

Car ferry - comparables

	total cost (\$ millions)	No. ferries	vehicle/ferry	pax	cost/each	cost/vehicle	gallons/hr	speed
BC ferries C-class (shipyard contract price)	\$ 334	3	370	1,650	\$ 111	\$ 300,901		
Massachusetts Steamship Authority (Island Home)	\$ 31	1	76		\$ 31	\$ 407,895		
Washington State Ferries - 2003 plan	\$ 348	4	144		\$ 87	\$ 604,167		
Nichols Bros. for Pierce County	\$ 11.5	1	54	325	\$ 12	\$ 212,963		
2008 WSF estimate - Pierce Co. ferry	\$ 16.9	1	50		\$ 17	\$ 338,000		
2008 Nichols Bros. estimate for WSF	\$ 20.0	1	50		\$ 20	\$ 400,000		
Washington State Ferries - 2008 bid results	\$ 25.9	1	50		\$ 26	\$ 518,000		
2008 WSF estimate - Island Home ferry	\$ 32	1	64		\$ 32	\$ 500,000		
Sultan of Oman	\$ 40	1	56		\$ 40	\$ 714,286	2,100	55 knots

241 No. vehicle spaces on 4 steel electric ferries
2,852 No. vehicle spaces in entire fleet (with steel electrics)

8.5% loss to fleet of steel electric vehicle capacity
16.7% loss of vessels

Washington State Ferries vehicle/passenger fleet
(Seattle P-I Table - January 15-2008)

Ferry Boat	Year built	Re-built	Max. passengers	Max. vehicles	Status - January 15, 2008
1 Klickitat	1927	1981	617	64	Developed pitting and corrosion, dry-docked in Dec. 2007
2 Ilahoe	1927	1986	616	59	Developed pitting and corrosion, dry-docked in Dec. 2007
3 Nisqually	1927	1987	616	59	Developed pitting and corrosion, dry-docked in Dec. 2007
4 Quinault	1927	1985	616	59	Developed pitting and corrosion, dry-docked in Dec. 2007
5 Rhododendron	1947	1990	546	48	Corrosion inside the hull, drydocked January 2008 for at least 3 weeks
6 Evergreen State	1954	1988	981	87	To be dry-docked, unannounced date for repairs and possibly an engine overhaul
7 Klahowya	1958	1995	800	87	
8 Tillikum	1959	1994	1,200	87	To be dry-docked in mid-April 2008 until end of May
9 Hyak	1967		2,500	144	
10 Kaleetan	1967		2,500	144	To be dry-docked in mid-April 2008 for unknown period
11 Yakima	1967		2,500	144	
12 Elwha	1967	1991	1,076	144	
13 Hiyu	1967		200	34	Developed a leak in its keel, dry-docked in Dec. 2007
14 Spokane	1972		2,000	188	Scheduled dry-dock at the end of Jan. 2008, replacement boat not yet designed
15 Walla Walla	1972		2,000	188	
16 Issaquah	1979	1989	1,200	124	
17 Kitsap	1980	1992	1,200	124	
18 Kittitas	1980	1990	1,200	124	
19 Cathlamet	1981	1993	1,200	124	
20 Chelan	1981		1,076	124	Routine scheduled maintenance Jan. 2008. No replacement boat available
21 Sealth	1982		1,200	90	To be dry-docked in Feb. 2008 for unknown period
22 Tacoma	1997		2,500	202	
23 Wenatchee	1998		2,500	202	To be dry-docked in Feb. 2008 for unknown period
24 Puyallup	1999		2,500	202	

Age years	=pax*age	=car*age	ferry cost per vehicle space	
			BC unit price	WSF unit price
			\$ 300,901	\$ 604,167
			Replacement Cost (\$ millions)	
81	49,977	5,184	\$ 19.3	\$ 38.7
81	49,896	4,779	\$ 17.8	\$ 35.6
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61	33,306	2,928	\$ 14.4	\$ 29.0
54	52,974	4,698	\$ 26.2	\$ 52.6
50	40,000	4,350	\$ 26.2	\$ 52.6
49	58,800	4,263	\$ 26.2	\$ 52.6
41	102,500	5,904	\$ 43.3	\$ 87.0
41	102,500	5,904	\$ 43.3	\$ 87.0
41	102,500	5,904	\$ 43.3	\$ 87.0
41	44,116	5,904	\$ 43.3	\$ 87.0
41	8,200	1,394	\$ 10.2	\$ 20.5
36	72,000	6,768	\$ 56.6	\$ 113.6
36	72,000	6,768	\$ 56.6	\$ 113.6
29	34,800	3,596	\$ 37.3	\$ 74.9
28	33,600	3,472	\$ 37.3	\$ 74.9
28	33,600	3,472	\$ 37.3	\$ 74.9
27	32,400	3,348	\$ 37.3	\$ 74.9
27	29,052	3,348	\$ 37.3	\$ 74.9
26	31,200	2,340	\$ 27.1	\$ 54.4
11	27,500	2,222	\$ 60.8	\$ 122.0
10	25,000	2,020	\$ 60.8	\$ 122.0
9	22,500	1,818	\$ 60.8	\$ 122.0

Annual cost for new ships

57 replacement rate (vehicle space/year)

	BC Ferries	Planned	WSF
cost/vehicle space	\$ 300,901	\$ 350,000	\$ 604,167
fleet replacement cost	\$ 858.2	\$ 998.2	\$ 1,723.1 (millions)
half replacement cost	\$ 429	\$ 499	\$ 862 (millions)
years	25	25	25
rate	6.00%	6.00%	6.00%
payment (millions)	\$2.8	\$3.2	\$5.6 per month
	\$33.2	\$38.6	\$66.6 per year
payment (no bonding)	\$17.2	\$20.0	\$34.5 per year

interest rates

<http://tre.wa.gov/LOCAL/localp-re.pdf>

Vessel design life

Steel electric ferries lasted 80 years
WSF assumes 60 year life for car ferries per news report
US Navy aircraft carriers - 50 year life
Washington state auditor - 40 years car ferry, 25 years foot ferry
<http://www.ofm.wa.gov/policy/30.50.htm>

24 mean	1966 total	33,344	2,852	design life 50 years
mean age (2008)	42.1		57	(with 4 steel electric ferries)
				replacement rate (vehicle space/year)
20 mean	1974 total	30,879	2,611	(without 4 steel electric ferries)
mean age (2008)	34.3			

	mean (years)	34.7 (pro-rated)	35.0	totals (\$ millions)	
				\$ 858.2	\$ 1,723.1
				lifetime (years)	50
				annual cost	
	mean (years)	34.3 (not including steel electrics)	31.0	\$ 17.2	\$ 34.5
				"catch-up cost" (cost to get to a mean age 25 years)	
				\$ 172.4	\$ 346.1
				\$ 86.6	\$ 173.8 catch-up to 30 years mean

What it is now per Seattle Magazine - March 2008

annual spending	2 year
Operations	\$ 190,000,000 \$ 380,000,000
Capital	\$ 120,000,000 \$ 240,000,000
total	\$ 310,000,000 \$ 620,000,000

\$ 148,200,000 tariffs 48% percent of total budget
 \$ 161,800,000 DOT subsidy
 \$ 7,222,000,000 2007-09 WSF biennial budget - Governor's summary transportation operations and capital
 \$ 3,611,000,000 2007-08 biennium DOT annual budget
 4.48% WSF subsidy vs. total state DOT budget - what it is now

WSF budget
What it could be - no bonding

ships	\$ 20,000,000	\$ 350,000	cost per vehicle space
ship maintenance	\$ 29,900,000	3.0%	of replacement cost
docks	\$ 7,600,000		
dock maintenance	\$ 11,400,000	3.0%	of replacement cost
total capital	\$ 68,900,000		what it could be

operations	\$ 167,200,000	88%	% of existing reported operating expenses
capital	\$ 68,900,000		
new foot ferry system	\$ 26,233,333	10%	% of WSF budget for foot ferries
total	\$ 262,333,333		total WSF expenses - what it could be

\$ 133,380,000 80% farebox recovery
 \$ 6,890,000 90% tariffs - rollback 51% percent of total budget
 \$ 3,344,000 10% federal grants (% of capital)
 \$ 118,719,333 2% adverts, joint venture, concession and other (% of operating)
 \$ 262,333,333 DOT subsidy
 \$ 262,333,333 total WSF revenue - what it could be
 \$ 43,080,667 26.6% savings to DOT with revised WSF plan + foot ferries
 3.29% state subsidy - % of DOT budget - what it could be

WSF budget
What it could be - with bonding

ships	\$ 38,600,000	\$ 350,000	cost per vehicle space
ship maintenance	\$ 29,900,000	3.0%	of replacement cost
docks	\$ 14,700,000		
dock maintenance	\$ 11,400,000	3.0%	of replacement cost
total capital	\$ 94,600,000		what it could be

operations	\$ 167,200,000	88%	% of existing reported operating expenses
capital	\$ 94,600,000		
new foot ferry system	\$ 29,088,889	10%	% of WSF budget for foot ferries
total	\$ 290,888,889		total WSF expenses - what it could be

\$ 133,380,000 80% farebox recovery
 \$ 9,460,000 90% tariffs - rollback 46% percent of total budget
 \$ 3,344,000 10% federal grants (% of capital)
 \$ 144,704,889 2% adverts, joint venture, concession and other (% of operating)
 \$ 290,888,889 DOT subsidy
 \$ 290,888,889 total WSF revenue - what it could be
 \$ 17,095,111 10.6% savings to DOT with revised WSF plan + foot ferries
 4.01% state subsidy - % of DOT budget - what it could be

Rough order of magnitude cost of ferry dock/transit station (space for two ferries per station)

Item	Quantity	Unit Cost	Units	Total
1. mobilization	1	\$ 500,000	each	\$ 500,000
2. demolition	1	\$ 500,000	each	\$ 500,000
3. landscaping	1	\$ 100,000	each	\$ 100,000
4. building	10,000	\$ 100	square feet	\$ 1,000,000
5. passenger walkway (10' x 500')	5,000	\$ 200	square feet	\$ 1,000,000
6. passenger bridge	2	\$ 200,000	each	\$ 400,000
7. dolphin/fender	8	\$ 750,000	each	\$ 6,000,000
8. vehicle bridge	2	\$ 1,000,000	each	\$ 2,000,000
9. bulkhead	400	\$ 5,000	linear feet	\$ 2,000,000
10. dredging	10,000	\$ 15	cubic yard	\$ 150,000
11. parking	400	\$ 5,000	vehicle space	\$ 2,000,000
12. lighting/power/water/sewer/utilities	1	\$ 500,000	each	\$ 500,000

design-permitting-admin. (10%) \$ 1,615,000
 contingency (10%) \$ 1,615,000
 total \$ 19,380,000

cost - ferry dock only
 design-permitting-admin. (10%) \$ 1,155,000
 contingency (10%) \$ 1,155,000
 total - dock only \$ 13,860,000

Annual cost WSF docks
 design life 50 years
 No. transit stations 19 each
 cost per WSF dock \$20 million
 total replacement cost \$380 million
 half replacement cost \$190 million
 years 25 (half design life)
 rate 6.00%
 payment \$1.2 per month
 (millions) \$14.7 per year - with bonding
 \$7.60 per year - no bonding

cost cuts and revenue improvements
 advertising \$ 500,000
 food sales - concessions \$ 500,000
 joint venture (events, cruises, retail, bookstore, dining, tourist orient) \$ 2,000,000
 fare revenue from Keller ferry \$ 210,000
 improved tariff collections \$ 741,000
 total increased revenue \$ 3,951,000

eliminate free lifetime ferry passes for workers, retired and families \$ 2,400,000
 cuts in headquarters positions \$ 12,269,504
 reduce fuel use with better engines and operations \$ 4,900,000
 eliminate Sidney, BC ferry terminal use fee (they should pay us) \$ 200,000 assumed
 total cost savings \$ 19,769,504
 total to "close the gap" - operations \$ 23,720,504
 operations gap - existing minus planned 88% of existing \$ 22,800,000

WSF routes and docks

No.	dock No.
1 Anacortes	Sidney, BC
	10 Friday Harbor
	11 Shaw
	12 Orcas
	13 Lopez
2 Port Townsend	14 Keystone
3 Clinton	15 Mukilteo
4 Kingston	16 Edmonds
5 Bainbridge Island	17 Seattle
6 Bremerton	Seattle
7 Southworth	18 Fauntleroy
8 Vashon	
9 Tahlequah	19 Point Defiance

fuel savings - better engines
 existing diesel fuel consumption 17,500,000 gallons/year
 \$ 3.50 fuel/gallon
 annual fuel cost \$ 61,250,000

fuel savings with engine retrofits 1,400,000 gallons/year
 planned diesel fuel consumption 16,100,000 gallons/year
 \$ 3.50 fuel/gallon
 planned annual fuel cost \$ 56,350,000
 annual fuel cost savings \$ 4,900,000 8%

Keller ferry - eastern Washington
 60,000 vehicles/year - 10 minute crossing
 \$ 3.50 proposed vehicle fare each way
 0.5% losses at till and fare evasion

free ferry pass assumptions
 2000 number of free ferry passes
 \$100 per pass per month

draft Capital budget Report
 Cedar Rivers group - April 2, 2008
 1. Staff Budgeted in the Capital Budget
 Charges for the 141 capital staff were
 10 percent of total capital program expenses.
 \$ 17,300,000 cost/biennium
 \$ 8,650,000 cost/year
 141 positions
 \$ 61,348 cost/position
 200 positions cut from 320 position WSF HQ
 \$ 12,269,504 HQ budget - personnel cost savings

