

SR-35 Columbia River Crossing Feasibility Study



COST ESTIMATES

Based on the January 2002 design workshop, conceptual drawings (plan and profile) for various bridge types were developed. Within each of the corridors, variations of possible structure types and configurations were defined. Structures varied by length and design features (e.g., different types and locations of piers, different superstructure types). Construction costs for each alternative were based on unit costs and quantities for major construction components as well as bridge approaches and ancillary work. Additional costs have been included for engineering, construction management, and contingency to arrive at a total project cost. Table 1 summarizes the cost estimates for structures considered for long-term alternatives. Costs for right-of-way acquisition and environmental mitigation are not included. Costs are provided for two different-sized structure widths: 45 feet and 65 feet.

Table 1
Cost Estimates for Structures Considered for Long-Term Alternatives

Corridor	Structure	Cost for 65-Foot-Wide Roadway (millions)	Cost for 45-Foot-Wide Roadway (millions)
City Center	Cable Stayed with Girder Segmental Approach and Delta Piers	\$141	\$113
	Tied Arch with Girder Segmental Approach and Wedge Piers	\$132	\$106
	Concrete Haunch Girder Segmental with Tapered Piers	\$141	\$113
	Steel Girder Segmental with Tapered Piers	\$136	\$109
	Twin-bored Tunnel	~\$350-400	
Existing	Girder Segmental with Wedge Piers	\$151	\$121
	Haunched Girder Segmental with Delta Piers	\$137	\$110
	Retrofit Existing Bridge	\$172	\$137
East	Girder Segmental with Wedge Piers	\$161	\$129
	Arch with Girder Segmental Approach and Wedge Piers	\$178	\$142
	Hybrids (new fixed span plus retrofit existing bridge for pedestrian and bicycle use)	\$211-228	\$179-192

The 65-foot roadway consists of:

- One 10-foot pedestrian/bike path along the downstream side of any alternative,
- Two 8-foot shoulders, and
- Three 12-foot travel lanes.

The 45-foot roadway section consists of:

- One 10-foot pedestrian/bike path along the downstream side of any alternative,
- Two 4-foot shoulders, and
- Two 12-foot travel lanes.

The 45-foot option also is conceptualized to accommodate a future 5-foot pedestrian-/bike-only widening. This will provide the necessary added width to re-stripe the lanes to a 10-foot pedestrian/bike path, two 2-foot shoulders, and three 11-foot travel lanes. This would accommodate 75-to-100-year traffic growth that typically is used in designing high-capital improvements such as bridges and tunnels. No costs were developed for this future expansion.

The 45-foot option is recommended as the preferred design width as it is flexible to provide for long-term, multimodal capacity while minimizing the construction costs.