

## What is a long span bridge?

A type of bridge that requires fewer support columns, allowing for longer spacing, or spans, between columns. A vertical support structure above the deck of the bridge is needed to accomplish the longer spans. A variety of vertical structures can be considered for this project, including tied arch, truss, and cable stayed options (see examples on back page).

## Why are we considering it?

The long span alternative allows for fewer columns in the Geotechnical Hazard Zones on each side of the river, reducing project risks and costs.

## Decisions Regarding Long Span Alternative

### Environmental Phase Decisions

Choosing a Preferred Alternative at this stage of the process means deciding on a class of bridge that considers high level variables including:

- Retrofit or replacement
- Alignment
- Width
- Number and approximate location of columns
- Approximate span lengths

### Future Phase Decisions

#### Type Selection Phase Decisions (TS)

- Bridge superstructure type
- Column sizes and locations
- Movable bridge type

#### Specific to Cable Stayed option:

- Tower location

#### Final Design Phase Decisions (FD)

- Column shape
- Bridge lighting, railings, color and texture

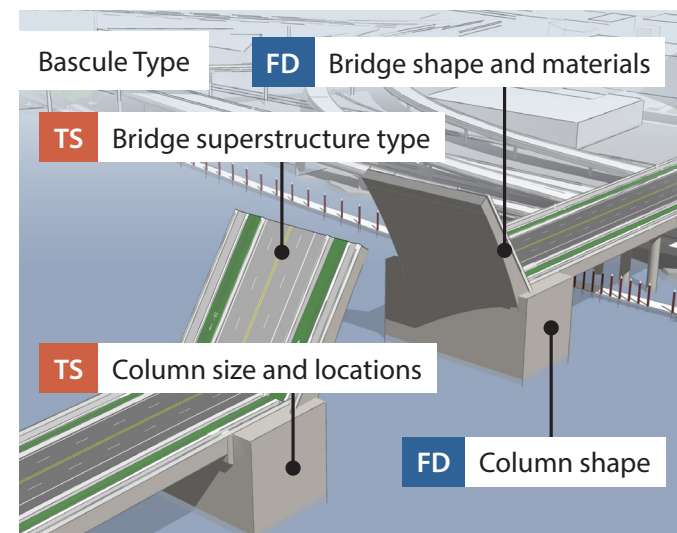
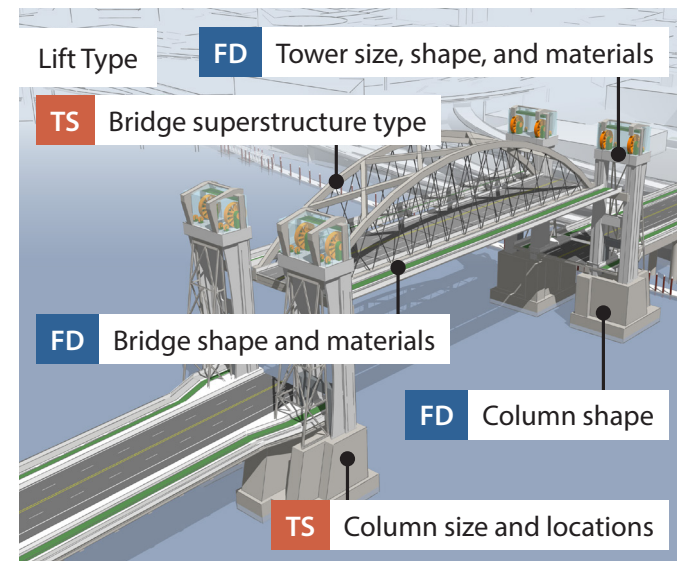
#### Specific to Tied Arch option:

- Arch height
- Arch rib materials, size, curvature, and shape
- Cross-frame size and shape
- Cable size and pattern

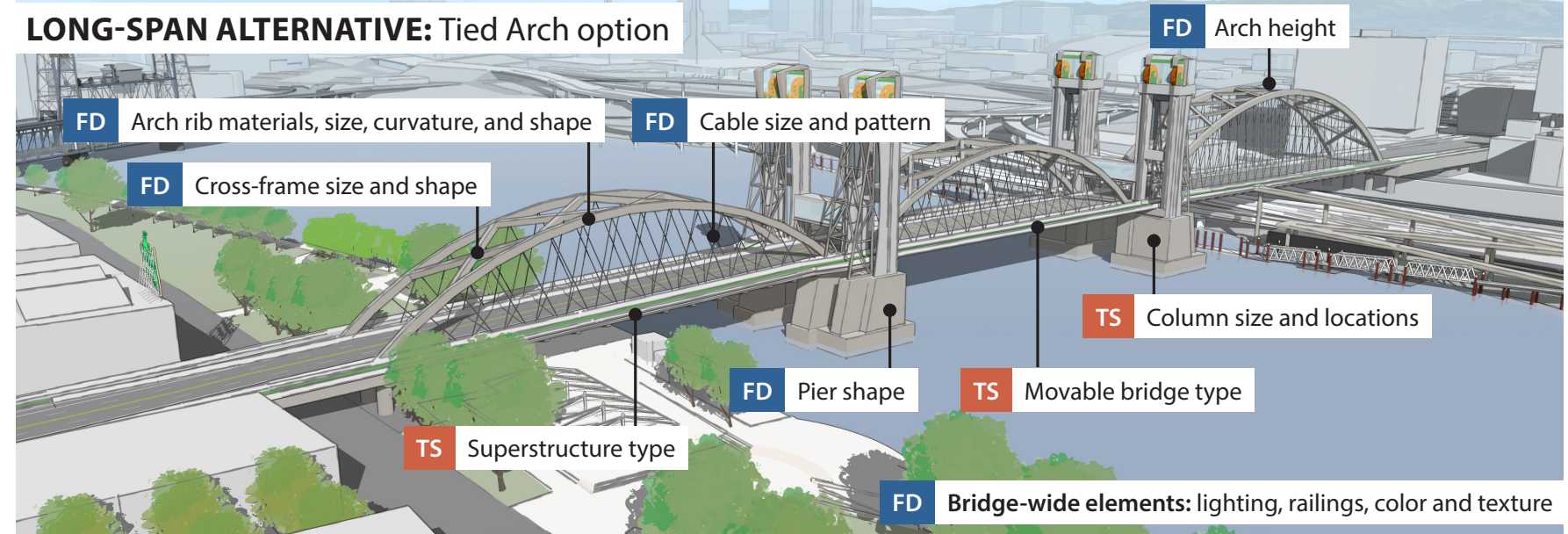
#### Specific to Cable Stayed option:

- Tower height, size, shape, and materials
- Cable size and pattern

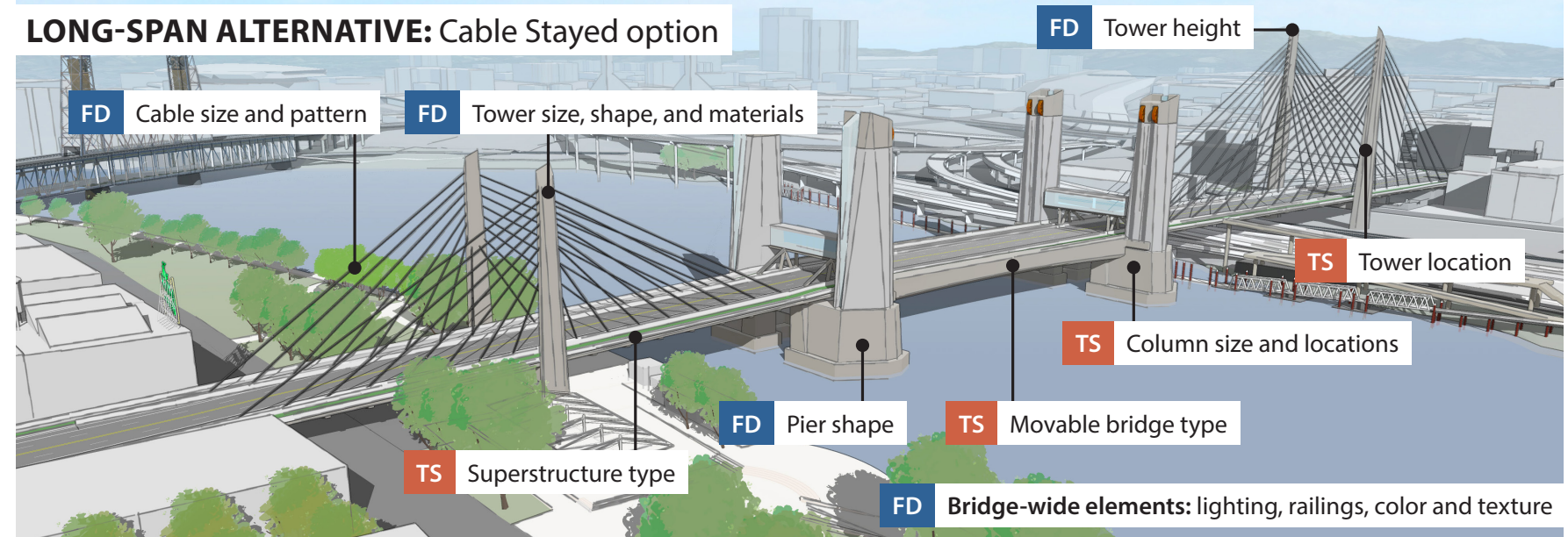
### Movable Span Type: variables for consideration



### LONG-SPAN ALTERNATIVE: Tied Arch option



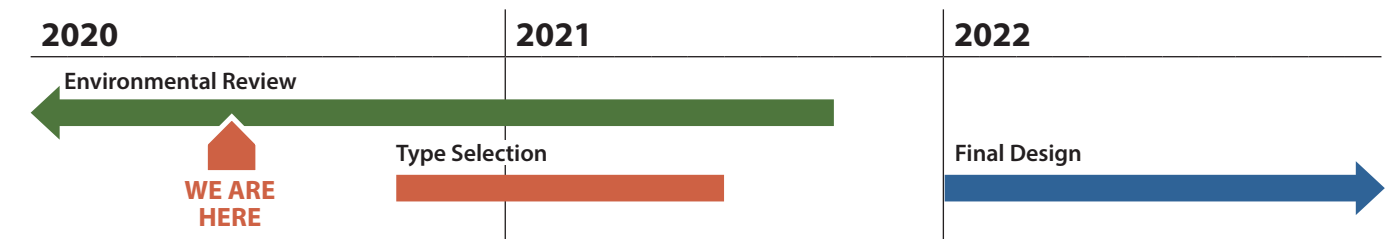
### LONG-SPAN ALTERNATIVE: Cable Stayed option



### LEGEND:

- TS Type Selection Phase
- FD Final Design Phase

### Schedule





# Bridge Type Examples

## BRIDGE TYPE OPTION: Tied Arch examples



Hastings Bridge, Minnesota



Torikai Ohas Bridge, Japan



Siuslaw River Bridge, Oregon



Tacony-Palmyra Bridge, Pennsylvania



Gateway Bridge, Michigan

## BRIDGE TYPE OPTION: Cable Stayed examples



Indian River Inlet Bridge, Delaware



Chongqing Expressway Bridge, Oregon



Copper River Bridge, South Carolina



Tilikum Crossing Bridge, Oregon

## BRIDGE TYPE OPTION: Through Truss examples



Main Street Bridge, Florida



Triborough (Harlem River) Bridge, New York



Tower Bridge, CA



Broadway Bridge, Oregon



Hawthorne Bridge, Oregon

## MOVABLE SPAN: Bascule examples



South Park Bridge, Washington



Harbor Bridge, Spain



New Johnson St. Bridge, Canada



Woodrow Wilson Bridge, Maryland

## MOVABLE SPAN: Vertical Lift examples



Teregganu Bridge, Malaysia



Fore River Bridge, Massachusetts



Pont Jacques Chaban, Delmas



Manchester Millenium Bridge, England

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