

North Link Project

Light Rail Review Panel Briefing

May 5, 2011



Meeting Overview

- Light Rail Review Panel (LRRP) process
- Link system overview
- Light rail design considerations
- North Link project
- Next steps - LRRP

Light Rail Review Panel

- Panel made up of members from City of Seattle's
 - Design Commission
 - Planning Commission
 - Arts Commission
- Reviews Sound Transit's project plans at 30%, 60% and 90% design completion
- Prior LRRP previously reviewed North Link project during earlier planning and EIS phases

Link Light Rail System

- 16 miles of light rail with 13 stations currently in service
- University Link under construction; opens 2016
- ST2 Plan funded extensions to Overlake, Lynnwood, and Federal Way
- 54 mile system



Link Light Rail System

- Light Rail is versatile: at-grade, elevated, tunnels
- Electrically powered light rail vehicles (LRVs) run on railroad tracks
- Power delivered by Overhead Contact System (OCS)
- Central Link stations designed for 4-car trains (380' platforms)
- Tacoma Link designed for 1 vehicle (90' platforms)



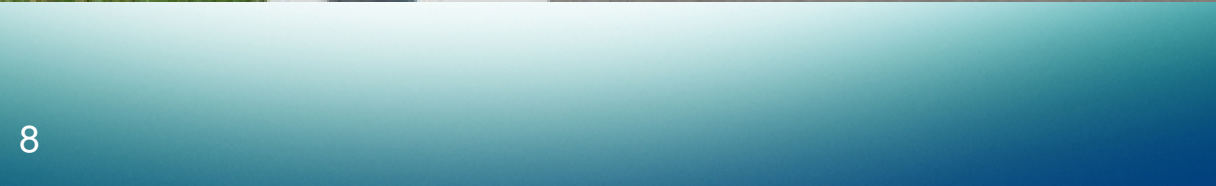
Link Light Rail Basics

- Traction power substations (TPSS)
- Signals buildings
- Communications cabinets
- Overhead Contact System (OCS)





Central Link Light Rail Vehicles

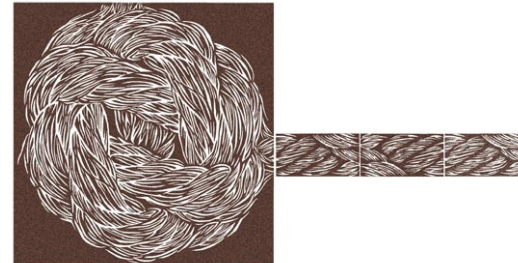




Stations - Balanced Approach

A. Elements of Continuity

- Station layout
- Families of parts / materials
 - standard glazing sizes
 - paving / way-finding
 - light fixtures
 - color palette
- ST signage



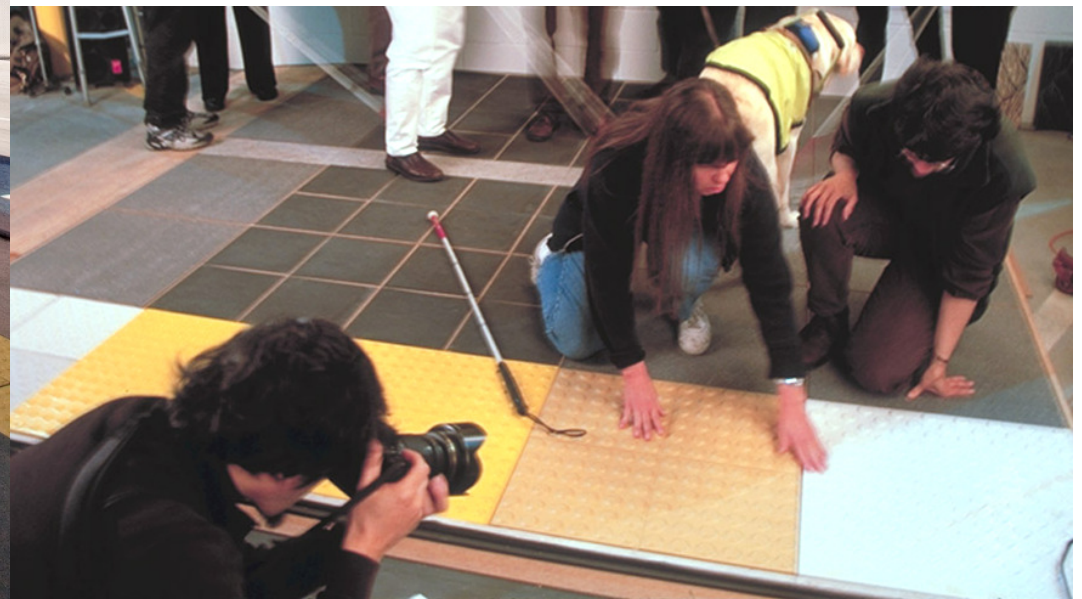
B. Elements of Differentiation

- Type of station
- Community input
- STart program



System-wide Elements

- Station signage
- Tactile & way-finding pavers
- Vehicles



Types of Stations



Community and Art







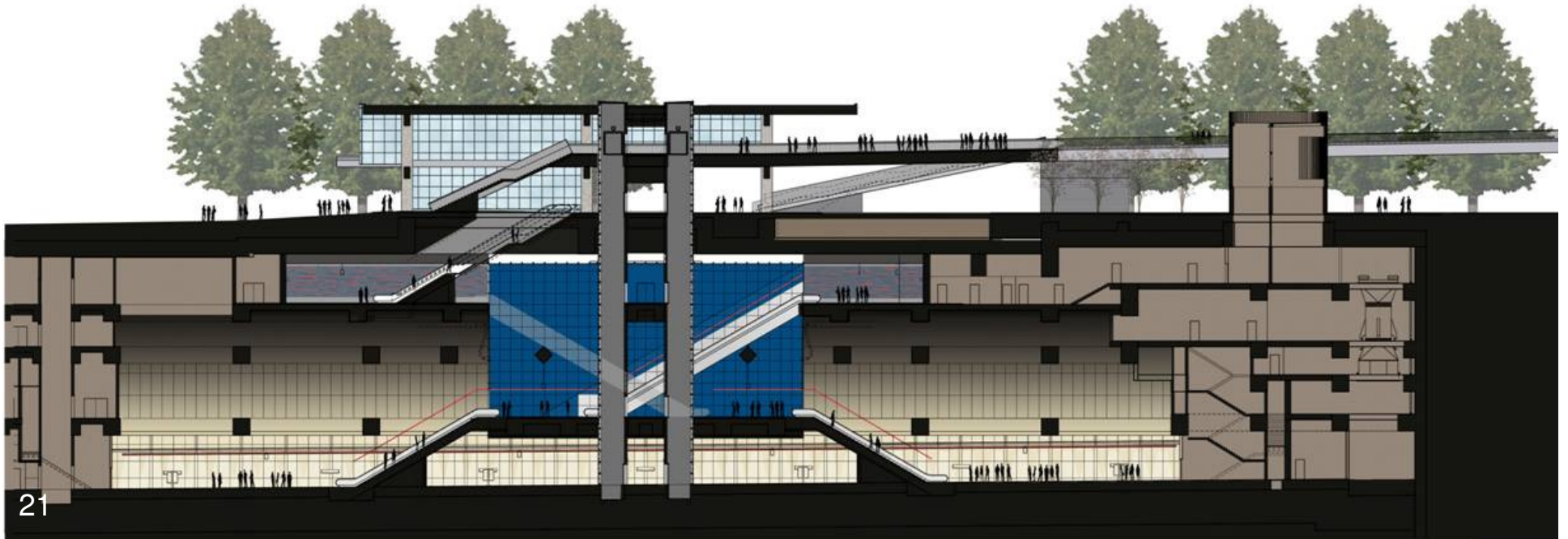












2008-2009 Design Excellence Award

SEATTLE Central Link Light Rail Stations

Stadium Station

SODO Station

Beacon Hill Station

Mount Baker Station

Columbia City Station

Othello Station

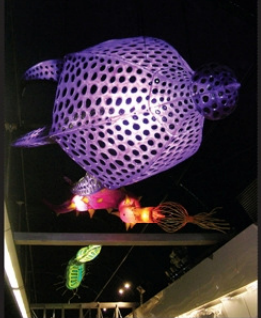
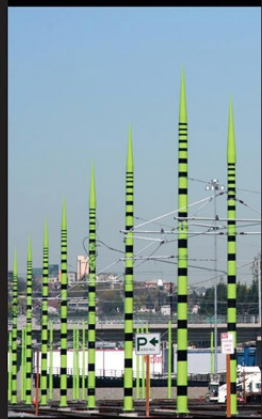
Rainier Beach Station

To Westlake Station

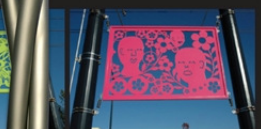
To Airport Station



Operation and Maintenance Facility



Systemwide / Between stations



North Link Overview

- 3.3 miles twin-bore tunnels
- 1.0 miles at-grade and elevated structures from NE 85th to Northgate
- Underground stations at Brooklyn and Roosevelt
- Elevated station at Northgate
- Adds 62,000 daily boardings (2030)
- Revenue service in 2020 or 2021
- ST2 Estimate - \$1.35 B (2010 \$'s)



Project Background

- Preliminary Engineering (PE) and Final Supplemental EIS completed in 2006
- Funded with voter approval of ST 2 Plan in 2008
- Early final design work/value engineering (VE) review in 2008-9
- Two recommended changes from PE work:
 - North Portal, I-5 tunnel alignment changes
 - Brooklyn Station re-configuration
- North Link final design and property acquisition now underway



Northgate Station

Key features:

- Elevated station spans NE 103rd St.
- 25' - 45' high with escalators, elevators and stairs
- North entrance connects Mall
- South entrance connects to buses and park-and ride lots
- Bicycle parking
- 15,000 daily boardings (2030)

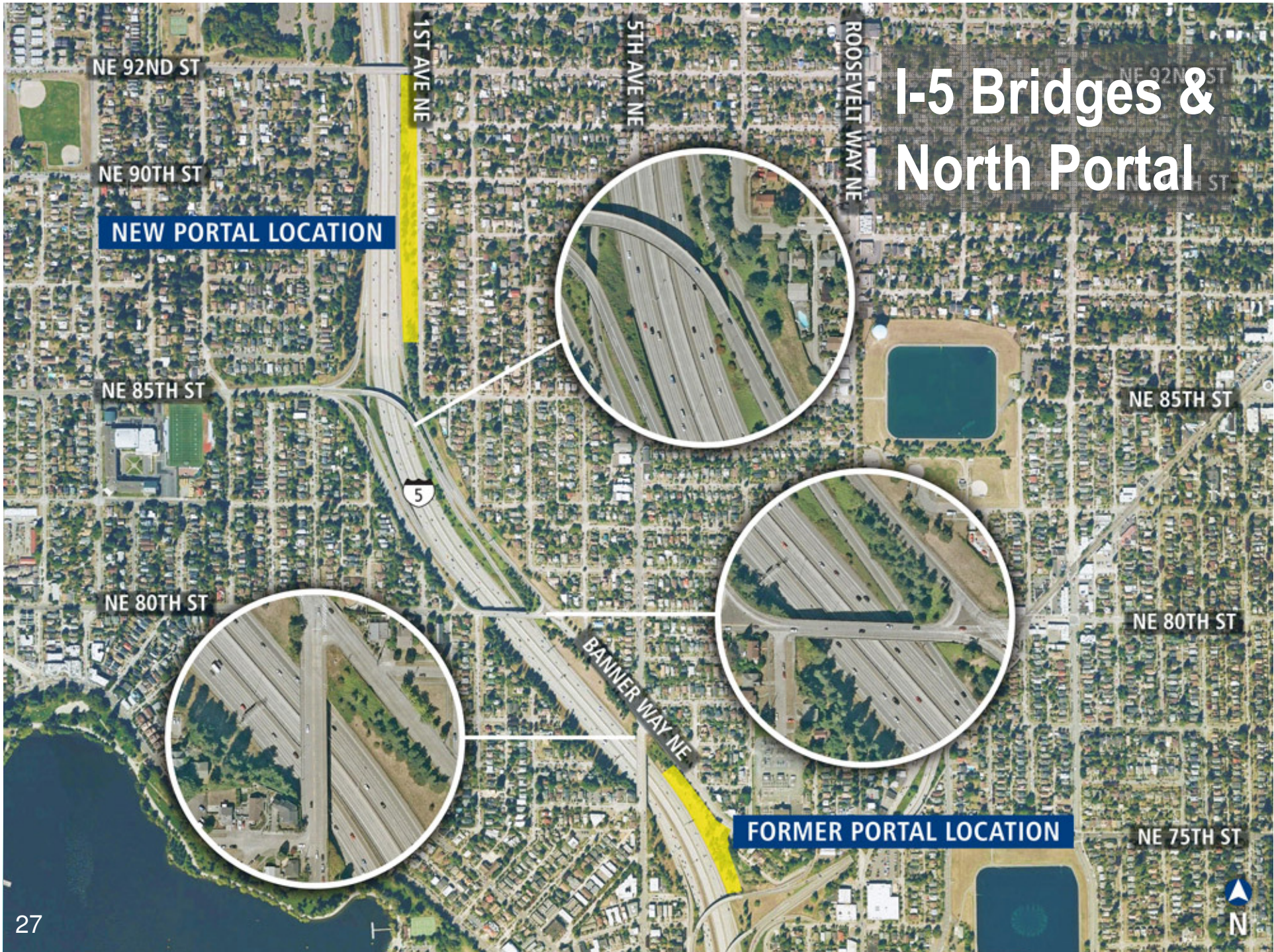


Northgate Station

Current Status:

- Team from ST, KCM and SDOT working on rail station, bus facility and access issues
- Integrated design options developed, refined
- ST also advancing portal and elevated guideway design
- HUD planning grant
- Project update public meeting - May 17

I-5 Bridges & North Portal



I-5 Tunnels and Portal Change Advantages

- Avoids difficult cut-and-cover tunnel work along I-5
- Provides a larger staging site with better access
- Allows tunnel mucking operation to be shifted to portal
 - reduces truck traffic in Roosevelt neighborhood
- Allows more construction schedule flexibility
- Less impact to residential areas
- Lower total cost
- Public support for change





Roosevelt Station

Key features:

- Underground station with two entrances
- 70'- 90' deep with escalators, elevators and stairs
- Bicycle parking
- 8,000 daily boardings (2030)
- Tunneling operations site
- Future TOD following station construction



Roosevelt Station

Current Status:

- Station design is advancing
- Major properties acquired
- Four townhouse buildings on site advertised for relocation
- Public open house to review 30% station design - May 26



Brooklyn Station

Key features:

- Underground station with two entrances
- 75' – 85' deep with escalators, elevators and stairs
- Bicycle parking
- 12,000 daily boardings (2030)
- Constrained construction site
- Future TOD following station construction

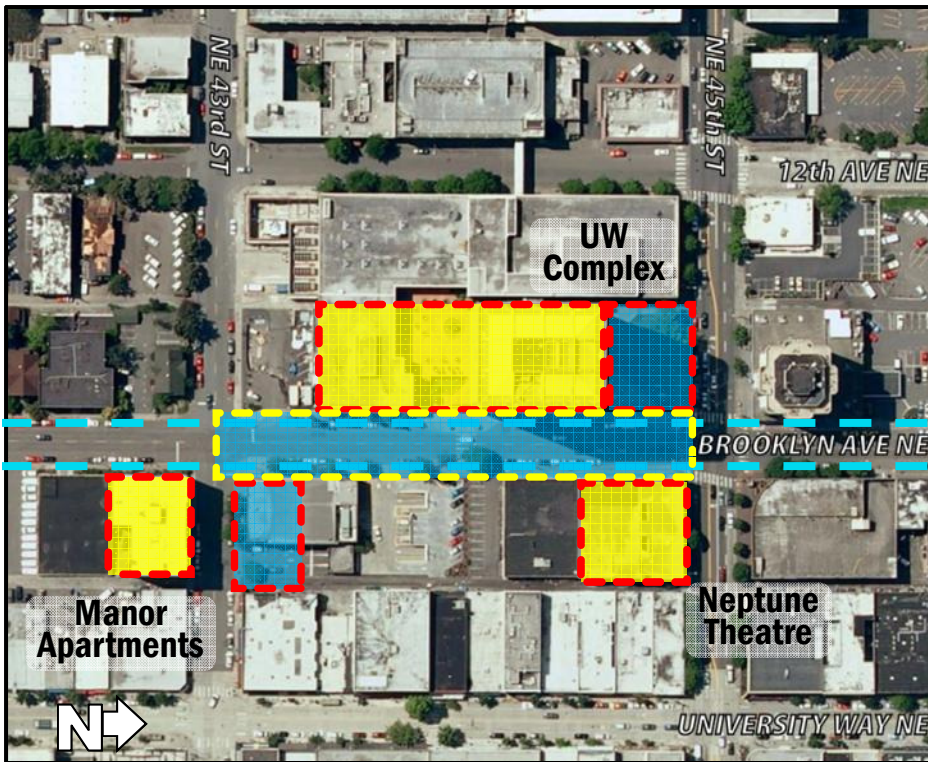


Brooklyn Station

Background:

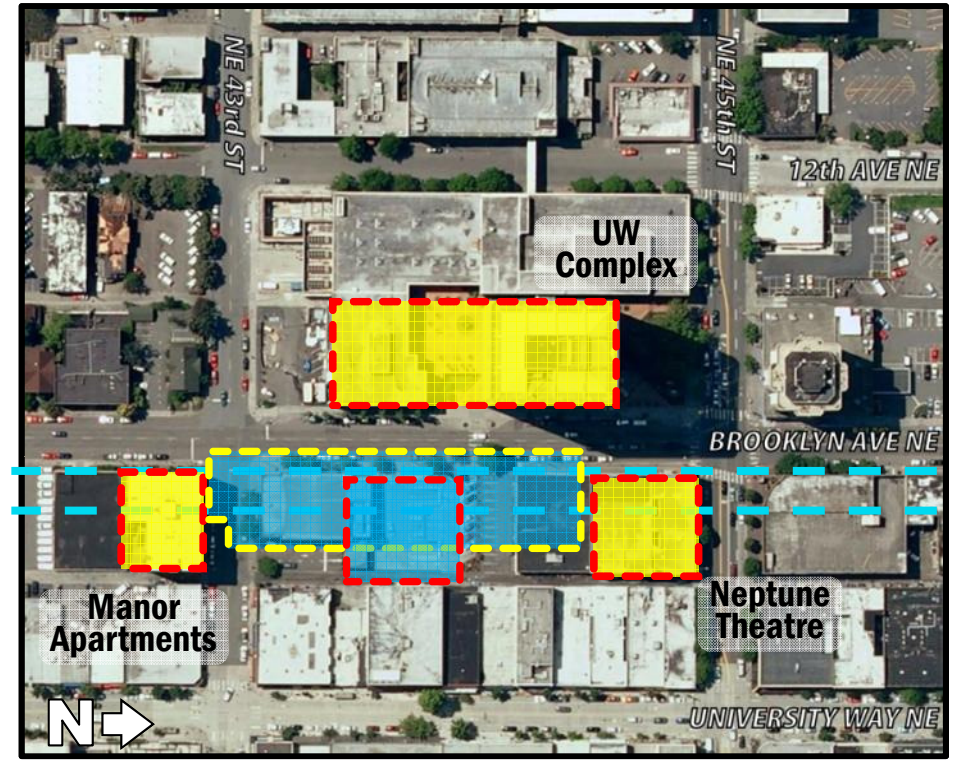
- Staff reviewed two design options and constructability issues with ST Board Capital Committee on January 13
- Staff presented station options to public on January 27; over 150 people attended
- Public feedback reviewed with Capital Committee in February

Brooklyn Station Alternatives Considered



Option 1 (Modified PE)

- Two Entries
- Entirely Within Brooklyn Avenue



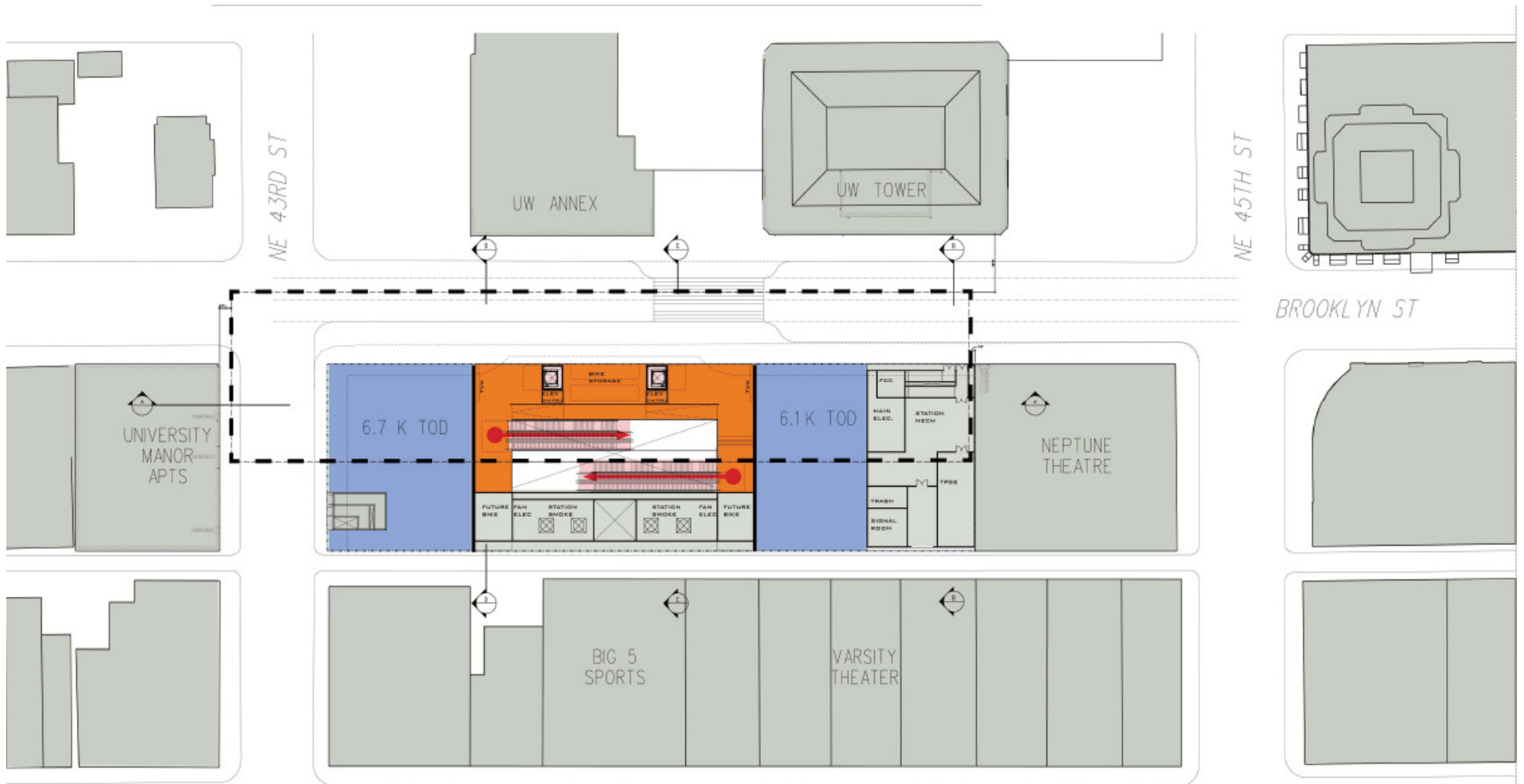
Option 2 (Single Entrance)

- Single Entry
- Off Brooklyn Avenue

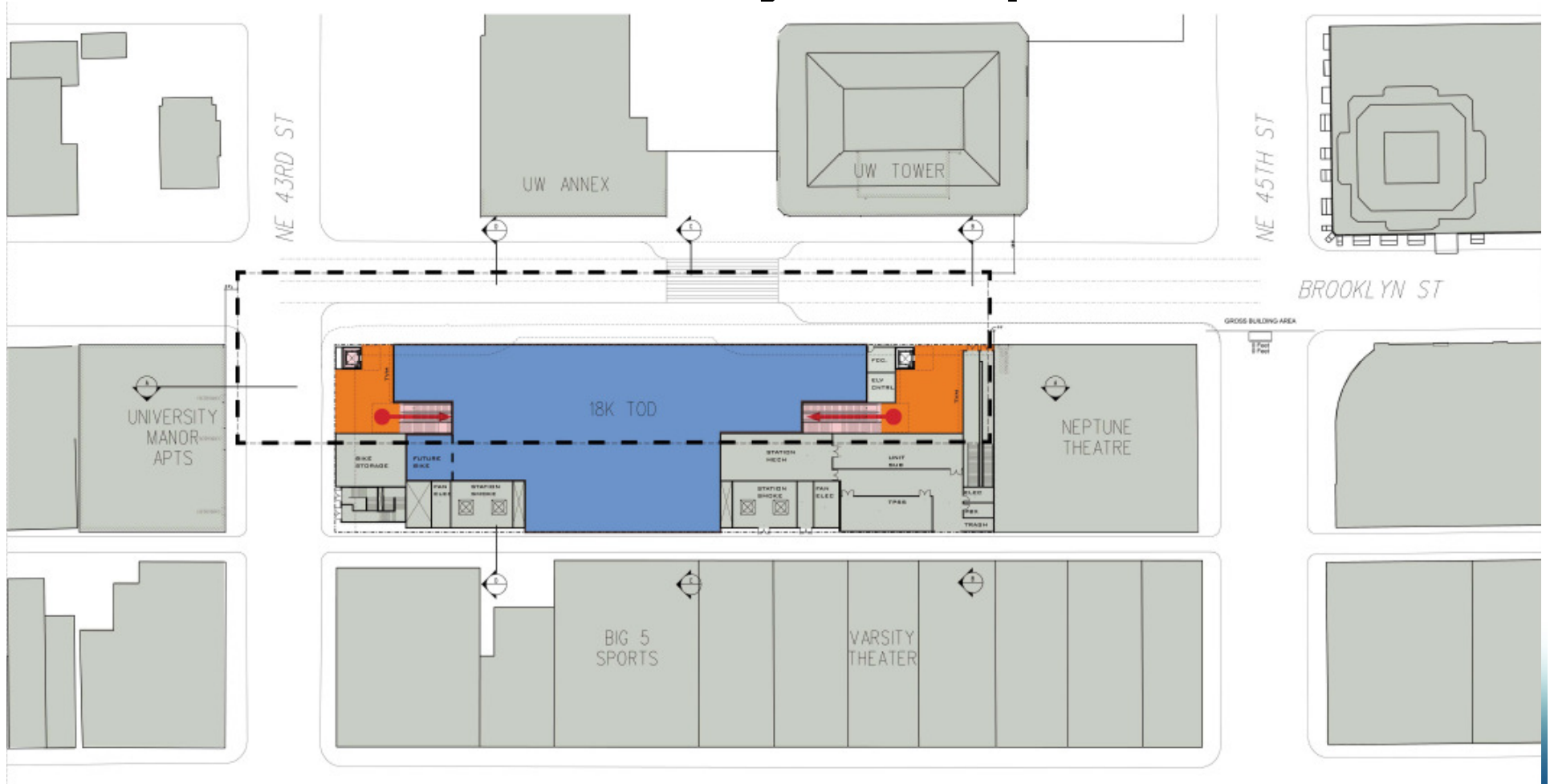
Brooklyn Station - Staff Conclusions

- Option 2 was best design to advance forward
 - meets long-term passenger needs
 - lower overall construction impacts
 - lower cost and schedule risk, lower cost (\$10 million)
- ST explored ways to further improve Option 2 design
 - improve entrance visibility and way-finding
 - refine TOD analysis of station overbuilding
- Design evolved to improved dual-entry concept
 - received strong community and UW support

Brooklyn Station – Single Entrance



Brooklyn Station Design Refinement – Dual Entry Concept



Brooklyn Station Design Refinement

- Station refined to provide two distinct entries - north and south
- Improves circulation within station; provides better access to TVM's and better location for elevators
- Maintains location of station box away from UW Tower, with reduced cost and risk
- Consolidates and enhances site for future TOD opportunities
- Dual entry concept being advanced by design team
- Public open house to review 30% station design - June 9

Other Final Design Activities

- Surveying – base mapping nearly complete
- Geotechnical borings – 54 of 103 complete
- Alignment refinement – track design improvements
- Demolition contract – 60% design submittal in May
- Tunnel contract – 60% design submittal in July
- Systems design work started in March

Construction Planning

- Defining scope of contract packages
 - demolition and utility relocations
 - tunnel and station contracts
 - track and systems work
- Developing staging and site access plans
- Evaluating contracting methods
- Hiring independent review consultants (VE, constructability, risk)
- First construction contract (Roosevelt and Brooklyn site demolition) expected to be awarded by May 2012

Next Steps – LRRP

- Roosevelt Station 30% design review – May 19
- Brooklyn Station 30% design review – June 2
- Northgate Station 30% design review – November 3 (tentative)

Up-coming Public Meetings

- Public open house meetings have been scheduled:
 - May 17: Northgate Station design update, bus facilities, portal, elevated guideway
 - May 26: Roosevelt Station 30% design
 - June 9: Brooklyn Station: 30% design

Questions?

