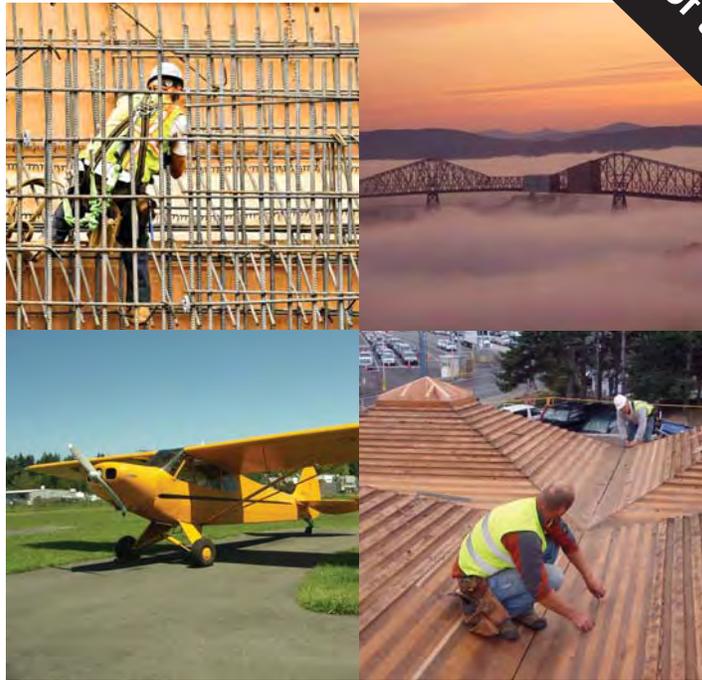




The Gray Notebook 43 Lite

GNB excerpts for the quarter ending September 30, 2011

Published November 18, 2011



Excerpts from WSDOT's quarterly performance report on transportation systems, programs, and department management

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

In this edition

| | |
|-------------------------------------|------------|
| Highway Safety Before & After | p 2 |
| Capital Facilities..... | p 2 |
| Ferries..... | p 3 |
| Incident Response | p 3 |
| Aviation..... | p 3 |
| Noise Quality | p 4 |
| Recovery Act..... | p 4 |
| Rail Freight..... | p 4 |
| Capital Projects..... | Insert A/B |

Additional highlights from Gray Notebook 43

Gray Notebook 43 presents information on WSDOT's performance for the quarter ending September 30, 2011. In addition to the topics in the Lite, selected highlights include:

- **WSDOT has completed Endangered Species Act documentation for 21% of projects scheduled for advertisement in the 2011-2013 biennium.** (*Endangered Species Act Documentation Annual Report*; pp. 38-40)
- **WSDOT works hard to help improve Puget Sound area air quality, as ferries and other vessels contribute to regional maritime emissions.** Solutions include using more carbon-neutral biodiesel, more efficient operation of ferry boats, and retrofits to engine components. (*Air Quality Annual Report*; pp. 35-37)
- The *Gray Notebook* continues to celebrate the publication's tenth year with a short article highlighting then-and-now performance measures (pp. 88).

Other articles in GNB 43 include updates on worker safety and training, Amtrak Cascades, Ferries, Incident response, and progress on federal Recovery Act-funded projects.

The *Gray Notebook* and *GNB Lite* are publications of the Washington State Department of Transportation. 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

Page references in the *Lite* refer to the full edition of *Gray Notebook 43*, available online at www.wsdot.wa.gov/Accountability

Safety – Highway Safety

Before & After Results of WSDOT Safety Projects

Washington State's Strategic Highway Safety Plan, Target Zero, outlines the goal to achieve zero traffic deaths and zero serious injuries by the year 2030. In order to achieve this goal, the state must decrease traffic fatalities by 23 each year between 2010 and 2030. To assess the effectiveness of highway safety strategies, WSDOT collects and analyzes highway traffic collision data. Projects with at least three years of Before and After data are reviewed. This edition of the *Gray Notebook*, on pages 5-8, presents Before and After analysis of 29 safety projects.

Serious injury and fatal collisions reduced by 14% in 29 projects

Implementing these 29 projects reduced fatal and serious injury collisions by 14%: 25 fatal and serious injury collisions in the After period compared to 29 in the Before period. The table below

Before and After results for 29 safety projects

Collisions for all projects: 3 years Before and After construction

| | All types | Property damage only | All injury/Fatal | Serious injury/Fatal |
|----------------|-----------|----------------------|------------------|----------------------|
| Before period | 952 | 503 | 449 | 29 |
| After period | 860 | 495 | 365 | 25 |
| Percent change | -10% | -2% | -19% | -14% |

Data source: WSDOT Statewide Travel and Collision Data Office.

presents Before and After collision data under four different categories. The number of collisions was lower in the After period, which could be attributed to the safety improvement projects.

WSDOT targets intersection improvements

WSDOT will be increasing its emphasis on ways to reduce collisions within intersections and nearby areas. Typical improvements might include installing traffic signals, improving the channelization, and reconfiguring intersections into roundabouts.

New 'SafetyAnalyst' software will help WSDOT prioritize and analyze safety projects

WSDOT has employed a standards-based approach since 1995, with support from the Federal Highway Administration (FHWA), which has led to significant reduction in the number of traffic-related fatal collisions each year. The fatal collisions that remain to be addressed are widely dispersed and random in nature.

Overall, benefits and results of risk-based projects are more difficult to define and analyze as the crash potential is addressed before crashes actually occur. The overall system risk is reduced but the Before and After collision reduction results may vary. WSDOT is looking for new tools, such as SafetyAnalyst, to help quantify the Before and After benefits of risk-based safety strategies.

WSDOT plans to use the SafetyAnalyst software tool to help diagnose safety concerns at specific locations; it may also be used to identify actual solutions for improving safety.

Preservation – Capital Facilities

Capital Facilities Program identifies needs

WSDOT's Capital Facilities program is responsible for the maintenance, operations, improvement, and preservation of 966 department-owned buildings and structures at 296 separate sites across the state. These 'facilities assets' are valued at more than \$1 billion dollars; they serve the needs of WSDOT's programs that construct, maintain, and operate state highways.

40% of primary buildings are rated in "poor" condition

In 2010, 113 of 288 primary buildings were rated in poor condition. This is up from 100 in 2008, a 13% increase. Since 2008, WSDOT has focused on high priority preservation and improvement projects for the 288 primary buildings.

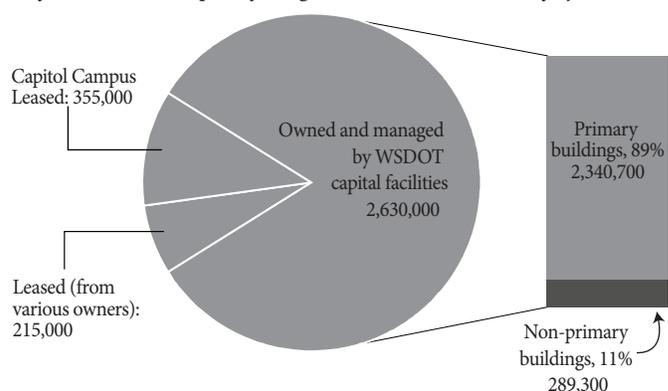
The main cause of the preservation and repair backlog is the steady aging of buildings: 66% of primary buildings are more than 25 years old, including 27% of primary buildings that are more than 50 years old. A building replacement backlog of about \$280 million has been identified in the 2010 Capital Facilities Strategic Plan. This 16-year plan was finalized in October 2010 and will be updated each biennium.

This report on pages 10-14 includes new information, including:

- WSDOT 2011-2013 capital facilities budget
- Improved method for developing repair backlogs in 2012
- 2010 preventative maintenance workload by criticality data
- Americans with Disabilities Act transition plan update

WSDOT occupied building space

As of October 2010; Square footage (excludes Ferries and Safety Rest Areas)



Data source: WSDOT Computer Aided Facility Management (CAFM) System Building Inventory.

WSDOT primary building condition rating

Number of primary buildings by condition rating

| Condition | 2008 | 2010 |
|--------------------------|------------|------------|
| Good | 31 (11%) | 24 (8%) |
| Fair | 142 (52%) | 150 (52%) |
| Poor | 100 (37%) | 113 (40%) |
| Total¹ | 273 | 288 |

¹ Differences in building numbers are due to new construction or additions to the Capital Facilities program from another WSDOT program.

Data source: WSDOT Capital Facilities Office.

Highway Construction: Nickel and TPA Project Delivery Performance Overview

Wrapping up project delivery in the 2009-2011 biennium

In contrast to the previous biennium, 2007-2009, with its unprecedented increases in construction material prices driving project estimates higher than budgeted in many cases, the 2009-2011 biennium experienced significant project cost savings due to the aggressive bidding climate brought on by the national recession. On average there were more contractors bidding on WSDOT work than during the previous two years, and the increased competition led to lower bid prices. When the project savings are federal funds, this requires additional planning to obligate and program those funds on other projects or else risk the loss of those funds.

Another result of the national recession was, and continues to be, the reduction in fuel tax collections resulting in reduced revenue available to fund the preservation program and reduced revenue to support the bond debt service for the Nickel and TPA accounts. As a result, there are instances where projects must be delayed until funding is available.

Progress against budget

The 2009-2011 budget contained appropriations amounting to \$4.3 billion for state transportation system projects. The measure for "on budget" compares the cost at completion with the most recent Legislative baseline. It is based on the cost of the project coming within 5% of the budget estimate as it appears in the most recent budget list.

Budget performance for Nickel and TPA projects

2009-2011 biennium; Dollars in thousands

| | Original appropriation | Cost at completion | Variance |
|--------------------|------------------------|--------------------|------------|
| 16 Nickel projects | \$689,540 | \$677,444 | 1.8% under |
| 74 TPA projects | \$952,065 | \$919,526 | 3.4% under |

Data source: WSDOT Capital Program Delivery and Management Office.

As of June 30, 2011, WSDOT had completed 304 projects funded by the Nickel and Transportation Partnership Account funding packages. Within the 2009-2011 biennium, a total of 90 projects were completed, for an estimated cost at completion of \$1.6 billion. The 2009-2011 appropriated amount for these projects was \$1.64 billion; the cost at completion is 2.7% under budget.

Within the 2009-2011 biennium, 74 TPA projects were completed, at an estimated cost at completion of \$920 million, 95% of which were within budget. The 16 Nickel projects are estimated to cost \$677 million; 88% were completed on budget.

Performance against schedule

Occasionally, projects enjoy excellent circumstances and weather at the right times for the contractor to complete the project early, but the converse is often the case. Poor weather, insufficient or delayed materials, unexpected issues with the site geology or environmental permitting, problems acquiring right of way or moving utilities: all can delay project completion.

Schedule performance for Nickel and TPA projects

2009-2011 biennium, measured against last legislative expectation

| | Percent on time advertised | Percent on time completed |
|--------------------|----------------------------|---------------------------|
| 16 Nickel Projects | 75% | 88% |
| 74 TPA projects | 82% | 89% |

Data source: WSDOT Capital Program Delivery and Management Office.

Data note: On time means project was completed within the planned quarter.

The approval of a new legislative budget can also reset a project's scheduled delivery date. For this biennium, WSDOT's performance against scheduled delivery of projects was good overall, with 88% of the 16 Nickel projects and 89% of the 74 TPA projects completed on time.

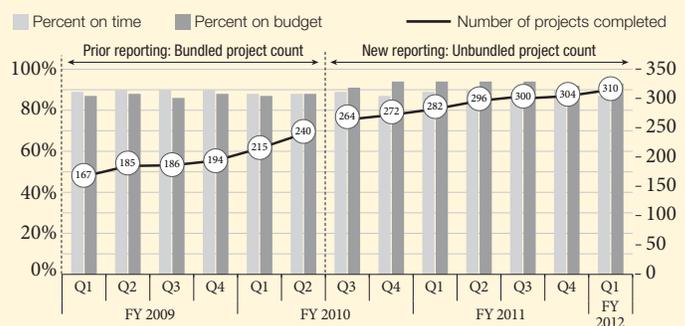
First quarter FY 2012 performance results: On time and on budget delivery performance on individual projects is unchanged from last quarter

WSDOT's on time and on budget results for the current highway construction program are shown on page 51. Six projects have been completed in the first quarter of the new 2011-2013 biennium. Of the six projects completed, 67% were early or on time and 67% were under or on budget.

Of the six projects completed this quarter, four were delivered on or under budget. Two projects were delayed by at least one quarter. More information on completed projects is on page 54 and pages 64-66.

Cumulative on time and on budget performance of Nickel and TPA projects

310 of 421 projects completed as of September 30, 2011



Data source: WSDOT Capital Program Development and Management.

Current 2011 Legislative Transportation Budget Performance Dashboard: Highways

Highway construction performance dashboard

As of September 30, 2011; Dollars in thousands

| Combined Nickel and TPA programs | Number of projects | Value of program |
|---|--------------------|----------------------------------|
| Projects completed in earlier biennia that <i>are not</i> included in the current Transportation Budget | 76 | \$343,051 |
| Projects completed that <i>are</i> included in the current Transportation Budget | 234 | \$3,818,693 |
| <i>Subtotal of completed projects</i> | <i>310</i> | <i>\$4,161,744</i> |
| Projects included in the current Transportation Budget but not yet completed | 111 | \$11,168,300 |
| Total number of projects¹ in Improvement & Preservation budget² | 421 | \$15,330,044 |
| Schedule and Budget Summary: Results of completed projects in the current Transportation Budget detailed on pages 53 and 54. | | Combined Nickel & TPA |
| Number of projects in current Transportation Budget completed to date: 2003 – September 30, 2011 | | 234 |
| Percent completed early or on time | | 87% |
| Percent completed under or on budget | | 92% |
| Percent completed on time and on budget | | 82% |
| Baseline estimated cost at completion | | \$3,818,693 |
| Current estimated cost at completion | | \$3,766,354 |
| Percent of total program over or under budget | | -1.4% Under |
| Total number of projects completed in 2011-2013 biennium to date | 6 | |
| Percent completed early or on time | 67% | |
| Percent completed under or on budget | 67% | |
| Percent completed on time and on budget | 67% | |
| Baseline estimated cost at completion this biennium | | \$35,952 |
| Current estimated cost at completion this biennium | | \$35,833 |
| Percent of total program under or over budget | | 0.3% Under |
| Advertisement Record: Results of projects entering into the construction phase or under construction detailed on pages 55-58. | | Combined Nickel & TPA |
| Total cumulative number of projects in construction phase to date, 2003 – September 30, 2011 | | 43 |
| Percent advertised early or on time | | 74% |
| Total number of projects advertised for construction in 2011-13 biennium to date | 0 | |
| Percent advertised early or on time | N/A | |
| Projects To Be Advertised: Results of projects now being advertised for construction or planned to be advertised, detailed on page 59. | | Combined Nickel & TPA |
| Total projects being advertised for construction bids October 1, 2011 - March 31, 2012 | | 4 |
| Percent on or better than anticipated advertisement schedule | | 75% |
| Budget status: 2011-2013 biennium <i>Dollars in thousands</i> | | WSDOT biennial budget |
| Budget amount for 2011-2013 biennium | | \$3,866,050 |
| Actual expenditures to date 2011-2013 biennium | | \$195,014 |
| <i>Total 2003 Transportation Funding Package (Nickel) expenditure</i> | | \$25,054 |
| <i>Total 2005 Transportation Partnership Account (TPA) expenditure</i> | | \$94,502 |
| <i>Total Pre-Existing Funds (PEF) expenditure³</i> | | \$75,457 |

Data source: WSDOT Capital Program Development & Management.

1. This project total has been updated to show "unbundled" projects which may have been previously reported in programmatic construction program buckets (such as Roadside Safety Improvements or Bridges Seismic Retrofit). See the June 30, 2010, *Gray Notebook* 38, page 55, for more details.

2. Per the 2005-2007 Transportation Budget, Section 603.

3. For full details of the PEF program, see pages 75-77.

Mobility – Ferries

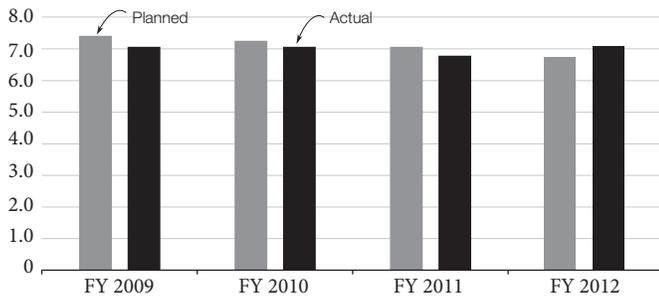
Ferries ridership above projected levels and improves over one year ago

From July 1 to September 30, 2011, 7.0 million people traveled on the Washington State Ferries (WSF) system, about 204,000 (3.0%) above the levels projected in June 2011. Compared to the same quarter one year ago, WSF served 151,000 more riders (2.2%).

WSF planned and actual ridership levels by fiscal year

First quarter (July 1 - September 30), fiscal years 2009 - 2012

Ridership in millions



Data source: WSDOT Ferries Division.

Farebox revenue above projected levels and improves compared to FY 2011

For the first quarter of FY 2012, farebox revenue was \$49.8 million, \$1.2 million (2.6%) above projected levels. Farebox revenues were approximately \$1.7 million (3.5%) above the same quarter last year.

The Washington State Transportation Commission adopted two items that will affect fare revenue:

- A 2.5% fare increase, effective October 2011
- A new fare category for small vehicles under 14 feet long

WSF is also working to increase non-fare revenues through concessions and advertising, as well as a new agreement with the Washington State Lottery. More information is on pages 24-26.

Mobility – Incident Response

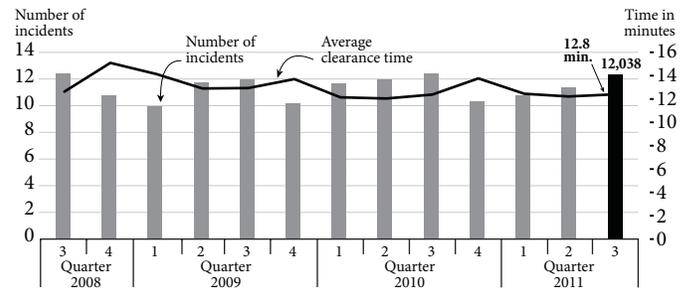
Incident Response (IR) serves 12,038 incidents in and saves \$11 million in delay

WSDOT IR teams responded to 12,038 incidents statewide during the third quarter of 2011, with an average clearance time of 12.8 minutes. Using estimates for the cost of incident-related delay, the IR program saved citizens and businesses about \$11 million in the quarter ending September 30, 2011.

Statewide IR responses and average overall clearance time

Third quarter 2008 to third quarter 2011

Number of incidents in thousands, clearance time in minutes



Data source: Washington Incident Tracking System (WITS), WSDOT Traffic Office.

Major Incident Tow (MIT) Program

Heavy trucks are involved in about 5% of collisions, yet they comprise a disproportionate 25% to 30% of collisions that take longer than 90 minutes to clear. MIT is a legislatively-mandated program to improve incident clearance times when a heavy vehicle is involved. Under the program, WSDOT gives incentives to authorized tow companies that can clear incidents within 90 minutes. The MIT program was activated for five incidents in the quarter. More information is on pages 19-23.

Mobility – Aviation

WSDOT awarded 43 grants for airport projects

WSDOT awarded grants to 43 airport projects in the second round of aviation grants for the 2009-2011 biennium. State contributions of \$962,206 were part of federal, state, and local contributions that brought the value of awarded improvement grants to \$9.2 million. The grant program funds projects that strengthen aviation infrastructure in the areas of

WSDOT fiscal year 2011 aviation grants

By funding source

| Funding source | Total funding |
|----------------------|--------------------|
| Federal | \$7,091,675 |
| State | \$962,206 |
| Local (matching) | \$903,494 |
| Other sources | \$308,075 |
| Total funding | \$9,265,450 |

Data source: WSDOT Aviation.

structure in the areas of pavement, safety, maintenance, security, and planning. More information is on pages 16-18.

Nearly all eligible aircraft register with WSDOT

As of October 3, 2011, 5,888 of 5,933 active aircraft were registered, exceeding the state's goal to register

at least 98%, or 5,814, of eligible aircraft. Washington state law requires that all airworthy general aviation aircraft be registered with WSDOT Aviation or have an exemption. Aircraft registration fees directly support WSDOT's airport preservation, maintenance, and improvement programs. Registration is due annually in January.

WSDOT coordinated 153 search and rescue responses in 2010

WSDOT is required to manage all air search and rescue operations within the state and coordinate the use of aviation assets for disaster relief efforts. In 2010, WSDOT responded to 153 incidents, up 6% from 2009.



WSDOT oversees search-and-rescue operations in Washington.

Most recent noise projects have been retrofits

Noise walls are the most common form of traffic noise abatement, ranging four to 30 feet tall, and made of concrete or other materials that reflect or absorb noise. WSDOT evaluates its road construction projects for traffic noise impacts and mitigation in two categories. Type 1 projects are built to mitigate noise from new construction projects. Type 2 projects mitigate noise created from previous constructed highways that predated noise mitigation requirements. Nine of the 15 noise wall projects built since 2008 have been installed to reduce noise from existing roadways.

New federal regulations changed noise wall policy

Federal regulations requiring states to evaluate traffic noise whenever they expand or change a road in a way that could change noise levels or bring traffic closer to neighborhoods have been

updated. WSDOT published the 2011 WSDOT Noise Policy and Procedures document, an updated policy that now applies to all new traffic noise studies, and those studies that were not substantially complete by July 13, 2011. The new policy is likely to affect when and where noise walls are built, result in more traffic noise analysis, and likely lead to fewer (though larger) noise walls.

WSDOT analyzing noise projects

The report on pages 30-34 includes new information on noise research and analysis including:

- Before and After analysis of quieter pavement and concrete texturing methods to reduce noise
- Before and After analysis of noise panels installed on the I-5/ Ship Canal Bridge in Seattle
- Research on rumble strips and underwater construction noise

Number and cost of noise walls constructed between 2000 and 2010, by project type

Length in miles; Area in square feet; Dollars in millions

| Years | Project type | Total number of noise walls built | Average number built per year | Total length of walls | Total area of noise walls | Total cost of noise walls | Average cost per noise wall ² |
|------------------------|--------------|-----------------------------------|-------------------------------|-----------------------|---------------------------|---------------------------|--|
| 2001-2007 ¹ | Type 1 | 49 | 7 | 18.4 | 1,323,425 | \$29.8 | \$0.6 |
| | Type 2 | 5 | < 1 | 0.6 | 99,612 | \$3.3 | |
| 2008-2010 | Type 1 | 6 | 2 | 0.9 | 11,815 | \$6.9 | \$1.09 |
| | Type 2 | 9 | 3 | 1.9 | 147,401 | \$9.5 | |

Data source: WSDOT Environmental Services Office

Data notes: 1 Between 2000 and 2007 (7 years), the majority of funded noise mitigation projects were Type 1. In 2008, noise mitigation efforts shifted focus to Type 2 projects.

2 Average cost combines costs for both Type 1 and Type 2 projects.

Stewardship – Recovery Act

Recovery Act performance update

Most highway projects now complete

To date, construction is complete on 212 of 219 Recovery Act-funded highway projects, including projects that preserved WSDOT highways and improved local government roads and bridges.

\$766 million obligated for High Speed Rail projects in Washington

Agreements signed in September between WSDOT and the Federal Railroad Administration (FRA) secure approximately \$31 million in previously awarded federal high-speed rail funds, to move forward with more projects aimed at improving and expanding Amtrak *Cascades* service between Portland and Vancouver, B.C. The \$31 million brings the total to more than \$766 million in federal high-speed-rail funding awarded and obligated for projects in Washington.

Recurring mudslides in mostly the northern portion of the corridor prompted FRA and WSDOT to dedicate \$16.1 million of those funds to identify slope stabilization needs. In addition, the FRA, WSDOT and the Port of Vancouver agreed to dedicate \$15 million toward improving rail access to the port area, building a new connection to the existing track to help alleviate rail delays near the busy port. More information is on pages 46-47.

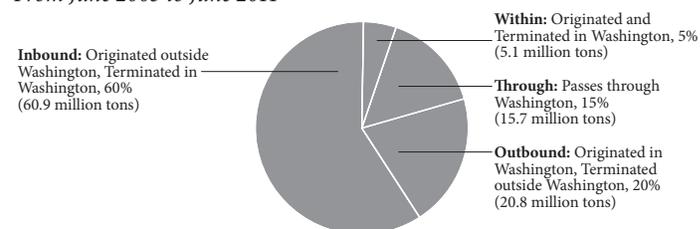
Economic Vitality – Freight Rail

Freight rail movement in Washington

In 2009, freight railroads operating in the state carried 103 million tons of freight over 3,604 operated route miles. A large amount of agricultural freight arrives in Washington by rail from the Midwest for export to the rest of the world through Washington's sea ports. The largest component of Washington's rail freight in 2009 was inbound movement: 60% of rail freight originated outside the state and terminated in Washington.

Washington freight rail movement

From June 2003 to June 2011



Data source: WSDOT State Rail and Marine Office.

The Washington State Grain Train's upward trend in use remains intact despite a 13% decrease in carloads for the third quarter of 2011 compared to the same period in 2010. Grain Train use is up 13% compared to the third quarter of 2009. More is on pages 42-44.