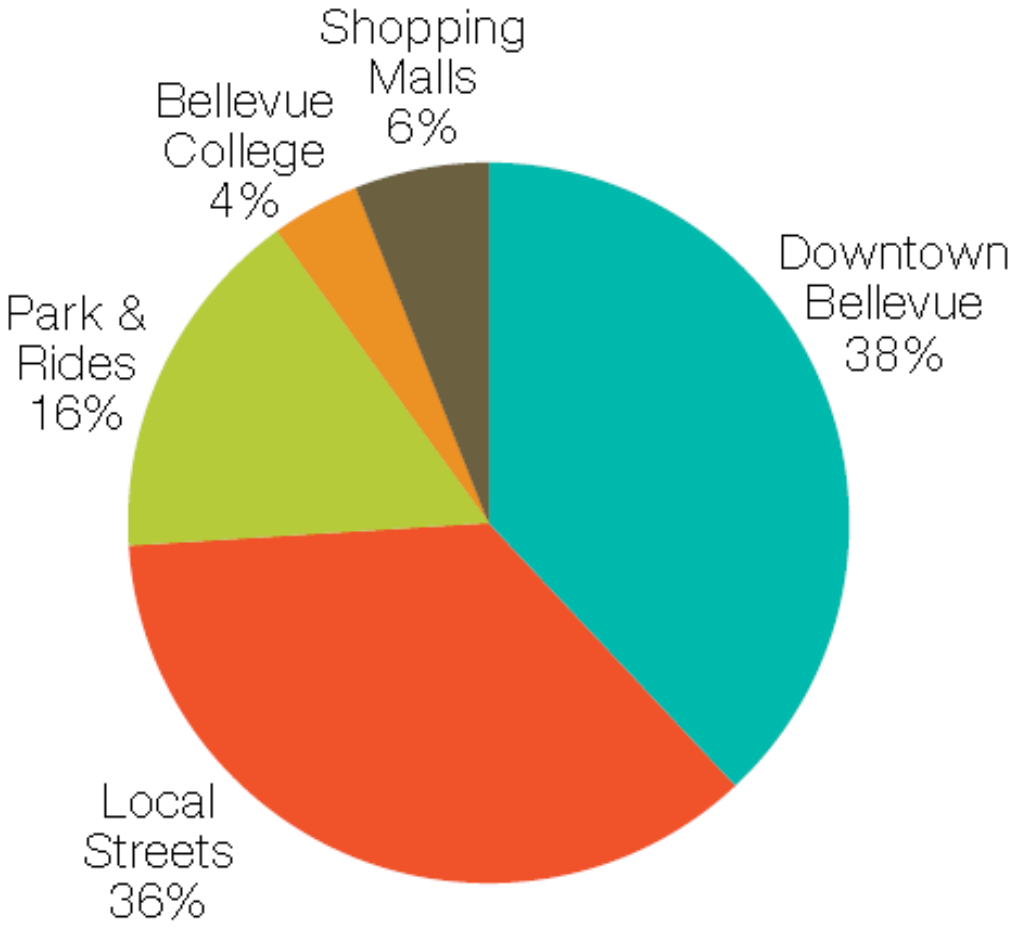
Transit Route Facilities



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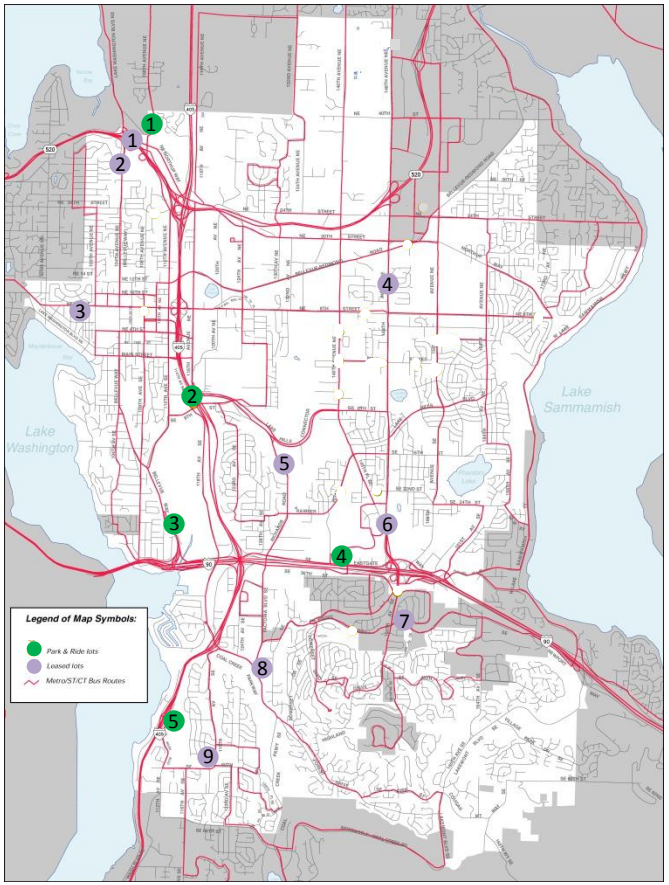
Transit Usage in Bellevue



Park-and-Ride Lots:

Map ID #	Park & Ride Lots	Lot Capacity	% Occupancy
1	S Kirkland (Bellevue and Kirkland)	783	100%*
2	Wilburton	186	82%
3	South Bellevue	519	100%
4	Eastgate	1,614	93%
5	Newport Hills	275	73%
	TOTAL	**3,377**	

Leased Lots:

Map ID #	Leased Lots	Lot Capacity	% Occupancy
1	St. Luke's Lutheran Church	30	21%
2	St. Thomas Episcopal Church	64	38%
3	Grace Lutheran Church	50	100%
4	Bellevue Christian Reformed Church	20	5%
5	Bellevue Foursquare Church	35	8%
6	St. Andrew's Lutheran Church	20	37%
7	Eastgate Congregational Church	20	32%
8	Newport Covenant Church	75	50%
9	Newport Hills Community Church	37	72%
	TOTAL	**351**	

- 100% occupancy for S Kirkland P & R is based on 2012 WSDOT observations. Current occupancy is undetermined due to recent opening of new garage.

Existing Capacity and Usage

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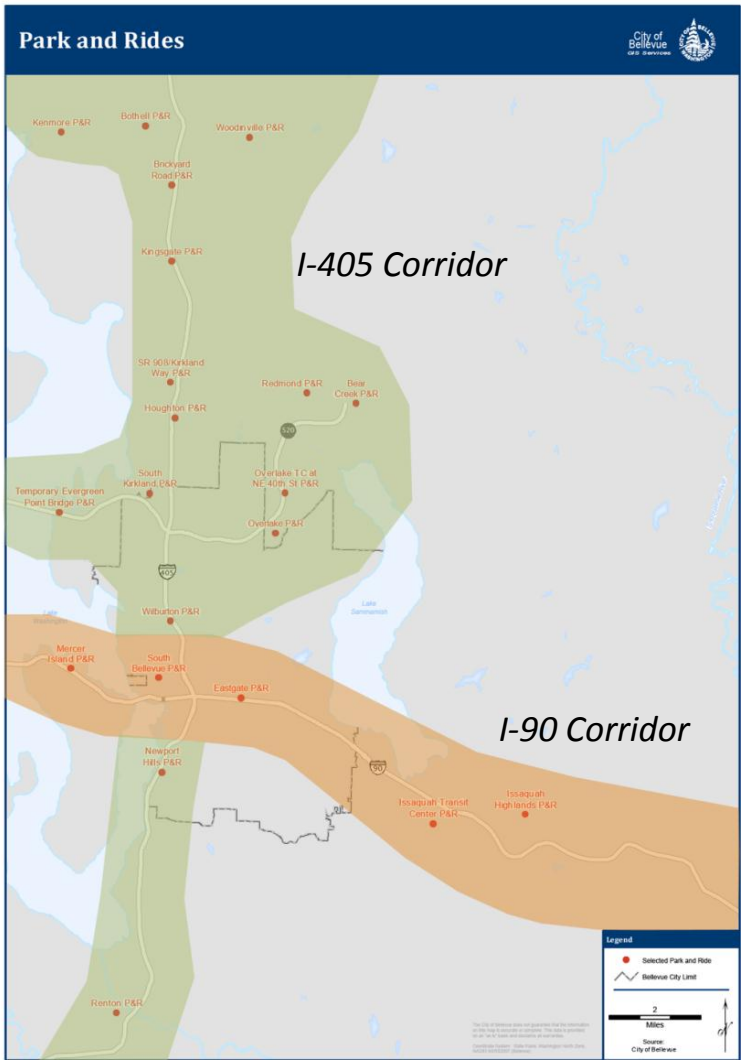
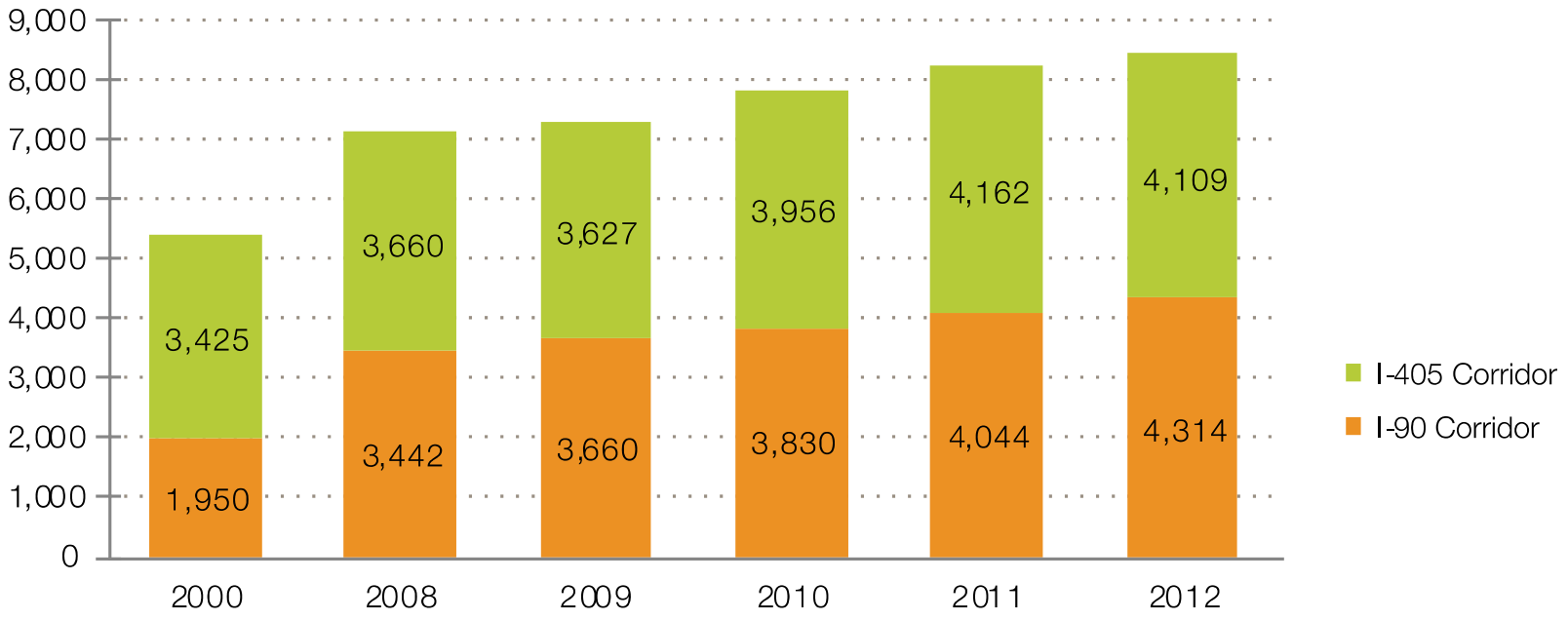
System Imbalance



I-90 Corridor:
Mercer Island
South Bellevue
Eastgate
Issaquah
Issaquah Highlands
Preston

I-405 Corridor:
Kenmore
Bothell
Woodinville
Brickyard
Kingsgate
SR 908 / Kirkland Way
Houghton
Redmond
Bear Creek
Evergreen Point
S Kirkland
NE 40th / Overlake TC
Overlake
Wilburton
Newport Hills
Renton

Regional Analysis



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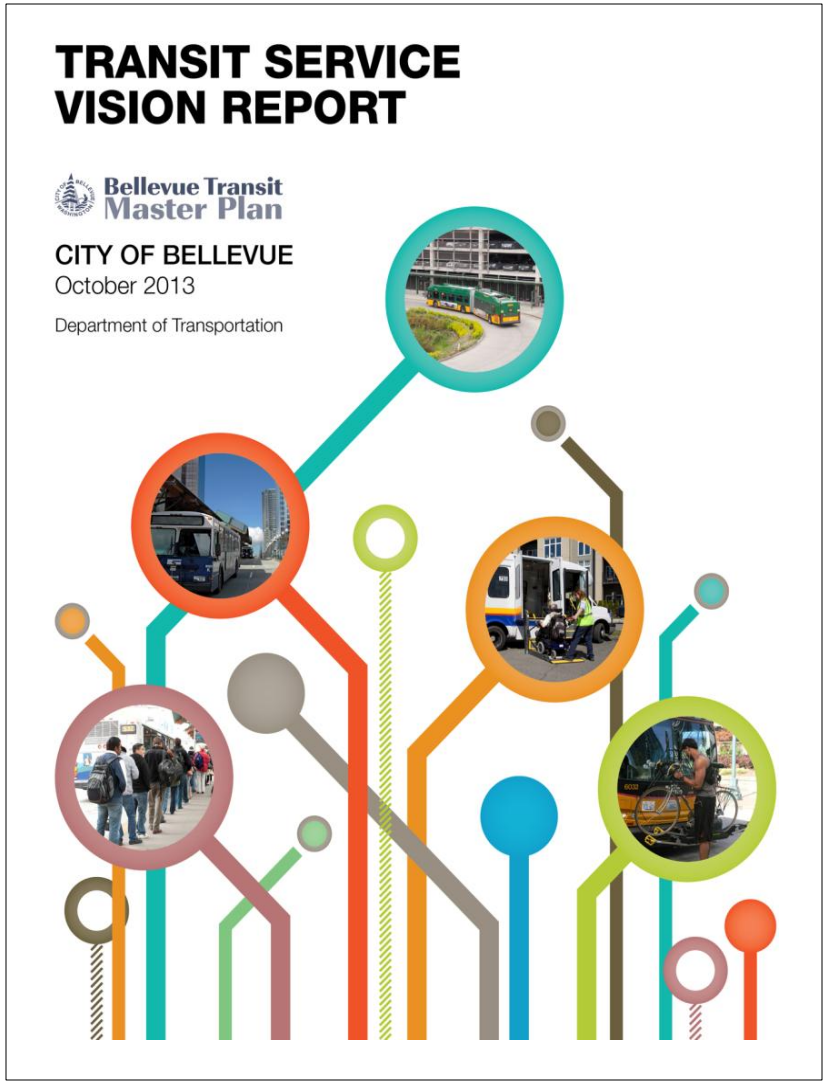
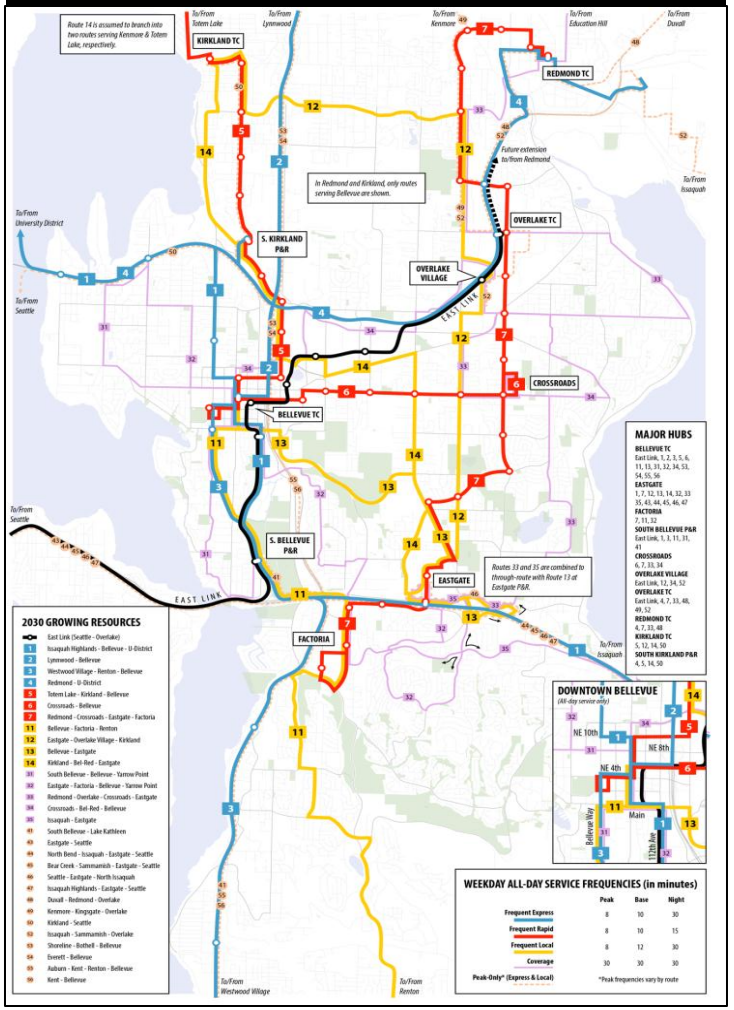
Park-and-Ride Historic Utilization



2030 Growing Resources



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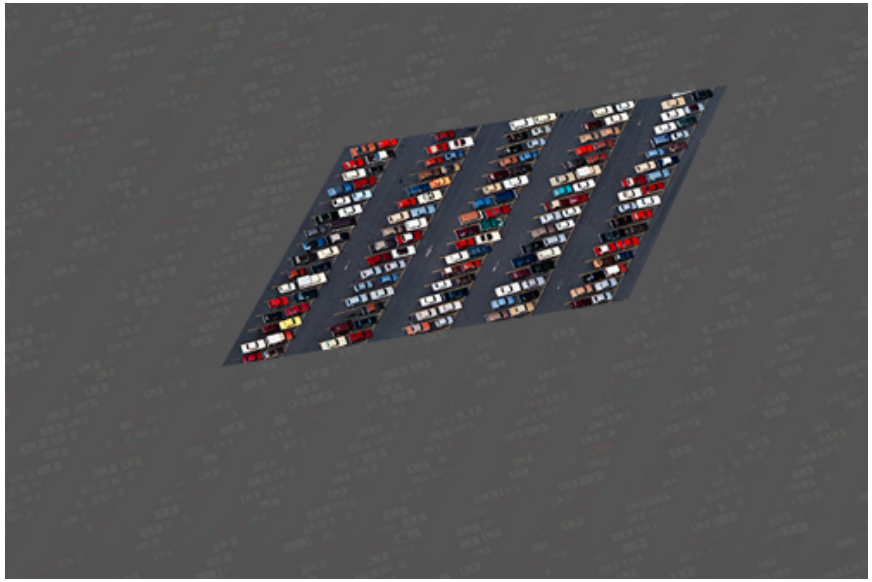
Determining Demand

Constrained

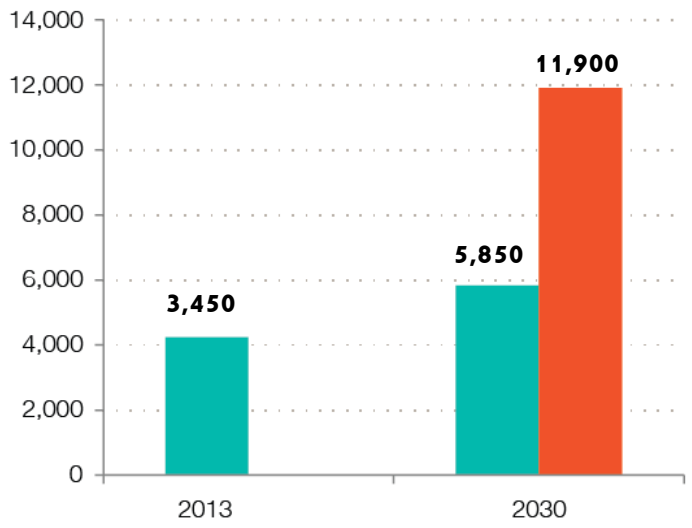


Unconstrained

Bellevue Transit Master Plan

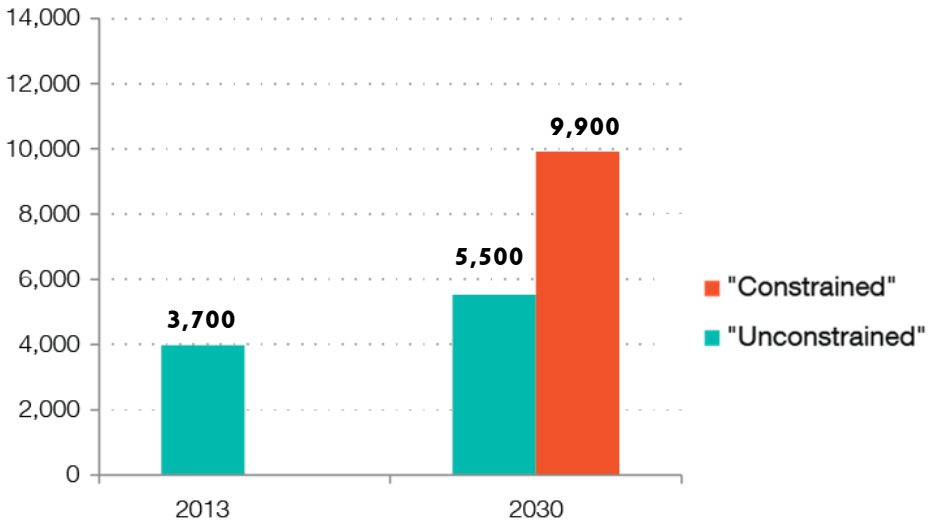
Determining Demand

Interstate 90



2030 Constrained: 247 stall shortage
2030 Unconstrained: 6,310 stall shortage

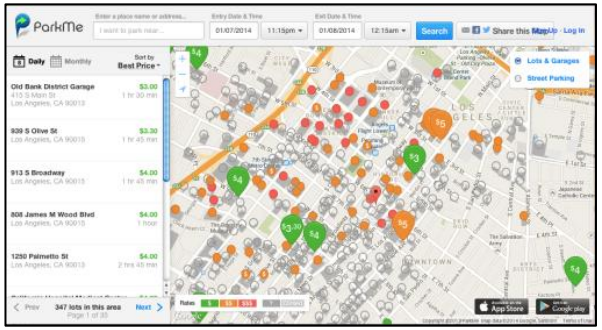
Interstate 405



2030 Constrained: 198 stall shortage
2030 Unconstrained: 4,596 stall shortage

Projected Park-and-Ride Demand

Fees
(Sound Transit Pilot Study)



Technology (Los Angeles)

Leased Lots

New Construction

"Develop measures of effectiveness to evaluate transit investments and to track plan progress."

- Bellevue City Council, Project Principles (Approved July 9, 2012)

1 **Service Availability**
Measure service availability on Bellevue's Frequent Transit Network corridors

2 **Transit Usage**
Measure transit usage in Bellevue's Mobility Management Areas.

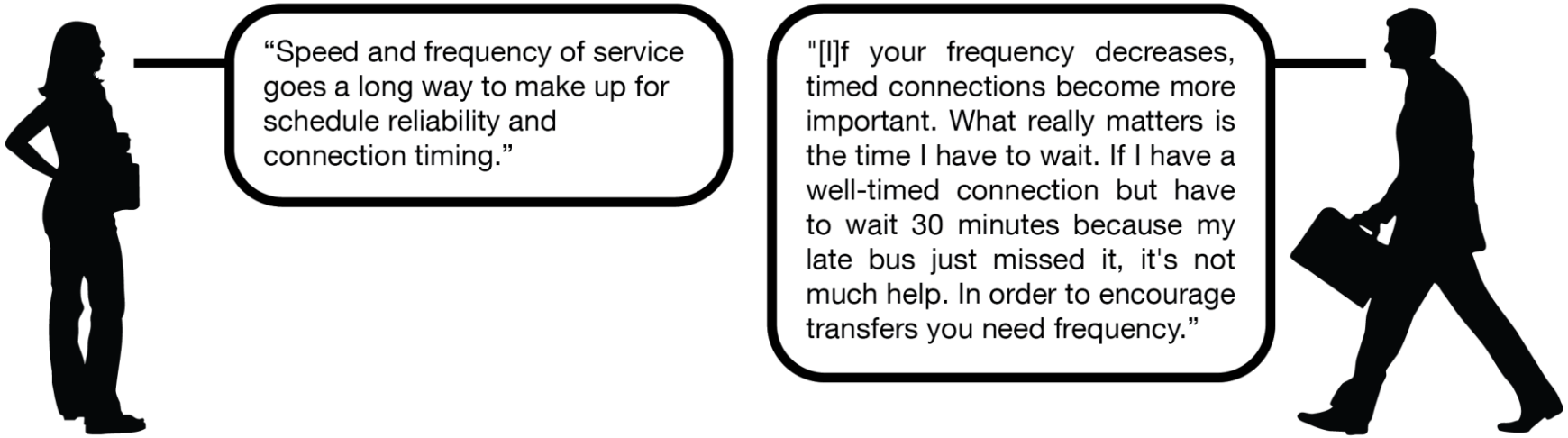
3 **Person Throughput**
Measure person throughput by mode on Bellevue's Frequent Transit Network corridors.

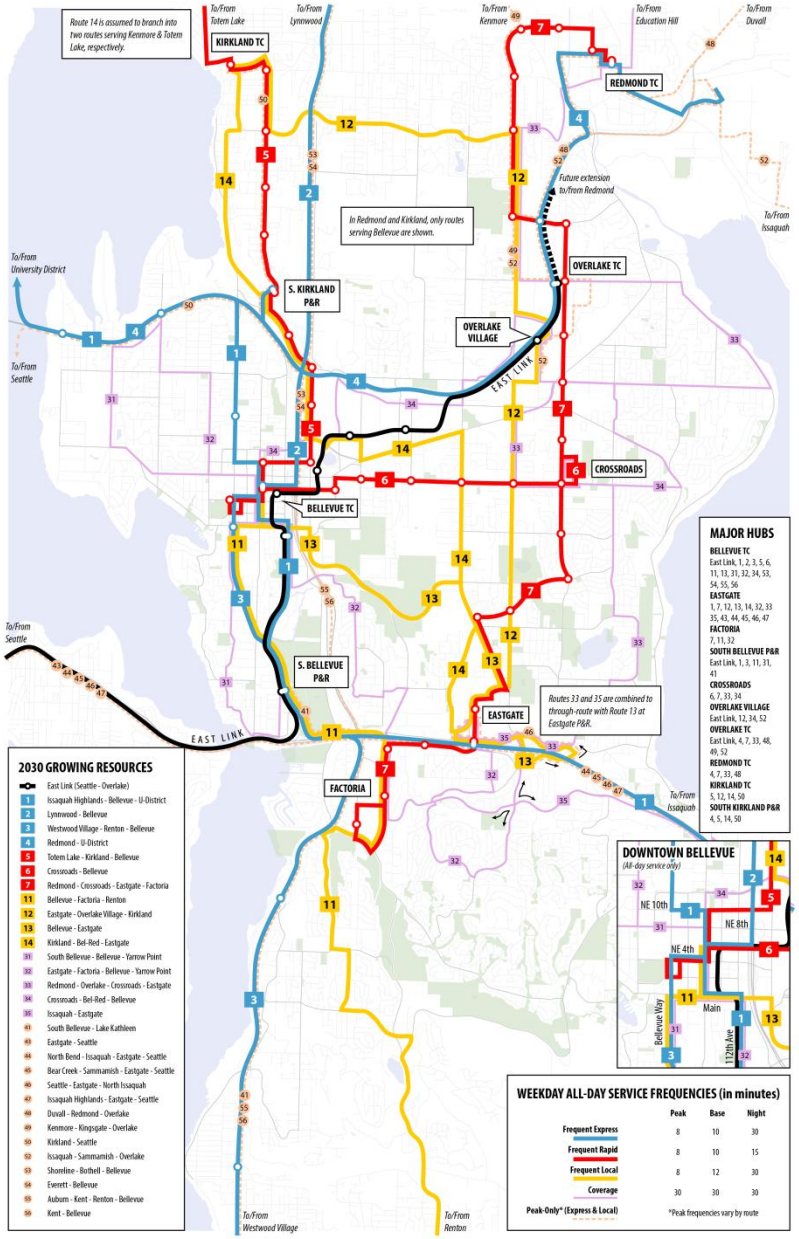
4 **Travel Time**
Measure travel time savings resulting from speed and reliability improvements on Bellevue's Frequent Transit Network corridors.

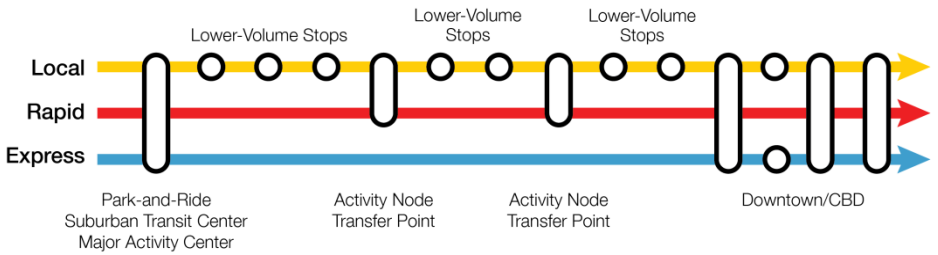
TMP Measures of Effectiveness

Route Frequency

The number of transit vehicles scheduled to serve a given stop during one hour. The more frequent the service, the shorter the wait time and the greater the flexibility afforded to riders.





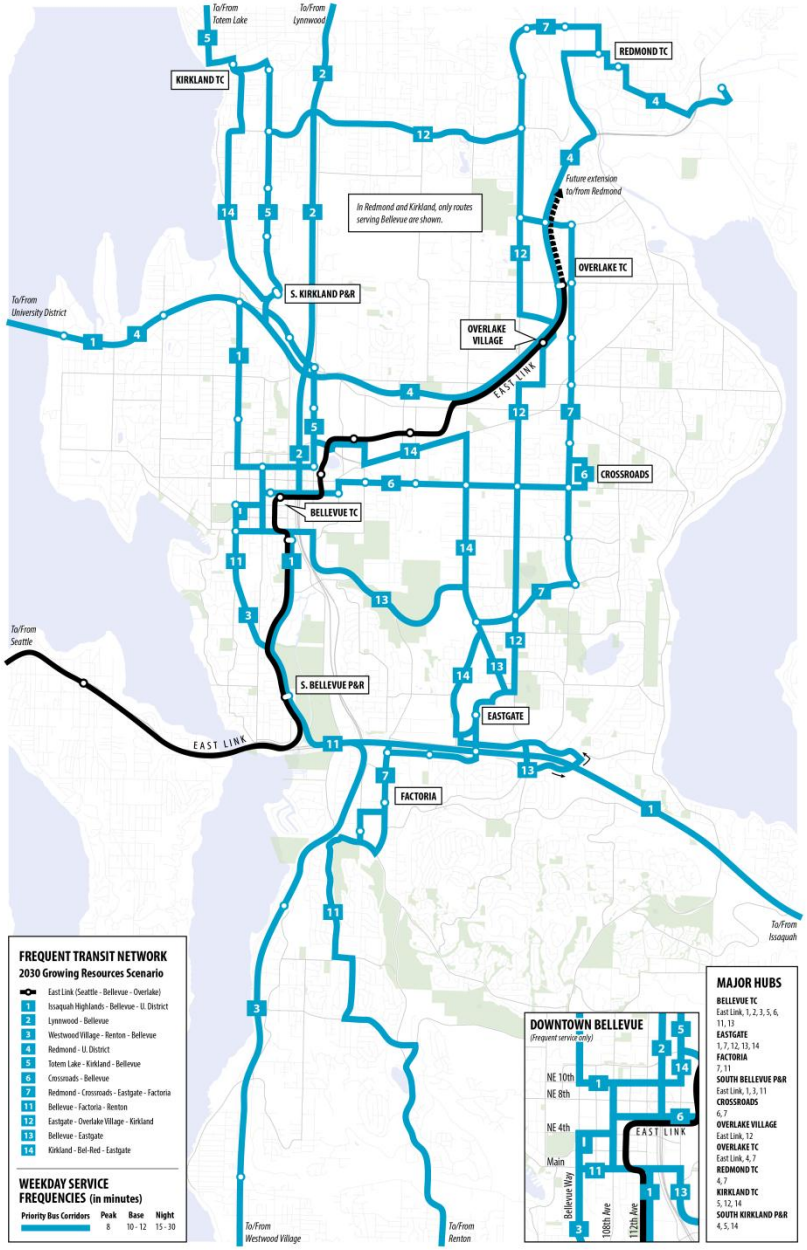


WEEKDAY ALL-DAY SERVICE FREQUENCIES (in minutes)

	Peak	Base	Night
Frequent Express	8	10	30
Frequent Rapid	8	10	15
Frequent Local	8	12	30
Coverage	30	30	30
Peak-Only* (Express & Local)	*Peak frequencies vary by route		

Bellevue Transit Master Plan

2030 Growing Resources Scenario



FREQUENT TRANSIT NETWORK
2030 Growing Resources Scenario

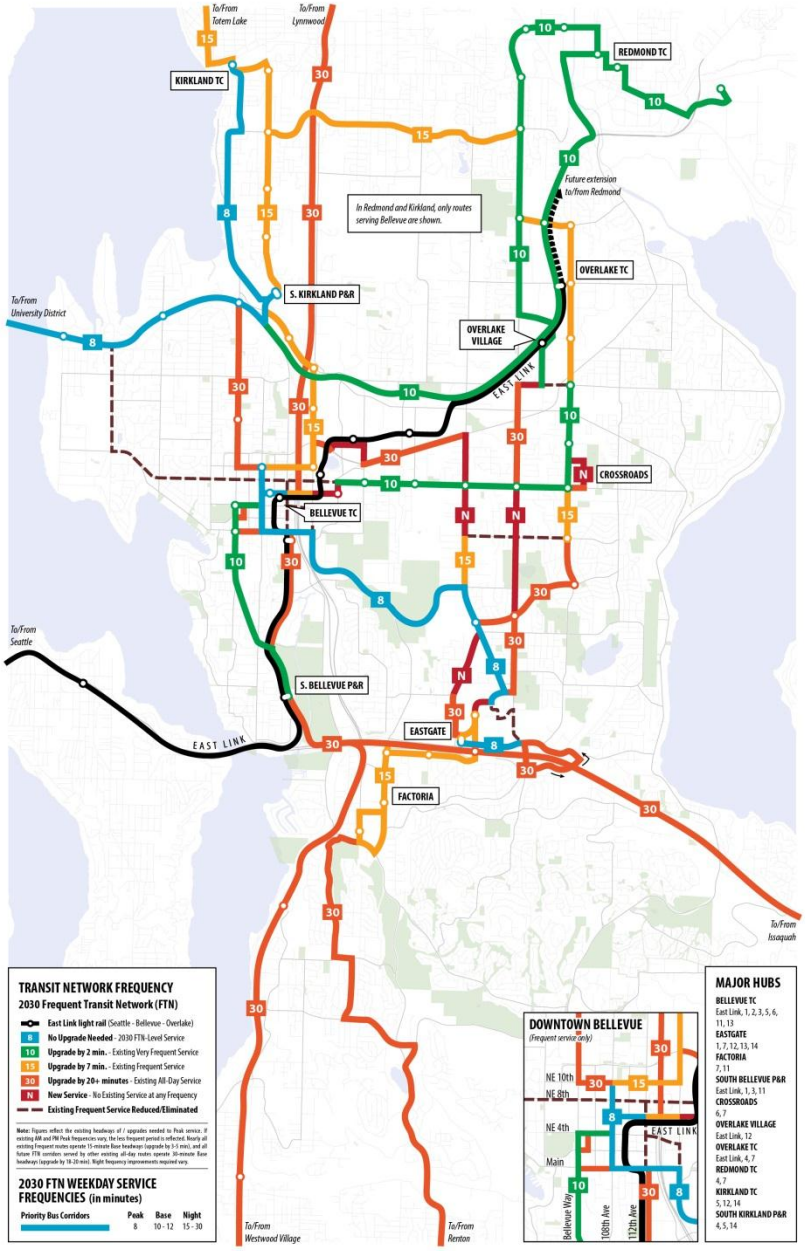
- East Link (Seattle - Bellevue - Overlake)
- 1 Issaquah Highlands - Bellevue - U. District
- 2 Lynnwood - Bellevue
- 3 Westwood Village - Renton - Bellevue
- 4 Redmond - U. District
- 5 Totem Lake - Kirkland - Bellevue
- 6 Crossroads - Bellevue
- 7 Redmond - Crossroads - Eastgate - Factoria
- 11 Bellevue - Factoria - Renton
- 12 Eastgate - Overlake Village - Kirkland
- 13 Bellevue - Eastgate
- 14 Kirkland - Bel-Red - Eastgate

WEEKDAY SERVICE FREQUENCIES (in minutes)

Priority Bus Corridors	Peak	Base	Night
	8	10 - 12	15 - 30

Bellevue Transit Master Plan

2030 Frequent Transit Network



TRANSIT NETWORK FREQUENCY

2030 Frequent Transit Network (FTN)

- **East Link light rail** (Seattle - Bellevue - Overlake)
- 8 — **No Upgrade Needed** - 2030 FTN-Level Service
- 10 — **Upgrade by 2 min.** - Existing Very Frequent Service
- 15 — **Upgrade by 7 min.** - Existing Frequent Service
- 30 — **Upgrade by 20+ minutes** - Existing All-Day Service
- N — **New Service** - No Existing Service at any Frequency
- **Existing Frequent Service Reduced/Eliminated**

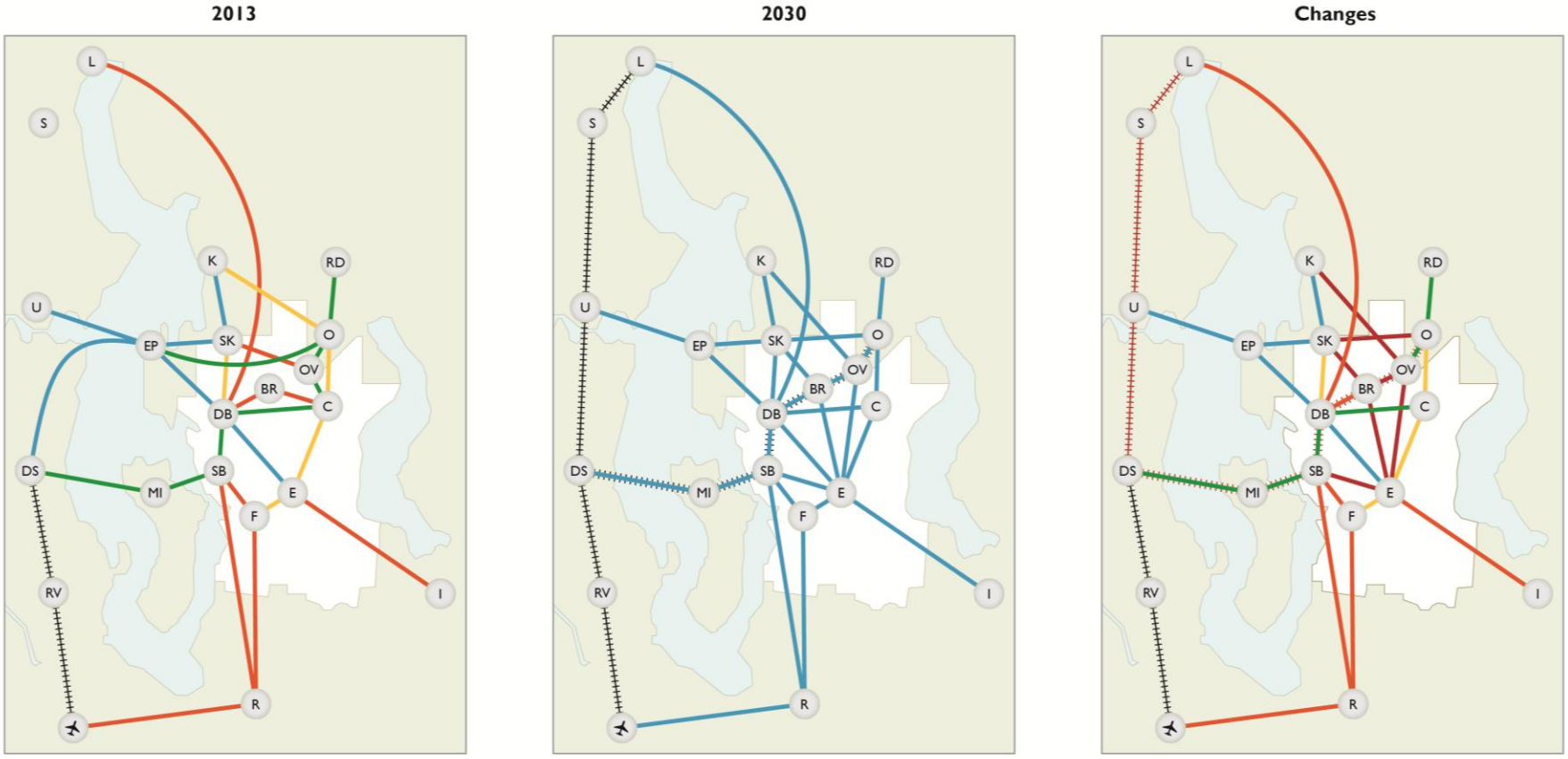
Note: Figures reflect the existing headways of / upgrades needed to Peak service. If existing AM and PM Peak frequencies vary, the less frequent period is reflected. Nearly all existing Frequent routes operate 15-minute Base headways (upgrade by 3-5 min), and all future FTN corridors served by other existing all-day routes operate 30-minute Base headways (upgrade by 18-20 min). Night frequency improvements required vary.

2030 FTN WEEKDAY SERVICE FREQUENCIES (in minutes)

Priority Bus Corridors	Peak	Base	Night
	8	10 - 12	15 - 30

Bellevue Transit Master Plan

2013-2030 FTN Upgrades



Legend

BELLEVUE

- **BR** Bel-Red
- **C** Crossroads
- **DB** Downtown Bellevue
- **E** Eastgate
- **F** Factoria
- **SB** S. Bellevue Park & Ride

REGION

- **DS** Downtown Seattle
- **EP** Evergreen Point
- **I** Issaquah Transit Center
- **K** Kirkland Transit Center
- **L** Lynnwood
- **MI** Mercer Island
- **O** Overlake Transit Center
- **OV** Overlake Village
- **R** Renton
- **RD** Redmond Transit Center
- **RV** Rainier Valley
- **S** Shoreline
- **SK** S. Kirkland Park & Ride
- **U** University District
- SeaTac

	Peak	Midday	Night
Very Frequent (every train connection)	≤8	≤12	15-30
Infrequent	30	15-30	30-60
LRT			

Note: numbers reflect approximate peak/midday/night frequencies.

2013 - 2030 FTN Upgrades Required

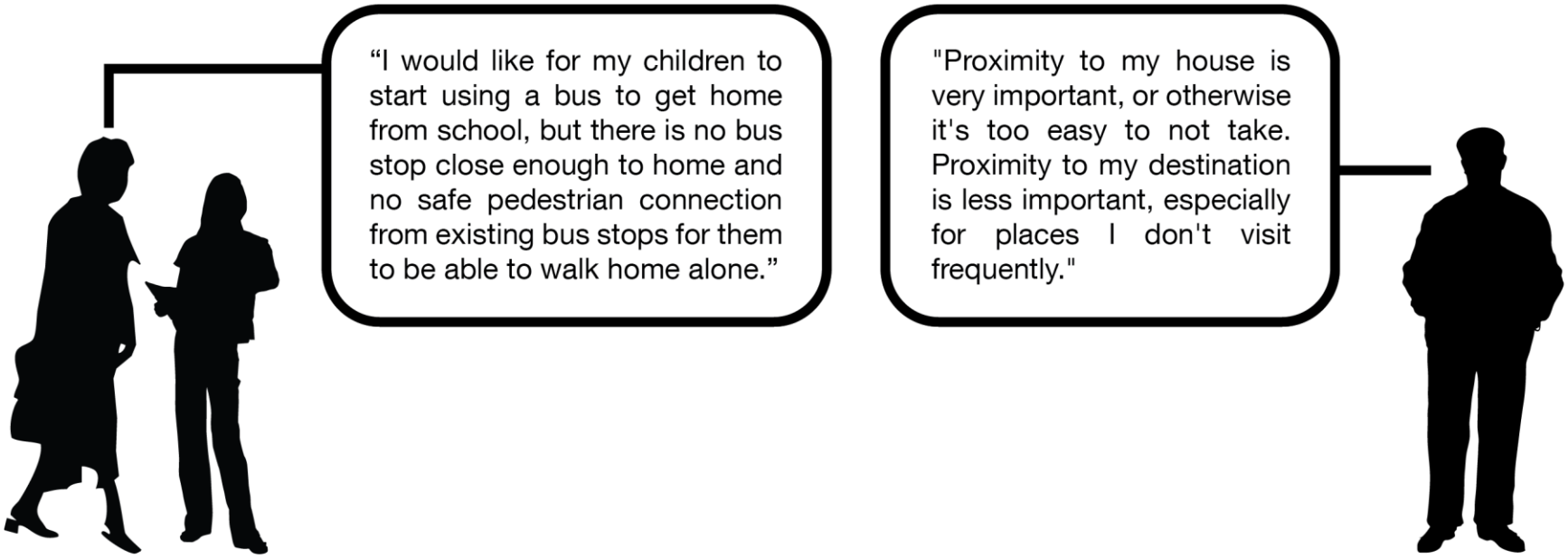
- 8 **No Upgrade Needed** - 2030 FTN-Level Service
- 10 **Upgrade by 2 min.** - Existing Very Frequent Service
- 15 **Upgrade by 7 min.** - Existing Frequent Service
- 30 **Upgrade by 20+ minutes** - Existing All-Day Service
- N **New Service** - No Existing Service at any Frequency
- **Existing Frequent Service Reduced/Eliminated**

Bellevue Transit Master Plan

2013-2030 Regional FTN

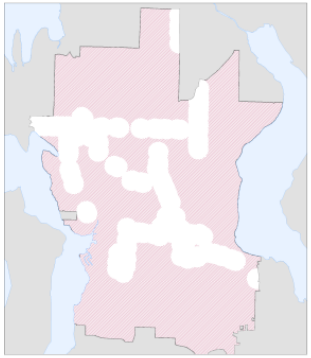
Route Coverage

A measure of the area within a reasonable walking distance of transit service (1/4-mile), which helps identify the number of opportunities people have to access transit from different locations.



Areas in Bellevue lacking 15 min or Less Bus Service on Weekdays (Fall 2011)

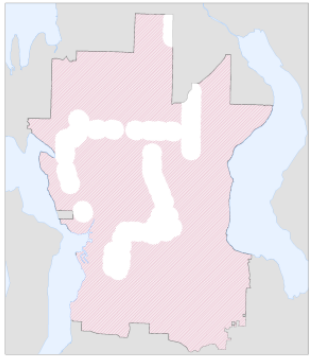
AM Peak (05:00 - 09:00)



Percent of population served:

Residents - 37%
Older adults - 36%
Minorities - 42%
Speak language other than English - 56%
People in poverty - 51%
Affordable housing complexes - 56%
Major employers - 79%
Jobs - 63%

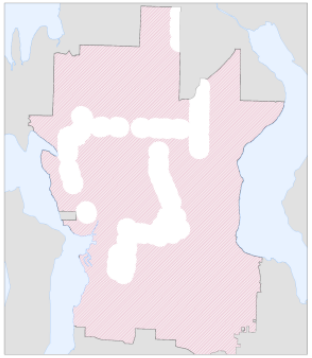
Base (09:00 - 15:00)



Percent of population served:

Residents - 29%
Older adults - 28%
Minorities - 35%
Speak language other than English - 48%
People in poverty - 44%
Affordable housing complexes - 43%
Major employers - 67%
Jobs - 51%

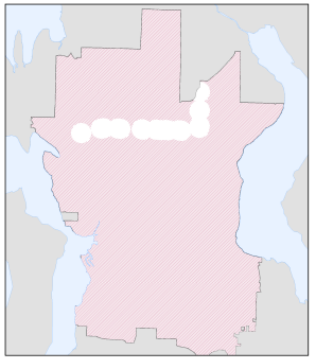
PM Peak (15:00 - 18:00)



Percent of population served:

Residents - 30%
Older adults - 28%
Minorities - 36%
Speak language other than English - 50%
People in poverty - 46%
Affordable housing complexes - 49%
Major employers - 67%
Jobs - 51%

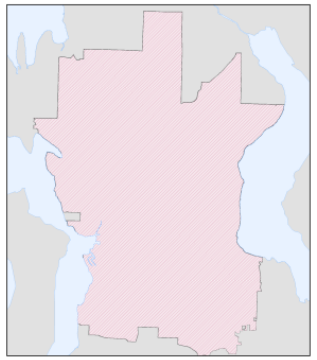
Evening (18:00 - 22:00)



Percent of population served:

Residents - 13%
Older adults - 13%
Minorities - 17%
Speak language other than English - 23%
People in poverty - 18%
Affordable housing complexes - 18%
Major employers - 48%
Jobs - 25%

Night (22:00 - 01:00)



Percent of population served:

Residents - 0%
Older adults - 0%
Minorities - 0%
Speak language other than English - 0%
People in poverty - 0%
Affordable housing complexes - 0%
Major employers - 0%
Jobs - 0%

Areas served by a bus stop within 1/4 mile and 15/30 minute or less service provided during weekdays

Areas not served by Metro or under served during weekdays (i.e bus stop not within 1/4 mile or 15/30 minute or less service not provided)

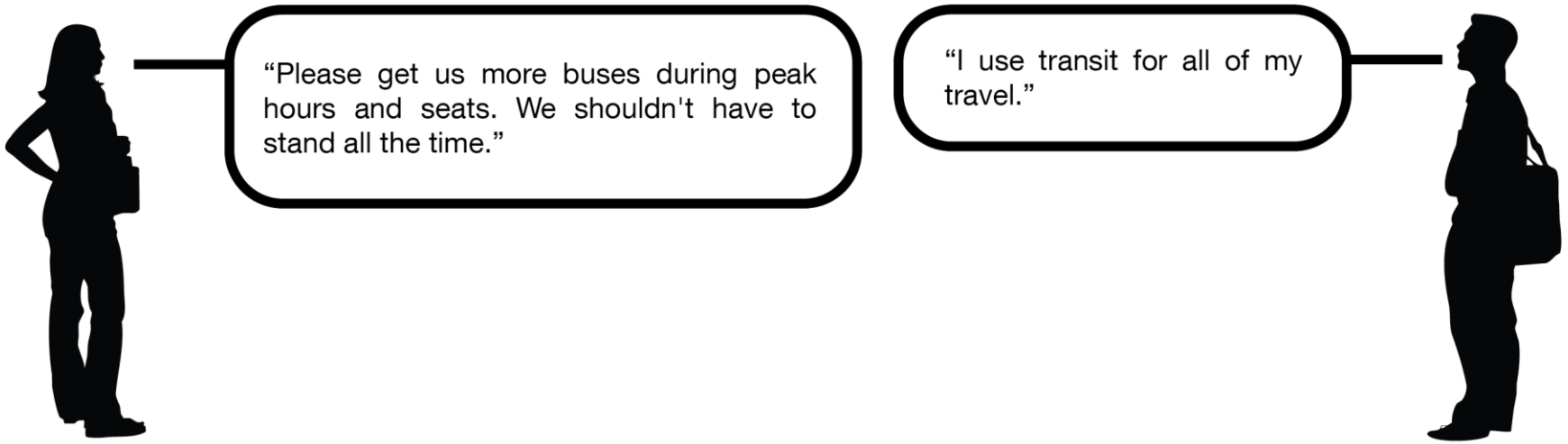
Other jurisdictions

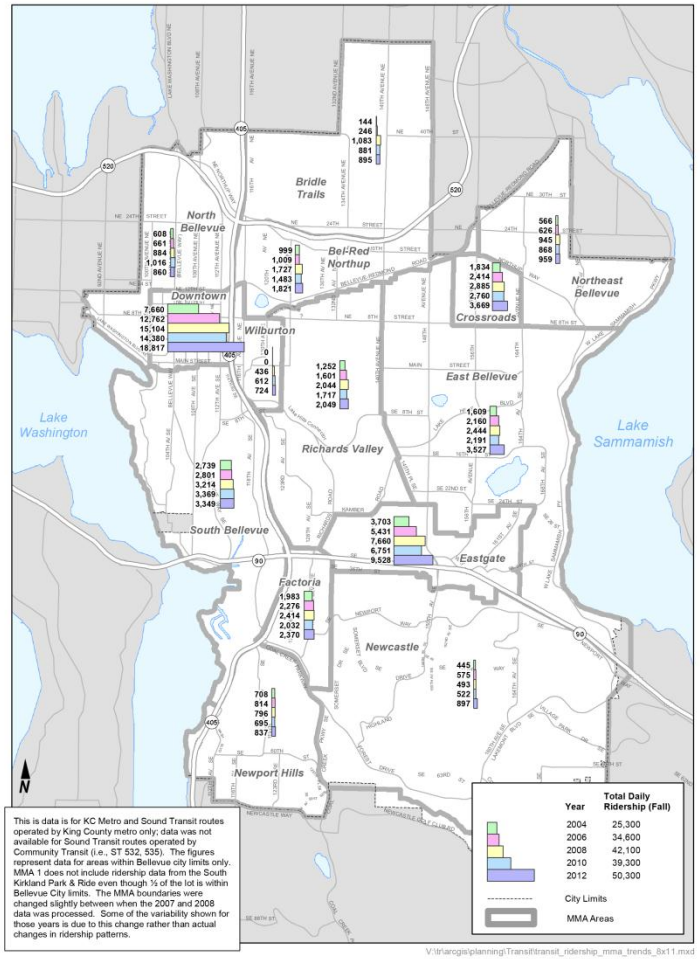
Bellevue Transit Master Plan

Fall 2011 Route Coverage

Transit Usage

An indicator of both the demand for transit and satisfaction with the quality of transit services operating in Bellevue. Transit usage is tracked by Mobility Management Area (MMA).





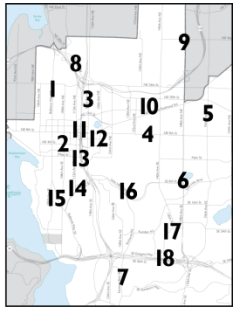
Average Transit Weekday Usage (ons/offs)

MMA	Fall 2003	Fall 2012	% Change
Downtown	7,346	18,817	156%
Eastgate	2,197	9,528	334%
Crossroads	1,706	3,669	115%
East Bellevue	1,695	3,527	108%
South Bellevue	2,908	3,349	15%
Factoria	1,724	2,370	37%
Richards Valley	1,301	2,049	58%
Bel-Red Northup	883	1,821	106%
Northeast Bellevue	532	959	80%
Newcastle	384	897	134%
Bridle Trails	62	895	1,337%
North Bellevue	512	860	68%
Newport Hills	670	837	25%
Wilburton	-	724	N/A
Total	**21,920**	**50,302**	**129%**

Person Throughput

The maximum number of people that can be carried past a given location during a given time period under specified operating conditions—regardless of the type of vehicle in which those people are traveling.

15 Bellevue Way SE btw SE 8th St and 113th Ave SE

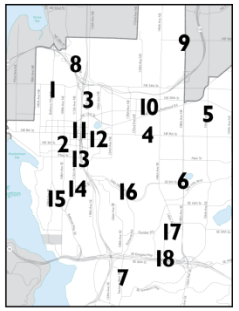


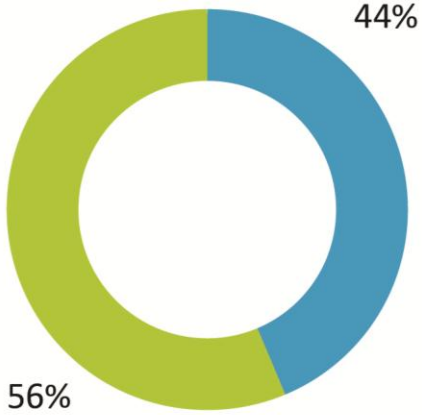
Buses[1]	36
Total Vehicles[1]	3,230
Percent Transit[1]	1.1%
Person Trips – Transit[1]	3,363
Person Trips – Total[1]	7,705
Percent Transit[1]	44%

[1] Based on City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).

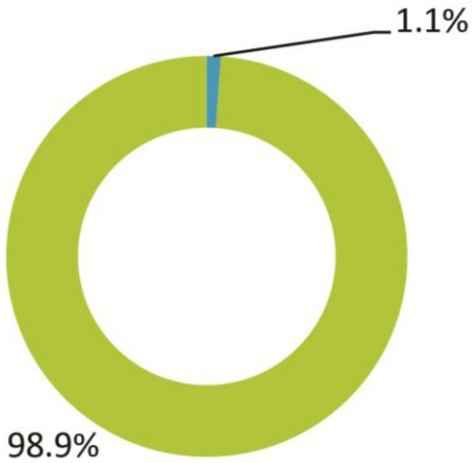
15

Bellevue Way SE btw SE 8th St and 113th Ave SE





Person Throughput



Vehicle Throughput

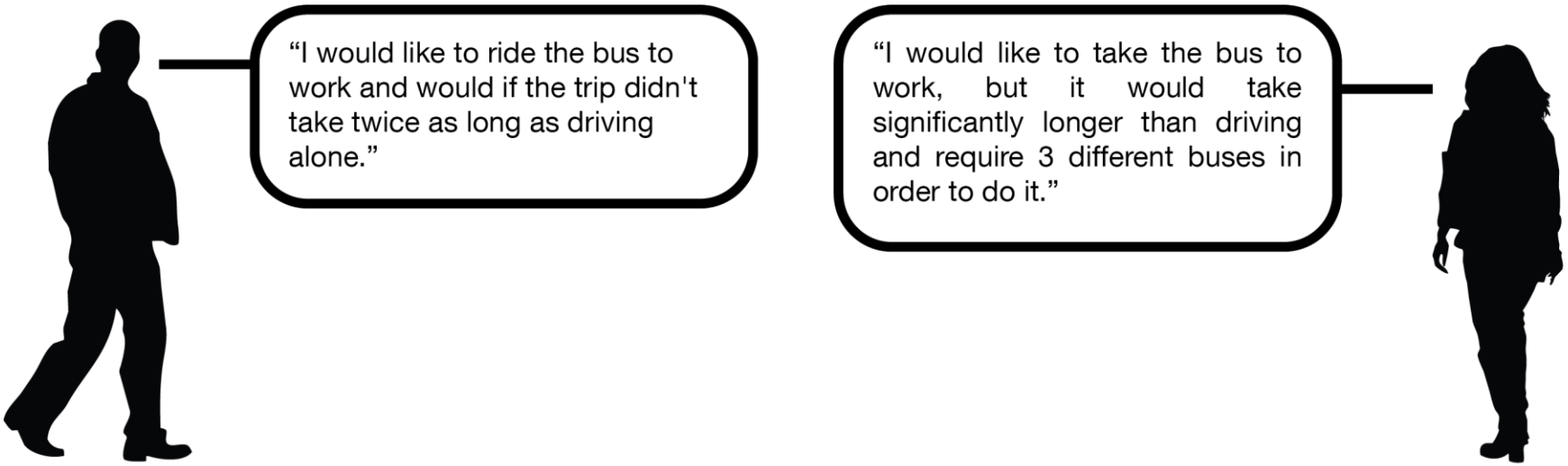
Bus Auto

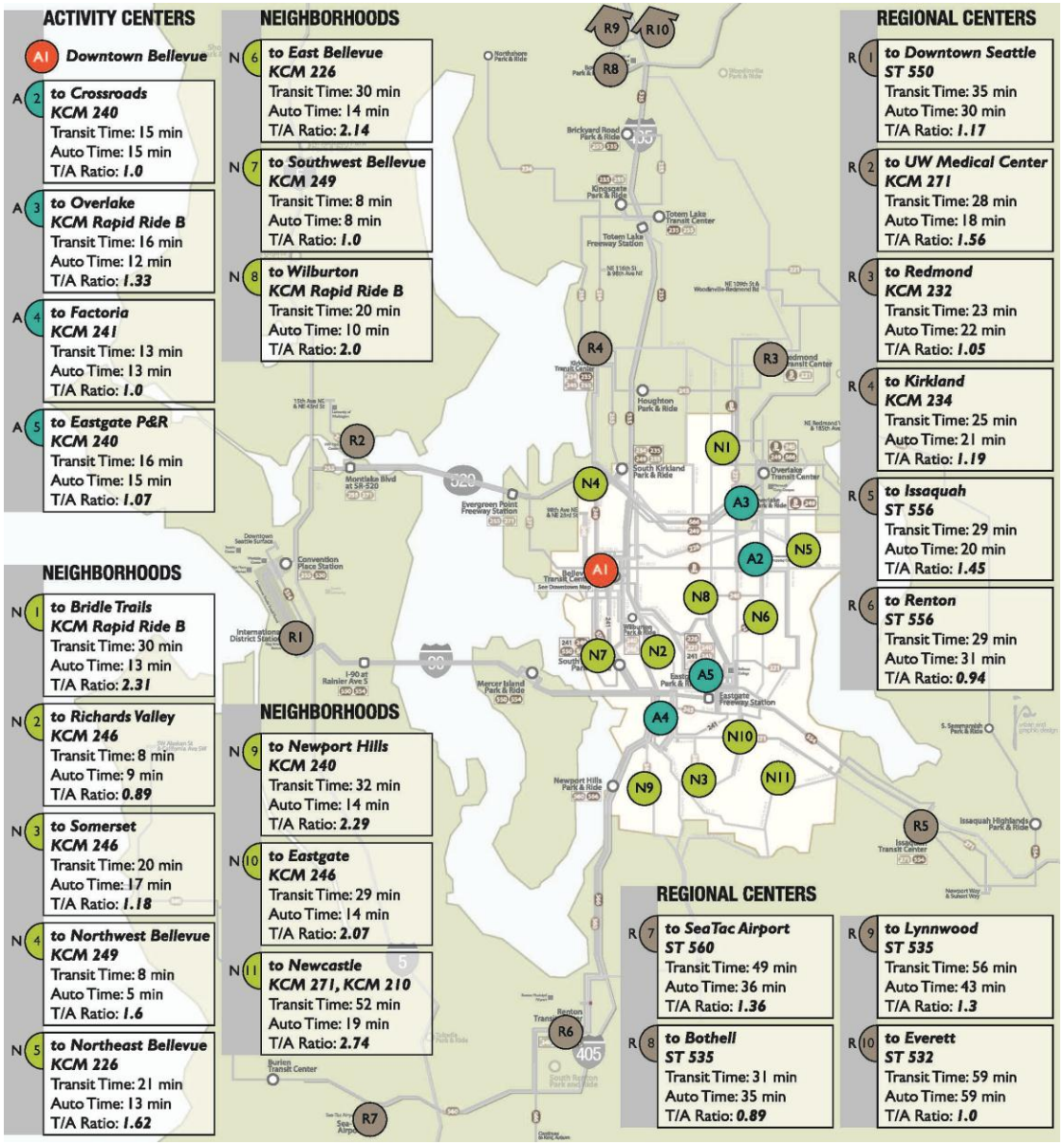
Bellevue Transit Master Plan

2030 Travel Demand

Transit/Auto Travel Time

It is the most frequently cited reason why former-riders and non-riders do not use transit, and many riders also lament how much longer some trips take by transit than by car. The T/A ratio will be measured as a means of assessing the attractiveness of transit service to those who have travel alternatives.



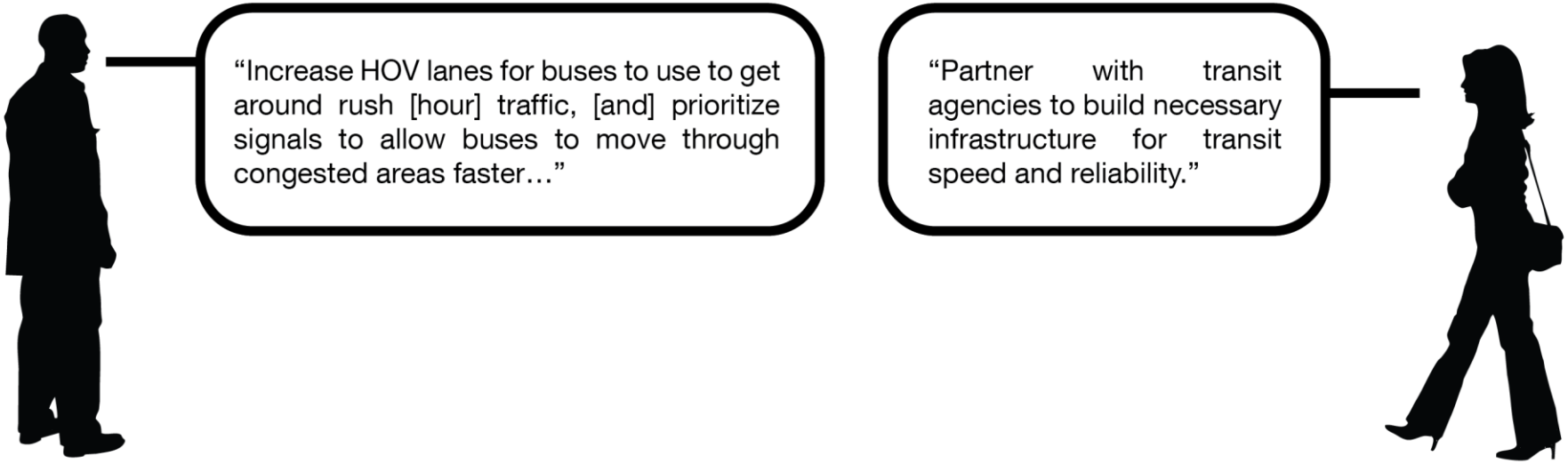


Bellevue Transit Master Plan

Transit/Auto Travel Time

Operating Speed

Current transit users identified speed- and reliability-related capital improvements as the highest priority for municipal investment in transit. Given this, and because operating speed has a direct impact on how much service can be provided given a limited budget, transit operating speeds will be tracked by FTN service type.



Year	Service	AAM	AM	MD	PM	EVE	NITE
2012	Express	24.81	23.14	23.07	20.62	24.15	25.85
	Rapid	18.14	15.63	13.74	13.03	16.72	19.03
	Local	20.52	16.34	15.76	14.48	16.95	18.71
	Local*	20.52	16.41	15.89	14.54	17.00	18.75
2022	Express	24.85	21.59	23.19	20.00	23.77	24.91
	Rapid	20.16	16.88	16.78	15.25	17.87	19.60
	Local	18.32	15.35	15.25	13.86	16.24	17.82
2030	Express	26.28	24.26	24.51	21.58	25.24	26.77
	Rapid	19.56	16.38	16.28	14.80	17.34	19.02
	Local	17.78	14.89	14.80	13.45	15.76	17.29

* Route 271 includes Local and Express segments. For the 2012 observed figures shown here, revenue miles and hours cannot be extracted for only a single segment. Two figures are therefore provided for Local speeds—the first without Route 271 factored in, and the second (*) with Route 271 included. Express speeds include only Sound Transit Express routes.

Note: Estimated speeds for 2022 and 2030 are calculated by dividing the distance between route timepoints by the scheduled travel time. Observed operating speeds for 2012 are calculated by dividing daily weekday revenue miles by revenue hours. All figures in miles per hour.

Operating Speed

http://www.bellevuewa.gov/bellevue-transit-plan.htm

Franz Loewenherz
Transportation Department
floewenherz@bellevuewa.gov
425-452-4077

Additional Information