Ferries Performance Measures

Office of the Governor
January 2012

For more information, contact:

Jennifer Ziegler
Executive Policy Advisor for Transportation
Governor's Executive Policy Office
360-902-0460
Jennifer.Ziegler@gov.wa.gov

FERRIES DIVISION PERFORMANCE TARGETS

Second Engrossed Substitute Senate Bill 5742, which passed in the 2011 legislative session, requires an ad hoc committee to establish ferry system performance targets. Subsection (10) of the legislation requires the committee to comprise up to 11 members designated by the Office of the Governor, with at least one representative from labor. The committee is required to present performance targets to representatives of the Senate and House Transportation Committees and the Joint Transportation Committee for review by Dec. 30, 2011.

After the performance targets are reviewed by the Legislature, Subsection (12) of the legislation requires the Office of Financial Management (OFM) to complete a Government Management and Accountability Program (GMAP) report that provides baseline data for the performance targets. OFM must then complete an annual report on these targets.

During the 2011 interim, the following members were appointed to the ad hoc committee and met to discuss proposed performance targets:

- Senator Mary Margaret Haugen, Chair, Senate Transportation Committee
- Representative Mike Armstrong, Ranking Minority Member, House Transportation Committee
- Jean Baker, Ferries Division Deputy Chief, Administration and Finance
- Daniela Bremmer, Director of Strategic Assessment, Department of Transportation
- George Capacci, Ferries Division Deputy Chief, Operations and Construction, Department of Transportation
- Tom Cowan, Member, Washington State Transportation Commission
- Paul Ingiosi, Office of Financial Management
- Bill Knowlton, Marine Employees Beneficial Association (MEBA)
- Pam Pannkuk, Governor's GMAP office
- Tim Saffle, Master, Mates and Pilots
- Jennifer Ziegler, Governor's Executive Policy Office

Ad Hoc Committee Recommendations

2ESSB 5742 requires performance targets to be developed in the following areas:

1. **Safety performance** as measured by passenger injuries per 1 million passenger miles and by Occupational Safety and Health Administration recordable crew injuries per 10,000 revenue service hours.
2. **Service effectiveness measures,** including passenger satisfaction of interactions with ferry employees, cleanliness and comfort of vessels and terminals, and satisfactory response to requests for assistance. The evaluation must be conducted by a contracted research company and the Washington State Transportation Commission as part of the Ferry Riders' Opinion Group survey.

3. **Cost containment measures,** including operating cost per passenger mile, operating cost per revenue service mile, discretionary overtime as a percentage of straight time and gallons of fuel consumed per revenue service mile.
4. **Maintenance and capital program effectiveness measures,** including project delivery rate as measured by the number of projects completed on time and within budget, and vessel and terminal design and engineering costs as measured by a percentage of the total capital program, including measurement of the operating and maintenance costs, and total vessel out-of-service time.

The Department of Transportation (DOT) Ferries Division's performance is reported quarterly in DOT's "Gray Notebook" and through GMAP. DOT reports periodically in other Ferries Division areas, including maintenance backlog reduction, new vessel construction, condition ratings for terminals and vessels, safety and environmental areas.

Following are the suggested targets for the performance measures required by 2ESSB 5742.

1. Percent of ferry terminal capital projects completed on time

Proposed target: 90 percent completed on time[1]

Data for 2009–11 biennia			Goal
	FY 2010	FY 2011	FY 2012
Terminal projects completed	4	20	
Terminal projects completed on time	4	19	
Percent completed on time	100%	95%	90%

While the Ferries Division has recently completed more than 90 percent of terminal projects on time, the committee is recommending this target because it is consistent with DOT's performance target for highway projects.

Background
Ferry terminal projects range from building rehabilitation for compliance with the Americans with Disabilities Act to replacement of wing walls and dolphins in water. The time needed to complete a terminal project varies widely for a number of reasons, such as in-water deterioration, local and environmental permitting, and seismic requirements.

[1] Projects are defined at the Project Identification Number (PIN) level, project milestone dates are defined by the last legislatively approved budget prior to project competition and "on time" means if the project is delivered in the same quarter as stated in the last enacted budget.

The following table lists the ferry terminal project types completed in the 2009–11 biennium:

Project Type and Location	Completed On-Time	Reason if Not Completed On Time
Wing Walls		
Coupeville	√	
Lopez	√	
Dolphins		
Port Townsend	√	
Vashon	√	
Mukilteo	√	
Seismic Retrofit – Bridge Seats		
Bainbridge, Bremerton, Edmonds, Keystone, Seattle, Vashon	√	
Facility Rehabilitation		
Eagle Harbor	√	
Other Terminal Projects		
Anacortes – pavement rehabilitation	√	
Anacortes – overhead loading rehabilitation	√	
Clinton – septic system replacement	√	
Edmonds – trestle pavement preservation	√	
Mukilteo – mechanical/electrical transfer span replacement	√	
Mukilteo – right turn pocket/ADA	√	
Port Townsend/Coupeville – toll booths	√	
Seattle – bicycle gate	√	
Security Projects		
Bainbridge, Bremerton, Seattle	√	
IT Projects		
Electronic fare system		√ - 1 ½ years, system partner completion delays
Vehicle reservation system – Phase 1		√ - 1 year, software changes in preliminary engineering

2. Percent of ferry terminal capital projects completed on budget[2]

Proposed target: 90 percent of ferry terminal capital projects completed on budget

Data for 2009–11 biennium			Goal
	FY 2010	FY 2011	FY 2012
Terminal projects completed	4	20	
Terminal projects completed on or under budget	4	19	
Percent completed on or under budget	100%	95%	90%

While the Ferries Division has recently completed more than 90 percent of terminal projects on budget, the committee is recommending this target because it is consistent with DOT's performance target for highway projects.

3. Percent of ferry vessel construction and preservation projects completed on time

Proposed target: 100 percent for new construction; 75 percent for preservation projects[3]

Data for 2009–11 biennium			Goal
	FY 2010	FY 2011	FY 2012
Vessel projects completed		41	
Vessel projects completed on time		41	
Percentage completed on time		100%	90%

Background

Vessel preservation and improvement work is primarily performed at local shipyards, with some small capital and maintenance work done at the Ferry Division's Eagle Harbor Maintenance Facility. The availability of local shipyards is the most important factor in dictating when work is scheduled. The vessel biennial construction schedule is planned around these available openings and supplemented with work periods at Eagle Harbor.

As shipyard availability changes, contract times and milestones are adjusted in supplemental budgets. The M/V Tacoma passenger space preservation was the only work that extended into the next biennium, but was still delivered in the same quarter at its operationally complete milestone date.

---

[2]Projects are defined at the PIN level, project budget amount is defined as the last legislatively approved budget prior to project competition and on budget is defined as delivering the project within 5 percent of the budget estimate the project had in the last legislative budget.

[3] Projects are defined at the PIN level; project milestone dates are defined by the last legislatively approved budget prior to project competition and considered "on time" if the project is delivered within the same quarter as stated in the last budget.

The following table describes the project types completed in the 2009–11 biennium:

Project Type and Location	Completed On Time	Comment
New Vessels		
64 car	√	Two vessels were delivered in 2009-11; the third was delivered this biennium ahead of schedule and under budget.
Painting		
Spokane	√	
Hyak	√	
Yakima	√	
Kittitas	√	
Evergreen State	√	
Chelan	√	
Passenger Space		
Tacoma	√	One week's worth of work crossed into the 2011–13 biennium
Klahowya	√	
Issaquah	√	
Tillikum	√	

4. Percent of ferry vessel construction and preservation projects completed on budget

Proposed target: 100 percent for new construction; 75percent for preservation projects[4]

Data for 2009–11 biennia			Goal
	FY 2010	FY 2011	FY 2012
Vessel projects completed		41	
Vessel projects completed on or under budget		31	
Percent completed on budget		76%	75%/100%

Background

For the 2009–11 biennium, all vessel projects (PINs) were completed in the second fiscal year (FY 2011) due to the availability of dry dock space and tie-up slips at Eagle Harbor. The total vessel capital budget was overspent by less than 2 percent, in part because a portion of the budget for the 64-auto ferry was spent in FY 2012. Other projects experienced budget overages caused by

[4] Projects are defined at the PIN level; project budget amount is defined as the last legislatively approved budget prior to project competition; and on budget is delivering the project within 5 percent of the budget estimate the project had in the last legislative budget.

additional steel costs not identified during the scoping phase and additional landing radars that were purchased for a few vessels late in the biennium.

5. Passenger injuries per 1 million passenger miles

Proposed target: Passenger injuries below the three-year average or 0.48, whichever is lower[5] (DOT's ultimate goal is zero passenger injuries; this is a proposed interim target)

Data for past 3 years				Goal
	FY 2009	FY 2010	FY 2011	FY 2012
1 million passenger miles	175	176	173	172
Passenger injuries	87	105	58	<82
Injuries per million passenger miles	0.50	0.60	0.34	<0.48
3-year rolling average	NA	NA	0.48	

6. OSHA recordable crew injuries per 10,000 revenue service hours

Proposed target: 110 incidents per 10,000 revenue service hours[6] (DOT's ultimate goal is zero crew injuries; this is a proposed interim target)

Data for past 3 years				Goal
	FY 2009	FY 2010	FY 2011	FY 2012
OSHA recordable incidents	177	138	115	110
10,000 total service hours	11.50	11.45	11.64	11.78
Incidents per 10,000 total service hours	15.4	12.1	9.9	9.3
Change from prior year	NA	-22%	-18%	-6.10%

Background

Traditionally, occupational safety and health performance by the Ferries Division has been measured by focusing on selected metrics such as injury and illness rates and workers' compensation claims data. The outcome metrics that DOT uses for injury and illness rates is the OSHA recordable rate, which measures the number of employees who have sustained an OSHA recordable injury or illness per 100 workers. OSHA defines an occupational injury or illness as any incident where medical treatment beyond first aid is needed.

---

[5] FY 2012 passenger miles based on adopted service plan and September ridership forecast
FY 2009–FY 2011 passenger injuries: WSF Patron Claims System
FY 2009–FY 2011 passenger miles: National Transit Data Base, entered by WSF from AOSS
FY 2012 passenger miles based on budgeted service plan and November ridership forecast

[6] FY 2009–FY 2011 OSHA recordable incidents: WSF Claims Database and Compliance Suite
FY 2009–FY 2011 revenue service hours: National Transit Data Base, entered by WSF from AOSS
FY 2012 revenue service hours based on budgeted service plan

In 2010, there were 5.3 injuries/illnesses per 100 full-time equivalent employees, or FTEs, in the national marine transportation sector. The recommended performance target translates into 9.3 incidents per 10,000 revenue service hours and a reduction of 6.1 percent.

Since 2009, Ferries Division OSHA recordable injuries/illnesses have been reduced by nearly half. DOT has focused on conducting timely investigation of all accidents, injuries, near collisions and illnesses to evaluate what happened and measures that could be taken to prevent similar incidents. The investigation determines hazardous conditions or unsafe behaviors and recommends corrective actions to "surface causes" and to address the underlying "root causes."

7. Passenger satisfaction of interactions with ferry employees

Proposed target: Passenger satisfaction of 90 percent for interactions with terminal and vessel staff[7]

Data from Transportation Commission survey (March–April & July–August 2010)		Goal
Interactions with terminal employees	88%	90%
Interactions with vessel employees	84%	90%

Survey sponsored by the Transportation Commission through a contracted market research firm.

Background
DOT now receives feedback from its ferry customers on interactions with employees and on customer information services. This feedback is measured by the number of complaints submitted per 100,000 passengers. Feedback is taken on an ongoing basis in person; by customer feedback form; and via telephone call, mail, email and DOT's website.

8. Passenger satisfaction of cleanliness and comfort of vessels and terminals

Proposed target: Passenger satisfaction of 90 percent for cleanliness and comfort of vessels and terminals[8]

Data from 2010 Transportation Commission survey		Goal
Cleanliness and comfort	85%	90%

[7] "Satisfied" = Transportation Commission survey data for passengers who are somewhat satisfied, very satisfied, neutral or do not respond

[8] "Satisfied" = Department of Transportation survey data for passengers who are somewhat satisfied, very satisfied, neutral or do not respond

9. Passenger satisfaction of requests for assistance

Proposed target: Passenger satisfaction of 90 percent for requests for assistance.

Data from 2010 Transportation Commission survey		Goal
Customer telephone information	76%	90%

10. Operating costs per passenger mile

Proposed target: Cost per passenger mile within +/- 5 percent of the budgeted service plan[9]

Data on operating costs for past 3 years				Goal
	FY 2009	FY 2010	FY 2011	FY 2012
Total WSF operating program expenses	$225,813,396	$208,584,420	$224,653,415	$232,617,000
Passenger miles	175,293,789	175,703,172	173,179,020	172,474,805
Cost per passenger mile	$1.29	$1.19	$1.30	$1.35

Background
The Ferries Division operating costs are composed of labor costs (55 percent of budget), fuel costs (29 percent of budget) and other non-labor costs (16 percent).

11. Operating cost per revenue service mile

Proposed target: Cost per revenue service mile within +/- 5% of the budgeted service plan[10]

Data for 2009–11 biennium			Goal
	FY 2010	FY 2011	FY 2012
Total WSF operating program expenses	$208,584,420	$224,653,415	$232,617,000
Revenue service miles	877,722	884,397	896,911
Cost per revenue service mile	$238	$254	$259

[9] Operating cost per passenger mile is expressed as an annual figure based on the state fiscal year (July 1–June 30). An annual measure is used since a shorter time period (quarterly or monthly) does not accurately reflect seasonal differences and related costs for ferry service. In addition, a longer time period helps minimize timing-related issues for when expenditures occur. FY 2012 expense is based on the adopted budget; passenger miles are based on FY 2012 budgeted service plan and November ridership forecast.

[10] FY 2012 expense is based on the adopted budget; revenue service miles are based on FY 2011 with adjustment for Port Townsend – Keystone route for second boat service added July 2011

12. Overtime as a percentage of straight time

Proposed target: Overtime as a percentage of straight time within 1 percent of the budgeted level[11]

Data for the 2009–11 biennium				Goal
	FY 2009	FY 2010	FY 2011	FY 2012
Overtime hours	121,803	113,894	95,747	123,647
Straight time hours	2,340,319	2,377,377	2,369,458	2,494,556
Overtime as a percent of straight time	5.2%	4.8%	4.0%	5.0%

Note: Two adjustments are made to the FY 2012 performance goal based on the collective bargaining agreements negotiated for the 2011–13 biennium. These new agreements will result in higher overtime hours, but with long-term savings for DOT due to less need for vacation relief employees.

As a result of bargaining in early 2011, MEBA licensed and unlicensed engineers now receive four hours of overtime in lieu of four hours of comp time every pay period. This adds 28,800 hours to total mandatory overtime. Employees called in on their day off receive three hours of callback pay at straight time. This adds 11,244 hours to estimated straight time. Straight time was calculated according to the service plan, which includes a second boat at Port Townsend-Coupeville (returning service to where it was before the Steel Electric class of ferry vessels were removed for safety concerns in November 2007) and a higher crewing level for the M/V Chetzemoka compared to the M/V Rhododendron at Point Defiance-Tahlequah.

Background

Over the past three years, the Ferries Division has reduced the frequency of overtime use. In July 2010, DOT instituted a policy aimed at reducing discretionary overtime for employees who work in the ferry fleet, terminals and Eagle Harbor.

Due to the limitations of the data available on overtime, it is not possible to recreate the history of discretionary overtime as a percent of total overtime. The proposed target is based on total overtime, on the theory that unavoidable overtime should be relatively unchanged from year to year.

[11] FY 2012 overtime and straight time hours based on the adopted service plan

13. Gallons of fuel consumed per revenue service mile[12]

Proposed target: Gallons per revenue service mile within +/- 5 percent of budget.

	FY 2010	FY 2011	Goal FY 2012
Fuel consumed (gallons)	17,209,630	17,274,110	17,468,106
Revenue service miles	877,722	884,397	896,911
Fuel consumed per revenue service mile	19.6	19.5	19.5
Variance			< +/- 5%

Note: An adjustment for service and vessel changes is made for the FY 2012 performance target based on the addition of new vessels on the Port Townsend – Coupeville ferry route to replace service lost in 2007, and the substitution of the larger M/V Chetzemoka for the M/V Rhododendron on the Point Defiance – Tahlequah route

Background

Fuel conservation measures such as selectively slowing certain runs, reducing some off-peak sailings, running on fewer engines and reducing engine speed at the dock are part of the Ferry Division's fuel mitigation strategy.

14. Vessel and terminal design, engineering and maintenance costs

Proposed target: Percentages consistent with DOT's State Design Manual and Ferries Division terminal design standards and estimating guidelines due in 2012.

Terminal engineering[13]		
	FY 2010	FY 2011
Preliminary engineering costs	1 ,285,110	7,567,906
Construction costs	5,343,470	6,803,187
Total cost	6 ,628,580	4,371,093
Preliminary engineering percentage of total costs	19%	22%

[12] FY 2012 consumption is based on the adopted budget for fuel consumption; revenue service miles derived from WSF Automated Vessel Tracking System and route lengths from nautical navigation charts.

[13] DOT recommends deleting maintenance costs from this measure because of the multiple factors affecting maintenance costs and because lower maintenance costs can, at some point, lead to reduced service.

Vessel engineering		
	FY 2010	FY 2011
Preliminary engineering costs		3,984,441
Construction costs		38,831,407
Total costs		42,815,847
Preliminary engineering percentage of total costs		9%

Notes:
1. Projects delivered via design-build are not included in calculations in the chart above
2. Project PE & CN dollars are listed in the fiscal year the projects (PINs) were completed. All vessel projects were started in FY 2010 but not completed until FY 2011 due to availability of dry dock space and tie-up slips, and work done during the FY 2011 annual inspections at Eagle Harbor.

Background
Higher-than-average terminal preliminary engineering costs in the 2009–11 biennium reflect multiple seismic retrofit projects that required unique designs with multiple utility relocations. Additionally, the Eagle Harbor preservation project required complex design coordination with multiple engineering disciplines, and faced significant costs from environmental challenges and legal costs associated with permit acquisition.

15. Vessel out of service time

Proposed target: Total vessel out of service time of six weeks per vessel or less per year

Actual days out of service			Planned days out of service
	FY 2010	FY 2011	FY 2012
Jumbo Mark II (3 vessels)	48	97	140
Jumbo (2 vessels)	67	92	87
Evergreen State (3 vessels)	161	136	169
Issaquah (6 vessels)	185	273	202
Super (4 vessels)	217	142	137
Kwa-di Tabil (3 vessels)	0	0	41
Rhododendron (1 vessel)	34	20	15
Total days out of service	712	760	791
Total number of maintained vessels	19	19	21
Out-of-service weeks per maintained vessel	5.4	5.7	5.4

Background
The total number of weeks a vessel is out of service depends on the service life of the vessel, Coast Guard-required preservation and maintenance, average fleet age, and the maintenance and preservation plan for the year. The average age of the DOT ferry fleet is 35 years. As vessels age, the number of total planned out-of-services days is expected to increase.

Planned out-of-service time occurs for each vessel due to required annual inspections, the requirement for a dry docking twice every five years and preservation that is due according to the life-cycle cost model. Actual out-of-service time depends on those factors and unexpected events and conditions, such as availability of dry dock time at shipyards that are able to handle the specific class of vessel, more or less extensive preservation work once a project is started and unexpected breakdowns.

16. On-time performance[14]

Proposed target: On-time annual performance of 95 percent or greater[15]

On-Time Performance	FY 2009			FY 2010			FY 2011		
Route	Actual on-time trips	On-time %	Average sail delay (mins.)	Actual on-time trips	On-time %	Average sail delay (mins.)	Actual on-time trips	On-time %	Average sail delay (mins.)
San Juan Domestic	22,769	87.9	4.1	22,692	85.3	4.6	23,723	88.4	3.9
San Juan International	526	71.0	8.7	575	76.2	6.7	665	88.1	3.5
Edmonds – Kingston	16,070	89.3	4.3	15,595	86.4	4.6	16,353	96.8	2.4
Fauntleroy–Vashon–Southworth	38,427	94.3	3.3	37,824	93.3	3.2	38,740	95.2	2.7
Port Townsend – Coupeville	204	68.2	7.8	6,086	87.5	4.2	5,642	84.6	5.1
Milteo – Clinton	25,024	96.1	2.8	25,722	96.6	2.4	25,533	97.7	2.1
Point Defiance – Tahlequah	8,233	92.6	4.0	12,746	94.0	3.7	13,306	96.9	2.8
Seattle – Bainbridge Island	15,461	95.2	2.1	15,362	93.5	2.3	15,539	94.5	2.1
Seattle – Bremerton	9,623	96.2	3.2	10,203	96.7	2.7	10,540	97.1	2.4
Totals	136,337	92.9	3.4	146,805	91.7	3.4	150,041	94.4	2.8

Background

A trip is considered delayed when a vessel does not leave the terminal within 10 minutes of the scheduled departure time. The Ferries Division calculates its on-time performance rating using an automated tracking system onboard each vessel. On-time performance can be affected in several ways:

- Ferries stop and the crew assists when there are emergencies with other boats or if boaters or people are in distress on the water.
- Ferries wait for ambulances to transport patients for medical treatment between the island and the mainland.
- Weather-related events (fog, high winds) that necessitate the slowing of vessels for safety.
- Additional loading/unloading time needed during peak traffic times and busy travel times.
- Security activity and other actions taken by the Washington State Patrol.
- Timing issues with nearby trains and pedestrian/vehicle traffic signals.
- Customer-related delays due to vehicle stalls, keys locked in car, etc.
- The ripple effect that one late departure has for the rest of the day's schedule.

[14] Items 16 and 17 are not specifically required by legislation but are recommended by the ad hoc committee.
[15] "On time" is defined as a departure within 10 minutes of the scheduled departure time. Data Sources:

17. Trip reliability[16]

Proposed target: Annual average trip reliability of 99 percent or greater

Percentage of Completed Trips	FY 2009	FY 2010	FY 2011
San Juan domestic	99.9%	99.7%	99.8%
San Juan international	99.9%	100.0%	100.0%
Edmonds – Kingston	99.7%	99.7%	99.6%
Fauntleroy – Vashon – Southworth	99.8%	99.5%	99.8%
Port Townsend – Coupeville[17]	95.6%	94.1%	96.7%
Mukilteo – Clinton	99.8%	99.9%	98.8%
Point Defiance – Tahlequah	99.6%	99.8%	99.8%
Seattle – Bainbridge Island	99.9%	99.8%	100.0%
Seattle – Bremerton	99.9%	99.1%	100.0%
Totals	99.6%	99.4%	99.5%

Percent trip reliability is calculated by dividing net trips by the number of scheduled trips. Net trips are scheduled trips minus missed trips plus make-up trips. Scheduled trips are derived from the adopted service schedule.

Background

Reasons for missed trips include:

- Problems with vessel systems
- Low tides
- Weather (fog, strong winds)
- Security activity or emergency-related events
- Problems with mechanical systems at terminals
- Realignment of service with ferry schedule to maintain on-time performance

The aging of the majority of the ferry fleet affects trip reliability. Preservation consistent with the life-cycle cost model and regular maintenance reduces the probability of out-of-service time.

[17] The Port Townsend – Coupeville route's trip reliability numbers are affected by strong currents, tidal conditions and weather-related issues such as strong winds.