Northgate Pedestrian & Bicycle Bridge

Open House
October 15, 2015
Mission: deliver a high-quality transportation system for Seattle

Vision: connected people, places, and products

Committed to 5 core values to create a city that is:
- Safe
- Interconnected
- Affordable
- Vibrant
- Innovative
INTRODUCTION Design Collaboration

- West side ramp alignment, storm water detention, circulation & safety
- Connection to station mezzanine and construction timing
- Right-of-Way, lighting, and environmental design
- Traffic planning and design of intersection at 1st Ave NE and NE 100th St

See stations for more info!
• Project Overview
• Timeline
• Project Funding
• Design Criteria
• Bridge Alignment and Design
• Next steps
### Project Funding

<table>
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<th>Committed</th>
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<tr>
<td>$5 million</td>
<td>Sound Transit</td>
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<tr>
<td>$5 million</td>
<td>City of Seattle</td>
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<tr>
<td>$10 million</td>
<td>Washington State</td>
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<table>
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<th>Potential Additional Funding</th>
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| $15 million                  | Federal TIGER Grant  
   (out of a total $25 million grant) |
| $10 million                  | Move Seattle Levy  
   (out of the $15 million designated in levy) |

*Planning-level project cost estimate: $26.3 million*
INTRODUCTION | Design and Alignment Criteria

- Safety
- Connectivity
- Cost + Constructability
- Visual Impact + Presence
- Environmental Impact

APPROACH NODES + SPAN DESIGN
CPTED: Crime Prevention Through Environmental Design

- A multi-disciplinary approach to deterring criminal behavior through environmental design.

- CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts by affecting the built, social and administrative environment.
CPTED: Crime Prevention Through Environmental Design

Defining Design Characteristics of this project:

- Visibility
- Lighting
- Geometry
- Connectivity
INTRODUCTION | Bridge Components

- PRIMARY SPAN: +17.5’ clear height beneath
- WEST APPROACH: +35’ elevation gain
- EAST APPROACH: +45’ elevation gain
- CONNECTION TO SOUND TRANSIT STATION: @ ~20’ above grade
RECAP | Preferred Alignment

- Provides better sight lines for safety
- Links to existing and future bike facilities
- Proximity to NSC campus
- Ideal connection elevation at future Sound Transit Light rail station
- Minimizing ramp length/crossing time
- Minimizes environmental impacts

See stations for more info!
RECAP | Preferred Span Design: Tube/Truss

- Integration of safety systems: railings, barriers, and lighting
- Structural depth minimizes ramping
- Constructability and cost
- Unique aesthetic qualities
- Community preference

See stations for more info!
ALIGNMENT UPDATE | Post-Survey Grade Challenges

Desired grade alignment

Actual grade alignment
ALIGNMENT UPDATE | CPTED

- Improved sight lines for safety
- Increased exposure
ALIGNMENT UPDATE | Benefits

- **Benefits**
  - Ideal Connection at Grade
  - Coordinated with Utilities
  - Enhanced Visibility

**Feet Above Grade**
- 0 to 5
- 5 to 15
- 15 to 30
- 30 to 50
PROJECT OVERVIEW | Channelization

All Users Keep Right

See stations for more info!
PROJECT OVERVIEW | Mixing Zones

- Relative pedestrian volumes
- Relative bicyclist volumes
  - Mixing Zone on ground
  - Mixing Zone on bridge

N 100th St
- to: Northgate Mall vicinity
- to: Interurban North bikeway
- to: Maple Leaf neighborhood
- to: Greenlake neighborhood
PROJECT OVERVIEW | Crossing Times

DISTANCE: 1,750 FT

WALK: 7.0 min

RUN: 3.5 min

DISTANCE: 2,584 FT

WALK: 10.0 min

RUN: 5.0 min

WHEELCHAIR: 15 min

SKATE/BIKE: 3.5 min
PROJECT OVERVIEW | Characters of Place

- Neighborhood
- Sanctuary
- Campus
- Wetland
- Highway
- Transit Hub
PROJECT OVERVIEW | Sinuous Structural Expression
PROJECT OVERVIEW | Structural Typologies

Concrete Girder ↔ Transitional Truss ↔ Structural Steel Tube
DESIGN | Three Segments

1. EAST

2. MAIN SPANS

3. WEST APPROACH

See stations for more info!
DESIGN | East Approach Elements

1. Access
2. Bridge Components
3. Sound Transit Connection
EAST APPROACH | Access: Pedestrians
EAST APPROACH | Access: Bikes
EAST APPROACH | Access: Adjacent Automobile Movement
EAST APPROACH | Access: Transit
EAST APPROACH | Bridge Components

Elevated Concrete Girders

I-5 Express

I-5 NB

N 100th ST

1st AVE
EAST APPROACH | Bridge Components

Steel Tube/Truss Spans
EAST APPROACH | Bridge Components

Sound Transit Connection
View South along 1st Ave
View from Station Mezzanine

View East from 1st Ave

See stations for more info!
EAST APPROACH | View from South East
2. MAIN SPANS
MAIN SPANS | Summary

1. Spans
2. Structural Concept
3. Railings Barrier + Lighting
4. Column Design
5. Transition Truss
MAIN SPANS | Span Distances

East Span: 175'
West Span: 250'
- Higher quality fabrication
- Minimizes costly on-site labor
- Minimized impact to I-5
MAIN SPANS | Structural Tube Concept
Throw Barrier / Guardrail: Stainless Steel Cable Mesh

Railing: Sustainably Harvested Hardwood

Support Structure: Stainless Steel
MAIN SPANS | Lighting Simulations
See stations for more info!
MAIN SPANS | Looking East
MAIN SPANS | Views From I-5

From NB I-5

From SB I-5
3. WEST APPROACH
WEST APPROACH | Components

Steel Tube/Truss Spans
WEST APPROACH | Components

Transitional Tube/Truss
WEST APPROACH | View West to North Seattle College
WEST APPROACH | Access: Pedestrians
WEST APPROACH | Access: Bikes
WEST APPROACH | Access: Adjacent Automobile Traffic
OVERALL | View from North West
WEST APPROACH | View from South
ART INTEGRATION | Charles Sowers

WAVE WALL: LIGO, Livingston, LA

WINDSWEPT: Randall Museum, San Francisco, CA

See stations for more info!
Contact Us

northgatebridge@seattle.gov | (206) 684-8766
www.seattle.gov/transportation/northgatepedbridge.htm

www.seattle.gov/transportation