AGENDA

• RECAP
• ALIGNMENT + OVERVIEW
• BRIDGE + LANDSCAPE DESIGN
• DISCUSSION
• Design input and outreach work with North Seattle College

• Design and schedule coordination with Sound Transit

• Technical and Right-of-Way coordination with WSDOT

• Traffic planning and coordination with King County Metro
RECAP | Public Outreach

• Open House held June 2014
• Continual briefings:
  – NSC
  – modal Advisory boards (Bike and Ped)
  – stakeholders (District Councils and various advocacy/community groups)
  – OCTOBER 15 OPEN HOUSE
• Final Open House will be scheduled around 90% Design
$26.3\text{M}$ Project Cost Estimate (planning-level)

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<tr>
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<td>Sound Transit</td>
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<td>Federal TIGER Grant Application (combined Bridge and Bike Share application)</td>
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<td>Move Seattle Levy</td>
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## RECAP | Project Timeline

### Northgate Pedestrian & Bicycle Bridge Project Schedule

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<th>Year</th>
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- Early Design
- Environmental Review and Approvals
- Final Design
- Bridge Construction (dependent on funding and site access)
- Sound Transit Northgate Station Construction
This project will provide non-motorized improvements in the Northgate, North College Park and Licton Springs neighborhoods in the vicinity of Sound Transit’s North Link Station and the North Seattle College.

Improvements include:

- Pedestrian/bicycle overpass over I-5
- Connections of west and east neighborhoods/businesses
- Connection of integrated transit facilities with the bridge and separated bicycle facilities
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.
RECAP | Project Design Goals

- Provide a safe and efficient link for pedestrians and bicyclists over I-5
- Inspire users to connect with their environment through a rich variety of experiences across the bridge
- Enhance local environmental systems
RECAP | 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 | Screening Criteria

- Connectivity/Geometry
- Safety
- Visual Impact/Presence
- Environmental Impact
- Constructability
- Cost

APPROACH NODES + SPAN DESIGN
• Links to existing and future bike facilities
• Proximity to Campus
• Ideal elevation at connection to Sound Transit Station
RECAP | Preferred Span Design: Tube/Truss

- Constructability
- Integration of railings and barriers
- Unique Aesthetic Qualities
- Community Preference
VIEW FROM NORTHEAST
ALIGNMENT + OVERVIEW
CONTEXT | Social + Cultural: Current

- 3,600 Households in Northgate area
- 14,000 students + 450 faculty
- Bartonwood Sanctuary + Kumasaka Greenlake Gardens site
- 6,000 people per day served by King County Metro Transit Center
- 11,000 Northgate employment opportunities
CONTEXT | Social + Cultural: Projected

Future growth or decline tied to economic conditions. Currently in decline.

3,000 People per day to use network of Northgate paths upon opening.

15,000 People per day to be served by Sound Transit Northgate Station upon opening.

1,750 Housing units expected by 2024.

15,000 Northgate area job opportunities by 2024.
CONTEXT | Existing Water Flow
ALIGNMENT UPDATE | Concept Design Alignment

EXISTING UTILITIES CONFLICT
ALIGNMENT UPDATE | Post-Survey Grade Challenges

Desired grade alignment

Actual grade alignment
ALIGNMENT UPDATE | WSDOT Park-and-ride Lot

CONCEPT PHASE: EXCLUDE PARK-AND-RIDE LOT

DESIGN PHASE: INCLUDE PARK-AND-RIDE LOT
ALIGNMENT UPDATE | CPTED

INCREASED EXPOSURE

IMPROVED SIGHT LINES FOR SAFETY
ALIGNMENT UPDATE | Benefits

- Ideal connection at grade
- Potential stair connection to NSC
- Coordinated with utilities
- Enhanced landscape

Feet above grade:
- 0 to 5
- 5 to 15
- 15 to 30
- 30 to 50
PROJECT OVERVIEW | Bridge Access

Bridge access trip origins

to: Interurban North bikeway

to: Northgate Mall vicinity

N 103th St to: Northgate Mall vicinity

Northgate LRT Station

N 100th St to: Maple Leaf neighborhood

N 100th St

North College Way

to: Greenlake neighborhood

N College Way

North Seattle College

1st Ave NE
PROJECT OVERVIEW | Channelization

All Users Keep Right
PROJECT OVERVIEW | Mixing Zones
PROJECT OVERVIEW | Crossing Times

DISTANCE: 833 FT
- WALK: 3.0 min
- RUN: 1.5 min

DISTANCE: 2,584 FT
- WALK: 10.0 min
- RUN: 5.0 min
- WHEELCHAIR: 15 min
- SKATE/BIKE: 3.5 min
PROJECT OVERVIEW | Experience

- At-Grade Path: open, clear sight lines, decision signs
- West Approach: open, legible mixing nodes, decision & wayfinding signs
- Bridge: visual permeability = clear, long sight lines, decision signs, memorable landscape
- East Approach: visual permeability = clear, long sight lines, wayfinding signs, open, legible mixing zone

Legend:
- Nodes
- Sight Lines
PROJECT OVERVIEW  | Structural Systems

- Steel Tube
- Concrete Girder
- Concrete Girder
- Steel Tube

Diagram showing the structural systems in a design project.
PROJECT OVERVIEW | Sinuous Structural Expression
Concrete Girder ➔ Transitional Truss ➔ Structural Steel Tube
PROJECT OVERVIEW | Artist Charles Sowers

WAVE WALL: LIGO, Livingston, LA

WINDSWEPT: Randall Museum, San Francisco, CA
PROJECT OVERVIEW | Artist Charles Sowers

UNDERGROUND ESTUARY: Real-time graphing of sub-surface tidal fluctuations.
BRIDGE AND LANDSCAPE DESIGN
DESIGN | Three Segments

1. EAST

2. MAIN SPANS

3. WEST APPROACH
1. Context
2. Access
3. Landscape Design
4. Sound Transit Connection
5. Stairs
EAST APPROACH | Water + Topography
EAST APPROACH | Sound Transit Northgate Station
EAST APPROACH | Existing
EAST APPROACH | Access: Pedestrians
EAST APPROACH | Access: Adjacent Automobile Movement
EAST APPROACH | Access: Transit
EAST APPROACH | Access: All Users
EAST APPROACH | Vegetation
EAST APPROACH | Bridge Components

On Fill / At Grade

I-5 Express

I-5 NB

N 100th ST

1st AVE
EAST APPROACH | Bridge Components

Elevated Concrete Girders
EAST APPROACH | Bridge Components

Transitional Tube/Truss

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

Stairs

I-5 Express

I-5 NB

N 100th ST

1st AVE
EAST APPROACH | Aerial View from North
EAST APPROACH | Sound Transit Connection
View from Station Mezzanine

View East from 1st Ave
View South along 1st Ave
EAST APPROACH | Sound Transit Connection

Walking Only

Mixing Zone
EAST APPROACH | Stair Plan at Deck
DESIGN | Main Spans

2. MAIN SPANS
1. Spans
2. Structural Concept
3. Railings and Barrier
4. Lighting
5. Column Design
6. 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

ENLARGED TYPICAL TRUSS SECTION

1/4" = 1'-0"
MAIN SPANS | Looking East
MAIN SPANS | Structural System Options

Direct Weld

Cast Steel Nodes
10’ High Throw Barrier Over I-5
Leaning Rail

ENLARGED TYPICAL TRUSS SECTION

1/4" = 1'-0"
**MAIN SPANS** | Architectural Materials

- **Throw Barrier / Guardrail:** Stainless Steel Cable Mesh
- **Railing:** Black Locust
- **Support Structure:** Stainless Steel
MAIN SPANS | Drainage and Lighting Details

ENLARGED TYPICAL TRUSS SECTION

DETAIL @ GUARDRAIL
MAIN SPANS | Lighting Simulations
MAIN SPANS | Lighting Simulation from Roadway
BRIDGE DESIGN | Lighting
BRIDGE DESIGN | Column Geometry
BRIDGE DESIGN | Views From I-5

From NB I-5

From SB I-5
WEST APPROACH | Summary

1. Components
2. Stairs
3. Vegetation
4. Water
5. Connections
WEST APPROACH | Components

Steel Tube/Truss Spans
WEST APPROACH | Components

Transitional Tube/Truss
Elevated Concrete Girders
WEST APPROACH | Components

On-fill / At Grade
WEST APPROACH | Components

Potential Access Stairs
WEST APPROACH | Vegetation
WEST APPROACH | Water + Topography

- Full project context - diagrams on multiple slides to illustrate characteristics both different and shared.
- Assume plan with bridge elevation below. Assume base is either aerial screened back with survey or survey only.
- Context: topography and geology. Include images of glacial activity and soil section.
- Water: illustrate basic plus flood extent. Indicate direction of water flow.
- Include images of flood.
- Colored contours?

Assume part 4: Project context.
WEST APPROACH | Water + Topography

- Full project context - diagrams on multiple slides to illustrate characteristics both different and shared.
- Assume plan with bridge elevation below. Assume base is either aerial screened back with survey or survey only.
- Context: topography and geology. Include images of glacial activity and soil section.
- Water: illustrate basic plus flood extent. Indicate direction of water flow.
- Include images of flood.
- Colored contours?

Assume part 4: Project context.
WEST APPROACH | Existing Conditions
WEST APPROACH | Access: Pedestrians
WEST APPROACH | Access: Adjacent Automobile Traffic
WEST APPROACH | Access: Uses
WEST APPROACH | Access: All Users
WEST APPROACH | Materials
WEST APPROACH | Vegetation and Wildlife
# DESIGN RESPONSE | Enhanced Environmental Function

## EXISTING

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## PROPOSED

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