1) EMERGENCY BRIDGE CLOSURE TRANSPORTATION PLAN
✓ Guide the movement of people and goods between the Magnolia neighborhood and the 15th Ave W corridor immediately following a catastrophic event if one or more of the bridges serving Magnolia are closed.

2) SHORT-TERM CLOSURE TRANSPORTATION PLAN
✓ Improve the resilience of the transportation system in advance of a catastrophic or closure event, and help with recovery after an event. The plan focuses on the potential that the Magnolia Bridge—the most vulnerable of the bridges serving Magnolia—could be closed to all traffic until a permanent facility can be constructed.

Completed Nov 2017: [https://www.seattle.gov/transportation/magnoliabridgeplanning](https://www.seattle.gov/transportation/magnoliabridgeplanning)
1) EMERGENCY BRIDGE CLOSURE TRANSPORTATION PLAN
✓ Guide the movement of people and goods between the Magnolia neighborhood and the 15th Ave W corridor immediately following a catastrophic event if one or more of the bridges serving Magnolia are closed.

2) SHORT-TERM CLOSURE TRANSPORTATION PLAN
✓ Improve the resilience of the transportation system in advance of a catastrophic or closure event, and help with recovery after an event. The plan focuses on the potential that the Magnolia Bridge—the most vulnerable of the bridges serving Magnolia—could be closed to all traffic until a permanent facility can be constructed.

3) LONG-TERM PLANNING STUDY
➢ Develop a financially feasible permanent alternative replacing the functional needs served by existing Magnolia Bridge structure
LONG-TERM PLANNING STUDY PURPOSE & GOALS

Mission:
Develop an alternative that provides safe and efficient access to the Magnolia area that has stakeholder support and is financially feasible.

Project Goals:
- Provide a safe route(s) to Magnolia.
- Provide reliable and redundant access to and from Magnolia.
- Any new route must be grade separated from the BNSF Mainline railroad tracks.
- Provide a route that will support Magnolia Village.
- Maintain or improve traffic flow on, and connections to, the 15th Avenue W corridor.
- Maintain access to the Smith Cove waterfront and improve connection between Magnolia and the Smith Cove waterfront.
- Maintain or improve access to Terminal 91.
- Improve the level of bicycle and pedestrian connections within and beyond the project area.
- Consider future ST3 light rail project when evaluating alternatives.
- Design an alternative that is financially feasible.
- Minimize or mitigate environmental impacts.
- Minimize disruption during construction.
MAGNOLIA BRIDGE REPLACEMENT PROJECT

October 20, 2020

Magnolia Bridge Planning Study

BUILDING OFF PAST WORK
Component to replace the existing Magnolia Bridge was considered financially infeasible.

**QUALITATIVE ANALYSIS**

**Fatal Flaw Criteria:**
- Maintain access to the Smith Cove waterfront and improve connection between Magnolia and the Smith Cove waterfront
- Must be grade separated from the BNSF Mainline railroad tracks
- Maintain or improve access to Terminal 91 (T91)
- Must be financially feasible

**Technical Screening includes:**
- Traffic operational need
- Geometric feasibility

**QUANTITATIVE ANALYSIS**

**Alternative Analysis include:**
- Traffic operations metrics (travel time, intersection delay, etc.)
- Cost Estimates
- Right-of-Way Impacts
- Construction Disruption and Duration
Component 1: West Uplands Perimeter Road
- New roadway parallel to existing Elliott Bay Trail
- Provides access to/from Elliott Bay Marina and Smith Cove Waterfront
- Improves access between Magnolia and Elliott Bay Marina and Smith Cove
- Only works in conjunction with other components
Component 2: Magnolia Connector

- Improvements to existing roadway
- Required to provide access between Magnolia and Elliott Bay Marina and Smith Cove
- Providing access on 20th Ave W is geometrically preferred over access via 21st Ave W
- Only works in conjunction with other components
COMPONENT #2 – Geometric Feasibility

21<sup>st</sup> Ave W – Neighborhood Yield

20<sup>th</sup> Ave W – Minor Industrial Access

Considerations
- Existing Street Type
- Freight Vehicle Turns
- Current use by BNSF
- Adjacent Land Use
COMPONENT #2 – Geometric Feasibility
Component 3: Dravus St Improvements
- Improves existing access to/from Magnolia
- May include upgrades to intersections at 15th Ave W and 20th Ave W and/or the Dravus St Bridge
- Conceptually component works independently
COMPONENT #3 – Traffic Operations

Single Point Urban Interchange (SPUI)

Source: DallasNews

Example: I-5 & 41st St – Everett, WA
COMPONENT #3 – Geometric Feasibility
Component 4: Wheeler Street Bridge
- Provides new access to/from Magnolia
- Adding a 15th Ave W intersection (4A) deemed infeasible due to traffic impacts
- Gilman Dr W loop (4B) geometrically infeasible – tight right turn up steep grade
- Conceptually component works independently
COMPONENT #4 – Geometric Feasibility & Traffic Operations
COMPONENT #4 – Geometric Feasibility

Magnolia Bridge Planning Study
COMPONENT #4 – Geometric Feasibility
Component 5: Armory Way Bridge
- Provides new access to/from Magnolia
- Braided fly-over ramp (5B) provide grade-separated access from 15th Ave W
- Adding a 15th Ave W intersection (5A) deemed infeasible due to traffic impacts
- Conceptually component works independently
Component 6: New Bridge Port Connector

- Provides access between new bridge and Port property, Elliott Bay Marina, and Smith Cove
- Designed to accommodate freight traffic
- Option remaining Thorndyke Ave W/20th Ave W
- Only works in conjunction with other components
Component 7: Magnolia Bridge Segment
- Improvements to existing Magnolia Bridge segment
- Provides direct access to/from Port properties
- Provides partial access to/from Magnolia in combination with other components
- Relieves pressure on Galer Street Flyover
- Designed to accommodate freight traffic
- Conceptually component works independently however, if intended for public use, only works in conjunction with other components
Component 8: Alaskan Way Connector
- Extend portion of Alaskan Way
- Provides access between Port property/Magnolia Bridge segment and Galer St Flyover
- Provides partial access to/from Magnolia in combination with other components and/or the Galer Street Flyover
- Relieves pressure on the Galer St Flyover
- Only works in conjunction with other components
COMPONENT #7&8 – Geometric Feasibility & Traffic Operations
Component 9: East Uplands Perimeter Road

Improve and open existing private Port road
- Provides partial access between Port property and Magnolia and 15th Ave W
- Provides partial access to/from Magnolia
- Deemed infeasible due to direct impact to essential Port operations
Considerations

- Rail Spur essential to Port operations
- Existing pinch points on Elliot Bay Trail
Component 10: Magnolia Bridge Segment to 23rd Ave W

- Improvements and replacement of existing Magnolia Bridge segments
- Provides access to/from Elliott Bay Marina and Smith Cove (does not improve access to/from Magnolia)
- Provides direct access to/from Port properties
- Particularly important to freight traffic
- Conceptually component works independently
Component 5B: Armory Way Bridge
Component 5B would create a new access point to Magnolia via an elevated bridge structure from 15th Ave W along Armory Way W, crossing perpendicularly over the BNSF railroad, and connecting to Thorndyke Ave W at W Halladay St. The structure will have a northbound, on-ramp from 15th Ave W designed to allow free-flow access to the bridge while also accommodating the potential ST3 alignment.

Component 6D: Thorndyke Ave W Improvements
Component 6D provides access between the new Armory Way Bridge and the Port property, Smith Cove and Elliott Bay Marina. It would include improvements to the intersection of Thorndyke Ave W and 20th Ave W to accommodate turns for freight vehicles and buses.

Component 1: West Uplands Perimeter Road
Component 1 provides more direct access between Magnolia and the Elliott Bay Marina and Smith Cove. It will follow the alignment of the existing Elliott Bay Trail but may deviate at certain points to provide a more direct route.

Component 2A: 20th Ave W Improvements
Component 2 is required to provide access between Magnolia and the Elliott Bay Marina and Smith Cove via the West Uplands Perimeter Road. 20th Ave W is preferred over 21st Ave W because it better accommodates traffic both geometrically and operationally.

Component 7: Magnolia Bridge Segment to Alaskan Way
Component 7, in combination with Component 8, is required to provide access to Terminal 91 and Expedia, relieving pressure on the existing Galer St Flyover. The component is particularly important to serve vehicles traveling southbound on 15th Ave W which currently make a left turn onto the W Galer St Flyover ramp.

Component 8: Alaskan Way W Extension
Component 8, in combination with Component 7, is required to provide access to Terminal 91 and Expedia, relieving pressure on the existing Galer St Flyover.

Component 6D: Thorndyke Ave W Improvements
Component 6D provides access between the new Armory Way Bridge and the Port property, Smith Cove and Elliott Bay Marina. It would include improvements to the intersection of Thorndyke Ave W and 20th Ave W to accommodate turns for freight vehicles and buses.
Component 1: West Uplands Perimeter Road
Component 1 provides more direct access between Magnolia and the Elliott Bay Marina and Smith Cove. It will follow the alignment of the existing Elliott Bay Trail but may deviate at certain points to provide a more direct route.

Component 2A: 20th Ave W Improvements
Component 2A is required to provide access between Magnolia and the Elliott Bay Marina and Smith Cove via the West Uplands Perimeter Road. 20th Ave W is preferred over 21st Ave W because it better accommodates traffic both geometrically and operationally.

Component 3: W Dravus Street Improvements
Component 3 would increase capacity along W Dravus St, an existing access point to Magnolia, by widening the roadway, including the existing bridge structures, and making improvements to the intersections at 15th Ave W and 20th Ave W.

Component 7: Magnolia Bridge Segment to Alaskan Way
Component 7, in combination with Component 8, is required to provide access to Terminal 91 and Expedia, relieving pressure on the existing Galer St Flyover. The component is particularly important to serve vehicles traveling southbound on 15th Ave W which currently make a left turn onto the W Galer St Flyover ramp.

Component 8: Alaskan Way W Extension
Component 8, in combination with Component 7, is required to provide access to Terminal 91 and Expedia, relieving pressure on the existing Galer St Flyover.
Component 3: W Dravus Street Improvements
Component 3 would increase capacity along W Dravus St, an existing access point to Magnolia, by widening the roadway, including the existing bridge structures, and making improvements the intersections at 15th Ave W and 20th Ave W.

Component 10: Magnolia Bridge Segment to 23rd
Component 10 would rebuild the Magnolia Bridge from the point where it crosses 15th Ave W to the west over BNSF and to the point where it crosses over the center Port of Seattle’s north-south access road and then extend ramps down to 23rd Ave W.
Mobility and Connectivity
- Vehicular Access to and from:
  - Magnolia
  - Marina/Waterfront
  - Terminal 91
- Traffic Flow on 15th Avenue
- Bicycle and Pedestrian Connections
- Transit Access
  - Compatible with ST3
  - Compatible with KC Metro

Implementation Characteristics
- Project Cost
- Construction Phasing and Duration
- Construction Impact
- Stakeholder Support
- Public Support

Environmental Impact
- Adjacent Land Use (Acquisition, Noise, and Visual)
- Sensitive Areas (Cultural, Historic, and Natural Resources)
- Natural Hazards (Steep Slopes and Seismic Susceptibility)

Other Considerations:
- Neighborhood Advisory Committee (NAC) Agreement
- Freight access and Port security protocol
- WA State Shorelines Elliot Marina Stipulated Order
**NEXT STEPS**

1. **Package viable components into alternatives**
   - **Online Open House & Survey** to describe Magnolia Bridge history (including past alternatives evaluation process), present alternatives, and collect community input
   - **COMING IN THE NEXT MONTH**

2. **Perform alternatives analysis**
   - **Present to SDOT Directors, Mayor, and Council Members** to present alternatives, and summarize community feedback

3. **Identify the Preferred Alternative**
   - **Present to SDOT Directors, Mayor, and Council Members** to present preferred alternative (including mobility, cost, and impact information) and frame the funding plan discussion
   - **BY SUMMER 2018**

**Public Outreach Event(s)** to describe the evaluation process, share findings, summarize community feedback, and present the preferred alternative

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