

VII. STANDING COMMITTEE

B. Finance, Audit and Facilities Committee

Sound Transit

See attached PowerPoint presentation.



# Sound Transit/University of Washington

## North Link Light Rail Project Implementation Agreement Briefing

To the

**University of Washington Board of Regents  
Finance, Audit and Facilities Committee**

June 9, 2005



# North Link Preferred Alternative

**University District to Northgate:** >  
Northgate and Roosevelt Stations

**Ship Canal to University District:** >  
Brooklyn and UW Stations

**Montlake Vent:** at the Hop-In site >

**Convention Place to Ship Canal:** >  
Capitol Hill and First Hill Stations



# UW Station

Potential 3rd Entrance

North Entrance

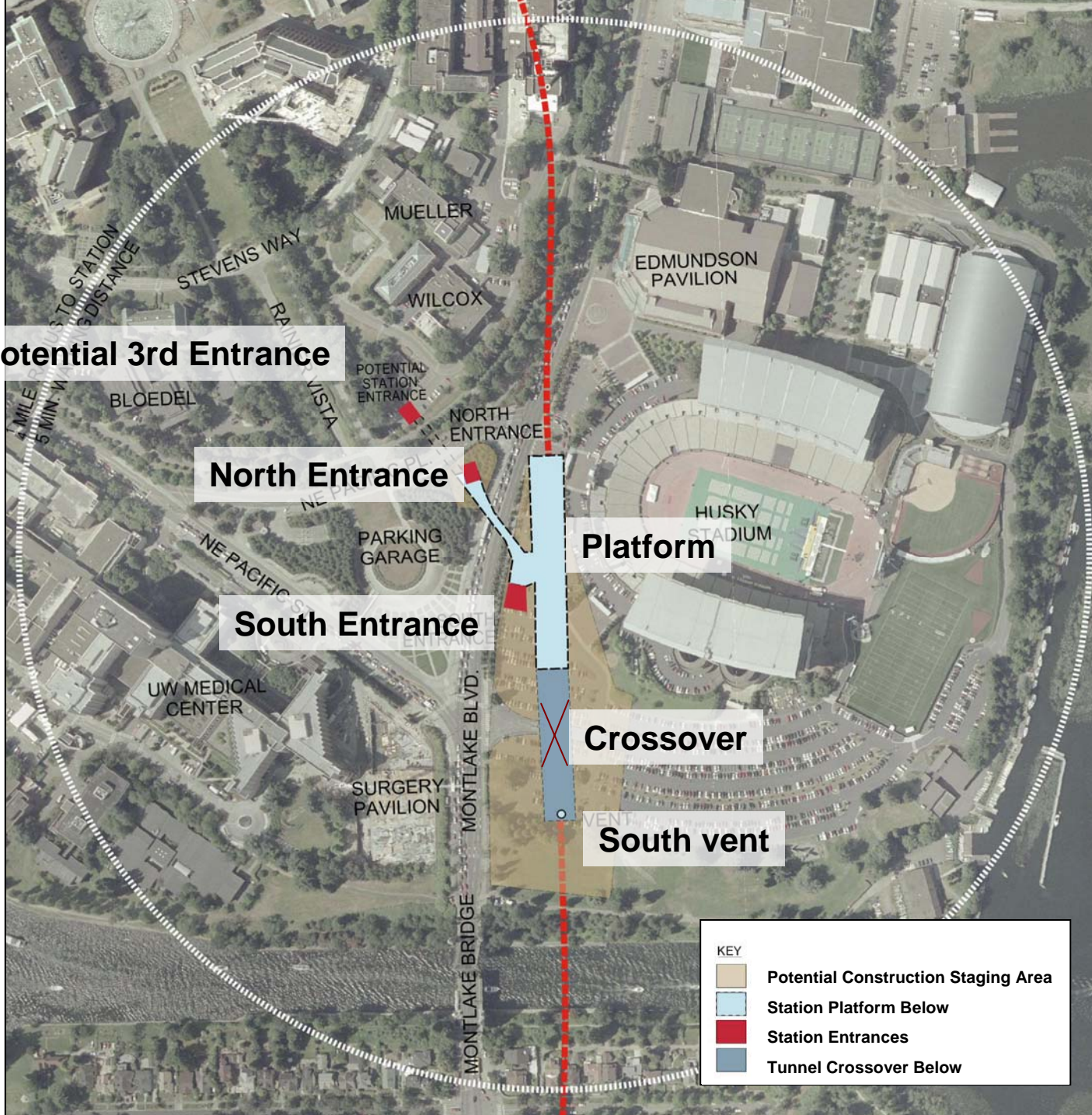
South Entrance

Platform

Crossover

South vent

Basic Program:  
-two entrances  
-crossover



KEY	
	Potential Construction Staging Area
	Station Platform Below
	Station Entrances
	Tunnel Crossover Below

# Sound Transit/University of Washington

## Implementation Agreement

This agreement will set forth the terms and conditions by which the University of Washington grants Sound Transit the authority to construct, operate, monitor and maintain light rail facilities on University property.



# Key Challenges

- EMI (Electro-Magnetic Interference)
- Vibration
- Performance Assurance
- Interim Terminus
- Tunneling Spoils Removal
- Construction Impacts
- Parking Replacement
- Station Design/3<sup>rd</sup> Entrance
- Property

# Key Challenges

## EMI

- ST has refined EMI predictions and mitigation design
- ST issued updated draft EMI Mitigation Report in February 2005
- UW/ST working group met March 8 and discussed EMI report and UW provided written comments
- **General concurrence on predicted EMI levels and mitigation**
- Next steps:
  - Follow-up on remaining UW comments
  - Continue discussions and refinements of EMI monitoring
  - Observe testing of similar mitigation design in Bielefeld Germany and St. Louis

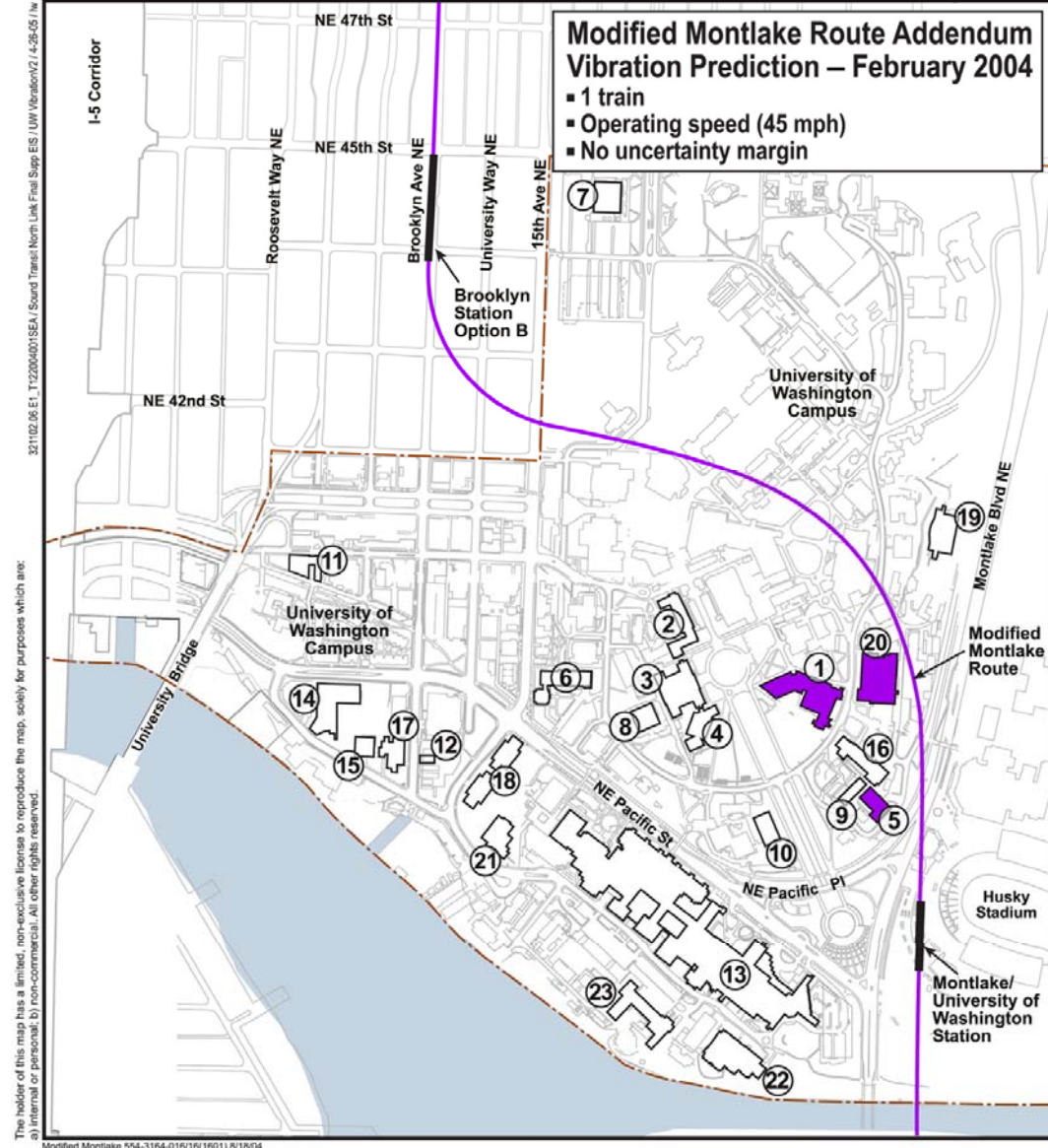


# Vibration

- Vibration, like EMI, is a concern to researchers who currently enjoy a competitive advantage in the “quiet” center of campus.
- UW told ST in 2003 that a route through the center of campus was unacceptable; ST proposed the MMA in a February, 2004 supplemental DSEIS.
- UW asked ST in July, 2004 to commit contractually not to exceed the thresholds they published in February, 2004
- ST updated analysis and issued draft vibration report in March, 2005

# Modified Montlake Route Addendum Vibration Prediction

February 2004



### UW Buildings with Vibration Sensitive Equipment

- |  |  |   |
|--|--|---|
| 1. Electrical Engineering/Computer Science | 9. Roberts Hall                            | 17. Marine Studies                                    |
| 2. Johnson Hall                            | 10. Winkenwerder Hall                      | 18. Bioengineering/Genomics                           |
| 3. Bagley Hall                             | 11. Henderson Hall                         | 19. Fluke Hall  |
| 4. Chemistry                               | 12. Oceanography Research Building         | 20. Mechanical Engineering and Annex                  |
| 5. Wilcox Hall                             | 13. UW Medical Center                      | 21. Ocean Sciences                                    |
| 6. Physics/Astronomy                       | 14. Fisheries Sciences                     | 22. Center on Human Development and Disability (CHDD) |
| 7. Burke Museum                            | 15. Fisheries Teaching and Research Center | 23. Fisheries Center                                  |
| 8. Benson Hall                             | 16. More Hall                              |   |

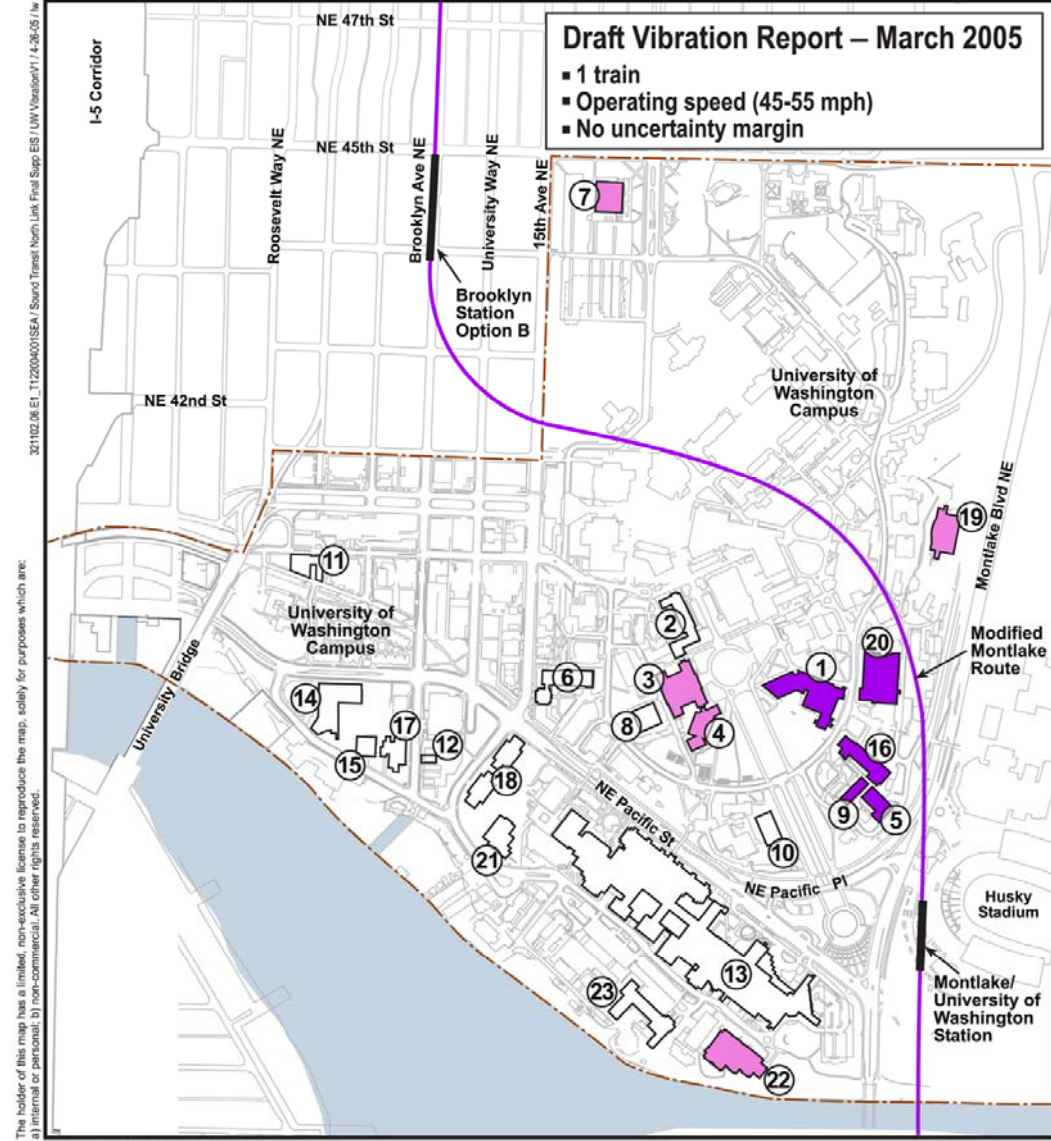
 Mitigated impact exceeds UW requested threshold.

**Mitigated Impacts for UW Buildings with Vibration Sensitive Equipment**



# Draft Vibration Report

## March 2005



**UW Buildings with Vibration Sensitive Equipment**

- |  |  |   |
|--|--|---|
| 1. Electrical Engineering/Computer Science | 9. Roberts Hall                            | 17. Marine Studies                                    |
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| 3. Bagley Hall                             | 11. Henderson Hall                         | 19. Fluke Hall  |
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| 7. Burke Museum                            | 15. Fisheries Teaching and Research Center | 23. Fisheries Center                                  |
| 8. Benson Hall                             | 16. More Hall                              |   |

Mitigated impact exceeds UW requested threshold.

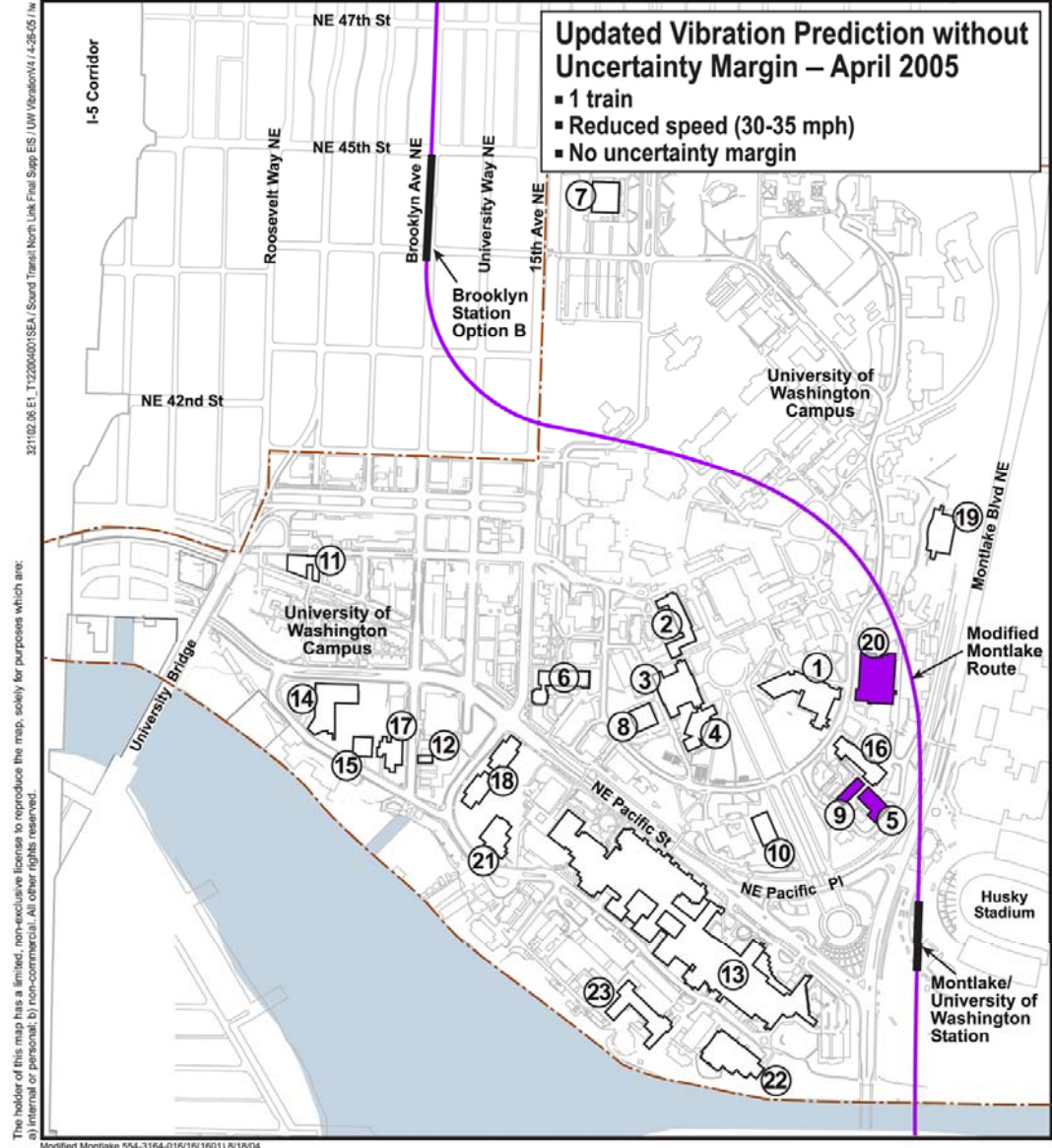
Mitigated impact exceeds UW requested threshold at 8 Hz, limited speeds only.

**Mitigated Impacts for UW Buildings with Vibration Sensitive Equipment**



# Updated Vibration Prediction without Uncertainty Margin

April 2005



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### UW Buildings with Vibration Sensitive Equipment

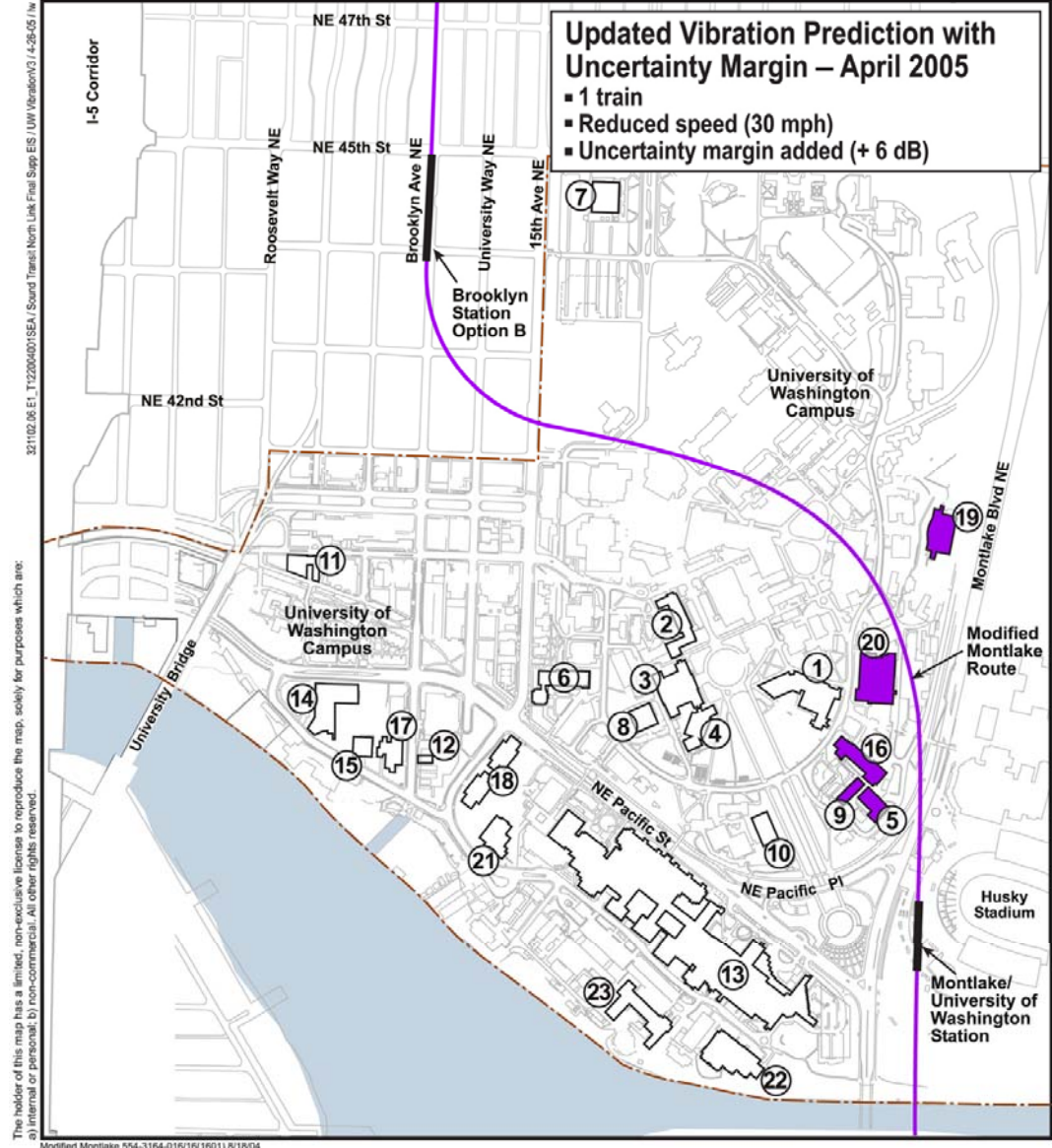
- |  |  |   |
|--|--|---|
| 1. Electrical Engineering/Computer Science | 9. Roberts Hall                            | 17. Marine Studies                                    |
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| 3. Bagley Hall                             | 11. Henderson Hall                         | 19. Fluke Hall  |
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| 7. Burke Museum                            | 15. Fisheries Teaching and Research Center | 23. Fisheries Center                                  |
| 8. Benson Hall                             | 16. More Hall                              |   |

Mitigated impact exceeds UW requested threshold.

**Mitigated Impacts for UW Buildings with Vibration Sensitive Equipment**

# Updated Vibration Prediction with Uncertainty Margin

April 2005



### UW Buildings with Vibration Sensitive Equipment

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 Mitigated impact exceeds UW requested threshold.

**Mitigated Impacts for UW Buildings with Vibration Sensitive Equipment**



# Key Challenges

## UW Needs Assurance

- *UW needs certainty (thresholds) as to the impact of EMI and vibration caused by the ST trains*
- *EMI and vibration need to be measured and monitored*
- *If ST trains do exceed thresholds in, e.g., 2083, UW needs problem fixed immediately – no time to arbitrate*
- *UW has suggested a financial incentive that it can control to encourage ST to stay within thresholds*
- *ST proposes an assets maintenance fund to ensure corrective measures are taken promptly in the event a threshold is exceeded*

# Key Challenges

## Interim Terminus

*UW has consistently told ST an interim terminus south of NE 45<sup>th</sup> is unacceptable:*

- *Hide and ride, bus, auto, and pedestrian congestion*
- *“End of the line” concerns*
- *Significantly increases the elapsed time of construction on campus*



# Key Challenges

## Tunneling Spoils Removal

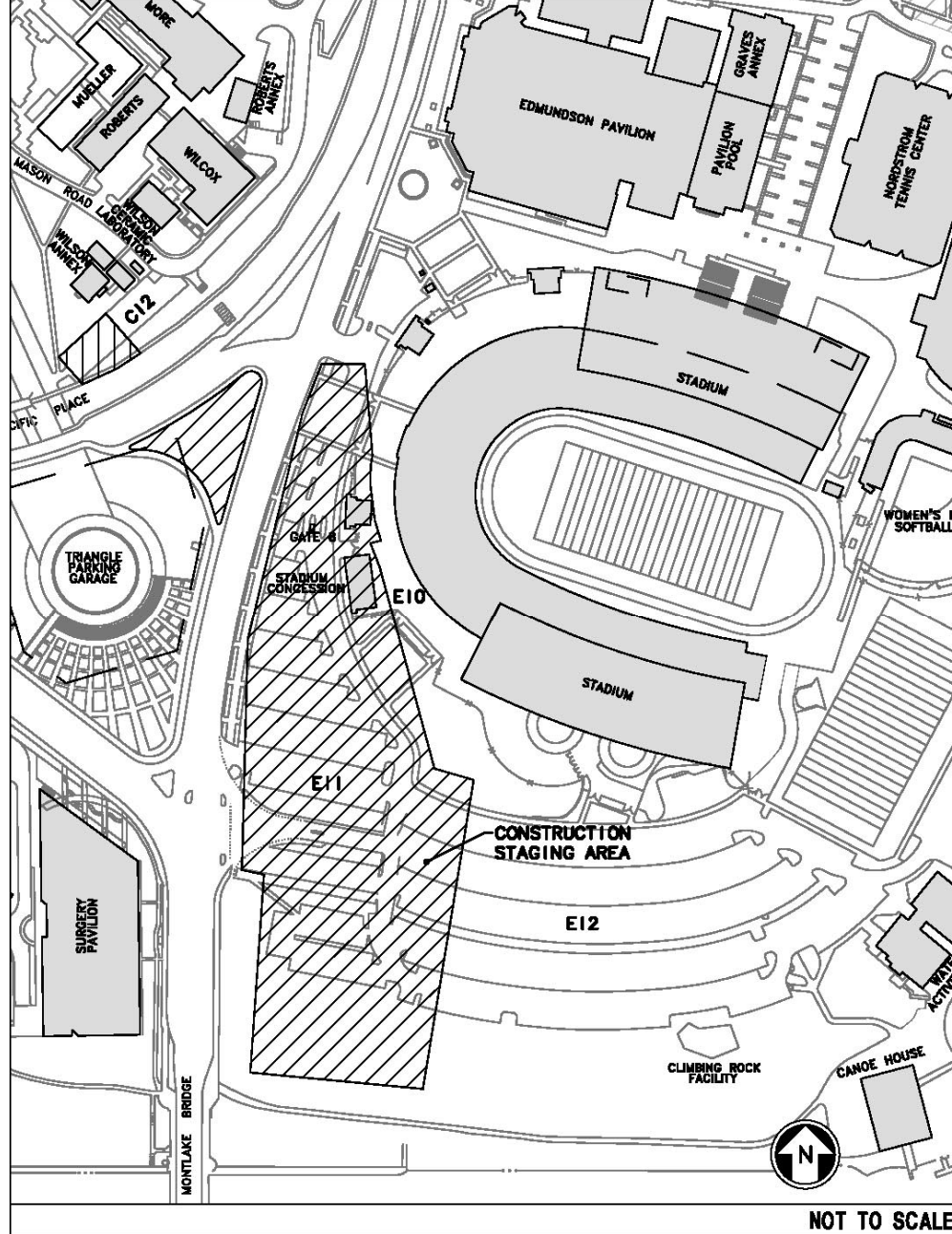
- *ST proposes removal of spoils from UW station and running tunnel between UW and Capitol Hill*
- *UW has consistently told ST that removal of non-UW spoils from the campus is unacceptable*
- *Future spoils associated with an extension North would be removed from a station north of campus*
- *UW concerns relate to the size of the staging area, duration of use and impacts of activities:*
  - *Size – UW wants smaller footprint to reduce parking loss*
  - *Duration – UW wants shortest duration to reduce impacts on Stadium /Health Sciences*
  - *Activities – Truck hauling, temporary spoils storage, conflicts with events, traffic congestion, noise impacts on patients, dust.*

# Key Challenges

## Construction

- *Construction duration is estimated by ST to be approximately 5.5 years from NTP to final completion*
- *ST wants about 6 acres to stage construction*
- *8-12 months to bore the tunnel under campus in future if interim terminus is allowed*
- *ST suggests prescribing construction requirements in contract documents:*
  - *Direction of tunneling*
  - *Maximum staging area size*
  - *Truck haul routes*
  - *Conduct of Construction*
  - *Incentives for contractor's early completion and efficient use of space*
- *Vibration impact of TBM (tunnel boring machine) not yet available*

# Staging Area



NOT TO SCALE

# Key Challenges

## Parking Replacement

- *If UW allows ST requested staging area, up to 630 parking spaces would be displaced for 5.5 years. About 100 of these would be permanently displaced*
- *Up to 200 additional parking spaces are needed for contractor parking*
- *Parking is currently used daily by UWMC and ICA, and is prime event parking*
- *UW has asked ST to construct replacement parking to be operational before light rail construction begins*
- *ST committed to mitigate both short and long-term parking impacts*
- *Several possible parking replacement scenarios are under consideration*

# Parking Replacement Options



- Structured parking
  - Rainier Vista
  - E12 South
- Surface parking
  - E1 North



# Key Challenges

## Property

- ST needs continuing control of property used for light rail operations and maintenance
- Current property ownership in Triangle area is complex
- ST/UW looking at means to establish long-term property interest for ST



# Schedule

- PE completed - May 2005
- Draft SEIS publication planned - June 2005
- Risk assessment and value engineering – June/July 2005
- Implementation agreement - July/August 2005
- Final SEIS completed - fall 2005
- ST Board adopts North Link project - fall 2005