East Link Cost Saving Options

Bellevue City Council

April 15, 2013

Tonight's Presentation

- April decision
- Follow-up from 4/8 Council meeting
- East Link Work Program
- Draft Resolution on Cost Saving Ideas
- Next Steps

April Cost Saving Decision

- Cost savings efforts underway since early 2012 identified a range of options and progressively narrowed choices based on technical analysis and public input
- April final decision on East Link alignment
  - April 22 Council action requested
- The City and Sound Transit must agree to any changes, or the alignment stays consistent with the MOU
- Resolution identifying cost saving options to be incorporated into final alignment
- If Council wishes to advance Shift Bellevue Way with HOV, additional action by Council on HOV lane in June needed, pending completion of TFP environmental analysis

Bellevue Way

Bellevue Way Options

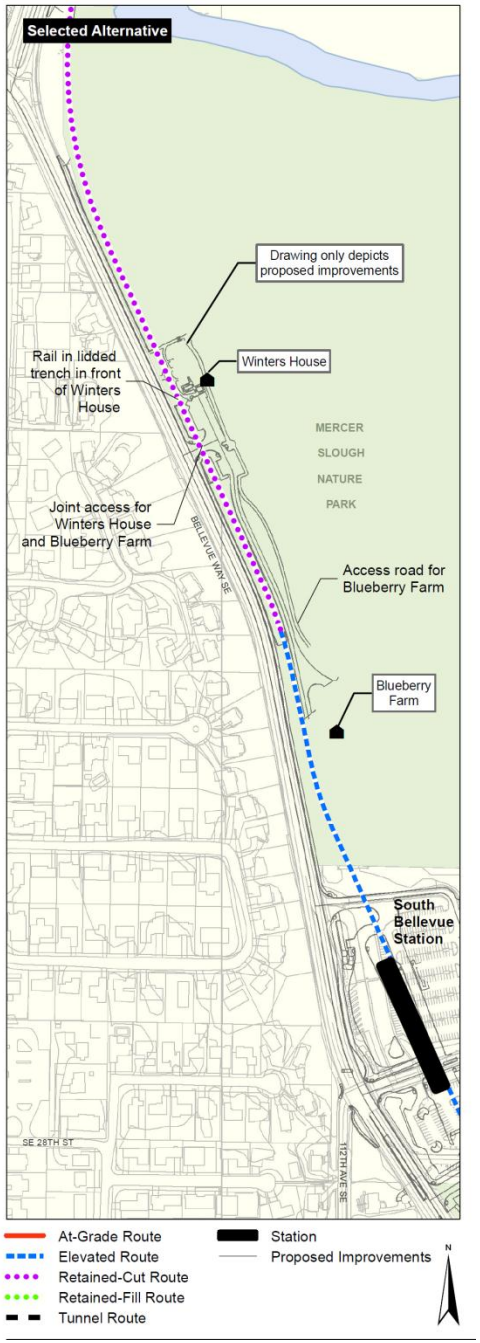
MOU Option: LRT in a retained cut on east side of Bellevue Way

-Baseline project cost

Cost Saving Option: Shift Bellevue west with At-grade LRT and an HOV Lane

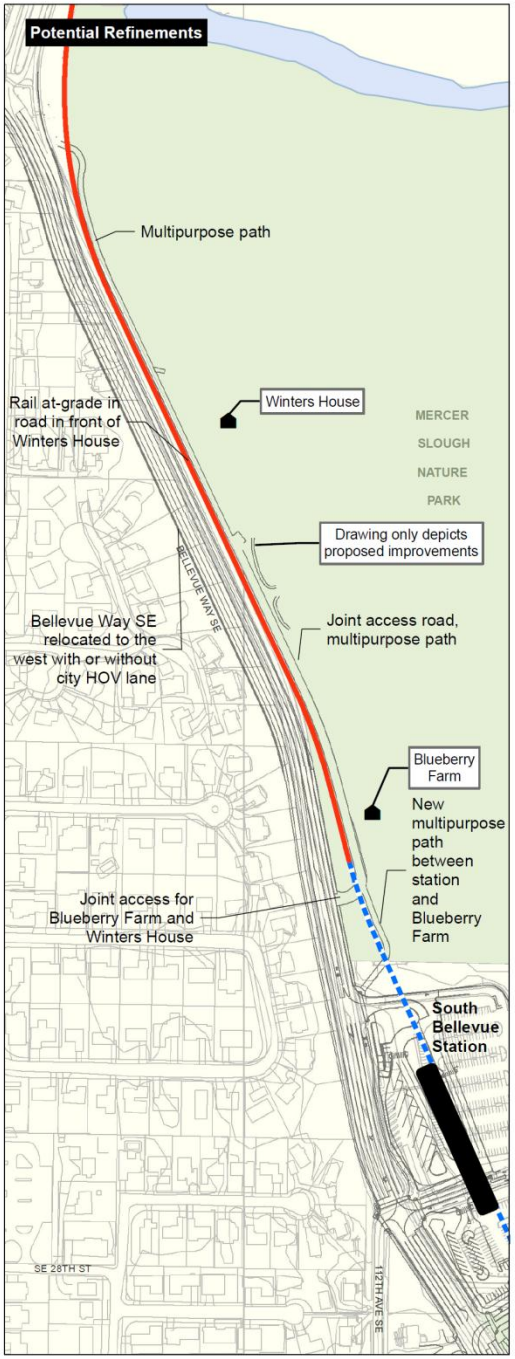
-Savings $5-8M (with $11M contribution from the City for the HOV lane)

Bellevue Way Retained Cut (MOU)



*Conceptual design, prepared by the City of Bellevue

Bellevue Way Cost Saving Option – Shift BW w/HOV Lane



HOV Lane Next Steps

- If Council selects cost saving option, the following actions would need to be taken:
  - Adopt TFP after completion of environmental process (anticipated June 2013)
  - $1.5M in resources available in East Link CIP to advance design
  - Additional resources through 2015-2021 CIP Update
  - Project-level permitting, including SEPA

Bellevue Way Traffic Noise

Bellevue Way – Traffic Noise Analysis	Existing Ambient (Ldn)	Change in Ambient After Mitigation	Discussion
MOU	65-69	+1 dBA	No change to west side of Bellevue Way (no noise walls). Traffic noise increase due to assumed growth in traffic over time.
MOU + City HOV	65-69	+/- 1 dBA*	Some retaining walls. Assumed 6' noise wall for mitigation on retaining walls.
Cost Saving Option	65-69	- 2-11 dBA	Tallest retaining walls with noise walls; results in overall decrease in noise levels at home.

*Based on a City of Bellevue high-level analysis using four locations along the corridor.

112th Ave SE –
SE 15th Road-over-Rail
with SE 4th Options

112th Ave SE Options

Road over Rail at SE 15th with SE 4th options:

- SE 4th Rail Under SE 4th ($6-11M increase)
- SE 4th Emergency Access Only ($2-4M savings)
- SE 4th Open Right-in/Right-out ($2-4M savings)

SE 15th Road over Rail

SE 4th Retained Cut

- Train noise mitigated by retained cut configuration
- Existing traffic noise from 112th Ave SE remains

SE 4th Open Right-in/Right-out

- Train noise mitigated by longer noise wall
- Bells at SE 4th mitigated through shrouds, directional bells, potential sound insulation
- Some benefit of traffic noise reduction expected from longer noise wall

SE 4th Emergency Access Only

- Train noise mitigated by longer noise wall
- No bells or ped audible warning devices
- Benefit of traffic noise reduction expected from longer noise wall and emergency access barrier

Ped Audible Warning Devices

- City practice:
  - 5dB over ambient
  - Sound depends on many variables including size of intersection, type of tone, mounting configuration
- Sound Transit
  - Train mounted bells:
    - 80 dBA at 50’ during daytime
    - 72 dBA at 50’ during nighttime
  - Ped audible warning devices:
    - 77dBA at 15’ (assumed for noise analysis)

City Noise Code Issues

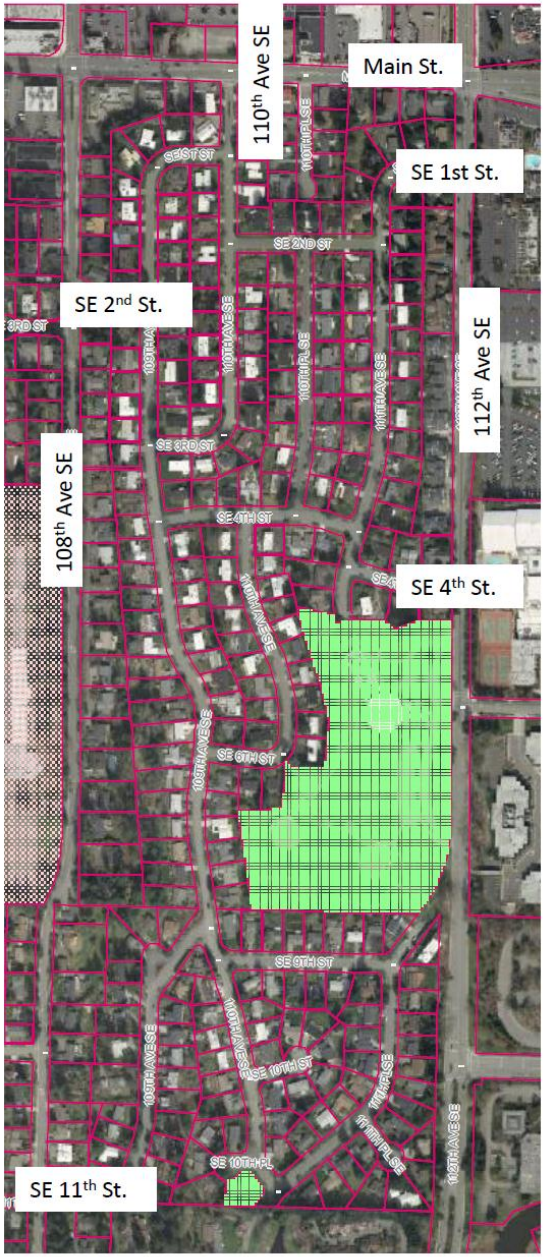
- Train noise
- Warning device noise
- Construction period noise

Surrey Downs Neighborhood Traffic Counts

110th Ave SE
Year 2000: 669
Year 2012: 382

SE 2nd St.
Year 2000: 742
Year 2012: 632

SE 11th St.
Year 2000: 525
Year 2012: 398



SE 1st St.
Year 2000: 229
Year 2012: 282

SE 4th St.
Year 2000: 680
Year 2012: 492

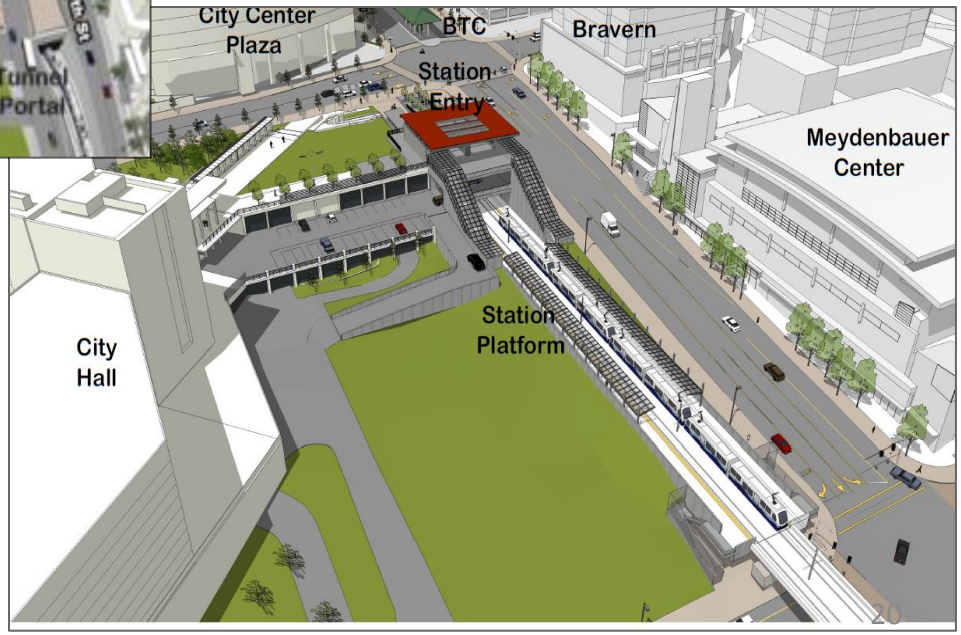
- Traffic counts taken in May 2012
- Decrease in volumes at many intersections since 2000
- Approx. 800 daily trips at SE 1st and SE 4th combined
- In 2001, City restricted left turns from Main Street onto 110th Ave SE into Surrey Downs
- Overall, traffic volumes down citywide over the last few years

Downtown Station

Downtown Station Options

PE Optimized Station ($6-10M savings)

NE 6th Station ($19-33M savings)

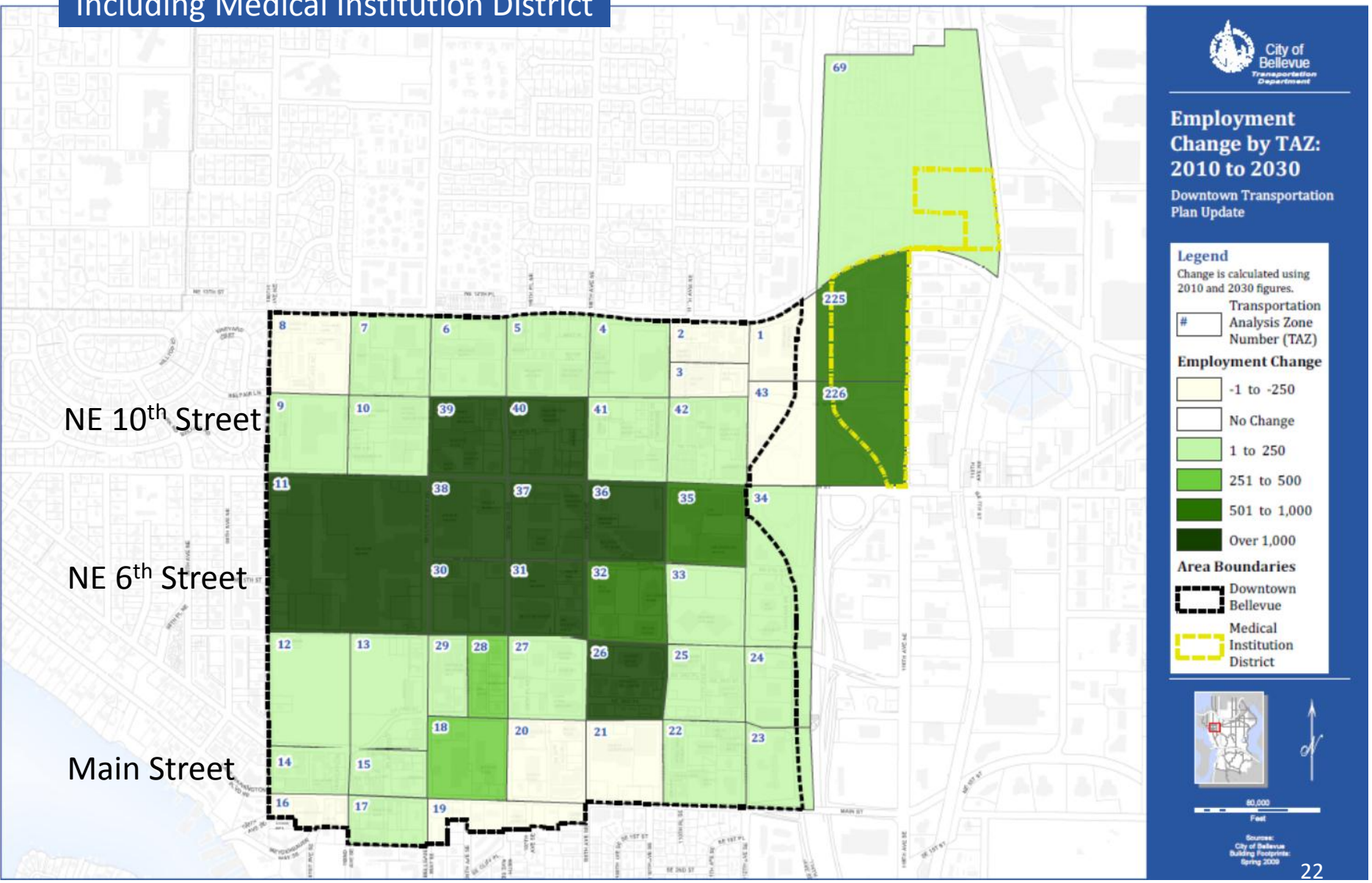


Downtown Station Walk Analysis

2030 Jobs and Residents	Optimized PE	NE 6th Station
% of Jobs Within 5 Minute Walk Radius	36% (25,300)	33% (23,200)
% of Jobs Within 10 Minute Walk Radius	89% (62,600)	88% (61,900)
% of Residents Within 5 Minute Walk Radius	14% (2,700)	7% (1,300)
% of Residents Within 10 Minute Walk Radius	60% (11,400)	56% (10,600)

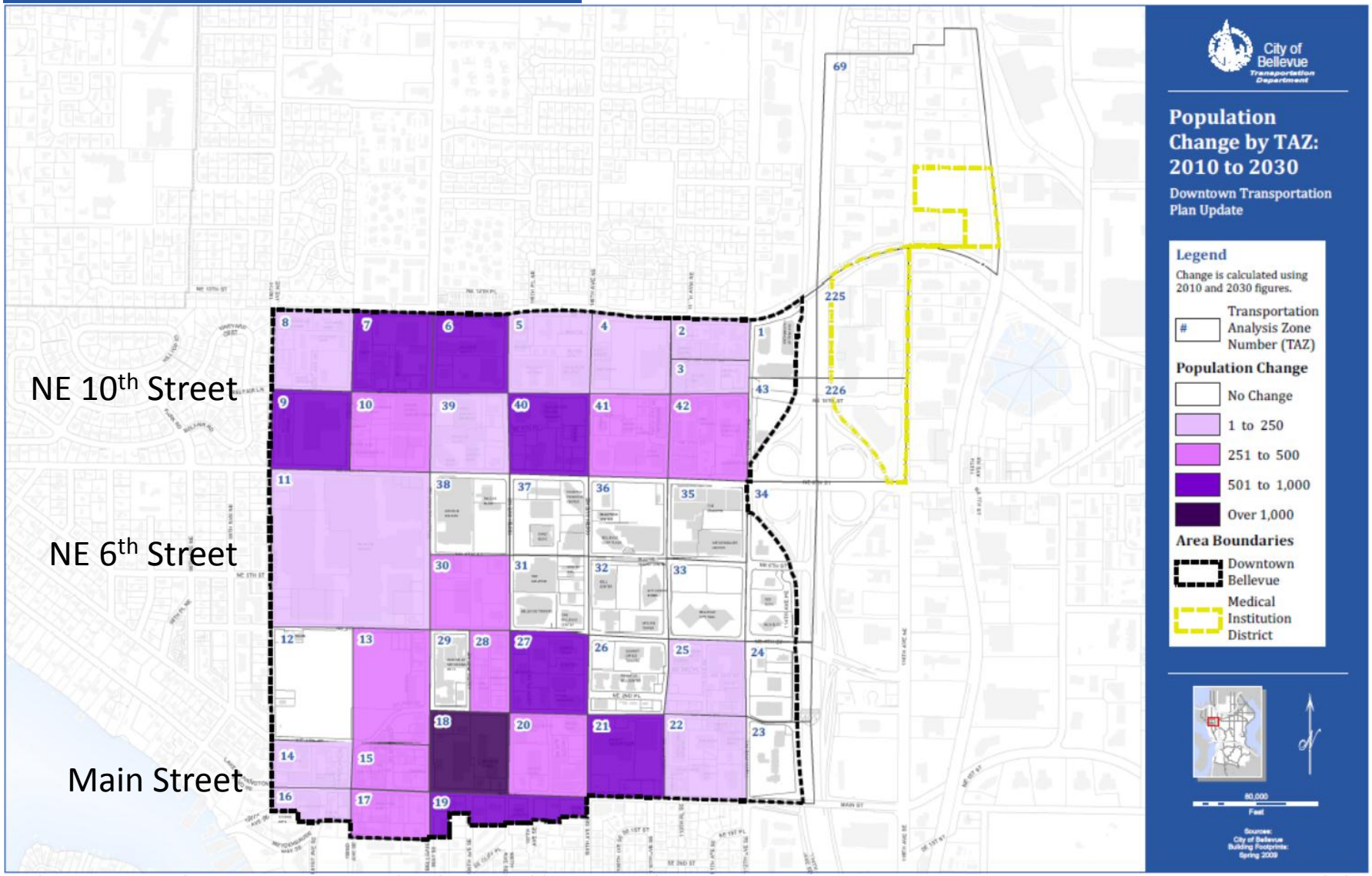
Downtown Employment Change

Including Medical Institution District

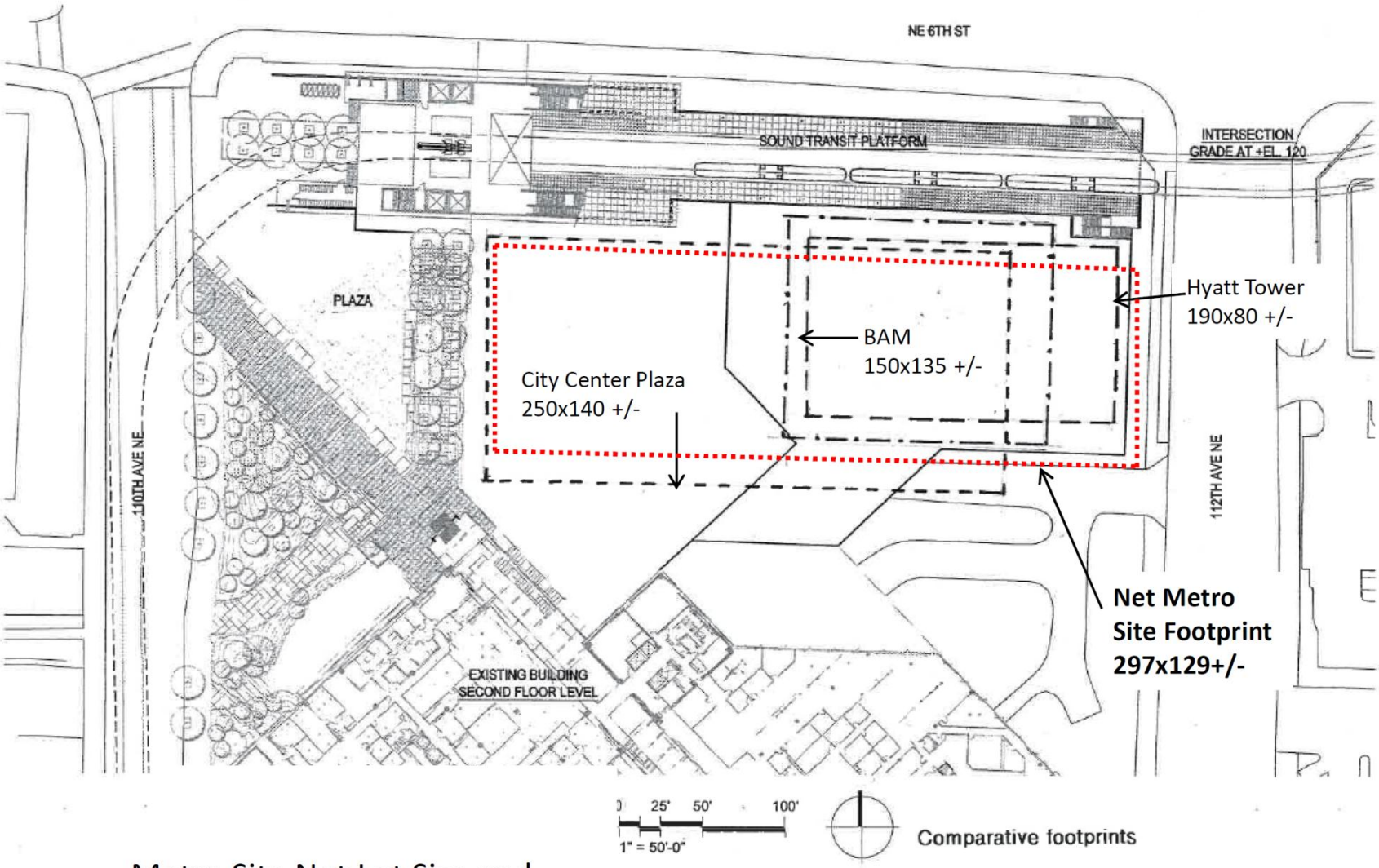


Downtown Population Change

Including Medical Institution District



Metro Site Impacts Comparison



Metro Site Net Lot Size and
Comparative Footprints

East Link Work Program

- MOU Implementation
  - Collaborative Design Process continues
  - Deliver City up-front contributions
  - Cost estimate review
- Final Design
  - Participate in design of noise and other mitigation as final design advances
- LRT Overlay District
  - CAC formation
  - Design and Mitigation Permit
- Station Area Planning

Draft Resolution

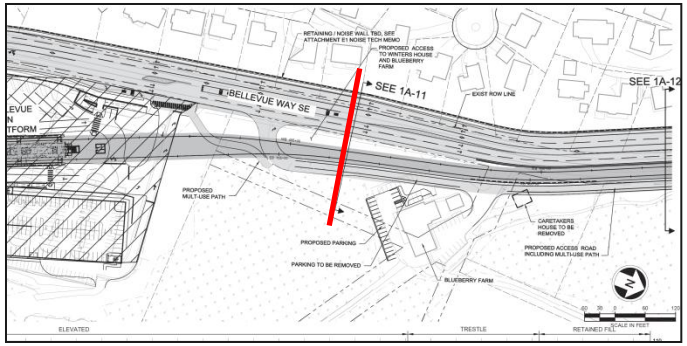
- Draft Resolution
  - Selection of cost saving options for final alignment
  - Approves the alignment and general profile for the Light Rail Overlay District
- April 22nd Council action requested via resolution on cost saving options
  - Selection of cost saving options for each of three segments handled individually, then a final action on the complete resolution

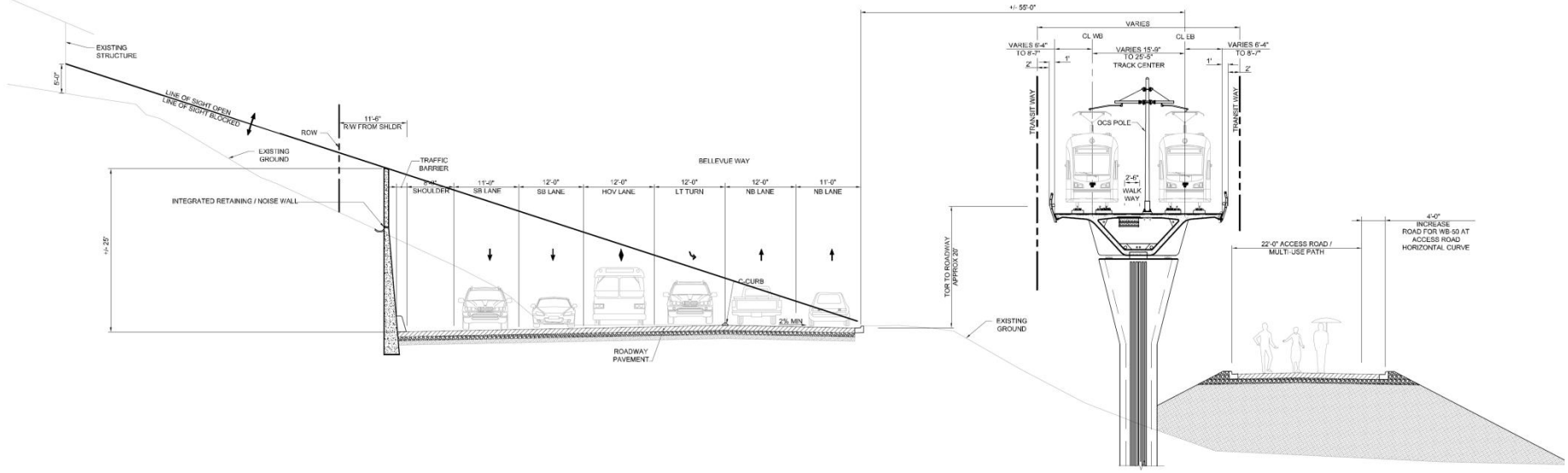
Next Steps

- Public hearing this evening
- April 22nd Council action requested via resolution on cost saving options
- Continued regular briefings to Council as East Link work program advances
  - May 6 Station Area Planning

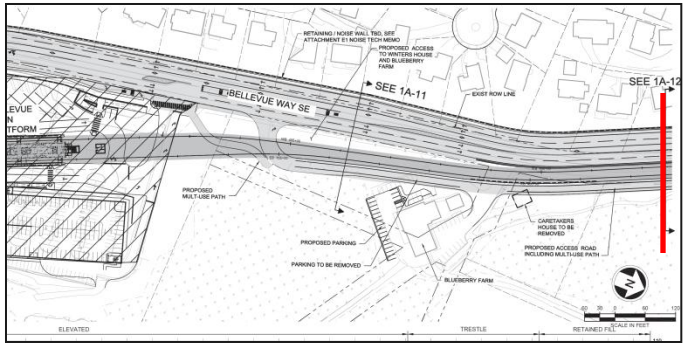
Questions?

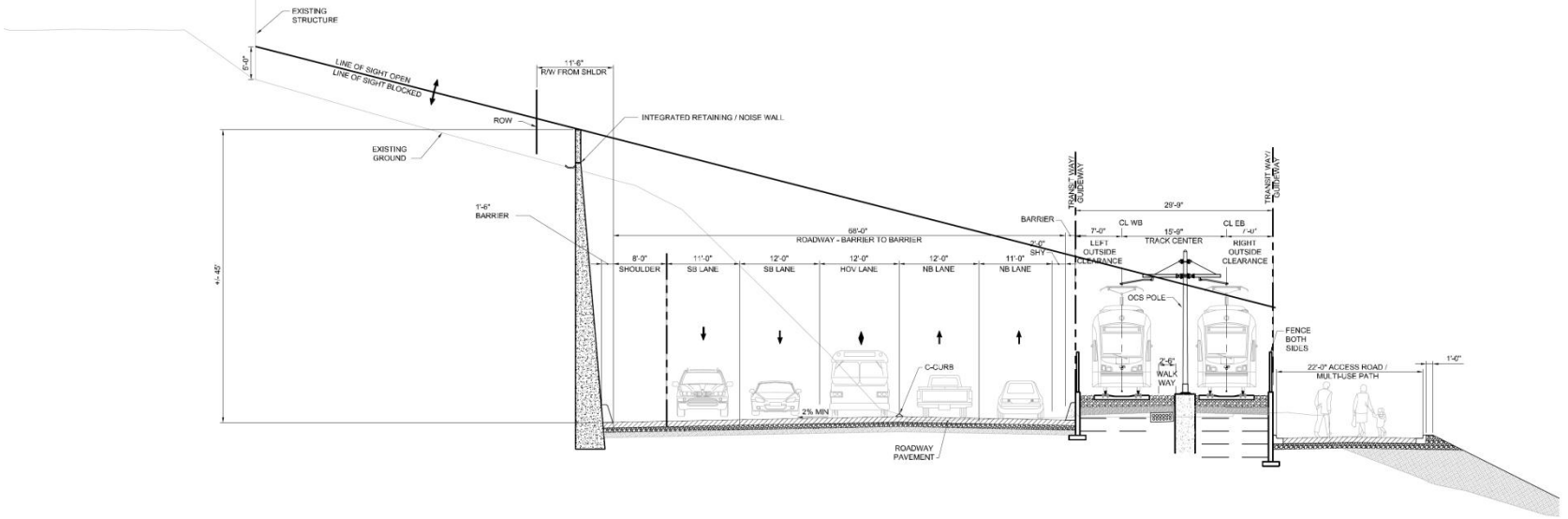
Bellevue Way Sightlines





Bellevue Way Sightlines





Policy Background

- Southwest Bellevue Subarea Plan
  - Principal arterial, gateway, aesthetics
- Downtown Subarea Plan
  - Minimize arterial traffic growth, arterials not alternatives to freeways
  - Add NB & SB lanes, SE 30th to I-90 and extend NB right turn lane to favor traffic flow to 112th Ave SE
- 2003 Transit Plan
  - SB HOV lane, S. Bell P&R to I-90
- Comprehensive Plan
  - Roadway improvements not to create bypasses for I-90, I-405, or SR 520 that would adversely affect adjacent residential neighborhoods
  - Pursue integrated arterial HOV system linking activity centers to regional HOV system to provide HOV travel time advantage over SOVs in congested corridors and locations + dedicated bus lanes

Bellevue Way SE HOV Concept

<u>South Bellevue Park & Ride:</u>

- Currently 519 stalls, consistently over capacity
- Expanding to 1450+/- stalls with East Link

<u>Park & Ride to I-90 southbound HOV lane:</u>

- Mitigates expanded park & ride
- Restores traffic to no-build condition (2030)
- Part of East Link project (per 11/2011 MOU)
- Does not address underlying congestion and delay

Bellevue Way SE HOV Concept

<u>”Y” to Park & Ride southbound HOV lane:</u>

- Addresses underlying growth
- Draws Enatai cut-through traffic back to Bellevue Way SE
- Cost:
  - $11m (City share of $22m joint project)
  - $18-20m (City build independently)

Southwest Bellevue Travel Times

In Minutes – "Y" to I-90

Year 2030 – Typical evening peak

	HOV Lane Park and Ride to I-90 (Part of East Link)	HOV Lane "Y" to I-90	Change	Percent Change
General purpose	3.4	2.0	-1.4	-41%
Transit	3.9	1.4	-2.5	-64%
HOV	3.4	1.2	-2.2	-65%

Southwest Bellevue Traffic Volumes

"Y" to I-90

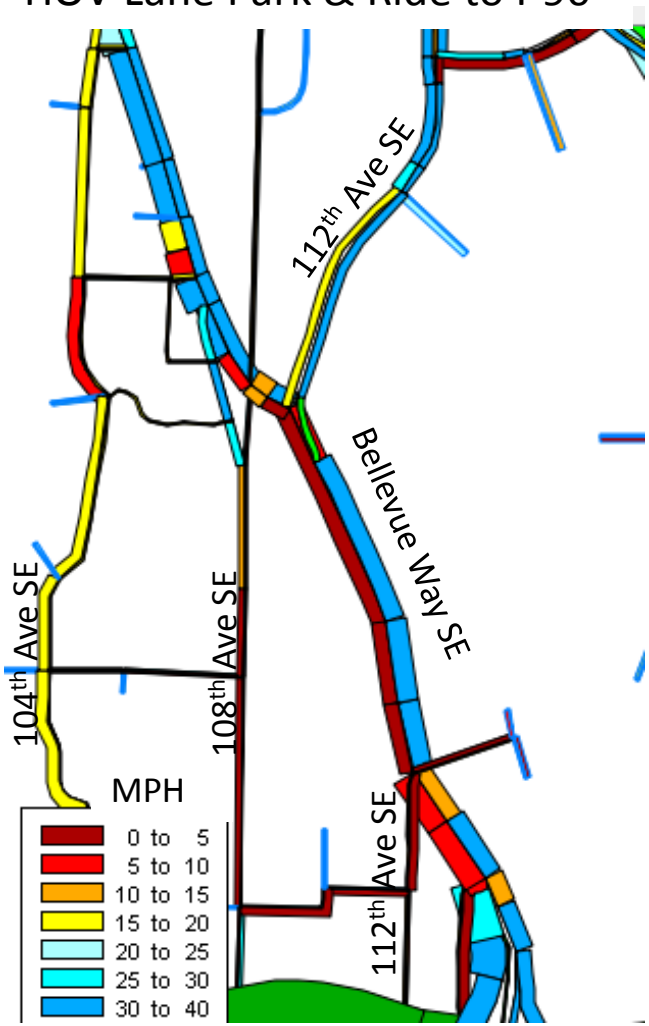
Year 2030 – Typical evening peak

	HOV Lane Park and Ride to I-90 (Part of East Link)	HOV Lane "Y" to I-90	Change	Percent Change
Bellevue Way SE southbound vehicles	2410	1830 GP 1170 HOV 3000 total	+590	+24%
Transit routes	9	9	0	0
Person trips – total	4440	6030	1590	+36%
Person trips – transit	1520	1690	170	+11%
Person trips – Auto-HOV	2920	1830 + 2510	1420	+49%
Southbound neighborhood vehicle volumes	470 (108th Ave SE) 300 (104th Ave SE) 770 total	210 (108th Ave SE) 190 (104th Ave SE) 400 total	-260 (108th) -110 (104th) -370 total	-55% -37% -48% total

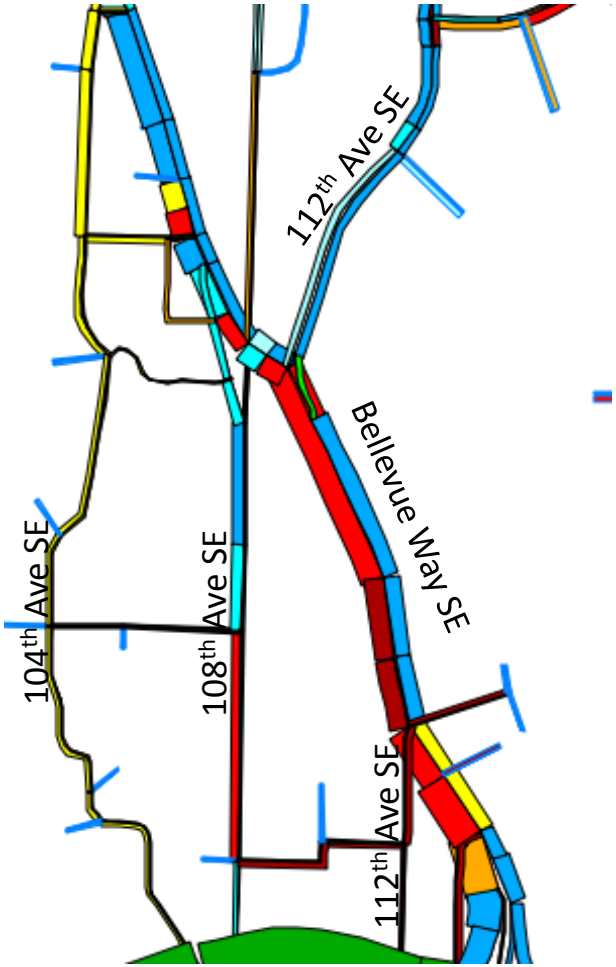
Southwest Bellevue Traffic Speed

Year 2030 – Typical evening peak (5:50pm)

HOV Lane Park & Ride to I-90



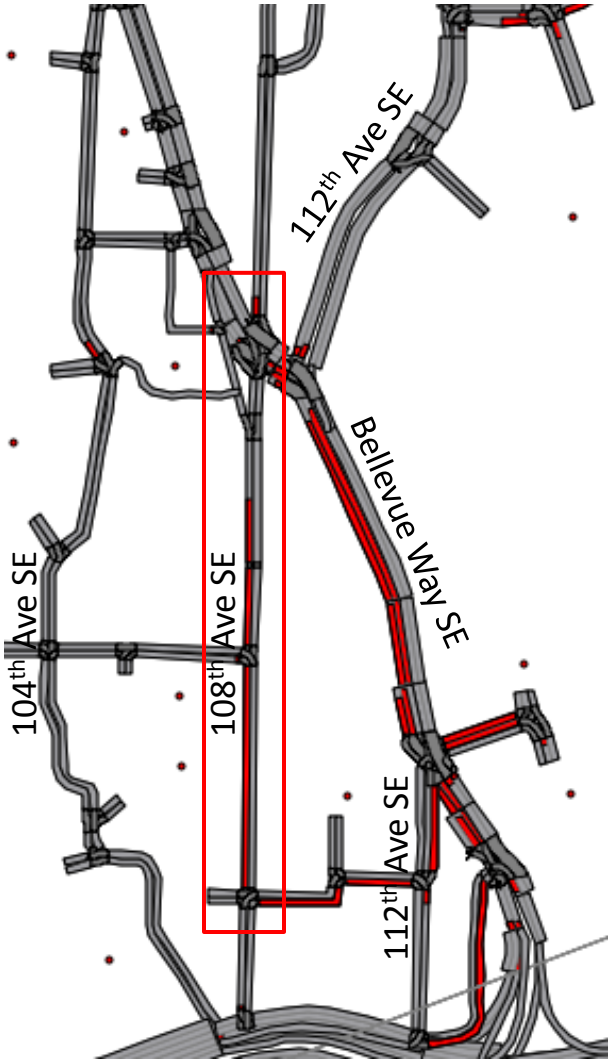
HOV Lane "Y" to I-90



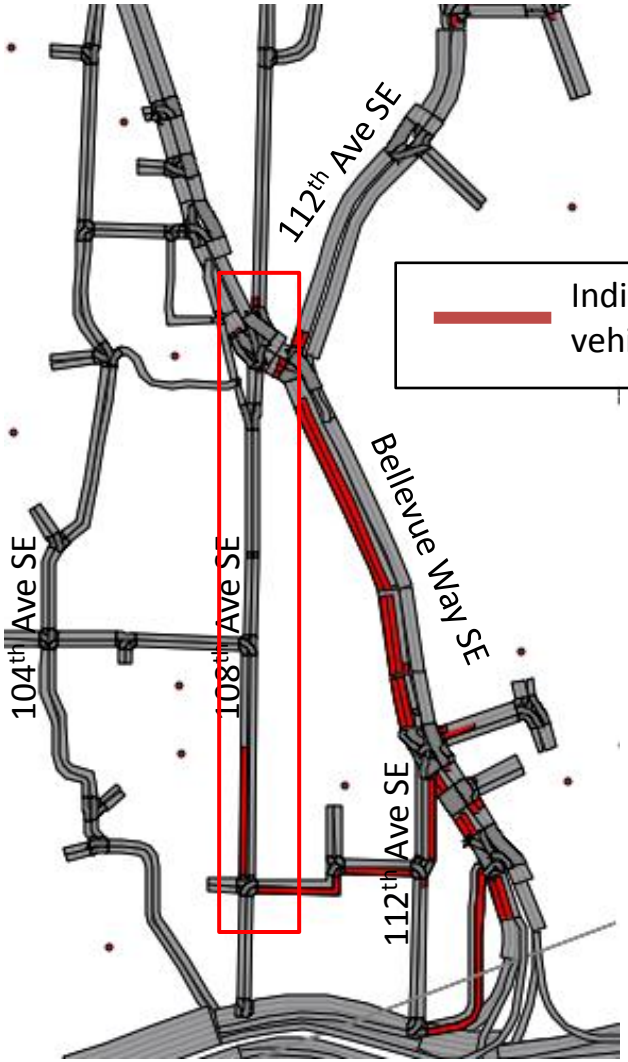
Southwest Bellevue Traffic Queues

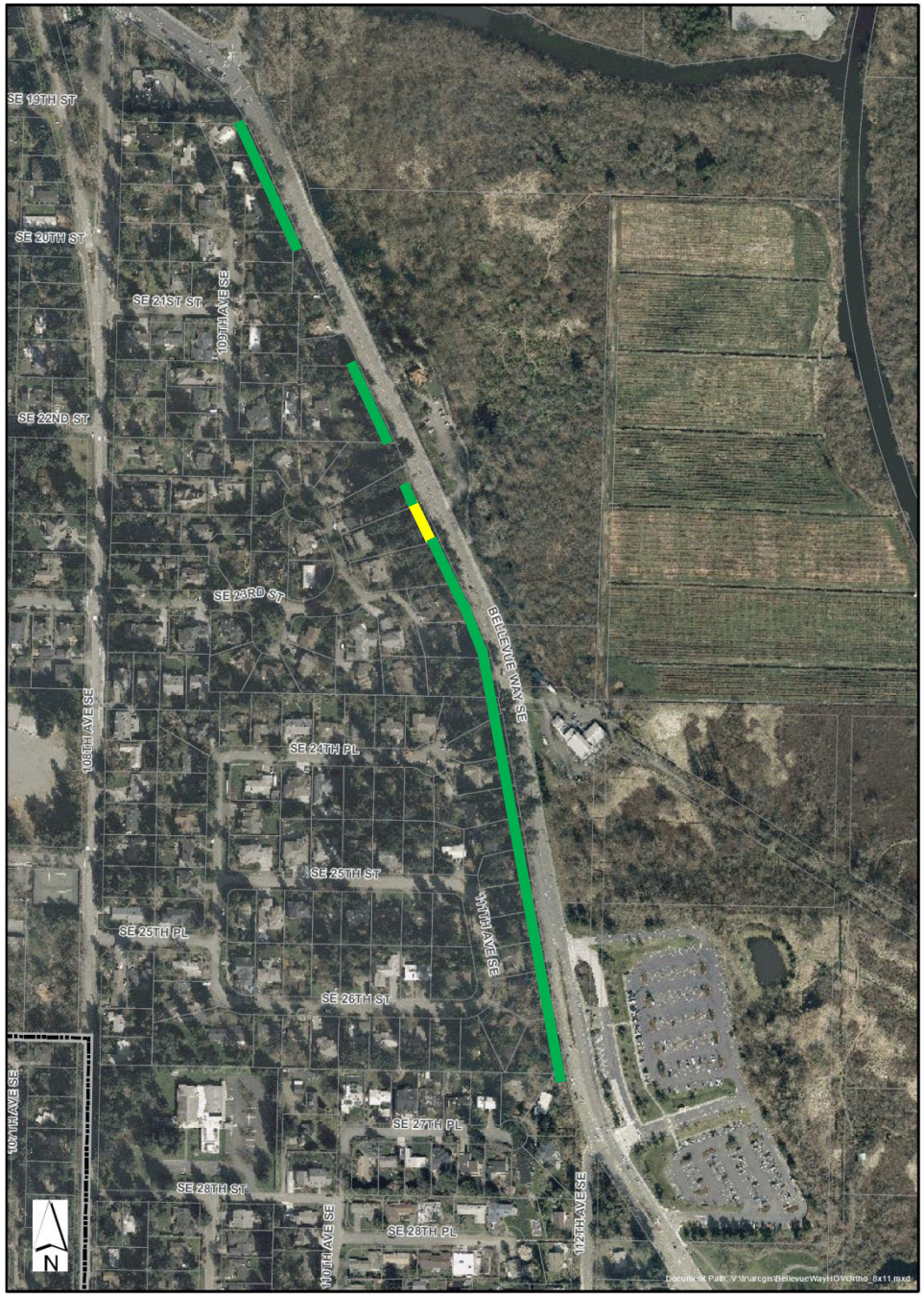
Year 2030 – Typical evening peak (5:50pm)

HOV Lane Park & Ride to I-90



HOV Lane "Y" to I-90





Retaining Wall Heights
MOU Alignment w/HOV Lane

< 15’ **94%**

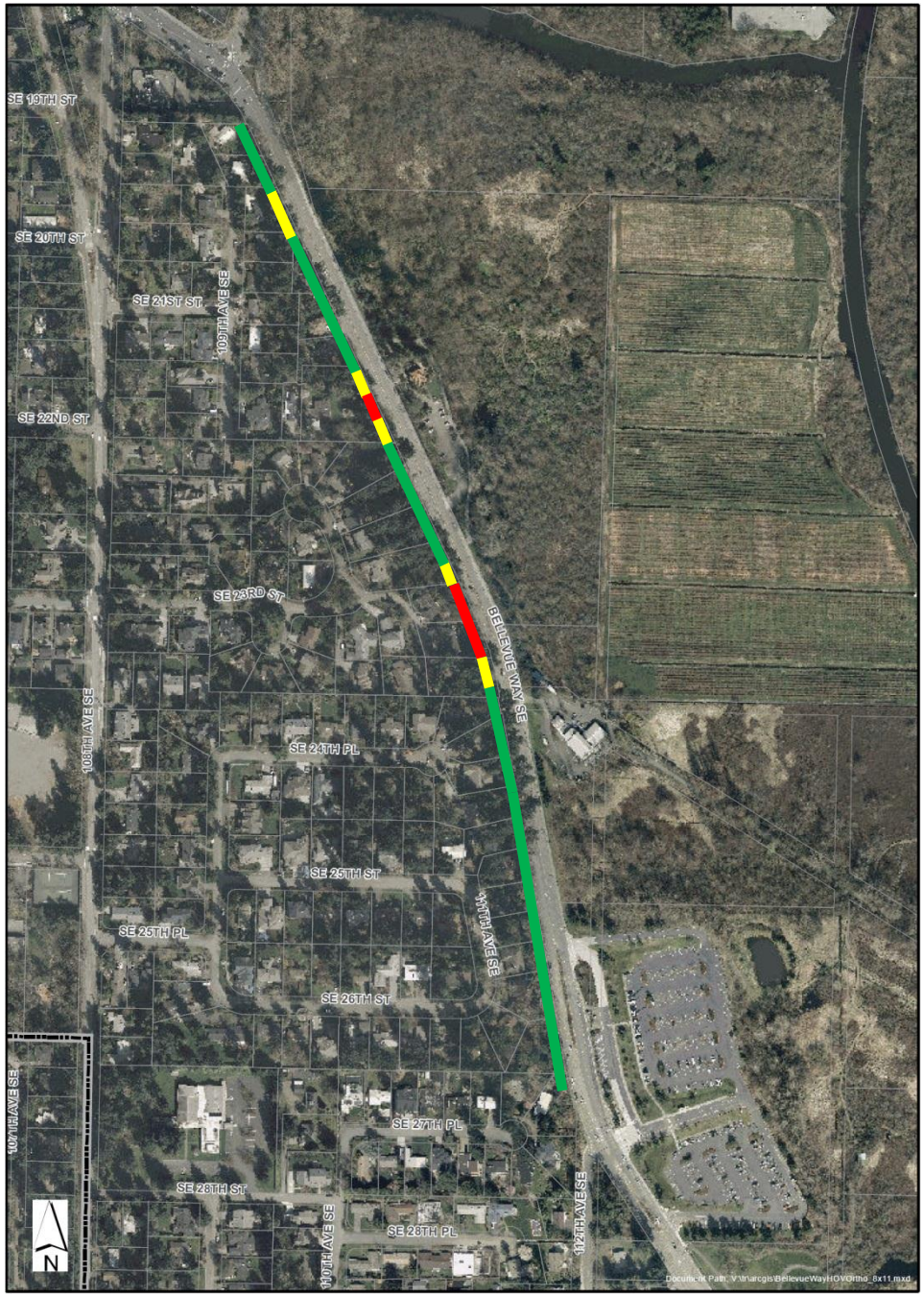
26% <6’

36% 6’-10’

32% 10’-15’

16’-18’ **6%**

> 20’



Retaining Wall Heights Cost Savings Alignment w/HOV Lane "Y" to I-90

< 15' **70%**
35% <10'
35% 10'-15'
(approx. 6'-10' noise wall)

15'-30' **20%**
(approx. 10-11' noise wall)

30'-40' **10%**
(approx. 6-7' noise wall)

Bellevue Way Noise Impacts

	MOU	MOU with HOV	Shift Bellevue Way with HOV
Light rail noise impacts (after mitigation)	13(0)	13(0)	14(0)
Traffic noise impacts (after mitigation)	0(0) *	Not avail.**	28(0)

*Existing traffic noise exceeds federal criteria at 28 residences

**High-level analysis of 4 locations on corridor shows 0-3 dBA increase, a slight change

Mitigation: Noise walls along elevated light rail, noise walls west of Bellevue Way for traffic impacts and potentially building insulation depending on final design.

Predicted noise levels after mitigation similar to existing for both MOU options and reduced compared to existing for Shift Bellevue Way with HOV.

Road over Rail at SE 8th

*Conceptual design, prepared by the City of Bellevue

112th Road-over-Rail – Retained cut at Surrey Downs Park

*Conceptual design, prepared by the City of Bellevue

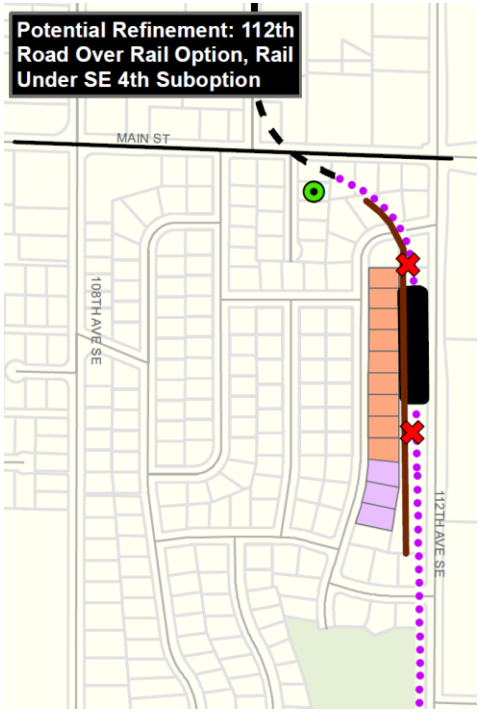
112th Ave SE:
Noise Impacts North of Surrey Downs Park

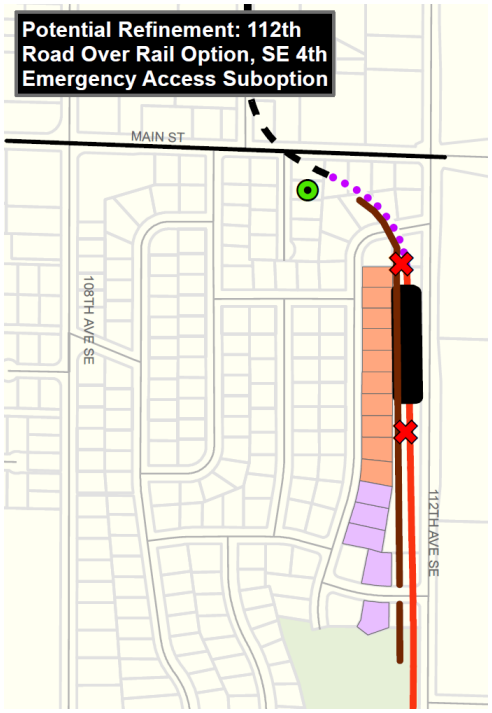
	SE 4th Access Options		
	Emergency Only	Open	Retained Cut
Light rail noise impacts			
Moderate	5	6	3
Severe	10	12	9
Total (after mitigation)	15(0)	18(0)	12(0)

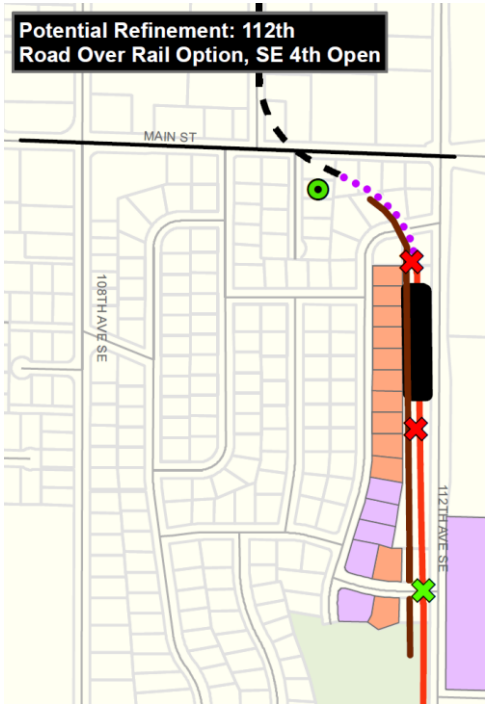
Mitigation: Noise walls west of light rail, building insulation for Open Option. Final mitigation to be determined during final design.

Overall, cumulative noise levels slightly lower with SE 4th Emergency Access compared with the Open and Retained Cut.

112th Ave SE - SE 4th Options : Noise Analysis Comparison







<u>Retained Cut:</u>
-Shorter noise wall

<u>Emergency Access:</u>
-Longer noise wall
-Overall cumulative noise levels lowest of three options

<u>SE 4th Open:</u>
-Longer noise wall
-3rd location for ped audible warning device and train bells

112th Road Over Rail Noise and Vibration

- Decreased number of noise impacts for all SE 4th sub-options
- Walls, special track work, building insulation mitigate impacts

112th Road Over Rail Noise and Vibration

Overall cumulative noise levels lowest with SE 4th Emergency Access and highest with Road under Rail

Bellevue Way – Implementation Principles

- Reduce the elevated portion of guideway north of the South Bellevue Park and Ride to a distance similar to the MOU project description
- Develop creative solutions to access to Mercer Slough Park
- Mitigate visual impacts of segment for neighborhood west of Bellevue Way to similar level provided by trench
- Mitigate noise impacts through variety of techniques, including review of potential for decreasing noise through measures that eliminate or contain noise at the source, such as depressing tracks below grade
- If Bellevue decides to implement the Bellevue Way HOV lane through a separate capital project review process that is already underway, include consideration of ways to phase construction of the two projects to maximize benefits and minimize costs of both projects

112th Ave SE – Implementation Principles

- Maintain one location for neighborhood access from 112th unless an appropriate alternative exists when considering travel time and cut-through traffic
- Continue commitment to no gates/bells along 112th
- Mitigate visual impacts of segment for neighborhood west of 112th to a similar level provided by trench
- Mitigate noise impacts through variety of techniques, including review of potential for decreasing noise from train wheels through measures that eliminate or contain noise at the source, such as depressing tracks below grade
- Prepare alternatives for consideration of early property acquisition in this area as part of design process
- Consider options for developing and providing noise and visual mitigation early in the construction phase
- City staff is directed to examine future Surrey Downs park functions

Downtown Station – Implementation Principles

- Ensure that station design is of the quality consistent with its status as the centerpiece of the Downtown transit network
- Ensure that the rider experience is one that includes safe and comfortable facilities
- Ensure that the station is consistent with City's land use and mobility plans
- Include further refinement of walkshed and ridership analysis to allow for full consideration of the level of service each station provides for the downtown transit system