



Gray Notebook Lite

“We don’t take the public’s trust lightly. It’s the foundation for everything we do here at WSDOT and is stabilized by our continued commitment to being transparent in our work and accountable for our actions.”

Paula J. Hammond, P.E.
Secretary of Transportation

Pedestrian and Bicyclist Safety Annual Report

GNB p. 5

WSDOT’s pedestrian and bicycle program has improved more than 80 known pedestrian risk locations since 2005 • Between 2010 and 2011, Washington’s pedestrian fatality collision rate rose from 0.90 to 0.97 pedestrian fatalities per 100,000 people, 37 percent lower than the national average; a long-term trend • Biking and walking in Washington have increased 10 percent since 2008, on target to exceed the state’s biking and walking goal of doubling these activities by 2027

Asset Management: Pavement Conditions Annual Report

GNB p. 10

WSDOT had 90.5 percent of asphalt and concrete pavement in fair or better condition in 2011, compared to 92.0 percent in 2010 • WSDOT’s pavement rehabilitation backlog increased by \$44 million to \$220 million from fiscal year 2011 to fiscal year 2012 • WSDOT’s first asphalt overlay project on concrete resulted in cost savings of approximately \$400,000 per lane mile compared to the traditional asphalt reconstruction method

Asset Management: Highway Maintenance Annual Report

GNB p. 18

WSDOT achieved 80 percent of its maintenance asset condition targets in 2012; up from 65 percent in 2010 and from 73 percent in 2011 • Since 2011, 11 maintenance scores increased, 17 remained unchanged and two decreased • Four of 30 maintenance activities have consistently been below target at the statewide level since 2009

Excerpts from *Gray Notebook 48*, WSDOT’s quarterly performance report on transportation systems, programs, and department management for the period ending December 31, 2012.

In this edition:

- Worker Safety
- Pedestrian and Bicyclist Safety
- Pavement Preservation
- Highway Maintenance
- Washington State Ferries
- Incident Response
- Amtrak Cascades
- Fish Passage Barriers
- Environmental Compliance
- Economic Vitality
- Construction Cost Trends
- Capital Project Delivery Programs

Safety

WSDOT reduces incident rate by 11 percent; has lowest number of injuries and illnesses since 2006

There were 336 Occupational Safety and Health Administration (OSHA) recordable incidents in 2012, down 28 percent from 2006 (467 incidents). Through a concerted, agency-wide effort WSDOT made progress in reducing the OSHA-recordable workplace incidents in 2012. The incident rate decreased from 6.2 incidents for every 100 full-time employees in 2011, to 5.5 in 2012, an improvement of 11 percent. See *Worker Safety*, pp. 2-4.

WSDOT recordable incident rates¹ for 2012

Number of recordable incidents for every 100 full-time employees

	2011	Goal 2012	2012	2011-2012 rate % change ²
Northwest Region	6.6	5.6	5.7	-14%
North Central Region	8.9	7.9	7.1	-20%
Olympic Region	5.2	4.2	5.5	6%
Southwest Region	6.6	5.6	6.1	-8%
South Central Region	7.8	6.8	6.6	-15%
Eastern Region	9.9	8.9	8.8	-11%
Headquarters	2.2	1.2	3.0	36%
Subtotal	5.8	4.8	5.4	-7%
Ferries Division	7.5	6.5	5.5	-27%
Agency-wide	6.2	5.2	5.5	-11%

Data source: WSDOT Office of Human Resources and Safety.

Notes: 1 The recordable incident rate is calculated as the count of recordable incidents multiplied by 200,000 hours (approximate number of hours worked by 100 employees in one year), divided by the total hours worked. 2 Incident rate changes: improved = decrease (-%); worsened = increase (+%).

WSDOT improves walking, biking conditions

WSDOT offers two funding programs to help local agencies improve conditions for walking and bicycling: The Safe Routes to School and the Pedestrian and Bicycle programs.

In 2012, WSDOT hosted two webinars to familiarize applicants with the grant programs, and reached about 400 people around the state. The grant programs received \$160 million in requests, and awarded \$26 million to 48 projects in 2012. The future state and federal funding for both programs is subject to approval by the 2013 state Legislature for the 2013-2015 biennium.

The Pedestrian and Bicycle Program has improved more than 80 known pedestrian risk locations since 2005. To date, 177 schools across the state have participated in the Safe Routes to School Program, enhancing safety for approximately 77,000 children. Through continued commitment, these programs gained state recognition; for the fifth consecutive year, the League of American Bicyclists named Washington as first in the nation in its "Bicycle Friendly State" ranking. See *Bicycle and Pedestrian Safety*, pp. 5-8.

Fatalities per year compared to goal of reducing fatalities by five percent each year

2007 through 2011 data; Goal projected from 2007 baseline

	2007	2008	2009	2010	2011	2012	2013
Pedestrian	60	63	59	61	66	n/a	n/a
Bicyclist	14	9	9	6	11	n/a	n/a
Combined goal¹	n/a	70	67	63	60	57	54

Data source: National Highway Traffic Safety Administration Fatality Analysis Reporting System. 2012 data is preliminary.

Preservation

Pavement preservation feels funding pinch

WSDOT continues to feel the consequences of reduced funding for pavement preservation. While the agency met its goal, with 90.5 percent of state highway pavement in fair or better condition in 2011 (the latest available data), this is a drop of 1.5 percent from 2010,

when 92.0 percent of all asphalt and concrete pavement was fair or better. WSDOT maintains pavement on 18,622 lane miles of state highways, and 2,000 lane miles of ramps and special use lanes. The condition of WSDOT's pavement types has been declining since 2008 when 94.7 percent was in fair or better condition.

Pavement performance measures dashboard

Performance measure ¹	Previous year	Current year	Goal	Goal met	Progress	Comments
Percentage of pavement in fair or better condition (Annual measure: calendar years 2010 & 2011)	92.0% ²	90.5%	90.0%			Reduction from previous year; chip seal not rated in 2011 (pp. 11-12).
New pavement performance measures						
Average years and percent of Remaining Service Life ³ of asphalt and chip seal pavement (Annual measure: fiscal years 2011 & 2012)	6.11 yrs 52.2%	6.09 yrs 51.9%	40% to 60%			Indicates average remaining life of flexible pavement: about 52% of the average life remains (p. 13).
Asset Sustainability Ratio ⁴ of asphalt and chip seal pavement (Annual measure: calendar years 2011 & 2012)	0.79	0.70	1.0	-		Measures the years of service life replenished divided by the service life consumed annually. (pp. 13-14).
Deferred Preservation Liability ⁵ of all pavement (asphalt, chip seal and concrete) (Annual measure: fiscal years 2011 & 2012)	\$176 million	\$220 million	\$0	-		Measures the accumulated agency cost of deferred pavement rehabilitation. (p. 14).

Notes: 1 All measures are for WSDOT state highway pavement. 2 For comparison purposes, the 2010 pavement condition for all pavement types was 92.7 percent fair or better. 3 Remaining Service Life is the years and percent left of a pavement segment's remaining useful life before rehabilitation or replacement is necessary. 4 Asset Sustainability Ratio compares the years of useful pavement life replenished in a given year through rehabilitation compared to the amount consumed. 5 Deferred Preservation Liability is the cost in current dollars to fund the backlog of past due pavement rehabilitation work. The project trend for all measures is unfavorable.

Preservation (Continued)

Remaining Service Life (RSL) measures the expected life of pavement by measuring the number of years before rehabilitation is required for any given pavement section. RSL is expressed as the average number of years remaining, and as a percent of the original life. The statewide average RSL is an important aspect of this performance measure.

WSDOT's flexible road network (state-owned roads with asphalt and chip seal pavement) had an average Remaining Service Life of 48 percent for asphalt pavement and 61 percent for chip seal pavement in fiscal year 2012 (July 1, 2011 through June 30, 2012). See *Pavement Conditions*, pp. 10-17.

WSDOT achieves 80 percent of highway maintenance targets in 2012

WSDOT achieved 80 percent of its highway maintenance condition targets in 2012. This is 7 percent higher than the 73 percent achieved in 2011, and 15 percent higher than in 2010. Between 2011 and 2012, 11 asset condition ratings increased, 17 remained unchanged and two dropped to a lower score. The six targets missed in 2012 were also missed in 2011.

Maintenance plays an important role in WSDOT's Asset Management by meeting the daily needs of maintaining and operating the 18,622 lane miles and 2,000 miles of ramps and special use lanes of the state's highway system. WSDOT focuses on preventive maintenance, repairs, and safe operation of the highway infrastructure.

The Maintenance Accountability Process (MAP) measures and reports on the performance of 30 highway maintenance activities, as part of asset management.

Between 2011 and 2012, 11 asset condition ratings increased, 17 remained unchanged and two dropped to a lower score

WSDOT uses two metrics, asset condition and task completion. For more information and definitions, refer to *Gray Notebook* 44, p. 17. There are a number of factors that impact the condition of WSDOT's highway assets. These factors include maintenance work performed, the timing and scope of WSDOT's preservation projects, weather conditions, and the amount of new highway projects that add infrastructure to the system. See *Highway Maintenance*, pp. 18-22.

Mobility

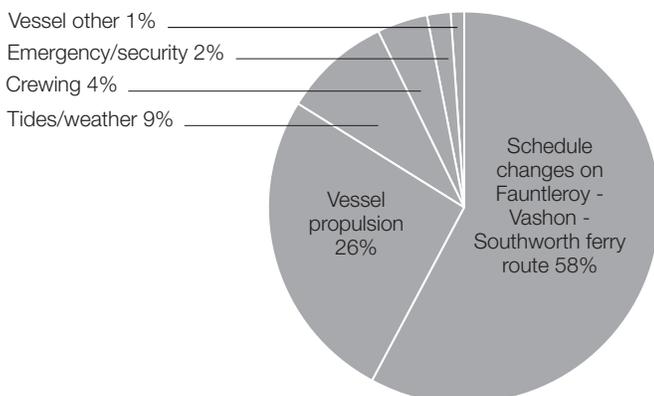
Ferries exceeds on-time performance goal, sees increase in cancellations for quarter

Washington State Ferries (WSF) exceeded its 95 percent on-time performance goal with 96.3 percent of trips on time in the second quarter of fiscal year 2013 (October 1 through December 31, 2012). Despite decreasing for the quarter, Ferries' trip reliability was 99.3 percent and surpassed the annual goal of 99 percent.

There were 727 more cancellations in the second quarter of FY2013 than in the same quarter of FY2012 primarily due to a lack of vessel availability and crewing issues on the Fautleroy - Vashon Island - Southworth route. See *Washington State Ferries*, pp. 28-30.

Reasons for Ferries' canceled trips

Second quarter (October 1 through December 31), 2012



Data source: WSDOT Ferries Division.

Note: In November and December a lack of available vessels resulted in a service change on the Fautleroy - Vashon - Southworth ferry route from a normal three-boat to a two-boat service schedule. Most of these trips were replaced and therefore the number of vessel cancellations overstates the impact to service on this route.

Amtrak Cascades increases its on-time performance rate to meet goal of 80 percent

State-supported Amtrak Cascades trains met the on-time performance goal of 80 percent in the fourth quarter of 2012 (October 1 through December 31). This is an increase from the on-time performance rate of 74.8 percent in the fourth quarter of 2011, and marks the first time WSDOT has met this goal since first reporting on-time performance in 2001. See *Amtrak Cascades*, pp. 31-32.

Incident Response clears scenes quickly to reduce drivers' costs by \$17.7 million

WSDOT's Incident Response (IR) program responded to 10,691 incidents in the fourth quarter of 2012 (October 1 through December 31) clearing incidents in an average of 13.4 minutes.

WSDOT responded to more than 10,600 incidents during the fourth quarter of 2012

The IR teams' quick response provided Washington motorists about \$17.7 million in estimated economic benefit by proactively helping prevent secondary collisions at incident sites and reducing the time and gas they would have wasted in travel delay due to incident-related congestion. The estimated economic benefits include \$9.9 million from reduction of traffic delay and \$7.8 million from an estimated 2,138 avoided secondary crashes.

IR teams responded to 10,691 incidents (preliminary data as of January 15, 2013) during the fourth quarter of 2012, with an average incident clearance time of 13.4 minutes. The fourth quarters of 2011, 2010 and 2009 experienced 10,494, 10,308, and 10,163 incidents with average incident clearance times of 13.3, 13.8, and 13.7 minutes. See *Incident Response*, pp. 24-27.

Environment

Fish barrier removal projects restore access to 55 miles of upstream habitat in 2012

WSDOT corrected 12 fish passage barriers as part of 10 projects during 2012. These corrections added more than 55 miles of potential upstream habitat for fish. Seven of the corrections were completed as stand-alone projects. Four culvert correction projects planned to be completed in 2012 were delayed until 2013. Three of the corrections are part of the SR 520 floating bridge replacement project and were rescheduled to better fit with that project's work plan.

The other delayed project went to bid late and the contractor was unable to have a new culvert fabricated in time to meet the window for in-stream work. WSDOT anticipates that all work for these projects will be completed in 2013. See *Fish Passage Barriers*, pp. 34-35.

WSDOT's environmental violations increase in 2012

WSDOT had 112 environmental violations in 2012, which is 48 more than in 2011. In 2012, WSDOT spent approximately \$1.3 billion on construction projects, performed more than 287,000 highway maintenance activities, and conducted more than 162,000 ferry sailings. These activities can present unique challenges resulting in environmental violations.

Economic Vitality

Recovery Act funding supports jobs and helps boost Washington economy through recession

State and local highway projects funded in full or part by the American Recovery and Reinvestment Act (ARRA) supported a monthly average of 152 full-time equivalent (FTE) jobs during the fourth quarter (October 1 through December 31) of 2012.

The December 2012 data in this article is preliminary and will be updated in the next Transportation: Economic Update article. Authorized by the federal government in February 2009, ARRA brought \$555 million in transportation funding to Washington state for 221 highway projects. Approximately \$182 million (33 percent) of this was distributed to local and city governments. About 98 percent of ARRA funding awards for Washington highway projects, \$543.5 million, has been expended as of December 2012.

Economic indicators show improvement

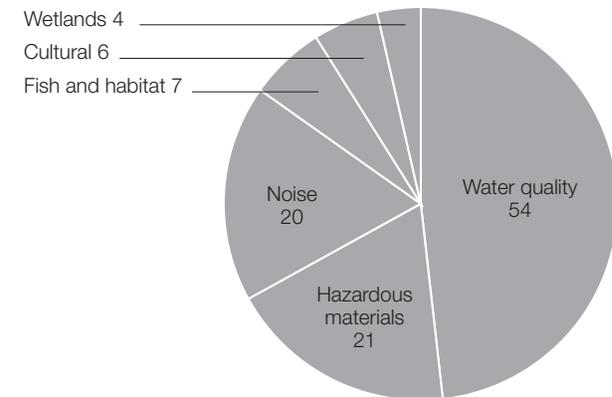
At both the state and national levels, 2012 was characterized by a continued moderate recovery from the economic recession that had officially ended three years prior. The labor market showed signs of improvement in 2012, as the average annual unemployment rate in Washington dropped below 9 percent for the first time in four years to 8.3 percent.

Despite improving from 9.2 percent in 2011, the statewide unemployment rate remains substantially higher than the pre-recession (2007) rate of 4.6 percent. See *Economic Update*, p. 41.

In 2012, 54 of WSDOT's 112 violations involved water quality, 12 more than in 2011. A large number of the water quality violations (27) occurred when diverting water around work to replace culverts and to protect roads and bridges. In other situations, contractors and WSDOT failed to install or maintain best management practices for preventing erosion and trapping sediment. See *Environmental Compliance*, pp. 36-38.

WSDOT's environmental violations in 2012

Number of violations by compliance category



Data source: WSDOT Environmental Services Office Commitment Tracking System.

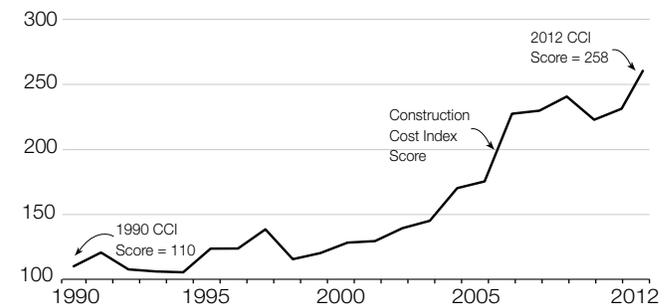
Stewardship

The Construction Cost Index (CCI), which WSDOT uses to track changes in its annual materials costs increased 5.1 percent during 2012. This was about 1 percent higher than the predicted rate of inflation for the year. The 5.1 percent increase in 2012 comes on the heels of a 5.8 percent increase in 2011.

During the past decade, WSDOT's CCI has increased by 77.9 percent compared to a 26.4 percent increase during the 13 years from 1990 to 2002. See *Construction Cost Trends*, p. 65.

WSDOT's Construction Cost Index

1990 through 2012; Costs of construction materials and activities relative to 1990 levels



Data source: WSDOT Construction Office.

Notes: 2003 and 2004 WSDOT CCI data points adjusted to correct for spiking bid prices on structural steel. WSDOT base 1990 = 110. WSDOT 2012 data through December.

The *Gray Notebook* and *GNB Lite* are publications of the Washington State Department of Transportation. All pages referenced in the Lite are to the full edition of *Gray Notebook (GNB)* 48, available online at www.wsdot.wa.gov/accountability. For more information, contact: Daniela Bremmer, Director WSDOT Strategic Assessment Office, P.O. Box 47374 Olympia, WA 98504-7374. Phone: 360-705-7953 E-mail: daniela.bremmer@wsdot.wa.gov

WSDOT's Capital Project Delivery Programs

WSDOT completes five more Nickel and TPA projects

WSDOT completed five Nickel and Transportation Partnership Account (TPA) projects since the production of the last *Gray Notebook*, bringing its total count to 341 out of 421 projects completed since the 2003 and 2005 gas tax funding packages were approved. Four of these projects were completed during the fourth quarter (October 1 through December 31, 2012). A fifth project, SR 530/Fortson Creek Culvert - Fish Barrier, was completed in late September 2012 (after publication deadlines for *Gray Notebook* 47) and is featured in this edition on page 52.

Of the 341 projects completed to date, 88 percent were on time and 91 percent were on budget. The goal for projects being delivered on budget and on time is 90 percent. The total value of these completed projects is approximately \$5.6 billion. The remaining \$10.8 billion in Nickel and

WSDOT Nickel and TPA project status

Project status	Number of projects	Value in thousands
Projects completed in earlier biennia that are <i>not</i> included in the current Transportation Budget	81	\$371,970
Projects completed that <i>are</i> included in the current Transportation Budget	260	\$5,181,249
Completed projects subtotal:	341	\$5,553,219
Projects included in the current Transportation Budget that are not yet completed	80	\$10,789,959
Total:	421	\$16,343,178

Data source: WSDOT Capital Program Development and Management.

Cumulative delivery performance¹ of completed Nickel and TPA projects

July 1, 2011 through December 31, 2012

Calendar year	2011		2012			
	Q3	Q4	Q1	Q2	Q3	Q4
Number of projects	310	325	325	330	336	341
Percent on time	89%	87%	87%	88%	88%	88%
Percent on budget	91%	91%	91%	91%	91%	91%
Percent on time and on budget	82%	81%	81%	81%	81%	81%

Data source: WSDOT Capital Program Development and Management.

Note: 1 A project is "on time" if it is operationally complete within the quarter planned in the last approved budget, and "on budget" if the budget is within 5 percent of the last approved budget.

TPA funds will support or continue to support 80 additional projects, including a number of mega-projects like the SR 99/Alaskan Way Viaduct Replacement, I-405 Corridor improvements and the I-5 - SR 16 Tacoma/Pierce County High Occupancy Vehicle program.

WSDOT has advertised one Nickel and TPA project since September 1, 2012, for a total of 28 projects in the construction phase as of December 31, 2012 (pp. 46-48). Six additional projects are in the delivery pipeline and are scheduled to be advertised from January 1 to June 30, 2013.

WSDOT advertises 28 Pre-existing Funds projects during the fourth quarter of 2012

Three of 51 Pre-existing Funds (PEF) projects were advertised early and nine were on time during the fourth quarter of 2012 (October 1 through December 31).

Also during the fourth quarter of 2012, WSDOT delayed eight projects within the 2011-2013 biennium and reprioritized 15 of 51 PEF projects (29 percent). Advertisement on these 15 projects was deferred to the 2013-2015 biennium.

Nickel and TPA revenue forecasts continue to fall well short of original projections

Gas tax revenues generated through the 2003 Nickel Account and 2005 Transportation Partnership Account fell short of original projections last quarter, continuing a downward trend that started for both funding sources during the 2005-2007 biennium.

The November 2012 revenue forecast for the 10-year period of the Nickel Account was \$1.73 billion. This is 10.1 percent less than the original projection of \$1.92 billion. As of November 2012, the revenue forecast for the 16-year TPA

Combined Nickel and TPA gas tax funding is about \$1.2 billion less than original projections

was 20.8 percent lower than the original 2005 projection. There is more than a \$1 billion dollar difference from the \$4.94 billion in anticipated gas

tax revenues and the \$3.92 billion forecast for November 2012. (Forecasts were corrected in *Gray Notebook* 47 from amounts provided in past editions.)

Because Nickel and TPA are both funded through gas taxes, they fluctuate with demand, prices and overall statewide consumption. As less gas is purchased by consumers, the gap between projections and forecasts continues to widen.

Performance Dashboard



Goal has been met.



Performance is trending in a favorable direction.



Trend is holding.



Performance is trending in an unfavorable direction.

Policy goal/Performance measure	Previous reporting period	Current reporting period	Goal	Goal met	Progress	Comments
Safety						
Rate of traffic fatalities per 100 million vehicle miles traveled (VMT) statewide (Annual measure: calendar years 2010 & 2011)	0.80	0.80	1.00			The rate of highway fatalities held steady (a lower rate is better). But the total was the lowest since 1954.
Rates of recordable incidents and days away, restricted or transferred for every 100 WSDOT workers ¹ (Cumulative year to date 2011 & 2012)	6.2/ 3.1	5.5/ 2.7	5.2/ N/A	—/ N/A		The rate of worker injuries improved; and the incident rate requiring days away from work worsened.
Preservation						
Percentage of state highway pavement in fair or better condition (Annual measure: calendar years 2010 & 2011)	92.0%	90.5%	90.0%			A 1.5 percent decrease from previous year. Pavement condition has been declining since 2008.
Percentage of state bridges in fair or better condition ⁷ (Annual measure: fiscal years 2011 & 2012)	95.0%	95.0%	97.0%	—		Structural condition ratings criteria continue to be a challenge.
Mobility (Congestion Relief)						
Highways: annual (weekday) vehicle hours of delay statewide at maximum throughput speeds ² (Annual measure: calendar years 2009 & 2011)	28.1 million	32.5 million	N/A	N/A		Increase of 16% from 2009 to 2011, with 2009 being the least congested year in past five years.
Highways: Average clearance times for major (90+ minute) incidents on nine key western Washington corridors (Calendar quarterly measure: Q3 2012 & Q4 2012)	170 minutes	161 minutes	155 minutes	—		Average clearance time decreased for the quarter, but did not meet the goal of 155 minutes.
Ferries: Percentage of trips departing on time ³ (Fiscal quarterly measure: year to year: Q2 FY2012 & Q2 FY2013)	97.1%	96.3%	95%			Performance is less than the same quarter a year ago but still better than the goal.
Rail: Percentage of Amtrak Cascades trips arriving on time ⁴ (Calendar quarterly measure: year to year Q4 2011 & Q4 2012)	74.8%	80.0%	80%			WSDOT and Amtrak continue to evaluate projects and other means to improve on-time performance
Environment						
Cumulative number of WSDOT stormwater management facilities constructed or retrofitted ⁵ (Annual measure: calendar years 2010 & 2011)	Over 800	Over 1,037	N/A	N/A		Stormwater facilities will now be constructed under a new permit, with new requirements.
Cumulative number of WSDOT fish passage barrier improvements constructed since 1990 (Annual measure: calendar years 2011 & 2012)	257	269	N/A	N/A		Past reporting period number was corrected from 258 to 257.
Stewardship						
Cumulative number of Nickel and TPA projects completed, and percentage on time ⁶ (Calendar quarterly measure: Q3 and Q4 2012)	336/ 88%	341/ 88%	90% on time	—		Performance remained the same this quarter and did not meet goal by a small margin.
Cumulative number of Nickel and TPA projects completed and percentage on budget ⁶ (Calendar quarterly measure: Q3 and Q4 2012)	336/ 91%	341/ 91%	90% on budget			Performance remained the same as last quarter and continued to meet the goal.
Variance of total project costs compared to budget expectations ⁶ (Calendar quarterly measure: Q3 and Q4 2012)	under budget by 1.2%	under-budget by 1.3%	on budget			Total Nickel and TPA construction program costs are within 1.2 percent of budget.

Notes: N/A means not available: new reporting cycle data not available or goal has not been set. Dash (—) means goal was not met in the reporting period.

1 Recordable incident rate reported as the number of incidents for every 100 full-time employees; the days away, restricted or transfer (DART) rate is a subset of RIR, and reports the number of incidents requiring time off or affecting on-the-job duties for every 100 full-time employees.

2 Compares actual travel time to travel time associated with 'maximum throughput' speeds, where the greatest number of vehicles occupy the highway system at the same time (defined as 70 percent to 85 percent of the posted speeds).

3 "On-time" departures for Washington State Ferries includes any trip recorded by the automated tracking system as leaving the terminal within 10 minutes or less of the scheduled time.

4 "On-time" arrivals for Amtrak Cascades are any trips that arrive at their destination within 10 minutes or less of the scheduled time. See page 31.

5 Number of estimated facilities in permitted counties: Clark, King, Pierce, and Snohomish.

6 Budget and schedule expectations are defined in the last approved State Transportation Budget. See page 43 for more information on capital projects in the current 2012 Legislative Transportation Budget.