

Draft Ranking from 10/28/08 Working Group Meeting

Working Group Ranking				
Bridge Types ("Some" to "Few")				
10/28/2008				
Code	4	6	7	9
Wave frame				Cable Stay'd
Center-to-center Span Width	680	Tied Arch 680	Thru Arch 680	Cable Stay'd 795 860

Screening Criteria ("Some" to "Few")		Scores range from 1 to 5 5 = best 3 = neutral 1 = worst					
Cost		3.00	1.00	2.00	4.00	4.00	Cost Category Averages
Initial cost		TBD	TBD	TBD	TBD	TBD	Lower anticipated bid cost = better
Life cycle cost - Maintenance		3	1	2	4	4	Concrete = better, Steel = worse
Risk		3.36	2.09	1.55	3.82	3.82	Risk Category Averages
Cost escalation risk (Superstructure)		3	1	2	4	5	More concrete = better, More steel = worse
Foundations - Geotechnical		3	1	1	3	3	Bigger = higher risk, distance from bore holes
Design risk		3	2	1	4	5	More common = better
Bid risk		1	5	2	4	4	More uncommon = added cost = worse
Schedule risk		2	2	3	5	5	Fabrication and erection
In-water construction risk		5	2	1	4	3	Fewer pier and smallest piers in water = better
Navigational Permitting - horizontal clearance		3	2	1	4	5	Wider = better
Navigational Permitting - vertical clearance		4	1	1	5	3	Thinner deck = better
Navigational Permitting - maneuvering		5	2	1	4	3	Piers further from PDX Spirit dock= better
Bridge width over shallow water		3	3	3	1	3	Verify with NOAA
Permitting risk (In-water Environmental)		5	2	1	4	3	Piers in shallow water = worse
Fundamental Performance		3.29	2.86	2.57	3.29	3.29	Fundamental Performance Category Averages
Total number of piers		3	3	3	3	5	Fewer better
Location of piers		5	4	3	2	1	Less square foot in least sensitive area= better (verify when size information available)
Size of piers		5	4	3	1	2	Smaller is better
Seismic performance		3	2	2	5	5	More flexible = better
Modal optimization of section		3	3	3	5	3	Structure below deck or at sides = better
User comfort - deflection/vibration		3	3	3	2	2	Less deflection/sway/vibration = better
Service interruptions for special inspections		1	1	1	5	5	Structure below deck or at pedestrian level = better
Architectural		4.67	1.33	3.33	2.33	3.33	Architectural Category Averages
Looking at the bridge - proportion and scale		5	1	4	3	2	
Being near the bridge - experience on greenway, walks and river		4	1	2	3	5	
Being on the bridge - experience crossing the river		5	2	4	1	3	
Urban Context		5.00	1.00	2.00	3.33	3.33	Urban Context Category Averages
Portland core values, traditions and symbolism		5	1	2	4	3	
Compatibility with existing context, fabric and adjacent bridges		5	1	2	3	4	
Reflection of current technology and innovation		5	1	2	3	3	

Draft Ranking from 10/28/08 Working Group Meeting

Working Group Ranking					
Bridge Types ("Some" to "Few")					
10/28/2008					
Code	4	6	7	8	9
Wave frame				Cable Stay'd	Cable Stay'd
Center-to-center Span Width	680	680	680	795	860

Screening Criteria ("Some" to "Few")		Scores range from 1 to 5 5 = best 3 = neutral 1 = worst					
	Greenway	3.50	2.25	2.00	2.75	4.00	Greenway Category Averages
	Depth of span over greenway (vertical clearance)	4	1	1	5	3	Thinner deck = better
	Bridge width over greenway	3	3	3	1	3	Narrower = better
	Length of span over greenway (distance column to abutment)	2	4	3	1	5	Greater span width = better
	Greenway trail user experience	5	1	1	4	5	Sense of space, illumination, detailing
	Environmental - Sustainability	4.00	1.33	1.33	4.00	4.33	Environmental Category Averages
	Environmental impacts during construction	4	1	1	4	5	Staging, false work, piers in sensitive areas = worse
	Resource use - availability of local material	3	1	2	4	5	Local is better = concrete
	In-water piers in or near proposed contaminated media cap	5	2	1	4	3	Pier in these areas in-water = worse
	Bridge Operations	2.40	2.80	3.60	4.40	2.00	Bridge Operations Category Averages
	Line of sight between modes	2	3	4	5	2	Clear line of sight = better
	OCS integration - complexity	2	3	3	5	1	Structure below deck or at sides = better
	Emergency response on bridge	2	3	4	5	2	Structure below deck or at sides = better
	Extent of inspection	1	2	3	5	4	
	Access for inspections	5	3	4	2	1	Structure on sides or below = worse, Taller structures = worse
	Miscellaneous	4.25	2.50	2.25	3.50	2.25	Miscellaneous Category Averages
	Utility duct bank integration	5	3	3	1	3	Concealed = better, Exposed = worse
	Pier proximity to existing subsurface utilities	5	1	1	3	2	Piers further from water/gas mains = better
	Accommodates asymmetric loading	3	3	3	5	3	
	Accommodation of curved greenway spans	4	3	2	5	1	Highest cost per SF ABOVE greenway span = worst
	Opportunity	3.00	3.00	3.00	4.00	3.25	Opportunity Category Averages
	Ability to treat stormwater on bridge	3	3	3	5	3	Deck flexibility for location of treatment
	Additional wildlife habitat on/under bridge	1	3	3	5	5	Bats under bridge
	Additional fish habitat near bridge	5	3	3	4	3	Bridge pier near active edge = opportunity to improve habitat
	Habitat enhancements at staging site	3	3	3	2	2	Restoration of staging areas = large better
	Incorporate alternative energy	3	3	3	3	3	
	Total Score	162.00	103.00	107.00	164.00	153.00	Number of criteria Scored
	Rank	2	5	4	1	3	46

Percentage spread - highest to lowest 98.8% 62.8% 65.2% 100.0% 93.3%

Draft Ranking from 10/28/08 Working Group Meeting

Working Group Ranking					
Bridge Types ("Some" to "Few")					
10/28/2008					
Code	4	6	7	8	9
Wave frame				Cable Stay'd	Cable Stay'd
Center-to-center Span Width	680	680	680	795	860

Screening Criteria ("Some" to "Few")	Scores range from 1 to 5 5 = best 3 = neutral 1 = worst				
--------------------------------------	--	--	--	--	--

Weight	Category						Highest Score per category
15.00	Cost	45.00	15.00	30.00	60.00	60.00	60.00
15.00	Risk	50.45	31.36	23.18	57.27	57.27	57.27
15.00	Fundamental Performance	49.29	42.86	38.57	49.29	49.29	49.29
10.00	Architectural	46.67	13.33	33.33	23.33	33.33	46.67
10.00	Urban Context	50.00	10.00	20.00	33.33	33.33	50.00
10.00	Greenway	35.00	22.50	20.00	27.50	40.00	40.00
10.00	Environmental - Sustainability	40.00	13.33	13.33	40.00	43.33	43.33
10.00	Bridge Operations	24.00	28.00	36.00	44.00	20.00	44.00
3.00	Miscellaneous	12.75	7.50	6.75	10.50	6.75	12.75
2.00	Opportunity	6.00	6.00	6.00	8.00	6.50	8.00
100.00	Total Weighted Score	359.16	189.89	227.17	353.23	349.81	
	Rank	1	5	4	2	3	
	Percentage spread - highest to lowest	100.0%	52.9%	63.3%	98.3%	97.4%	
		-1.2%	9.9%	2.0%	1.7%	-4.1%	