

History of Magnolia Bridge



- 1887 Seattle, Lake Shore & Eastern built railroad in Interbay to serve the coal fields of Issaquah and New Castle.
- 1891 The community of Boulevard received a post office. Three years later the name was changed to Interbay.
- 1892 Great Northern Railway constructed railroad to Seattle through Interbay. Great Northern built a depot at Smith Cove and piers into the cove to handle cargo from Asia.
- 1929 West Garfield Street Bridge constructed between 15th Avenue West and Dartmouth Avenue West. The new concrete bridge replaced a timber trestle that ran from 15th Avenue West to 23rd Avenue West. Bridge included north and south connections to 23rd Avenue West. See 1929 photo.
- 1931 Dravus Street Bridge was opened to traffic.
- 1940 Seattle obtains Piers 90 and 91.
- 1942 Navy condemned Piers 90 and 91 for military use. Presumably, the Navy removed the trestle connections to 23rd Avenue West. See 1946 photo.
- 1957 A new structure over 15th Avenue West on the east end of the bridge was constructed.
- 1960 Bridge renamed as Magnolia Bridge.
- 1961 West half of the bridge was strengthened by installing steel cross bracing on piers and steel trusses under deck.
- 1974 East half of bridge was strengthened similar to west half.
- 1975 Navy returns Piers 90 and 91 to Seattle.
- 1981 Concrete barriers added to both sides of roadway.
- 1991 New ramps added to serve Elliot Bay Marina.
- 1997 Landslide damaged piers on west end of bridge requiring closure until repaired.
- 2001 Nisqually earthquake damages piers requiring closure until repaired.
- 2001 West Galer Street Flyover is constructed.
- 2002 Planning begins for replacing Magnolia Bridge.



Magnolia Bridge Project Goals

Community and Design Advisory Group input helped SDOT create the following project goals.

- Provide a reliable route(s) between Magnolia and the rest of Seattle
- Maintain Magnolia's aesthetic qualities and community feel
- Maintain or improve traffic mobility
- Provide a route that will support local neighborhoods and businesses
- Maintain or improve traffic flow on the 15th Avenue W. corridor
- Improve access to the waterfront to and from Magnolia
- Minimize impact to existing traffic patterns during construction
- Maintain or improve the level of bicycle and pedestrian connections within and beyond the project area
- Preserve family-wage jobs and the marine industrial economic cluster
- Ensure the highest level of design excellence
- Support multi-modal connections



ALIGNMENT A



Preferred Alignment — Alternative A



The new Magnolia Bridge route shown in orange, with the existing bridge in the background photograph.

Bridge Structure Segments



The Magnolia Bridge has four structure segments used for bridge design work. These four color-coded segments group portions of the bridge with similar design characteristics in order to help the design team identify the best structure type for each segment.

15th Avenue W Overcrossing Structure



Existing Bridge Structure



Prestressed Concrete Girders

A

B



Haunched Cast-in-Place Concrete Box Girder



Straight Cast-in-Place Concrete Box Girder

C

Mainline Structure

Looking north from Alaskan Way W



Existing Bridge Structure

A



Prestressed Concrete Girders

B



Straight Cast-in-Place Concrete Box Girder

23rd Avenue Ramps Structure

Looking northeast from Smith Cove Acquisition Park



Existing Bridge Structure

A



Prestressed Concrete Girders

B



*Haunched Cast-in-Place Concrete Box Girder (Main Structure);
Straight Cast-in-Place Concrete Box Girder (Ramp Structure)*

Magnolia Bluff Structure

Looking north from Smith Cove Acquisition park site



Existing Bridge Structure

A



Prestressed Concrete Girders

B



Haunched Cast-in-Place Concrete Box Girder

Column Design Alternatives

**Straight Cast-in-Place Concrete
Box Girder Structure Type**



Curved Flare Columns

**Prestressed Girders
Structure Type**



Curved Flare Columns



Angular Flare Columns



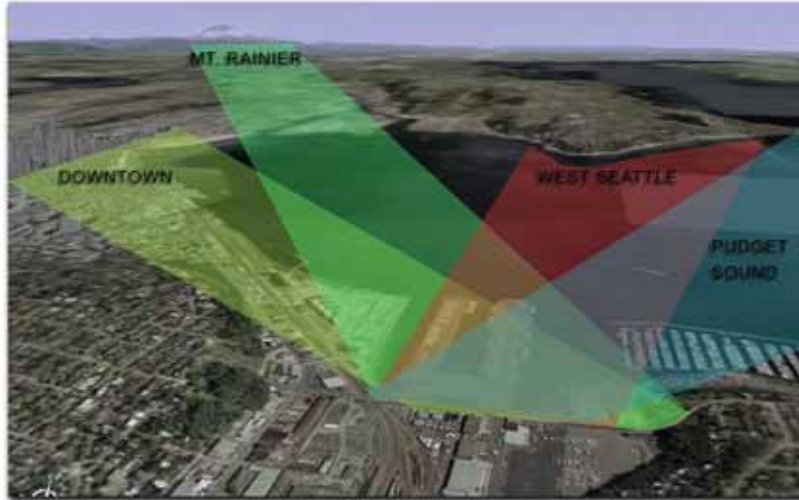
Angular Flare Columns



Tapered Columns



Tapered Columns

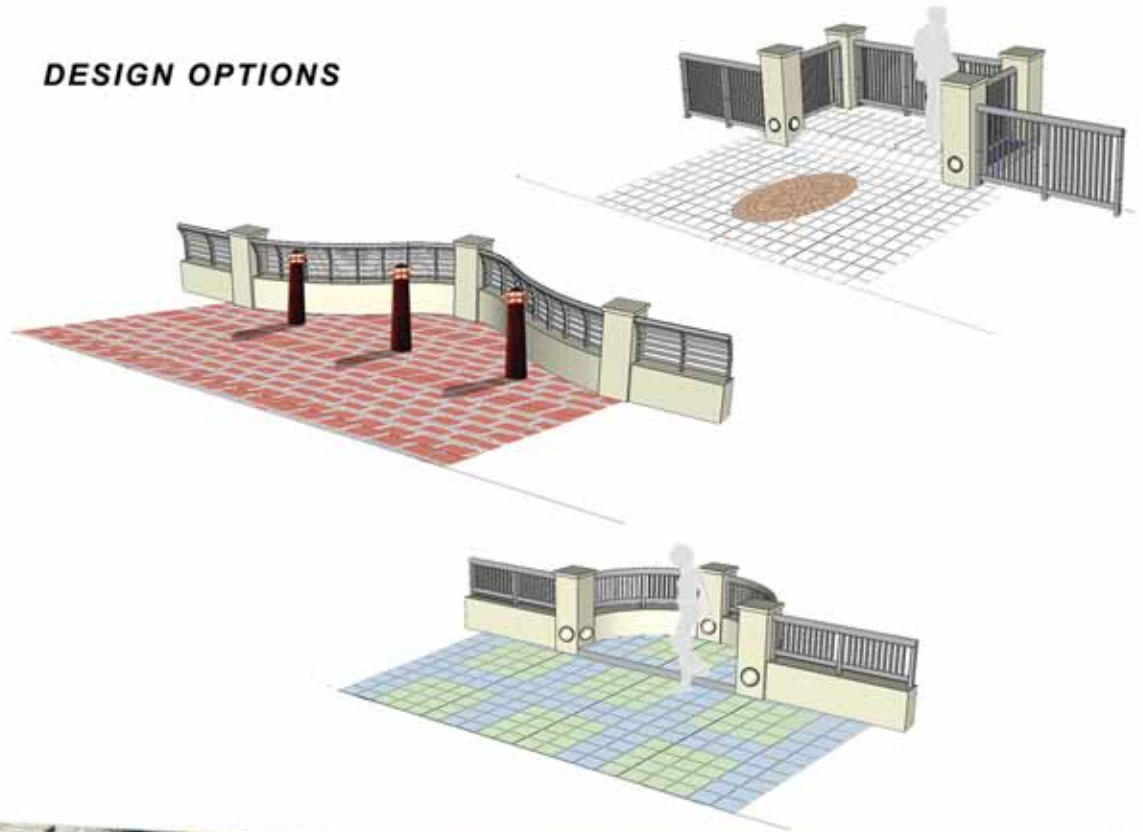


VIEW ANALYSIS

POTENTIAL OVERLOOK LOCATIONS



DESIGN OPTIONS





OPTION 1



OPTION 2



OPTION 3












OPTION 4



August 2, 2006

Magnolia BRIDGE PROJECT

AESTHETIC TREATMENT -RAILING & LIGHTING-

| | | BASELINE | OPTION 1 | OPTION 2 | OPTION 3 | OPTION 4 |
|----------|------------|---|---|---|--|---|
| RAILING | | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -MAINTAINS HISTORIC FEATURES</div> <div>DISADVANTAGES -PRE-CAST IS EXPENSIVE TO CONSTRUCT -BUFFERS VIEWS</div> <div>COST - LOW</div> | <div></div> <div>ADVANTAGES -SIMPLICITY - FITS VARIETY OF SCHEMES -MAINTAINS VIEWS -EASY TO INSTALL AND MAINTAIN -ADAPTABLE TO BARRIER INSTALLATION</div> <div>DISADVANTAGES -ARCHITECTURAL INTEREST MINIMAL -REQUIRES WIDER CURB FOR MOUNTING TO ALLOW FOR CURVATURE</div> <div>COST - LOW</div> | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -FITS MARITIME THEME -MAINTAINS VIEWS -EASY TO INSTALL AND MAINTAIN -ADAPTABLE TO BARRIER INSTALLATION</div> <div>DISADVANTAGES -COMPLEX DESIGN LIMITS VARIETY OF SCHEMES -PSYCHOLOGICALLY LACKS STRENGTH</div> <div>COST - MODERATE</div> | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -COLUMNS PROVIDE VISUAL BREAKS & CAN CARRY TEXTURE THEME -PROVIDES SENSE OF PROTECTION FOR PEDESTRIANS</div> <div>DISADVANTAGES -FORMING AND CONCRETE ADD TO COST -HIGHER MAINTENANCE COST DUE TO VARIETY OF MATERIALS</div> <div>COST - HIGH</div> | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -MAINTAINS VIEWS -EASY TO INSTALL AND MAINTAIN</div> <div>DISADVANTAGES -COMPLEX DESIGN LIMITS VARIETY OF SCHEMES</div> <div>COST - MODERATE</div> |
| | ROADWAY | <div></div> <div>ADVANTAGES -COMMON PARTS THAT MAY BE IN STOCK -STANDARD ROADWAY LIGHTS & TIE INTO CONNECTIONS</div> <div>DISADVANTAGES -LACK VISUAL INTEREST -DOES NOT SUGGEST A THEME</div> <div>COST - LOW</div> | <div></div> <div>ADVANTAGES -SIMPLICITY - FITS A VARIETY OF SCHEMES -MODERN VARIATION OF STANDARD COBRA HEAD FIXTURE</div> <div>DISADVANTAGES -ARCHITECTURAL INTEREST MINIMAL -NOT COMMONLY STOCKED PARTS</div> <div>COST - LOW</div> | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH</div> <div>DISADVANTAGES -SUGGESTS CONTEMPORARY THEME -NOT COMMONLY STOCKED PARTS</div> <div>COST - MODERATE</div> | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -SIMPLICITY - FITS WITH VARIETY OF SCHEMES</div> <div>DISADVANTAGES -SUGGESTS CONTEMPORARY THEME -NOT COMMONLY STOCKED PARTS</div> <div>COST - MODERATE</div> | |
| LIGHTING | PEDESTRIAN | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -FITS MARITIME THEME</div> <div>DISADVANTAGES -LIMITED TO MARITIME THEME</div> <div>COST - MODERATE</div> | <div></div> <div>ADVANTAGES -WOULD ENHANCE EXISTING HISTORIC FEATURES</div> <div>DISADVANTAGES -LIMITED TO HISTORIC THEME</div> <div>COST - MODERATE</div> | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -FITS MARITIME THEME</div> <div>DISADVANTAGES -LIMITED TO MARITIME THEME</div> <div>COST - MODERATE/HIGH</div> | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -COULD SET PRECEDENT FOR NEW DEVELOPMENT IN AREA</div> <div>DISADVANTAGES -LIMITED VARIETY OF SCHEMES -MAY NOT "FIT" FUTURE DEVELOPMENT IN AREA</div> <div>COST - HIGH</div> | |
| | ACCENT | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -FITS MARITIME THEME</div> <div>DISADVANTAGES -ADDITIONAL EXPENSE -COULD ADD GLARE</div> <div>COST - LOW/MODERATE</div> | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -WOULD ENHANCE EXISTING HISTORIC FEATURES -COLUMNS PROVIDE VISUAL BREAKS -COULD PROVIDE ACCENT TO OVERLOOKS</div> <div>DISADVANTAGES -COST FOR ADDITIONAL FORMING</div> <div>COST - MODERATE</div> | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -FITS MARITIME THEME -COULD PROVIDE ACCENTS AT OVERLOOKS</div> <div>DISADVANTAGES -LIMITED TO MARITIME THEME</div> <div>COST - MODERATE</div> | <div></div> <div>ADVANTAGES -ARCHITECTURAL INTEREST HIGH -COLUMNS PROVIDE VISUAL BREAK/ACCENT AT OVERLOOKS</div> <div>DISADVANTAGES -ADDITIONAL COST</div> <div>COST - HIGH</div> | |

Seattle Department of Transportation

Potential Detour Routes



Surface Route Alternative



Temporary Ramp Alternative