

# The Gray Notebook

WSDOT's quarterly performance report on transportation systems, programs, and department management  
Quarter ending September 30, 2013 • Published November 22, 2013  
Lynn Peterson, Secretary of Transportation



## Reducing the load on our roads

State's Commute Trip Reduction program helps keep people and traffic moving

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## Ready for takeoff

WSDOT's Aviation program assists small airports

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## Taking steps not to muddy the waters

Stormwater quality improves on construction sites

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## Notable results

- WSDOT surpassed its aircraft registration goal of 6,004 for the year with 6,474 registrations – 154 more than in 2012
- Pavement conditions at small airports in Washington state slightly worsened by 4% between 2005 and 2012
- WSDOT helped 103 local airports prioritize and submit projects through the State Capital Improvement Program
- WSDOT used \$900,000 of state funds to leverage \$21.3 million in federal dollars to fund 56 airport projects in fiscal year 2014

## WSDOT leverages \$21.3 million in federal funds for airport aid

WSDOT leveraged \$887,537 in state money to secure \$21.3 million in federal dollars benefitting 56 projects at 33 airports in fiscal year (FY) 2014. WSDOT's dollars are part of \$2 million in state funds for the Airport Aid Grant Program. The state and federal funds, combined with \$1.5 million in local matching contributions, amount to \$24.8 million in total award dollars for FY2014 (July 2013 through June 2014).

**Combined aid dollars total \$24.8 million for airports**  
Fiscal year 2014 Airport Aid Grant funding; Dollars in millions

Funding source	Amount
Federal funds	\$21.3
State (WSDOT) funds	\$2.0
Local (matching) funds <sup>1</sup>	\$1.5
<b>Total awarded</b>	<b>\$24.8</b>

Data source: WSDOT Aviation.  
Note: 1 A minimum 5 percent local match is required by WSDOT.

WSDOT's Airport Aid Grant Program supports pavement, safety, maintenance, security and planning projects, providing crucial assistance to public-use airports owned by local agencies, tribal governments, corporations and individuals.

### Grant dollars improve pavement

In FY2014, 87 percent (\$21.5 million) of the \$24.8 million in federal, state and local aid investment dollars is slated for projects that improve airport pavement. Safety projects account for 10 percent (\$2.5 million) of the combined grant dollars, and planning, security and other improvements account for 3 percent (\$800,000) of the grant dollars. More information about WSDOT's Airport Aid Grant Program is available at <http://www.wsdot.wa.gov/aviation/Grants/> (QR code above).

**Majority of Airport Aid funding preserves pavement**  
Fiscal year 2014 WSDOT Airport Aid Grant Program; Combined federal, state and local funds by project type



Pavement	\$21.5 million	87%
Safety	\$2.5 million	10%
Planning, Security, Other	\$800,000	3%

### WSDOT strengthens aviation in the state

WSDOT's mission is to enhance Washington state's aviation system interests in ways that strengthen the transportation system, economy and quality of life. Each year, airports in Washington state serve more than 34 million passengers, have 3.7 million aircraft landings and takeoffs, and move more than 600,000 tons of cargo. Aviation in Washington generates 248,500 jobs, \$15.3 billion in wages, \$792 million in tax revenue and \$50.9 billion in economic activity.



The 2013-2015 biennium budget for WSDOT Aviation is \$7.8 million. The state's aeronautics account funds 94 percent of the budget, primarily with aviation fuel tax, aircraft excise tax and aircraft registration fees. Federal funds make up the remaining 6 percent of the biennium budget. About 45 percent (\$3.5 million) of the biennium budget goes directly to airports through the Airport Aid Grant Program. The remaining 55 percent is used to manage WSDOT airports, manage aircraft registrations, direct air search and rescue missions and provide planning support to airports and local jurisdictions.

## Study shows pavement conditions at many airports are deteriorating

### Pavement condition index improves at state's primary commercial airports, declines at smaller airports

Pavement condition index (PCI) scale; 2005 and 2012 average PCI weighted by area for Washington state public-use airports



Data source: WSDOT Aviation.

Notes: 1 Washington state has 11 public-use airports that are considered primary airports in the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS). 2 This category includes all airports with paved runways that are not designated as primary airports by FAA. 3 Fifty-three of the non-primary airports are included in the NPIAS. 4 Thirty-six of the non-primary airports in the 2013 report are not in the NPIAS.

### System-wide airport pavement condition holds steady

WSDOT's overall goal of keeping the system-wide airport pavement condition index (PCI) at 75 or above was met in 2012, which indicates that preventive maintenance is keeping airport pavement in good condition. WSDOT's Airport Pavement Management System Report, released in 2013, shows that the average PCI for public-use airports in 2012, area-weighted, is 77 on a scale of 100 to zero (best to worst). Runway pavement at the few large airports with a lot of paved area have improved, while pavement at small airports — with less paved area — have worsened.

The pavement condition index combines several measures of pavement distress, such as cracking and weathering, into one rating. WSDOT monitors airport pavement conditions so the agency can work with airport owners and the Federal Aviation Administration (FAA) to identify and prioritize preservation needs.

### Pavement conditions improve at larger airports, decline at smaller airports

Pavement conditions at large airports have improved from a PCI rating of 72 in 2005 to 80 in 2012. These are called primary airports and are in the FAA's National Plan of Integrated Airport Systems (plan), deemed important to national air transportation. There are 11 primary airports in Washington, including Seattle-Tacoma and Spokane international airports.

There are two classifications of smaller airports called non-primary airports: those included in the FAA's plan (53 airports) and those that are not (72 total, of which

36 are paved and 36 are unpaved). The area-weighted PCI for all 89 non-primary airports in the 2013 report declined 4 percent from 78 in 2005 to 75 in 2012, still meeting the goal. For non-primary airports not in the FAA's plan, the PCI rating declined 15 percent, from 78 in 2005 to 66 in 2012, due to limited preservation funds.

### Pavement conditions at Washington's smaller airports likely to continue to decline

Approximately \$217 million is needed to eliminate the backlog of major pavement rehabilitation projects at non-primary airports in the next eight years. This funding amount is estimated to bring the PCI to 84 in 2020. If non-primary airports continue to receive the average level of pavement project funding of \$4.5 million annually (including federal and state funding sources), the PCI is expected to decrease from 75 to 71 by 2020 and the backlog of major pavement work is estimated to increase by 18 percent to \$257 million in 2020. If there is no funding for pavement projects at non-primary airports, the PCI is projected to deteriorate from 75 to 66 by 2020. WSDOT's Airport Aid Grant Program is particularly important for providing infrastructure improvement funds to these smaller airports.

### WSDOT pavement study includes 100 airports

Of the 100 airports in the 2013 report, 95 were evaluated by WSDOT and five primary airports provided their own data. The 36 airports not included have unpaved landing strips of grass, gravel, turf or water. The 100 airports in the report represent about 150 million square feet of pavement — the equivalent of a two-lane highway stretching 1,400 miles from Seattle to Albuquerque, New Mexico.

## WSDOT and local airports prioritize projects to target limited funds

WSDOT and the Federal Aviation Administration work with the state’s public-use airports to develop five-year project lists to determine strategic funding priorities through the State Capital Improvement Program (SCIP). As of September 30, 2013, 40 airports have submitted five-year plans (2014-2018) to WSDOT. Since the program began, 103 airports have submitted a total of 580 projects through the SCIP. WSDOT and the FAA award these projects based on federal, state and local funding priorities. The SCIP tackles the challenge of targeting limited state and federal resources and prioritizing aviation projects statewide.

### WSDOT surpasses aircraft registration goal

WSDOT has registered 6,474 aircraft in 2013, which is more than in any of the past six years, and 154 more than in 2012, a 2.4 percent increase. WSDOT surpassed the goal to register at least 95 percent, or 6,004, of the active aircraft from 2012 before the close of FY2013 on June 30, 2013. By law, most aircraft in the state must be registered with WSDOT by January 1 of each year.

In 2012, aircraft registration and excise tax fees generated \$427,365 in revenue, of which \$156,227 was put back into the aeronautics account to directly support WSDOT’s airport preservation, maintenance and improvement programs. The rest of the revenue goes to the state general fund.

The increase in registrations is largely attributed to WSDOT’s outreach efforts. Two reminder letters are mailed to each aircraft owner and WSDOT attempts to contact individuals via email or telephone before issuing late penalties. WSDOT also contacts new aircraft owners to inform them of registration requirements.

### WSDOT partners to enhance air cargo

WSDOT is reaching out to airport and freight partners in an effort to help develop the state’s Air Cargo Program by developing a strategy for airport infrastructure investments that enable air cargo growth. WSDOT is meeting with representatives of large commercial airports in order to gain a better understanding of the opportunities and challenges for air cargo growth. In September 2013, WSDOT solicited input from airport sponsors during a series of statewide aviation workshops to better understand the volume and operations of various types of air freight.

In 2013, WSDOT and the Spokane International Airport met with the Freight Mobility Strategic Investment Board to discuss collaborative air cargo opportunities that could lead to enhanced local, domestic and international air freight activity.

See the [Gray Notebook 49, p. 44](#), for air cargo information and performance measures featured in the annual Trucks, Goods and Freight Annual Report.

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*The Sullivan Lake State Airport, in northeast Washington, is managed by WSDOT and has a grass runway. This airport is commonly used for forest firefighting and recreation purposes during the summer months.*

### WSDOT manages 16 airports

There are 136 public-use airports in Washington state ranging from large commercial airports to backcountry grass landing strips. WSDOT owns or manages 16 of these airports, most of which are remote and have grass or gravel runways. Nine of these are state-owned, three are leased, and four operate under special use permits. These airports are used for a variety of purposes:

- Staging emergency management (natural disaster response, emergency medical evacuations, homeland security, law enforcement, and search and rescue)
- Staging natural resource and agricultural management
- Enhancing the overall level of safety for the state aviation system by providing emergency landing areas on major east/west air routes
- Providing transportation access to remote communities
- Providing access to recreational areas
- Supporting local economies

## Notable results

- WSDOT has mapped 1,594 of the 1,660 miles required for stormwater outfalls
- WSDOT completed all of the 1,804 required stormwater facilities inspections by June 2013
- Between July 2012 and June 2013, 86% of construction site stormwater samples met water clarity targets
- In fiscal year 2013, 169 stormwater facilities were constructed to protect water quality

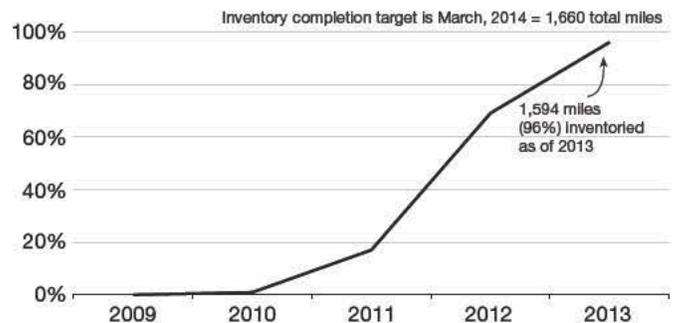
## WSDOT on track to meet stormwater mapping deadline

During fiscal year 2013 (July 2012 through June 2013), WSDOT made substantial progress mapping the location of all known stormwater outfalls in urban areas of the state; the deadline is March 6, 2014. Meeting the deadline is a requirement of the municipal stormwater permit, which is designed to reduce the discharge of pollutants from stormwater. Since fiscal year (FY) 2012, WSDOT has inventoried outfalls on 630 miles of state highways.



A WSDOT crew member mapping a stormwater outfall from WSDOT's drainage system to Skookum Creek in Mason County.

## WSDOT highway miles inventoried and mapped for stormwater outfalls in permit area near target 2009 through 2013



Data Source: WSDOT Environmental Services Office.

This work brings the total to 1,594 miles completed (96 percent) of the 1,660 miles required to be mapped, shown in the graph above. WSDOT is on track to complete the outfall inventory on the remaining 66 miles of highway segments.

***A stormwater outfall is the point where stormwater flows from a system of pipes and roadside ditches into lakes, streams, wetlands, or groundwater***

Mapping stormwater outfalls using Geographic Information

Systems (GIS) software helps WSDOT track and manage the stormwater runoff from WSDOT property. For a definition of stormwater permits refer to <http://www.wsdot.wa.gov/Environment/WaterQuality/NPDES.htm>.

## WSDOT built 169 stormwater facilities

During FY2013, WSDOT constructed 169 stormwater treatment and flow control facilities, like the first two shown

# Water Quality Annual Report

## Stormwater treatment facilities provide environmental benefits



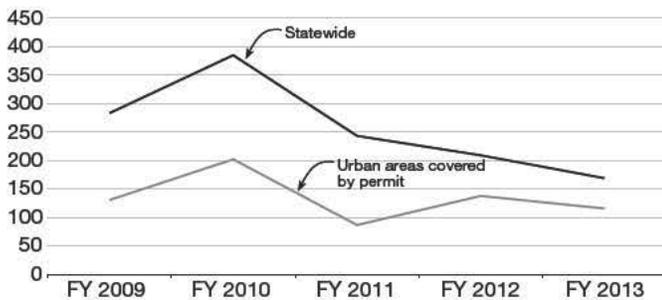
These photos depict three different types of stormwater treatment facilities. The first two, from left to right, are permanent facilities. Photo left: a bioswale, which is a shallow depression created to accept and convey stormwater, installed near State Route 2. Middle photo: a detention pond, which is used to manage stormwater runoff to prevent flooding and downstream erosion and improve water quality near the 164th street on-ramp to Interstate 5 southbound. Photo right: Snohomish River Bridge project on State Route 522, where mulch was used to protect the slope. A silt fence and sump system are used to keep the water in the ditch from being impacted by potential turbidity from the slope. This is a temporary stormwater facility used specifically for reducing and controlling erosion during a construction project.

on the left at the top of this page; the far right photo is a temporary structure. Of these, 116 are in urban areas of the state covered by the municipal stormwater permit.

Stormwater management facilities are usually constructed as part of a larger transportation project, like adding new lanes to a highway. The number of funded transportation projects in the construction phase directly affects how many stormwater management facilities WSDOT builds. Since 2010, existing transportation funding has declined due to the completion of 348 of 421 Nickel and Transportation Partnership Account (TPA) projects. The graph below shows a five-year declining trend in the number of stormwater treatment facilities built.

### Five-year trend for WSDOT stormwater treatment facilities constructed declines with revenues

Fiscal years (July through June) 2009-2013; Statewide and in urban areas covered by stormwater permits



Data Source: WSDOT Environmental Services Office.

WSDOT constructs stand-alone stormwater retrofit projects solely to help manage stormwater runoff from existing highways. Stand-alone stormwater

retrofits target sections of highways where stormwater management can provide the greatest environmental benefits by preventing polluted stormwater from entering lakes, streams and other bodies of water.

WSDOT uses stormwater best management practices (BMPs), approved by the Washington State Department of Ecology, included in WSDOT's Highway Runoff Manual (<http://www.wsdot.wa.gov/Environment/WaterQuality/Runoff/HighwayRunoffManual.htm>), and which meet the requirements specified by the municipal stormwater permit; to remove pollutants from runoff and to reduce flow and the erosive force of stormwater discharges downstream. WSDOT builds conventional BMPs such as detention ponds, and those WSDOT has developed specially for highway corridors, such as compost-amended embankment soils and engineered shoulders and ditches. Where appropriate, WSDOT utilizes the natural landscape and vegetation along roadsides to disperse and infiltrate stormwater runoff coming from WSDOT property.

### WSDOT completes all of stormwater facilities inspections

WSDOT completed all of the 1,804 stormwater facility inspections in FY2013. The annual permit-required inspections revealed that older stormwater management facilities have a wide range of deficiencies. Typical deficiencies can be corrected by removing trash and debris, clearing plugged or clogged inlets and outlets, beaver dam removal, and noxious nuisance weed control.

## Stormwater quality improves on construction sites

Other deficiencies can be corrected by vegetation removal, sediment removal, and in some cases structural repairs.

The permit requires WSDOT to correct minor deficiencies identified during inspections within one year. Additionally, the permit requires non-typical maintenance repairs, including sediment removal, liner replacement, tree falling, and structural repairs costing less than \$25,000, within two years. Repairs costing more than \$25,000 must be prioritized and corrected as funding becomes available.

### Most construction site stormwater samples show low turbidity

Between July 2012 and June 2013, 86 percent of construction site stormwater samples met the turbidity benchmark compared to 78 percent during the same time period in FY2012. Turbidity is the measure of suspended solids visible to the naked eye. The more suspended solids in the water, the murkier it appears and the higher the turbidity. There are a number of factors that affect turbidity levels, for example different soil types, amount of ground cover, location of the site, and the amount of rain.

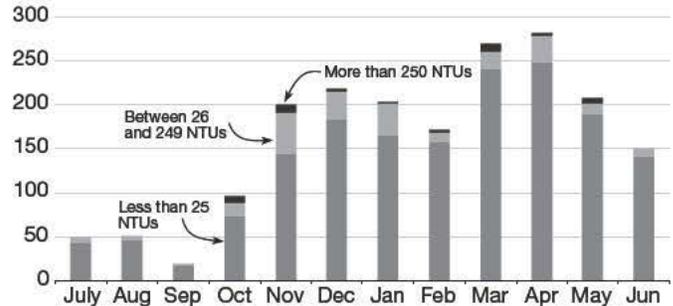


Water samples depicting Nephelometric Turbidity Unit levels. These are the units used to measure turbidity.

Discharges with turbidity values at or below the benchmark value of 25 Nephelometric Turbidity Units (NTUs—the unit used to measure turbidity) indicate the temporary erosion and sediment control best management practices (BMPs) are performing as required. Discharge samples with turbidity values above 25 NTUs mean WSDOT must lower turbidity levels by adapting existing BMPs or adopting new BMP strategies. The construction stormwater general permit requires WSDOT to immediately report and take corrective action when discharge samples reach or exceed 250 NTUs, because at this level there is a high likelihood surface water quality standards are being exceeded.

### WSDOT's monthly compliance with construction permit turbidity benchmarks improves

Fiscal year 2013 (July 2012 through June 2013); Number of samples taken per month; Measurements in Nephelometric Turbidity Units (NTUs)



Data Source: WSDOT Environmental Services Office.

Note: Compliance is with the National Pollution Discharge Elimination System permit requirements. Less than 25 NTUs is best.

The graph above summarizes stormwater discharge data collected between July 2012 and June 2013. About 2 percent (44) of the 1,922 discharge samples exceeded 250 NTUs. This is a steady percentage rate since FY2012. In FY2013, 86 percent (1,655) of the samples were below the 25 NTU turbidity benchmark value. The increase of samples 25 NTU or less in FY2013 may represent improvements, resulting in better compliance, that were made to several BMPs in the past year, as shown in the picture on the right at the top of [p. 20](#).

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