
2008 Sustainability Plan and Progress Report Update

October 2008



**Washington State
Department of Transportation**

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INTRODUCTION

Organization of the Report

This report builds upon the 2007 Sustainability Plan and Progress Report. It updates accounting of sustainability trends at the Washington State Department of Transportation (WSDOT) and existing agency sustainability policies and goals. It also provides increasingly-detailed data as it becomes available.

Section I

Provides an overview and summary of sustainability practices at WSDOT. It also provides agency information and WSDOT's Environmental Policy Statement.

Section II

Improves WSDOT's sustainability policies, long-term goals, and action strategies, as appropriate, to adapt to changing needs.

Section III

Reports on sustainable activities' performance related to WSDOT's usage of petroleum, paper, energy, and persistent bioaccumulative toxins. It also reports on office paper recycling at WSDOT.

Sustainable Practices Highlights

WSDOT's business practices are evolving to incorporate sustainable activities. Gray boxes in this plan highlight additional sustainable practices that are not required in this plan.

FOREWORD

Section I

Governor's Executive Orders 05-01, 04-01, and 02-03 direct Washington State agencies to develop Sustainability Plans that report on sustainable business practices and track progress.

The 2008 WSDOT Sustainability Plan and Progress Report Update provides this information and updates the department's progress toward meeting FY09 sustainability and efficiency goals. This year's plan also updates WSDOT's future policy directions on sustainability.

Practicing Sustainability at WSDOT

Sustainable practices at WSDOT support the vision of the Washington Transportation Plan 2007-2026, a plan that guides long-term transportation policy and investments in a manner that serves citizens' safety and mobility, the state's economic productivity, communities' livability, and ecosystems' viability. Furthermore, sustainable use of public resources, stewardship of the environment, and provision of a safe and efficient transportation system are priorities that WSDOT continues to meet. WSDOT is dedicated to achieving greater efficiencies throughout all business levels, especially as changing economic and environmental conditions prompt agencies to take positive action. As emerging issues, such as declining transportation revenue and mitigating climate change, take a more pressing role, practicing sustainability will present business challenges as well as opportunities.

Climate Change and Sustainability

In principle, the tenets of climate change and sustainability are linked. Addressing climate change at WSDOT affirms the need to apply sustainability practices to business operations and, as the department fulfills its mission to keep people and business moving, to operating and improving the state's transportation systems.

Washington's transportation system is directly connected to the topic of climate change in two ways:

1. How a changing climate affects the transportation infrastructure.
2. How transportation contributes to climate changing emissions such as greenhouse gases (GHG).

A changing climate affects the transportation infrastructure through impacts such as flooding, stream bank failure, and sea level rise resulting from more frequent and severe weather. Adapting to climate change will require quantitative data, appropriate resources, and increasingly strategic decision making.

Efforts are underway at WSDOT to examine practical action steps that ensure resiliency of the transportation system while providing the greatest benefit and value possible. Action steps that support sustainability principles in response to impacts from a changing climate could include:

- Inventory critical infrastructure
- Adopt strategic, risk-based approaches to decision making
- Incorporate climate change into investment decisions
- Incorporate climate change into land use, transportation, and emergency planning processes

It is essential for WSDOT to address climate change because transportation sources account for nearly half of the state's GHG emissions. WSDOT is developing effective, measurable, and balanced emissions reduction strategies to create more efficient driving conditions, reduce the amount of driving, encourage more fuel-efficient vehicles, and provide people with better transportation options.

WSDOT is working to integrate new capacity and operational and administrative efficiencies that improve the performance of our state's transportation system. Moving Washington is WSDOT's three-part strategy to address congestion (www.wsdot.wa.gov/movingwashington). It supports statewide efforts to reduce emissions and address climate change.

WSDOT is also looking at the department's carbon footprint and identifying strategies to reduce GHG emissions resulting from business operations. This effort evaluates both the direct emissions from our ferries, vehicle fleet, and facilities and the indirect emissions from electricity used by the department.

The Governor's Climate Action Team is in the process of preparing a report to the Legislature in December 2008, to provide the team's recommendations for the state's climate action plan. The 2009 legislative session is expected to take additional action on the topic of climate change. As the Governor's Climate Action team, the Washington State legislative process, and the federal government continue to define the topic of climate change, we recognize that new policies may shape future updates to the WSDOT Sustainability Plan.

WSDOT Strategic Plan

The department's Business Directions: WSDOT's 2009-2015 Strategic Plan will put sustainable management principles into practice to respond to the complex challenges facing the agency today.

WSDOT has identified several objectives and strategies that support the intent of the executive orders related to sustainability. The following list of selected objectives and strategies highlights the diversity of activities performed by WSDOT. Each of these activities provides unique opportunities to deploy sustainable practices.

The strategic plan recognizes the need for ongoing stewardship of and innovations to the transportation system that will serve the state and future generations well into the future.

Objective 2.4 Ferry Vessel Maintenance and Preservation: Preserve and improve vessel conditions to ensure safety, support operational needs, and minimize life-cycle costs. (Also see Objective 5.1)
2009-15 Strategies:

- Work with the Governor and Legislature to develop and implement a long-term plan for vessel maintenance and preservation.
- Implement critical vessel maintenance and preservation projects to reduce backlogs.

Objective 2.5 Ferry Terminal Maintenance and Preservation: Improve terminal conditions to ensure safety, support operational needs, and minimize life-cycle costs. (Also see Objective 5.1)
2009-19 Strategies:

- Work with the Governor and Legislature to develop and implement a long-term plan for terminal maintenance and preservation
- Implement critical terminal maintenance and preservation projects to reduce backlogs.

Objective 2.9 Safety Rest Area Maintenance, Preservation, and Improvements: Reduce rest area maintenance and preservation backlogs, and improve facilities to keep rest area facilities safe and open to the public.
2009-15 Strategies:

- Preserve safety rest areas through regular maintenance and replacement of aged or functionally deficient buildings.
- Explore options to expand truck parking in high demand areas
- Explore options to reduce emissions at safety rest areas.

Objective 2.10 Traffic Operations Equipment Preservation and Upgrades: Preserve and upgrade traffic operations equipment, such as traffic signals, variable message signs, and information technology and communications systems, to meet existing and future highway operations needs.
2009-15 Strategies:

- Preserve or replace traffic operations and associated information technology and communications equipment at lowest life-cycle costs.
- Provide traffic operations equipment that is functional and adequate to support congestion management goals.

Objective 2.11 Facilities Maintenance and Preservation: Maintain, operate, and preserve agency facilities and building systems.
2009-15 Strategies:

- Reduce maintenance and preservation backlogs
- Increase preventive maintenance.
- Identify and resolve the highest priority facility needs resulting from highway system additions and related operating cost increases.
- Replace aged and functionally deficient facilities.

Objective 3.3 Traffic Management (Operating Efficiently): Optimize efficiency of the existing system by improving and expanding traffic management to increase the operating capacity of highways and reduce the causes and severity of congestion.
2009-15 Strategies:

- Implement Active Traffic Management (ATM) on the highest priority corridors based on corridor system management plans.
- Reduce the amount of time necessary to clear major incidents.
- Improve and integrate management of construction projects, special events, and incident response.

- Improve arterial and highway operations by optimizing and coordinating signal timing.
- Expand and optimize core traffic management systems.

Objective 3.6 Demand Management: Increase vehicle occupancy and use of transportation services and commute choices.
2009-15 Strategies:

- Expand the availability of demand management programs and tools on key congested corridors. Programs and tools include: park and ride lots, growth and transportation efficiency centers, vanpools, telework, and flexible work schedules.
- Improve the effectiveness of demand management programs and tools.
- Promote expansion of transit service in key congested corridors.
- Expand and improve parking availability for transit, vanpool, and carpool users.
- Work with local governments and planning organizations to improve the availability of multi-modal travel options for new developments.

Objective 3.7 Highways and Ferries Operations (Operating Efficiently): Monitor, analyze, and report performance of highways and ferries system operations. Expand "real time" monitoring and analysis of highways and ferries to support travel decisions made by the public, better manage operations, and improve system performance.
2009-15 Strategies:

- Construct, maintain, and operate robust highways and ferries monitoring and communications systems. System elements include a communications backbone, traffic cameras, variable message signs, highway advisory radios, road and weather information systems, ramp meters, traffic data collectors, and traffic management centers.
- Expand and enhance tools for tracking, analyzing, and reporting of highway and ferry system performance.
- Expand the traffic flow and mobility data infrastructure.

Objective 3.9 Non-Motorized Transportation (Managing Demand): Increase bicycle and pedestrian transportation choices.
2009-15 Strategies:

- Increase the availability and connectivity of bicycle and pedestrian transportation facilities.
- Implement a statewide bicycle and pedestrian counting program.

Objective 3.10 Intercity, Rural, and Special Needs Transportation (Managing Demand): Support a statewide network of multi-modal transportation services linking urban and rural communities and serving people with special needs related to age, disability, or income.
2009-15 Strategies:

- Expand and improve the effectiveness of existing planning and grant programs that support intercity, rural, and special needs transportation.
- Enhance partnerships to expand and improve service.
- Expand and improve information available to the public on travel options.

Objective 4.1 Stormwater and Puget Sound: Reduce environmental impacts from stormwater discharged from WSDOT facilities.
2009-15 Strategies:

- Implement requirements of the new WSDOT stormwater permit.
- Provide for expanded review of development permits under SEPA to include potential connections and discharges to WSDOT-owned stormwater treatment facilities.

Objective 4.2 Species and Habitat Protection: Protect and restore fish and wildlife habitat.
2009-15 Strategies:

- Remove fish passage barriers.
- Improve habitat connectivity.
- Protect wildlife from noise and other impacts from transportation projects and facilities.

Objective 4.3 Climate Change: Reduce transportation contributions to climate change. Address impacts of climate change on transportation infrastructure and operations.
2009-15 Strategies:

- Continue to work with state agencies, regional transportation planning organizations, and other partners to create a range of climate change mitigation options for transportation.

b) Implement, monitor, and adjust strategies to reduce per capita vehicle miles traveled (VMT) and transportation related greenhouse gas (GHG) emissions.

c) Evaluate and implement strategies to reduce WSDOT GHG emissions.

Objective 4.5 Ferries Environmental Management: Improve environmental management at State Ferries.
2009-15 Strategies:

- a) Establish a centrally-coordinated State Ferries' environmental program.
- b) Improve alignment and coordination with other WSDOT environmental programs.
- c) Improve environmental analysis in ferries system planning.

Objective 5.1 Capital Project Management and Delivery: Deliver high quality capital projects on-time, within scope, and within budget.

2009-15 Strategies:

- a) Employ state-of-the-art project management across all regions and projects.
- b) Improve internal project tracking and external project reporting.

Objective 5.3 Information Technology and Decision Support Systems: Ensure that information technology and decision support systems support WSDOT's key business functions.

2009-15 Strategies:

- a) Improve information technology services and systems to support project and program delivery.

Objective 5.4 Accountability and Communication: Ensure that WSDOT's performance management and communication programs continue to demonstrate agency accountability, performance, and stewardship in order to maximize the return on and value of taxpayer dollars.

2009-15 Strategies:

- a) Enhance agency capacity and ability to track, analyze, and communicate performance results.
- b) Communicate and publish consistent, credible, and accurate performance information through the Gray Notebook and WSDOT's website.
- c) Develop the Moving Washington communications program.

Objective 5.5 Workforce: Enhance workforce recruitment, performance management, and leadership throughout WSDOT.

2009-15 Strategies:

- b) Implement training programs to maintain work force excellence and address staff turnover, retirement, and technology changes.

Objective 5.7 Planning and Prioritization: Provide long-term plans and investment programs that are strategic, data-based, prioritized, and supported by the Legislature and the public.

2009-15 Strategies:

- a) Create long-term, state transportation plans and investment programs that are performance-based and support state policy goals, including those for transportation and climate change.
- b) Coordinate state plans and programs with regional and local government transportation and land use plans, to reflect state transportation and climate change policy goals.
- c) Expand corridor-based planning to improve demand management, operating efficiency, and strategic capacity additions in key Moving Washington corridors.

Objective 5.10 Research and Knowledge Management: Support cutting-edge research and seek innovative solutions to transportation system issues. Retain key information and knowledge needed to support ongoing transportation system management within WSDOT.

2009-15 Strategies:

- a) Conduct short- and long-term research to support critical agency functions and emerging needs.

Summary of Sustainability Practices

Summary of Sustainability Practices

WSDOT FACTS

Our Mission:

“To keep people and business moving by operating and improving the state’s transportation systems vital to our taxpayers and communities.”

Just as each state agency has a unique mission and function, WSDOT also has distinct responsibilities. It is important to keep several issues in mind when reviewing this report:

- WSDOT is one of the state’s largest agencies.
- The WSDOT mission concerns the safe and efficient flow of people, goods, and services.
- WSDOT manages approximately 20,000 lane-miles of interstate and state highways, and the largest public ferry system in the nation.
- With the Nickel funding package in 2003 and additional funding provided in the Transportation Partnership Act approved in 2005, WSDOT is in the midst of a significant construction program that will continue for the next 16 years. This results in an increase in all phases of project delivery and operational demands.
- Weather conditions fluctuate significantly from year to year, causing variability in work-related vehicle miles traveled and fuel use for highway operations.

Agency Information

<i>Agency:</i>	Washington State Department of Transportation
<i>Address:</i>	310 Maple Park Avenue SE Olympia, WA 98504-7370
<i>Web site:</i>	http://www.wsdot.wa.gov/
<i>Agency Number:</i>	405
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WSDOT ENVIRONMENTAL POLICY STATEMENT

**Executive Order**

Number: E 1018.00

Date: September 26, 2001

/s/ Douglas B. MacDonald
Secretary of Transportation

Environmental Policy Statement

The WSDOT acknowledges the state's vital interests in protecting and preserving natural resources and other environmental assets and its citizens' health and safety. These interests must be integrated with other vital interests, including the cost-effective delivery and operation of transportation systems and services that meet public needs.

The department shall conduct all its affairs in accordance with the dictates of sound environmental protection practices, including pollution prevention wherever reasonably possible. The department shall also avoid, minimize and appropriately mitigate adverse environmental impacts. These undertakings extend to the construction, maintenance and operation of its systems and facilities. Legal obligations in these matters are established by applicable laws and regulations; this Policy Statement is not intended to create further or additional legally enforceable requirements.

To support the performance of the department's responsibilities and undertakings, as Secretary of Transportation, I hereby commit the department:

- To implement and maintain an environmental management system that embraces all the department's program functions.
- To establish, maintain and make available to the public appropriate performance indicators of the department's exercise of its environmental stewardship, and to consistently review these indicators as a basis to improve the department's performance;
- To comply with all environmental laws and regulations applicable to our business and activities;
- To assure that employees of the department receive training appropriate to their functions concerning the department's environmental responsibilities;
- To communicate to contractors, designers, consultants and other participants in the department's work the management practices and compliance requirements established to further the aims of this Policy Statement;
- To encourage employees and all other citizens to communicate with the department about ways to increase the effectiveness of department practices supporting its mission of environmental stewardship.
- To make every reasonable effort to also protect the cultural and historic resources of the state.

Each employee of the department is charged to exercise his or her responsibility on behalf of the department to assure that the intentions of the Policy Statement are diligently carried out.

SUSTAINABILITY GUIDELINES

Section II

The WSDOT supports using taxpayer dollars wisely, achieving the state's greenhouse gas emissions reduction targets, and maintaining sustainable practices of state agencies, in accordance with the preamble of Executive Order 02-03 that states:

- The state is committed to the mutually compatible goals of economic vitality, a healthy environment, and strong communities.
- Sustainability provides for current needs without sacrificing the needs of future generations.
- Within state government, sustainable practices require decisions based on a systematic evaluation of the long-term impacts of an activity or product on health and safety, communities, and the environment and economy of Washington State.
- Reversing the steady decline in the natural resources and ecosystems on which people and economic vitality depend is critical to our future.
- The regional and global implications of climate change, loss of biological diversity, and threats to resources such as clean water require us all to examine and change behaviors.
- State government should model sustainable business practices that contribute to the long-term protection and enhancement of our environment, our economy and the health of current and future generations.

Long-Range Goals from EO 02-03

1. Manage wise use of taxpayer dollars by reducing or eliminating waste as an inefficient or improper use of resources.

Action Steps:

- Develop a WSDOT approach for creating a comprehensive, measurable baseline to assess resource consumption costs and the benefits of developing a strategic resource reduction plan and additional policies.

Fleet Use:

- Identify efficiencies and improvements from construction, maintenance, and light-duty vehicles.
- Identify a “rideshare” program for employees that facilitates travel needs to the same destination from different offices and utilizes public transportation whenever feasible.

Water Use:

- Identify agency activities related to water consumption and conservation in administrative buildings, at Safety Rest Areas, in maintenance facilities, construction sites, and other facilities.
- Identify proper use of water collection systems, such as catchments for rain runoff from roofs for irrigation purposes.

Energy Use:

- Identify retrofit needs and costs to improve interior temperature control and lighting systems.
- Identify the cost savings of purchasing energy efficient appliances and equipment to replace older, less energy-efficient appliances that the agency owns and operates,
- Identify feasible energy reduction measures from the use of electronic equipment such as computers, peripherals, and other apparatuses ranging from information technology functions to Intelligent Transportation System operations.

Consumables and Waste

- Develop and promote WSDOT Organics Management System.
- Expand WSDOT recycling program.

2. Minimize energy and water use and shift to clean energy sources for both facilities and vehicles.

Action Steps:

- Identify improvements for utilizing clean energy fuels for WSDOT fleet. Evaluate options for enrolling in programs that utilize clean, renewable energy from sources including wind and solar.

3. Shift to non-toxic, recycled, and remanufactured materials in purchasing and construction and expand markets for environmentally preferable products and services.

Action Steps:

- Develop an environmental procurement policy and purchasing practices.

Examples:

- Amend appropriate manuals and conduct training to educate the workforce and encourage the use of environmentally preferred products and services.

4. Institutionalize sustainability as an agency value and raise employee awareness of sustainability practices in the workplace.

Action Steps:

- Develop and emphasize sustainability education and communication program that supports the WSDOT sustainability policy.

Examples:

- Develop and incorporate the sustainability Web page into the climate change Web page.
- Develop a required sustainability training program similar to the Department of Social and Health Services program for all WSDOT employees.
- Develop key performance measures that evaluate the agency’s reductions in greenhouse gas emissions.

AGENCY PERFORMANCE

Section III

This section reports WSDOT’s performance in specific sustainability topics and targets as required by Executive Orders 05-01 and 04-01.

Fleets and Transportation Background

The responsibilities of the Transportation Equipment Fund (TEF) of the Maintenance and Operations (M&O) Division include purchasing, maintaining, logistically supporting, and disposing of the department’s vehicles and equipment. The program consists of 14,000 units including:

- Medium and heavy-duty on and off-road equipment
- Highway and bridge maintenance equipment
- Passenger-carrying vehicles
- Laboratory equipment
- Surveying equipment
- Wireless equipment

The program provides statewide logistical support for 32 equipment repair facilities and 130 fueling facilities which includes assimilated Washington State Patrol (WSP) fueling facilities. Vehicle repair services and fuel are provided to other organizations and government agencies upon request for a fee.

Since 1992, the M&O Division has implemented several business practices aligning with and supporting current sustainability goals. These actions improve productivity and reduce long-term costs. They include:

- Providing adequate shop tools and training to enhance program staff proficiency.
- Eliminating inefficient, and redundant processes.
- Standardizing equipment to improve efficiency and lowering acquisition and operations costs.
- Maintaining inventory to maximize operational availability, performance, and useful life.
- Replacing vehicles and equipment at the end of life cycles, keeping inventory productive, and taking advantage of new operationally and environmentally friendly technology.
- Implementing a fleet and equipment management system to effectively manage the fleet.

The following achievements benefit the department and clients by lowering the financial burden:

- Including more modern vehicles and equipment with improved operational design and reliability (this achievement contributes significantly to increased statewide employee productivity).
- Having a more proficient, smaller work force
- Reducing paper transactions and eliminating time-consuming processes
- Improving fuel accountability through new technologies
- Providing WSDOT and WSP with strategic fueling locations
- Facilitating coordinated transportation management and maintenance activities with modernized statewide wireless communication systems

WSDOT’s vehicle and equipment inventory consists of distinct classes with specific uses. The inventory includes replacements and extended-use units. Passenger-carrying vehicles are used primarily for administrative transportation to meetings and other state activities. Other vehicles are considered task-oriented or on-demand vehicles. These vehicles have specific, specialized uses to deliver various public services. They include bulldozers, snowplows, and a variety of light-duty vehicles. Annual fuel consumption by these vehicles varies based upon weather conditions and maintenance and construction activities. This section provides a snapshot of WSDOT’s fleet transportation data. It is important to note that this data is dynamic and changes from year to year (or day to day).

The M&O Division implemented the statewide Fleet and Equipment Management System (FEMS) in 1999. This enables the division to manage business more effectively by interfacing with WSDOT’s Financial Accounting system to collect and report data related to inventory management, including vehicle and fuel use. FEMS also provides an effective tool for fleet operations, decision-making, and measurement of program performance.

Fleets and Transportation Summary

Executive Order or Statute	Topic	Requirement	Target Date
EO 05-01 & 02-03 RCW 43.19.648	Petroleum	20% Reduction in Petroleum Use	9/1/2009
		Give priority to hybrid or other fuel efficient/low emission vehicle purchases	9/1/2009
		Freeze purchase of 4WD vehicles	9/1/2009
		Replace standard diesel with B20 blend (Begin use of B5 as soon as practicable)	9/1/2009
		Priority to replace pre-1996 light duty vehicles driven more than 2,000 miles/year	January, 2008
		Employ professional fleet management and planning practices	9/1/05 & thereafter
		Establish clear direction on rental vehicle use	3/1/2005

Petroleum Use

Target: Reduce Petroleum Use by 20% in the Operation of State and Privately Owned Vehicles Used for State Business

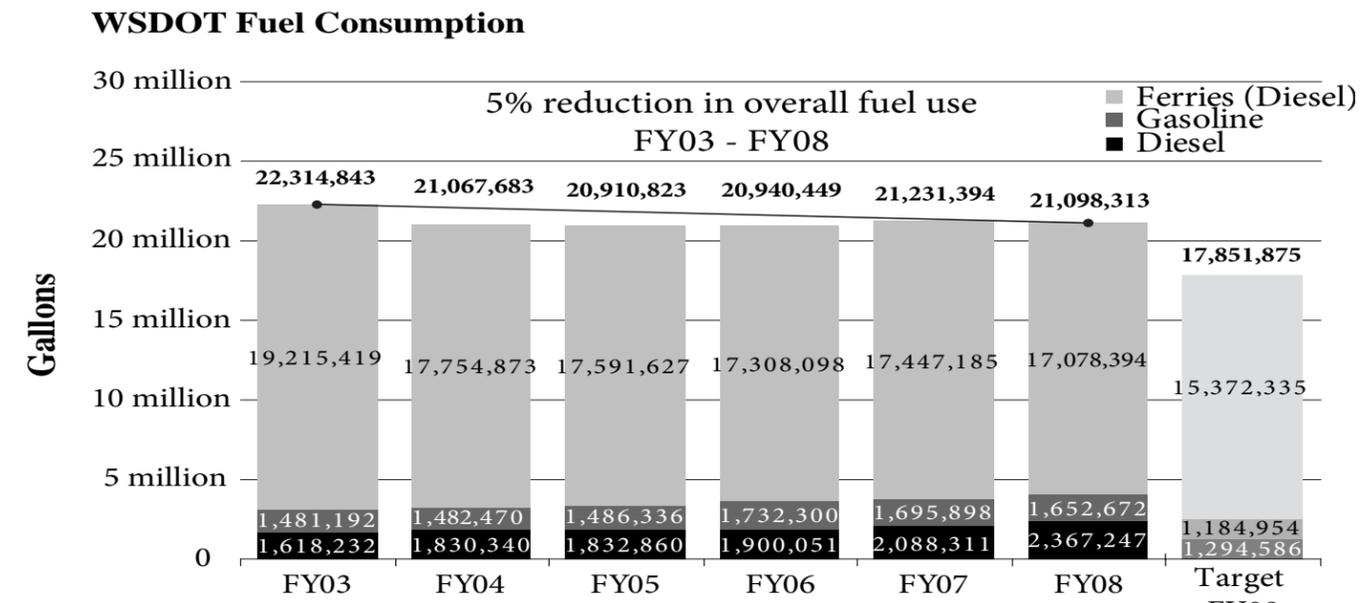
Target Date: September 1, 2009

WSDOT developed four different fuel reduction scenarios for meeting the FY09 petroleum reduction target.

Scenario 1 is to measure the petroleum usage for all WSDOT operations. This includes all fleet fuel purchases made by WSF and vehicles using both WSDOT and Voyager fuel cards.

As shown in Figure 1, WSDOT used 21,098,313 gallons in FY08. This is 5% less than the base year (FY03). It is 133,081 gallons less than used in FY07. To reach the target, the FY08 usage needs to decrease by 3,246,438 gallons (15%).

Figure 1
WSDOT Fuel Consumption (Gallons)



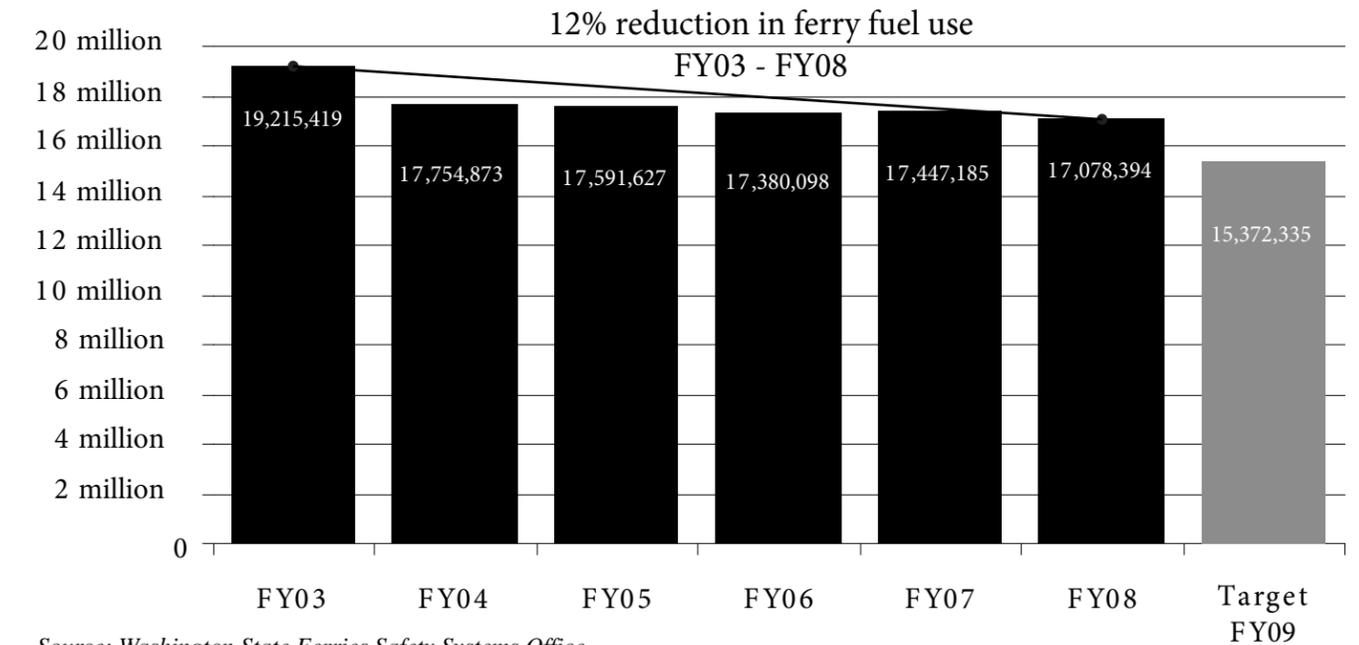
WSDOT Ferries Division (WSF)

Currently, WSDOT has not adopted a policy specifying service reduction as a means of fuel conservation.

Scenario 2 is to measure petroleum usage for ferries only. Ferries provide marine transportation.

As shown in Figure 2, the ferry system used 17,078,394 gallons in FY08. This is 2,137,025 gallons (12%) less than the base year (FY03). This is 368,791 gallons (2%) less than used in FY07. To reach the target, the FY08 usage needs to decrease use by 1,817,793 gallons (9%).

Figure 2
WSDOT Ferries Division Fuel Use (Gallons)



Source: Washington State Ferries Safety Systems Office

WSDOT Ferries Division (WSF) Facilities Update

Creosote Piling Removal

In 2000, WSDOT Ferries Division made a commitment to design, construct, and maintain ferry terminal facilities in an environmentally-responsible manner, using the best available practices and materials. As part of this commitment, WSF began removing creosote-treated timber from its ferry terminals.

In FY08, WSDOT Ferries Division removed 78 creosote-treated pilings (nearly 80 tons) from Puget Sound to benefit fish and the marine environment. This brings the total of creosote-treated pilings removed to 4,063 when the program began in 2000. WSF has the goal to remove nearly 3,800 additional creosote-treated pilings over the next eight years at the Anacortes, Mukilteo, Seattle, Bainbridge Island, Port Townsend, Keystone, and Southworth terminals, and at the Eagle Harbor Maintenance Facility.

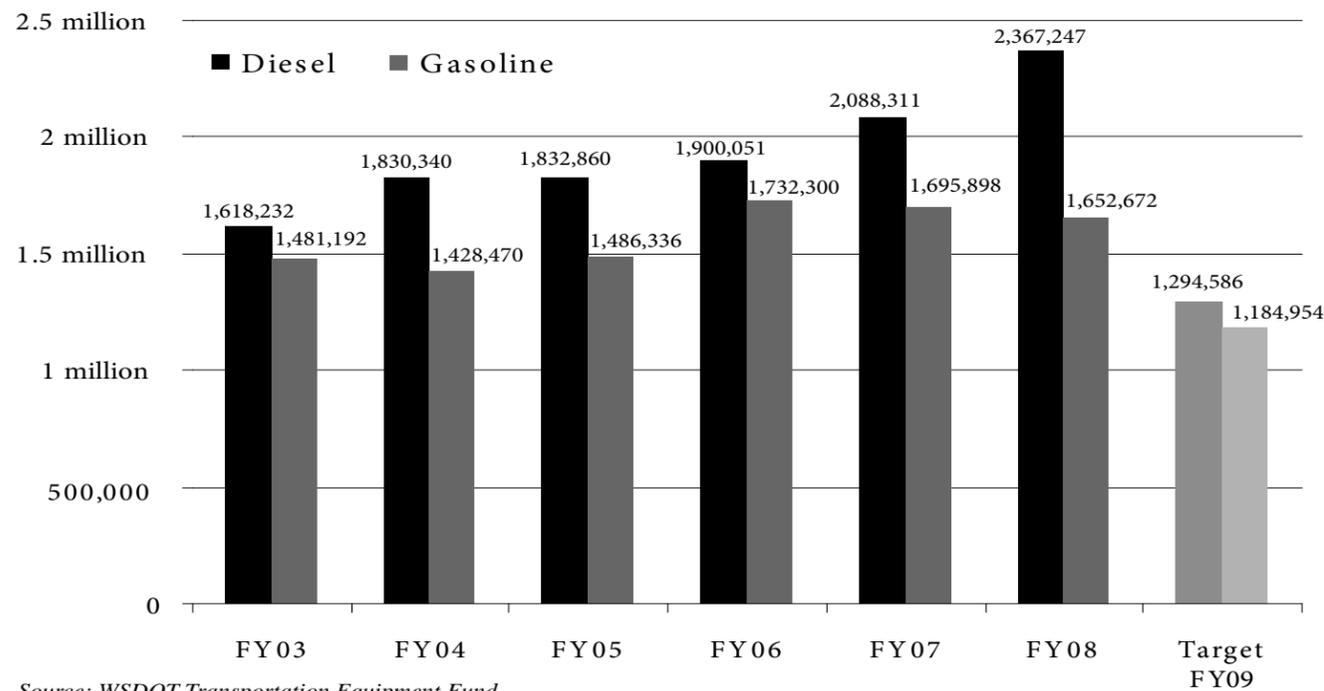
Task-Oriented and On-Demand Vehicles and Equipment

As shown in Figure 3, Scenario 3 is to exclude ferries and measure on-demand and task-oriented vehicles only. WSDOT used 4,019,919 gallons in FY08. This is 920,495 gallons (33%) more than the base year (FY03). This is 235,710 gallons (6%) more than FY07. To reach the target, the FY08 usage needs to decrease by 1,540,379 gallons (38%).

The majority of gas and diesel-burning vehicles in the WSDOT fleet are classified as task-oriented or on-demand. This includes units such as bulldozers, snowplows, and specially equipped light-duty vehicles.

Generally, fuel consumption varies annually based upon weather conditions, maintenance and construction activities. Projects and the scope of projects also impact fuel consumption.

Figure 3
WSDOT Petroleum Use (WSF Excluded)

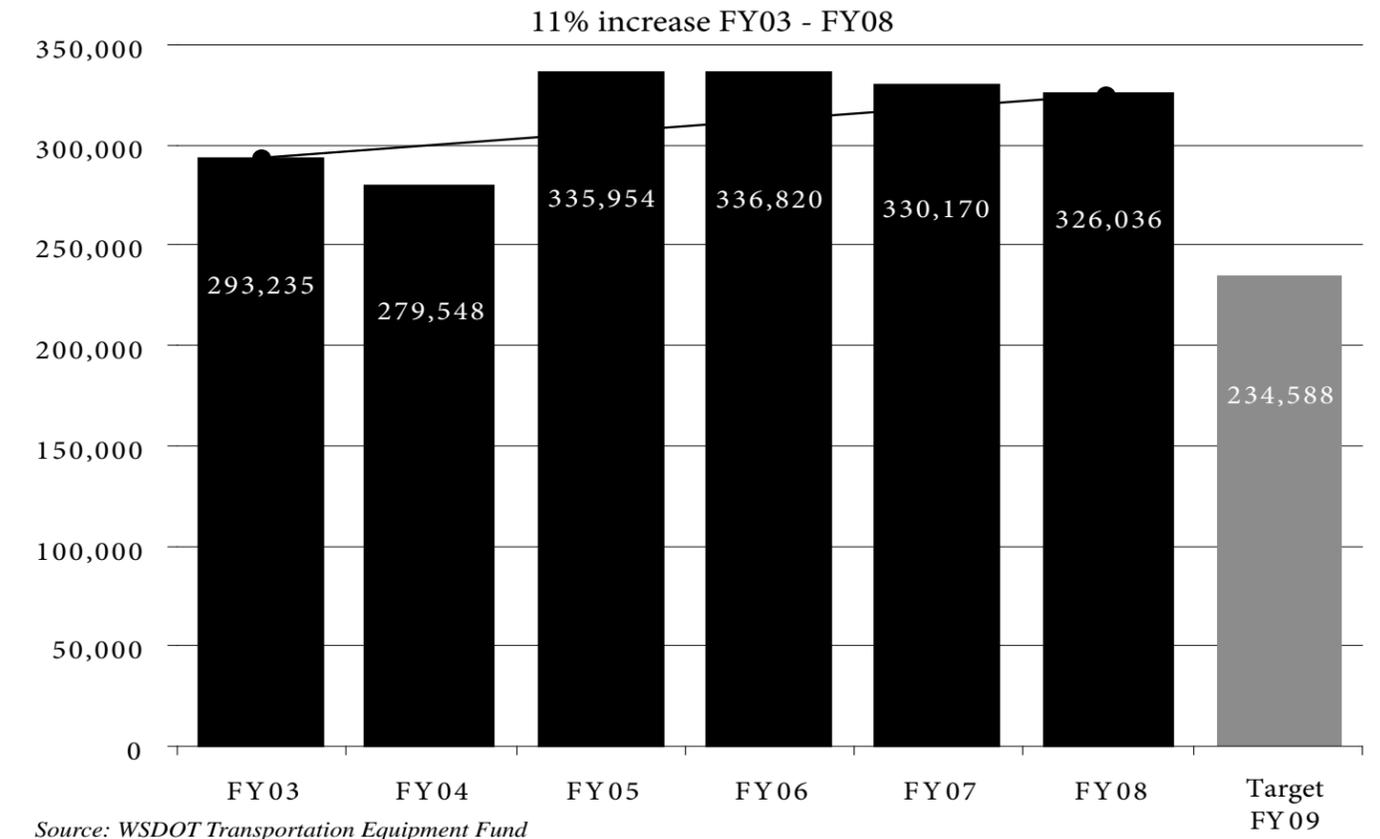


Source: WSDOT Transportation Equipment Fund

Petroleum Use: Passenger-Carrying Vehicles

Scenario 4, as shown in Figure 4, is to measure petroleum use for WSDOT passenger vehicles only. WSDOT used 326,036 gallons in FY08. This is 32,801 gallons (11%) more than the base year (FY03). However, this is 4,134 gallons (1%) less than FY07. To reach the target, the FY08 usage needs to decrease by 91,448 gallons (28%).

Figure 4
Passenger-Carrying Vehicles Petroleum Use (Gallons)



Source: WSDOT Transportation Equipment Fund

Figure 5 shows WSDOT vehicle petroleum consumption by program and is provided for additional information.

Figure 5
Vehicle Petroleum Consumption by Program, FY06 - FY08
(Cars, Trucks, and Equipment)

Program Name	Product	FY06	FY07	FY08
		Quantity (gals)	Quantity (gals)	Quantity (gals)
Toll Operations & Maintenance	Diesel			759
Toll Operations & Maintenance	Gas	1,032	1,151	842
Information Technology	Gas	6,765	8,254	9,437
Capital Facilities	Diesel	6,077	7,329	7,230
Capital Facilities	Gas	27,907	28,630	28,483
Transportation Equipment Fund	Diesel	207,022	191,267	107,710
Transportation Equipment Fund	Gas	288,771	235,805	134,311
Transportation Equipment Fund	Propane	224	1,265	1,083
Aviation	Diesel	1,974	1,292	2,260
Aviation	Gas	615	1,047	1,350
Program Delivery	Gas	26,422	32,710	34,379
Improvements	Gas	25,805	22,995	24,227
Maintenance & Operations	Diesel	1,584,417	1,766,593	2,077,987
Maintenance & Operations	Gas	581,573	580,650	614,696
Maintenance & Operations	Propane	196	3,607	3,724
Preservation	Diesel	63,936	65,405	75,088
Preservation	Gas	532,110	565,808	590,219
Preservation	Propane	3	174	73
Traffic	Diesel	5,467	24,562	55,623
Traffic	Gas	146,507	134,638	125,918
Transportation Management & Support	Gas	2,732	3,526	4,496
Planning, Data & Research	Diesel	5,549	7,333	9,869
Planning, Data & Research	Gas	29,326	29,730	31,005
Urban, Rural Public Transportation	Gas	888	856	1,673
W SF Construction	Gas	7,498	6,715	5,916
W SF Operations & Maintenance	Diesel	4,667	5,312	7,362
W SF Operations & Maintenance	Gas	41,079	30,109	29,218
Rail Programs	Gas	940	982	963
Local Programs	Gas	7,956	7,887	8,319
All Fuel Total		3,607,455	3,765,629	3,994,220

Source: WSDOT Transportation Equipment Fund

Further Discussion

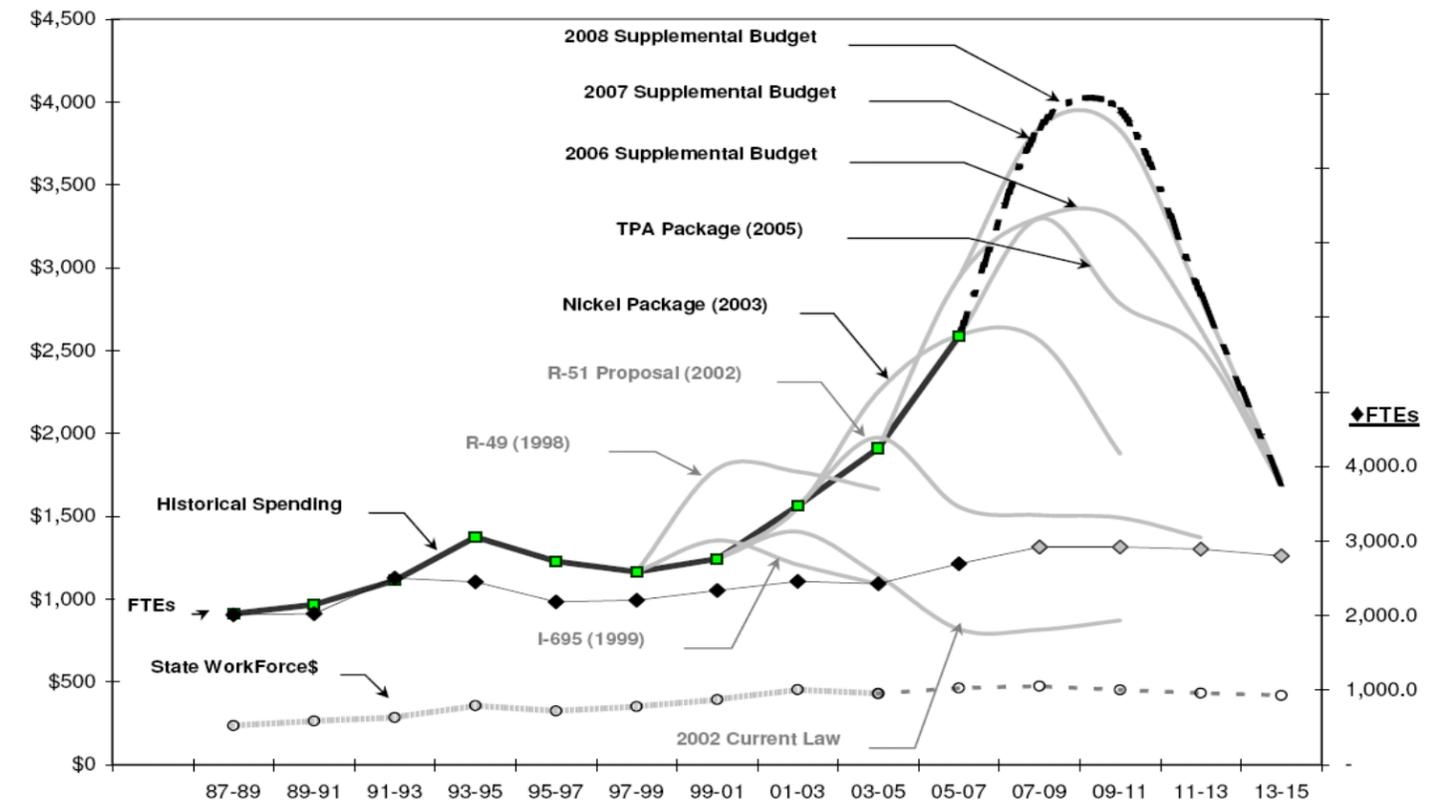
Executive Order 05-01 directs agencies to achieve a 20% reduction in petroleum use by September 1, 2009, based on their usage in 2003 (base year). To meet this target, WSDOT must reduce petroleum consumption by nearly 600,000 gallons per year.

Since this target was established, WSDOT received two significant funding and capital construction programs, resulting in increased petroleum consumption and work-related travel. As WSDOT delivers its capital construction programs over the next few years, longer-term trends will emerge. The increase in full-time equivalent (FTE) employees and highway capital expenditures correlates with the increase in fleet petroleum use (excluding ferries) as well as vehicle miles traveled (VMT) by passenger-carrying administrative vehicles (see Figure 4).

The increase in highway capital programs alone does not completely substantiate the increase in petroleum consumption. The rise in petroleum use is also attributable to delivery of the agency's maintenance operations.

Figure 6 details where the bulk of WSDOT petroleum is consumed. Operation and maintenance of the statewide transportation system and preservation programs together constituted 83.1% of the petroleum used by the department in FY06. On-demand vehicles, such as snowplows, sweepers, graders, and other equipment used to maintain the state's roadway infrastructure, are included in these two categories. The economic vitality of the state depends on delivering the highway capital programs and maintaining and operating our roadway infrastructure. This will make it difficult for WSDOT to meet the 20% petroleum reduction target. WSDOT should pursue further reduction solutions.

Figure 6
Highway Capital Program Trends
Historical and Projected expenditures and FTEs for 1987 - 2015
\$ in millions



Source: WSDOT Systems Analysis and Program Development

Vehicle Purchase Priorities

Target: Give Priority to Hybrid or Other Fuel Efficient/Low Emission Vehicle Purchases

Target Date: September 1, 2009

WSDOT replaces a percentage of the vehicle fleet annually based on life-cycle or the number of vehicles at the end of their service, and as funding is available. However, if a project has available funding and vehicles are required, individual project managers may purchase vehicles as needed.

The federal Energy Policy Act (EPA) of 1992 requires that 75% of WSDOT new light-duty vehicle fleet acquisitions in specific metropolitan areas be capable of running on alternative fuels. Executive Order 05-01 follows the EPA and specifies the purchase of high-mileage, fuel-efficient, low-emission vehicles when vehicle replacement occurs. Consequent to the EPA requirement, the purchase of hybrid vehicles is prioritized, as funding allows. As detailed in Figure 12, the majority of replacement passenger-carrying vehicles purchased by the agency meet the EPA requirement.

High-mileage vehicles are defined as those capable of traveling 30 miles or more to a gallon of fuel. Low emission vehicles are defined as vehicles meeting the federal Environmental Protection Agency Tier 2 emission standards, which scores cars and trucks based on emission levels and fuel economy values. Hybrid vehicles meet the U.S. Environmental Protection Agency's high-mileage, fuel-efficient, and low-emission requirements. Once these requirements are met, WSDOT's priority is to purchase hybrid vehicles for vehicle replacement. As noted in Figure 7, WSDOT has made a concerted effort to increase purchases of low-emission, high-mileage, fuel-efficient vehicles.

Freeze Four-Wheel Drive Purchases

Target: Freeze Four Wheel Drive (4WD) Sport Utility Vehicle (SUV) Purchases (Exempting Those with Fuel Economy Greater than 30 MPG or Those Purchased for Law Enforcement or Emergency Response Purposes)

Target Date: September 1, 2009

WSDOT has increased purchases of four-wheel drive (4WD) sport utility vehicles (SUVs). As detailed

in Figure 8, WSDOT did not grant any 4WD SUV purchase exemptions in FY05. One 4WD SUV purchase exemption was granted in FY06, three in FY07, and four in FY08. Unless exceptions continue to be granted, WSDOT should not purchase any additional 4WD vehicles rated at less than 30 miles per gallon.

Figure 7
Light Gas-Electric Hybrid Purchases

Fiscal Year	Total Low-Emission Light-Duty Vehicles Purchased	Hybrids Purchased	Percent Hybrids
FY03	47	2	4.3%
FY04	65	2	3.1%
FY05	43	2	4.7%
FY06	44	3	6.8%
FY07	86	4	4.7%
FY08	70	20	28.6%

Source: WSDOT Transportation Equipment Fund

Figure 8
Exceptions Granted

4WD Sports Utility Vehicle Purchase	
FY05	0
FY06	1
FY07	3
FY08	4

Source: WSDOT Transportation Equipment Fund

Light-Duty Fleet Inventory

WSDOT's light-duty fleet inventory includes passenger-carrying vehicles used for administrative transportation, incident response vehicles, and vehicles used in project delivery and highway maintenance.

The passenger-carrying vehicle fleet makes up the bulk of vehicles used for administrative assignments such as transporting staff to meetings, inspections, and business-related tasks. Figures 9 and 10 illustrate inventory trends for passenger-carrying and light-duty vehicles.

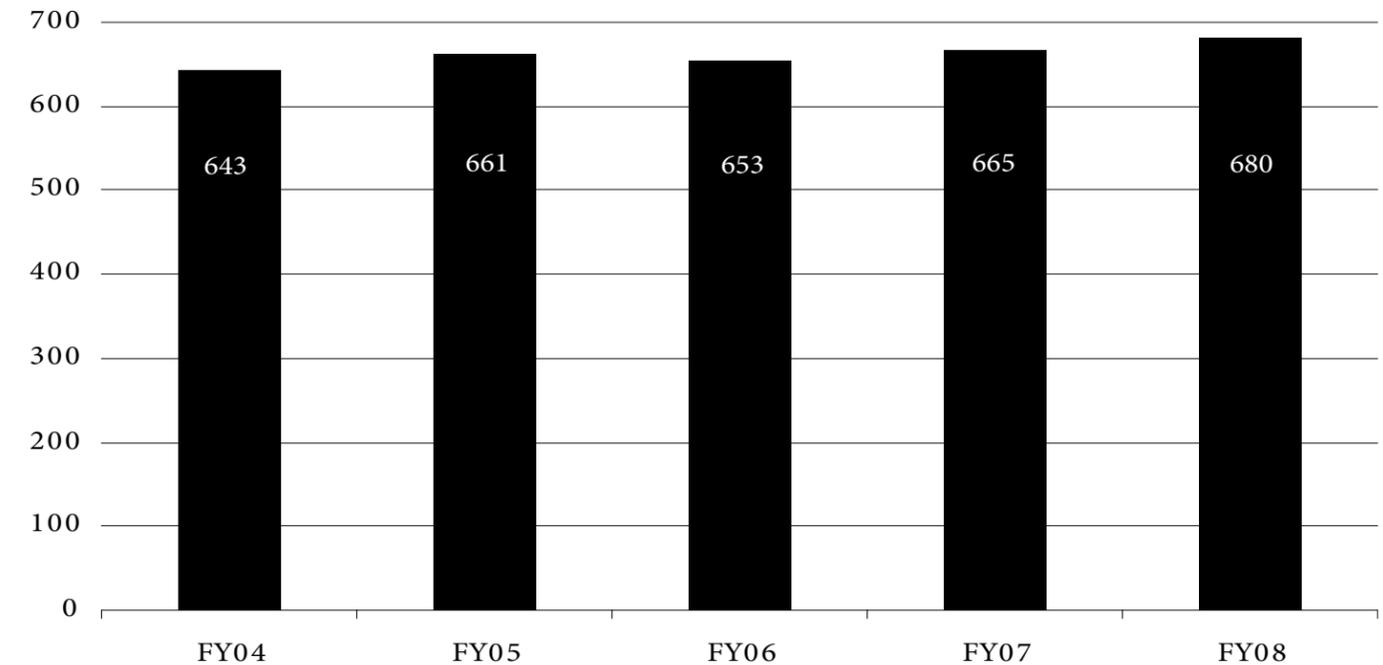
Figure 9
WSDOT Light Duty Fleet Inventory (FY04-FY05)

Inventory Type Units	FY 2004			FY 2005			FY 2006		
	Active	Retained	Total	Active	Retained	Total	Active	Retained	Total
Passenger Carrying Vehicles	526	117	643	581	80	661	624	29	653
Light Cargo Carrying Vehicles	116	42	158	127	27	154	155	12	167
Incident Response Vehicles	49	17	66	57	12	69	48	7	55
Light Vehicles w/Special Bodies	195	83	278	211	46	257	248	20	268
Pickup Trucks	844	267	1,111	984	165	1,149	1,098	92	1,190
Total	1,730	526	2,256	1,960	330	2,290	2,173	160	2,333

Inventory Type Units	FY 2007			FY 2008		
	Active	Retained	Total	Active	Retained	Total
Passenger Carrying Vehicles	645	20	665	645	35	680
Light Cargo Carrying Vehicles	152	14	166	145	13	158
Incident Response Vehicles	54	6	60	51	5	56
Light Vehicles w/Special Bodies	242	15	257	246	12	258
Pickup Trucks	1,087	94	1,181	1,070	103	1,173
Total	2,180	149	2,329	2,157	168	2,325

Source: WSDOT Transportation Equipment Fund

Figure 10
Inventory Trend: Passenger-Carrying Vehicles



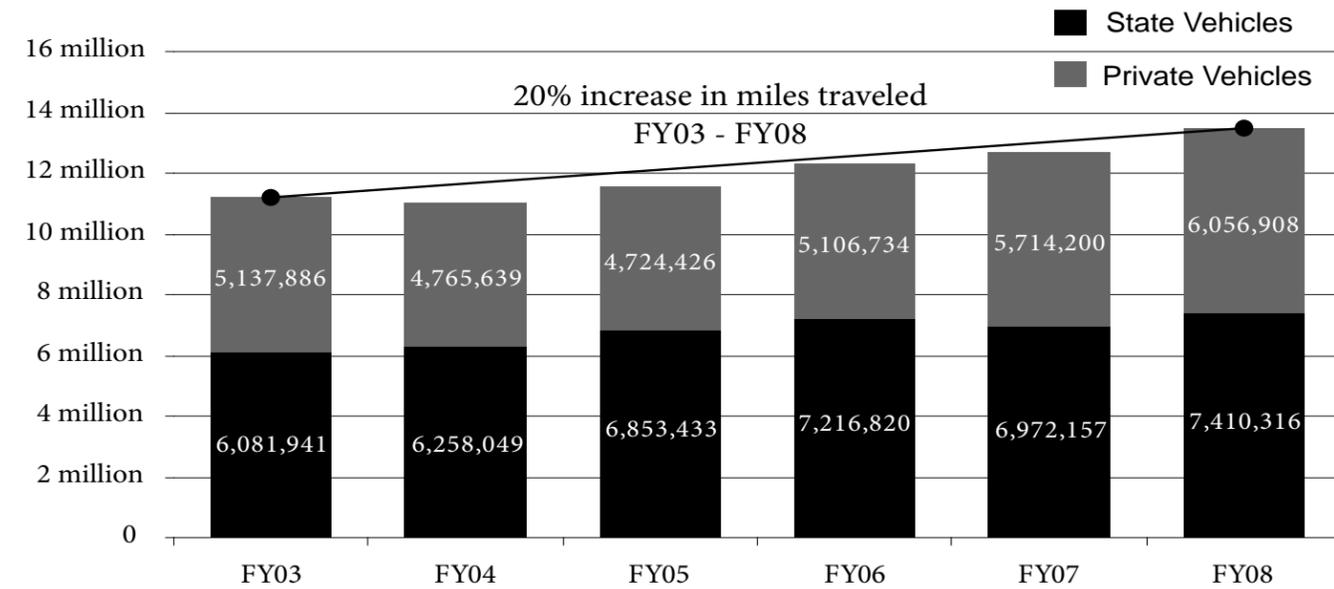
Source: WSDOT Transportation Equipment Fund

VMT: Passenger-Carrying Vehicles Report

WSDOT's inventory includes 680 passenger-carrying vehicles. Because of the limited fleet size state vehicles are not available for all business needs. In some instances, private vehicles are used for state business. WSDOT records mileage for both state vehicles and employees' private vehicles used for state business. WSDOT reimburses employees for the mileage accrued on private vehicles while used for state business. VMT traveled for both state and private vehicles are detailed in Figure 11.

Despite a decrease in FY04, combined VMT increased by 20% since FY03. The largest increase was for the use of state vehicles, which increased 22%. Private VMT increased by 18% in the same period of time. WSDOT employees are reimbursed for the mileage incurred on private vehicles while performing state business. VMT for both state and private vehicles are detailed in Figure 11.

Figure 11
Miles Traveled by Passenger-Carrying Vehicles



Source: WSDOT Transportation Equipment Fund

General Administration Motor Pool

GA maintains a motor pool from which state agencies can lease passenger-carrying vehicles. This is the first year that WSDOT has reported vehicle miles traveled

for GA Motor Pool vehicles. GA Motor Pool recorded a 42% increase of total vehicle miles traveled from FY07 to FY08.

Fuel Efficiency: Passenger-Carrying Vehicles

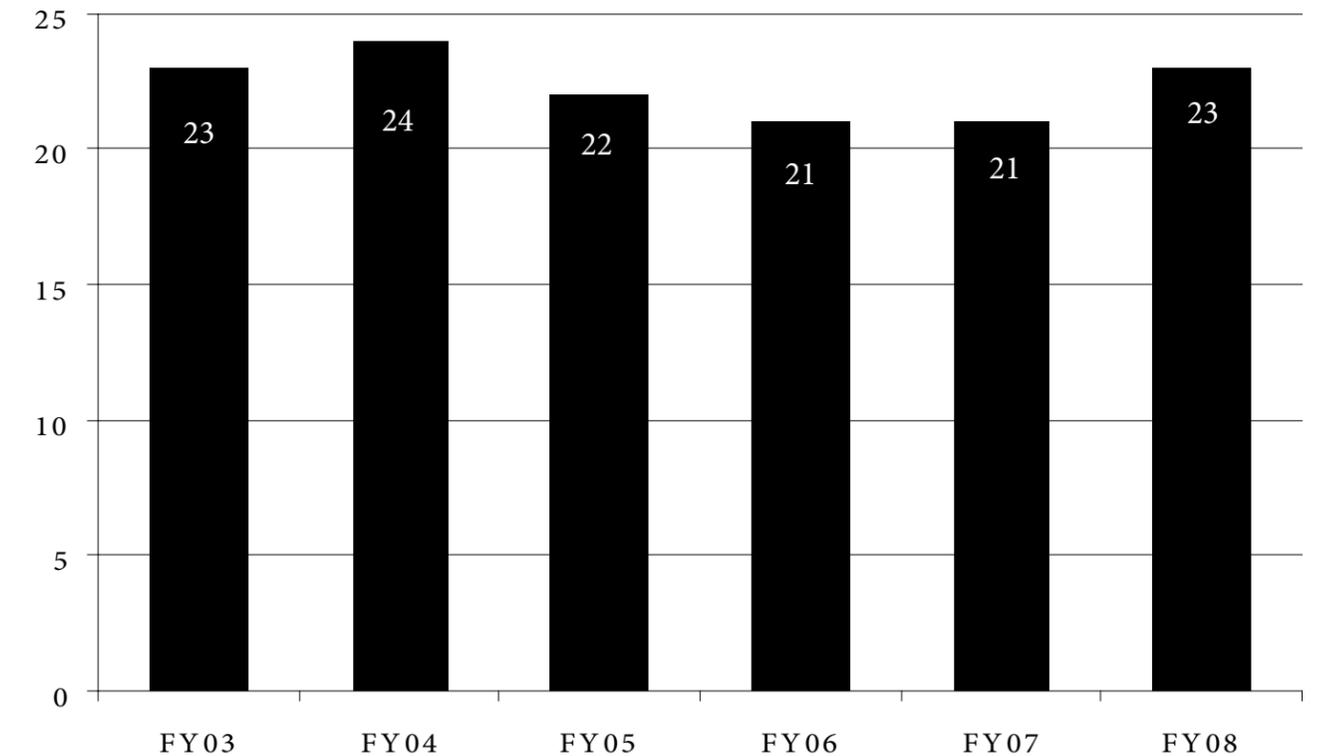
Figure 12 depicts the average fuel efficiency of the agency's passenger-carrying vehicles during the fiscal years indicated.

speed, highway or city driving, and the driving abilities and habits of vehicle operators.

The average fuel efficiency of passenger-carrying vehicles is affected by the fleet's composition. The Ford Taurus is the most common vehicle in the passenger-carrying vehicle fleet. Class 01 inventory also includes 15-passenger vans, which lower the average fuel efficiency ratings.

Several extenuating factors also affect fuel efficiency. Some of these factors are topography, weather, travel

Figure 12
Average Fuel Efficiency of Passenger Carrying Vehicles (miles per gallon)



Source: WSDOT Transportation Equipment Fund

Asphalt Innovation and Fewer Greenhouse Gas Emissions

In July, WSDOT began experimenting with a way to use less fuel by switching from "hot mix" asphalt to "warm mix." Their first test was on I-90 near George. By using a lower temperature, less energy is used to make the mix, meaning that fewer greenhouse gases will be emitted in the process.

The secret ingredient is a wax product called Sasobit™ that goes into the asphalt that holds the sand and gravel together.

Currently, the Warm Mix Asphalt process using Sasobit™ costs more than regular Hot Mix Asphalt. However, it uses 0.3 gallons per ton of diesel and may emit fewer greenhouse gases. The University of Washington's report on the experiment is underway.

Biodiesel Use

Targets: Replace Standard Diesel Use With 20% Biodiesel Blend.
As soon as Practicable, Begin Use of 5% Biodiesel Blend.

Target Date: September 1, 2009

Figure 13 lists biodiesel quantities distributed at WSDOT fuel stations. WSDOT fuel stations are not accessible by the general public.

Limited market availability of biomass restricts the use of biodiesel. As biomass availability increases, WSDOT will convert more fueling stations to biodiesel facilities.

During the first half of FY08 the product failed to meet American Society for Testing and Materials (ASTM) specification because the addition of biomass diluted the dye in red-dyed diesel. Fuel distributors

did not deliver biodiesel-dyed fuel until this problem was resolved.

Currently, a 20% biodiesel blend is available at 42 WSDOT sites.

Note: Passenger-carrying vehicles are fueled with gasoline. Only construction vehicles are fueled with biodiesel.

Figure 13
Biodiesel Purchased, Facilities and Quantities (gallons)

Site	Location Name	FY06	FY07	FY08
100	Corson	2,698	2,432	2,287
103	Signals	1,005	709	617
111	Bellingham		140	3,065
113	Maple Falls		85	823
114	Shuksan			3,230
120	Mount Vernon		190	2,548
121	Arlington		65	700
122	Coupeville		45	520
123	Hazel			800
126	Coal Creek			680
127	Newhalem			1,250
130	Everett		1,664	4,246
131	Monroe		200	1,860
132	Skykomish		180	3,460
140	Kent	1,185	1,590	1,530
142	Renton	100	162	150
143	Geneva	945	655	805
145	Greenwater			1,043
170	Bellevue WSDOT	2,480	1,855	1,070
173	Ballinger	670	552	354
174	Preston			251
301	Tumwater		2,121	8,087
310	Yelm		290	1,140

Site	Location Name	FY06	FY07	FY08
312	Lakeview		1,175	4,767
317	Willows			642
319	Mottman		735	3,000
322	Mt. Walker		385	1,180
323	Lofall		60	482
324	Mullinex		900	1,604
326	Shelton		670	2,830
331	Pt Angeles WSDOT		550	
333	Forks			950
335	Seiku		120	284
338	Discovery Bay		160	244
341	Aberdeen		1,110	1,404
342	Amanda Park		195	740
348	Elma		1,201	1,952
401	Vancouver	230	2,778	2,855
411	Kelso	145	1,367	805
416	Mt. St. Helens		110	
420	Chehalis WSDOT			290
422	Morton		253	421
427	White Pass		780	810
431	Raymond		830	480
511	Camp Mason		130	
	Total	9,083	12,935	40,516

Source: WSDOT Transportation Equipment Fund

WSF Emissions Reduction Initiatives Update

WSF Clean Fuels Initiatives

The WSDOT Ferries Division continues to take major steps to reduce air pollution from its ferry fleet by testing and switching to use of cleaner fuels.

Biodiesel Pilot Test - Phase II update

In March of 2008 WSF began the demonstration phase of the Biodiesel Research and Demonstration project. This demonstration phase involves fueling three WSF vessels (Tillikum, Issaquah, Klahowya) with specified grades of biodiesel fuels and then trial-tested them under normal operating conditions. Biofuels from three different feed stocks are being tested: soy, canola, and a high cloud point tallow-based biodiesel. Testing is expected to continue until February 2009. Initially the boats were fueled with a 5% blend of biofuel (5% biofuel mixed with 95% ultra low-sulfur diesel). This was then increased to a 10% blend and will increase to a 20% blend of biofuel.

Fuel use Monitoring Status per Vessel Class as of June 30, 2007

Vessel Class	Tests Completed	Percent Complete
Jumbo Mk I	Various speeds, various drafts	100
Evergreen State	Various speeds, various drafts	Monitoring equipment installation was cancelled due to cost of installation. WSF is seeking other means to identify fuel consumption.

Source: Washington State Ferries Safety Systems Office

Upgrading Engines

As a trial application, WSF upgraded the power packs for two main engines on the Motor Vessel (M/V) Klahowya to power packs that burn less lubricating oil. The reduction in lubricating oil burnt is expected to reduce diesel particulate matter emissions. It is likely that this equipment upgrade could be applied to some of the main engines of other WSF vessels.

Upgrading Ship-Service Generators

There were no upgrades to ship-service generators FY08

New Vessels

WSDOT Ferries Division intends to purchase three (3) new auto ferries with the capacity of 144 autos and 1500 passengers and two (2) new auto ferries with the capacity of 64 autos and 750 passengers. After delivery, shakedown, and crew training ferries will be deployed to existing routes. As these new ferries enter service, existing ferries will be redeployed to other routes or retired. Eventually, six ferries that are at or past the end of their useful service lives, including the recently retired Steel Electric Class ferries, are scheduled to be removed from service by the end of the projects (2011). Construction is expected to start in December 2009 for the 144-auto ferries, and November 2008 for the 64-auto ferries.

WSF has purchased the main propulsion and auxiliary generators and received delivery of the auxiliary generators for these vessels. The new engines and generators are EPA tier II compliant. As the vessels enter the fleet and old vessels are retired, WSF predicts a reduction in Nitrous Oxides (NOx), Carbon Monoxide (CO), Sulfur Oxides (SOx), Total unburned Hydrocarbons (THC), and Particulate Matter (PM) from the fleet.

Vehicle Replacement Priority

Target: Replace Pre-1996 Light Duty Vehicles Driven more than 2,000 Miles/Year

Target Date: January 2008

WSDOT established vehicle life cycles for each class of equipment. WSDOT will replace individual units based upon the individual vehicle's life cycle.

WSDOT uses a level purchasing methodology to determine the number of vehicle units to annually replace. The total number of units in a particular class is divided by the class life-cycle. For example, an equipment class with 100 units in inventory, on a ten-year life-cycle, means ten units are replaced annually to replace the entire inventory in the ten-year period. (100 units ÷ ten years life cycle = ten units replaced annually).

Level purchasing makes replacement planning predictable, provides a high degree of operational

and funding consistency, and is easily understood by interested parties. This method also ensures a reliable fleet requiring less maintenance and lower operational costs.

The Transportation Equipment Fund has been a revolving fund since 1935 and derives the majority of its income by charging rent for assigned units. Rental charges are set to cover all program operating costs, administration expenses, and capital (equipment replacement) costs.

WSDOT has replaced all pre-1996 light vehicles in the WSDOT fleet; thus meeting this executive order.

Figure 14
Pre-1996 Light Vehicle Replacement

Fiscal Year	Quantity Remaining
FY06	3
FY07	1
FY08	0

Source: WSDOT Operations Transportation Equipment Fund

Fleet Management

Target: Employ Professional Fleet Management and Planning Practices

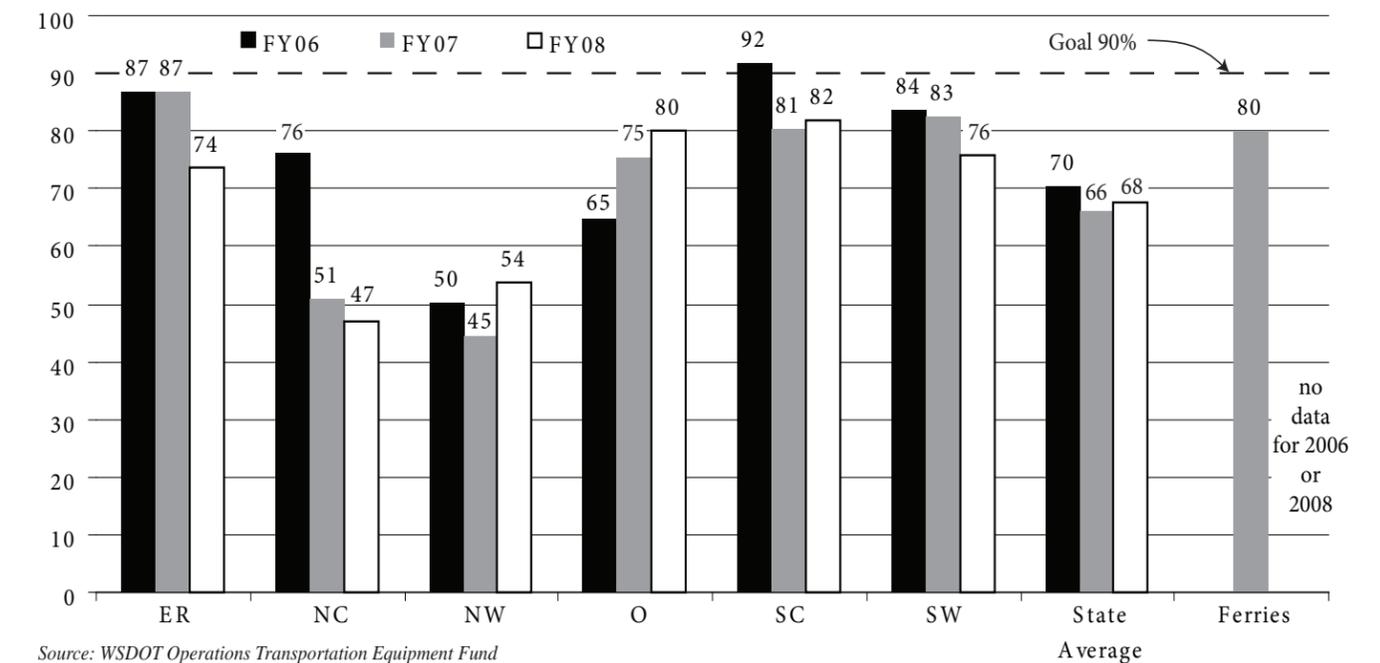
Target Date: September 1, 2005, and thereafter

WSDOT uses a regularly scheduled vehicle preventative maintenance program to increase and maximize the mechanical life, productivity, and efficiency of WSDOT's fleet. This fleet includes vehicles and highway maintenance equipment.

The established goal is to accomplish 90% of all preventive maintenance services within 30 days after the manufacturer's recommended due date. Figure 15 depicts WSDOT's performance for FY06, FY07, and FY08.

As shown in Figure 16, WSDOT needs to increase the state average by 22% to meet its goal.

Figure 15
Percent of Preventative Maintenance Completed Within 30 Days After Date Due



Source: WSDOT Operations Transportation Equipment Fund

Direction on Rental Vehicle Use

Target: Establish Clear Direction on Rental Vehicle Use

Target Date: March 1, 2005

GA executed a mandatory contract with Enterprise Rent-A-Car. The program provides access to daily rental of automobiles from more than 4,500 airport terminals and other locations nationwide. WSDOT rents vehicles from Enterprise for employees traveling on state business. In accordance with EO 05-01, employees are required to rent a fuel-efficient, low-emission vehicle, if available. Employees may rent 4WD vehicles during the winter months if travel involves traversing the Cascade Range. Currently, Enterprise Rent-A-Car in Washington has over 150 hybrid vehicles in its fleet and that number continues to grow as the manufacturers make those vehicles available. Additionally, Enterprise Rent-

A-Car, National Car Rental and Alamo Rent A Car represent the world's largest fleet of fuel-efficient vehicles with more than 440,000 vehicles that average a highway fuel efficiency rating of at least 28 MPG and more than 237,000 that average 32 MPG or better.

Per this contract, WSDOT has clear direction on rental vehicle use, thus meeting the intent of this target.

Purchase Summary of Goods and Services

Executive Order or Statute	Topic	Requirement	Target Date
EO 05-01 and EO 02-03	Paper	Reduce use of office paper by 30%	9/1/2009
		Increase % of environmentally preferred paper by 50%	9/1/2009
		Recycle 100% of used office paper	9/1/2009
		Increase use of post consumer recycled products for janitorial paper products	9/1/2009

Paper Use Reduction

Target: Reduce Use of Office Paper by 30%

Target Date: September 1, 2009

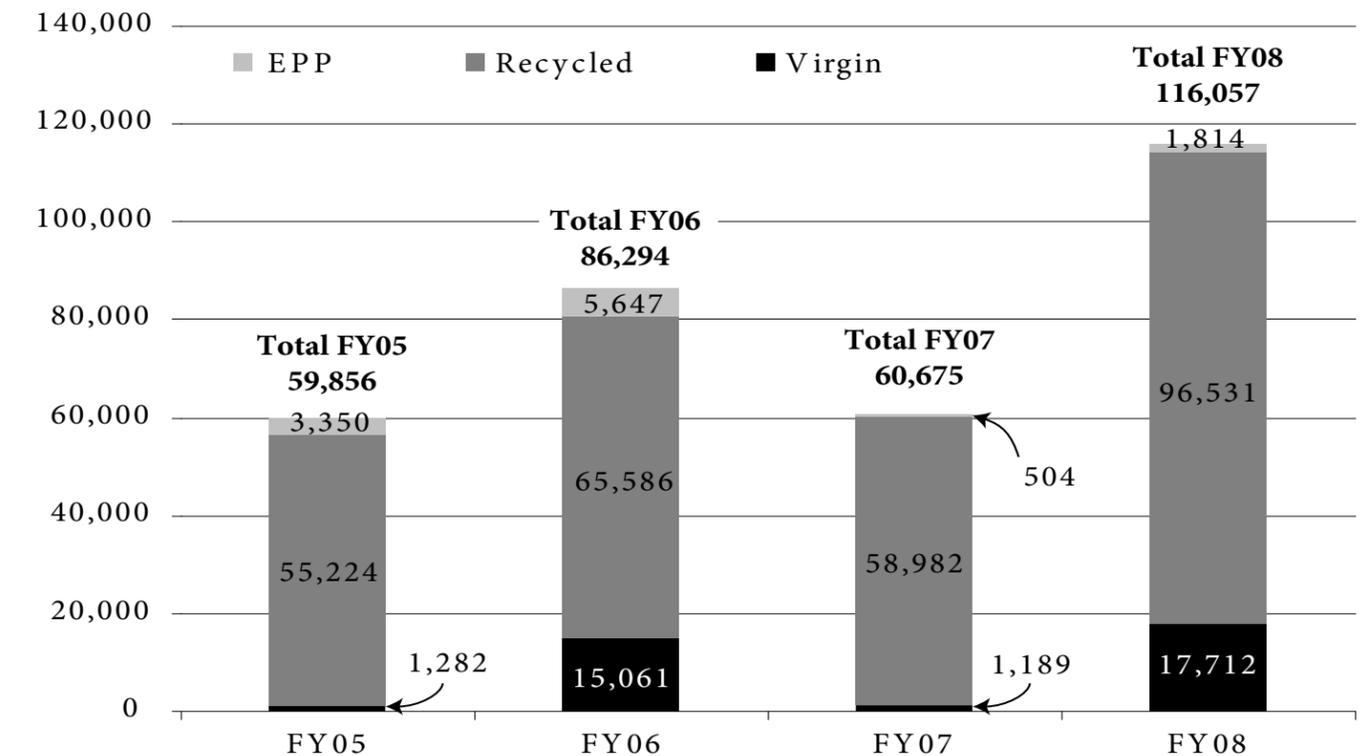
All data on paper use (except where noted) was collected through five sources: Printing Services, WSDOT Headquarters, GA's Central Stores, Corporate Express (previous state contract supplier), and Office Depot (current state contract supplier). WSDOT region offices purchase the majority of their paper from GA's Central Stores. This report does not measure paper purchases made through local retail stores.

WSDOT reports paper purchases in 8-1/2"x11" ream equivalents. Paper purchase data collected in this

section is incomplete. WSDOT is developing consistent measurement and tracking methods. According to data available for FY05 through FY08, WSDOT purchased more 56,201 more reams (94%) in FY08 than in FY05. Agency-wide paper use fluctuates due to legislative sessions and the increase in highway capital programs. Action steps include implementing consistent and accurate tracking of paper purchases, using the duplex function to make double-sided copies, and using electronic record keeping and print management.

In order to reach the FY09 target, WSDOT needs to reduce paper purchases by 277%.

Figure 16
WSDOT Paper Purchases (8.5" x 11" reams)



Source: WSDOT HQ Printing Services, WSDOT Purchasing and Inventory

Environmentally Preferable Paper Purchases

Target: Increase Environmentally Preferable Paper (EPP) Purchases by 50% from FY03 levels

Target Date: September 1, 2009

EO 05-01 defines environmentally preferable paper as 100% recycled paper with at least 50% post-consumer waste.

For this report, WSDOT collaborated with the Department of General Administration to standardize data collection for EPP purchases. Not all sources were canvassed. However, the majority of paper purchasing sources are included in this year's data.

The trend shows WSDOT EPP purchases (8.5"x 11" reams) met and exceeded the target in FY06. Data on EPP purchases for FY07 is incomplete. In addition, WSDOT Headquarters (HQ) Printing Services experienced equipment failure and other problems due to the more fibrous paper type. This prevents a more aggressive approach to using EPP. We will be able to see a more definitive trend by FY09.

WSDOT Recycled Purchases

Currently, WSDOT Urban Corridors Office purchases 30% recycled products from Office Depot. The Northwest Region purchases nearly 38%. This includes paper, copier and printer toner, office supplies, toilet tissue, and paper towels.

Janitorial Paper Product Purchases

Target: Increase Use of Post Consumer Recycled Products for Janitorial Paper Products

Target Date: September 1, 2009

The majority of janitorial products purchased through Central Stores are paper-based and made from at least 20% post-consumer content. In FY08, WSDOT purchased \$236,000 worth of janitorial paper products (7,946 cases) from Central Stores which is \$143,000 more than in FY06. WSDOT is developing a consistent agency-wide measurement of janitorial paper product use.

It is important to note that, of the 7,946 cases of janitorial products purchased, 1,779 cases were purchased for Safety Rest Areas. Safety Rest Areas comprise 22% of the total paper products purchased.

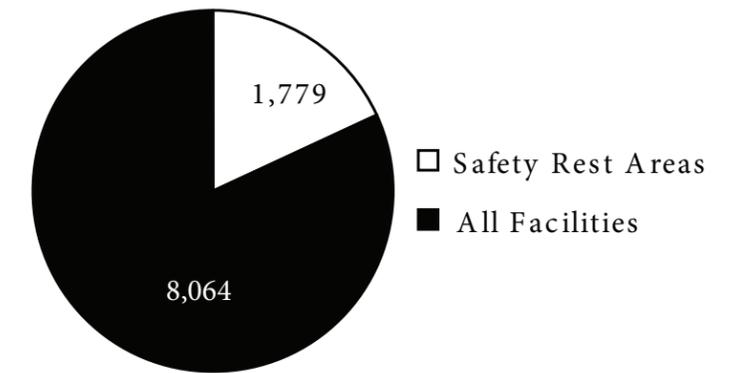
Virgin Paper Purchases

Virgin paper has no recycled post-consumer content. The number of virgin paper reams purchased has varied in recent years. The justification for virgin paper purchases is based upon the type of project. In

addition, certain printer manufacturers require virgin paper to prevent equipment damage. Data collected for FY07 is incomplete.

Per the data collected, WSDOT has met this target.

Figure 17
Cases of Janitorial Paper Products
Safety Rest Areas



Source: Department of General Administration

Figure 18
Post-Consumer Content of Janitorial Paper Purchases
FY08

Product	Quantity	Unit	Post Consumer Content
Seat Cover, Toilet, Half Fold, 50RA1	524	Case	60%
Tissue, 47410, Facial, White, 2 Ply	2,766	Box	20%
Towel, GP23504, 1P, Single/Fold	1,057	Case	40%
Towel, GP21000, 2 Ply, Multi Fold	969	Case	Not Known
Towel, Paper GP25190, C Fold,	802	Case	40%
Towel(20389)1-Ply, 16 Pk/Case	277	Case	40%
Towel GP89460 1Pl for use in 4515-007-035 Dispense	147	Case	40%
Towel, Paper GP 26401	42	Case	40%
Towel(GP-23304)1Ply, Mult-Fold	40	Case	40%
Towel KC01950, M-Fold	5	Case	40%
Towel, (HB 1990A), Household, White, Two Ply, 11" X	2	Case	40%
Toilet Tissue 4x4"(13102) Jumbo [2.55l]	1,682	Case	20%
Toilet Tissue(TJ1222), Jumbo Roll, Two Ply, 6-Roll/Case	966	Case	20%
Toilet Tissue (SCA TS1635) One Ply White, 1500 Sheets	813	Case	20%
Toilet Tissue, GP18280, 2 Ply	456	Case	20%
Toilet Tissue, Two Ply, (SCA TM-1616) 500 Sheets/	83	Case	20%
Toilet Tissue (GP 14580-1) 4 X 4.05	69	Case	20%
Toilet Tissue (2500), 1-Ply, 32-RI/Case	26	Case	0%
Toilet Tissue, (SCA TJ0922), Junior Jumbo Roll, Two	12	Case	20%

Source: WSDOT Purchasing and Materials Management Office

Paper Recycling

Target: Recycle 100% of Used Office Paper

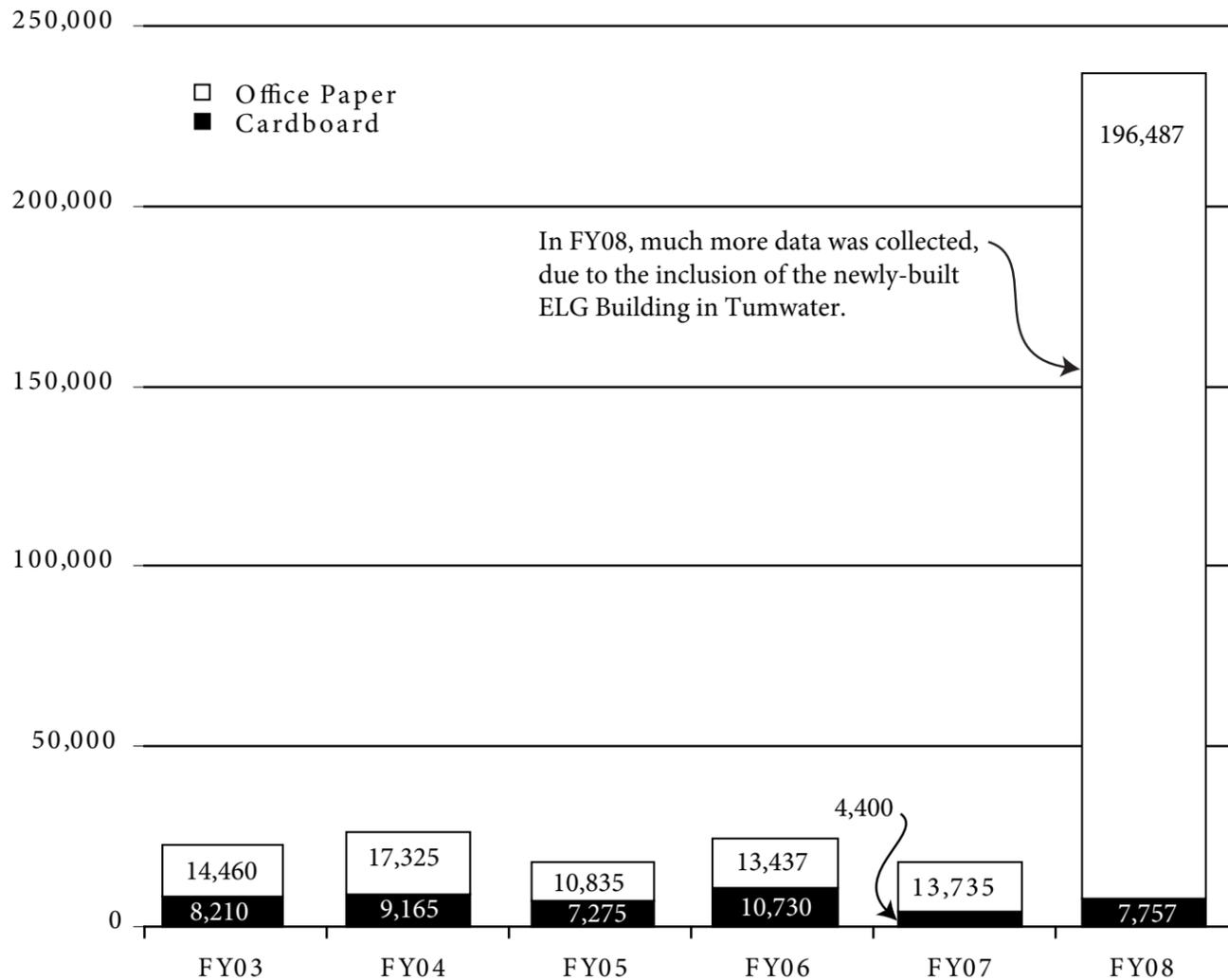
Target Date: September 1, 2009

At WSDOT Headquarters, office paper is recycled along with periodicals, newspapers, cardboard boxes, and other materials. Currently, no accurate or consistent methodology measures the amount of recycled materials agency-wide. However, employees at the ELG Building in Tumwater have developed a consistent methodology to measure shredded paper, office paper, and cardboard recycling. This explains

why there is a measurable difference in the amount of office paper reported for FY08 compared to previous years.

The FY08 data is incomplete. WSDOT should pursue further options for tracking all materials recycled.

Figure 19
WSDOT Total Paper and Cardboard Recycling (in lbs.)



Source: WSDOT Eastern Region Facilities, WSDOT North Central Region Facilities, WSDOT South Central Region Supply Office, WSDOT Northwest Region Office Services, Wright Runstad

Facility Construction, Operation, and Maintenance Summary

Executive Order or Statute	Topic	Requirement	Target Date
EO 05-01 and RCW 39.35D	Construction	Incorporate green building practices (LEED Silver) to projects costing more than 50% of facility's assessed value.	2005-2007 biennium and thereafter
EO 05-01 and EO 02-03	Energy	Reduce energy purchases by 10% from 2003 by 9/1/2009	9/1/2009
		Report annual energy use to GA	9/1 annually

Target: Construction or Remodeling Projects Larger than 5,000 Square Feet must Conform to LEED Silver Standards

Target Date: 2005-2007 biennium and thereafter

Incorporate Green Building Practices

The U.S. Green Building Council developed the Leadership in Energy and Environmental Design (LEED) rating system to encourage and facilitate construction of more sustainably designed buildings. LEED certification is tiered into three categories: Silver, Gold, and Platinum.

WSDOT adopted the LEED Rating System for design and construction of new and renovated buildings. All future projects will conform to LEED Silver standard or better.

The Department of General Administration is collecting data for LEED projects, which are in the department's report.

WSDOT has three new construction projects underway:

Facilities

- Spokane Signals – Design Development – Expected LEED Silver

WSF

- Eagle Harbor Maintenance Facility (Renovation)
- Anacortes Ferry Terminal – Expected LEED Silver

WSDOT delayed the following construction projects due to various budget constraints or requirements for further environmental analyses:

- NW Maintenance Headquarters (Corson) - Predesign – Expected LEED Silver
- Ephrata Maintenance Facility – Predesign – Expected LEED Silver
- Olympic Region Headquarters – Project on Hold – Expected LEED Silver
- Bainbridge Island Ferry Terminal – Project Dropped
- Mukilteo Ferry Terminal – Project sent back to environmental review – Expected LEED Silver

Further Discussion

LEED accreditation efforts are continuously underway for facilities project managers. WSDOT has one accredited project manager. Project Managers receive a copy of "Green Building Implementation Guide for State Project Managers."

Some of WSDOT's existing facilities present challenges to attaining a LEED silver status due to EPA Superfund site restrictions and existing construction over the water. WSDOT has pursued the intent of the standard by following the Quality Assurance program offered by General Administration.

Energy Use

Target: Reduce Energy Purchases by 10%

Target Date: September 1, 2009

The sustainability target calls for reducing energy purchases by 10% from FY03 levels. Natural gas use is reported in therms, and electricity is reported in kilowatt hours (KWh). The FY03 natural gas base year use was 719,190 therms, and the electricity use was 108,825,431 KWh.

Methodology

Comparing FY08 energy usage levels to FY07 levels is difficult. Data reported for FY03, 04, 05, 06, and 07 included natural gas and electricity use for all WSDOT facilities. Beginning in FY08, GA assumed responsibility for reporting this information for all capital campus facilities, including the WSDOT HQ building. This added a second level of complexity to comparing FY08 numbers to prior years for both natural gas and electricity.

Fundamental changes in energy usage calculations for FY08 include:

- Using the Accounting and Facilities Data Marts to match expenditures by facility.
- Using monthly instead of annual energy rates recorded by the Energy Information Administration (with estimated local tax applied).
- Excluding highway assets using energy such as bridges, tunnels, luminaries, traffic signals, and any other non-building facilities.
- Including only facilities with known internal square footage.
- Excluding WSDOT Headquarters Transportation Building on Maple Park Avenue (which will be reported in GA's Sustainability Plan Progress Report).

Limitations

Actual usage cannot be determined accurately for a variety of reasons. WSDOT has contracts with over 100 vendors statewide for its energy needs. Each energy provider uses a tiered-rate structure based on usage levels and applies local taxes, which vary by

city. This makes it difficult to track usage levels by facility. In the future, the department should explore the possibility of reporting individual billing rates per provider, per site.

Until WSDOT has a cost-effective reporting system to track each site's rates, we do not have a high degree of comfort with this data.

Additional Operational Factors

The 2007 Sustainability Report reported that WSDOT facilities used 701,628 therms and 84,795,823 kWh for FY07. Using a more accurate methodology and exclusion of the WSDOT HQ Transportation Building, WSDOT estimates usage to be closer to 669,184 therms and 30,995,436 kWh for FY07.

Changes in energy usage are related to many operational factors. An informal survey of regional facility managers revealed the following factors:

- Weather – adverse conditions such as increased snow levels or flooding increase demand
 - Increased usage of personal refrigerators and heaters in offices
 - Additional air conditioning in many facilities
- Increases in personnel
- Additional or more flexible work shifts to maintain vehicles exposed to salt brine used to prevent road icing
- Additional computers
- Recharging Personal Digital Assistants (PDAs) and other electronic equipment
- Additional exterior lighting for safety
- Aging and inefficient heating, ventilating, and air conditioning (HVAC) systems
- Increased propane usage due to facility expansion
- Replacement of older shop equipment with equipment that requires additional energy
- Additional radio sites and equipment needs
- Increased square footage of replacement facilities

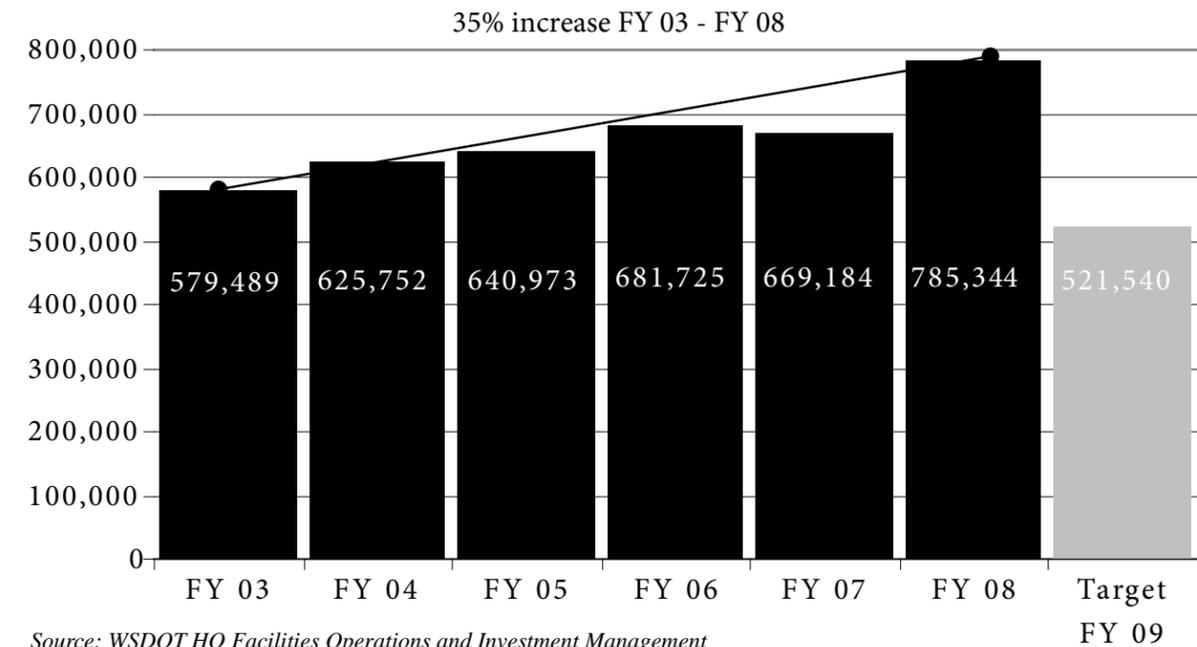
Natural Gas

Natural gas is used for fueling, lighting, and cooking. In 2007, WSDOT reported a 1.8% decrease in the use of natural gas from the base year, FY03—seemingly on track and making progress toward the required target. In prior years, the calculations for natural gas use was based upon an annual state rate of payment.

For FY08, natural gas rates were determined by national data from the Federal Energy Information Administration.

Figure 20 shows the revised numbers for WSDOT facilities, excluding the HQ Transportation Building on capital campus. The calculations for all years were redone using the national data. Applying the new formula, WSDOT increased its natural gas usage in FY08 by 35%.

Figure 20
WSDOT Facilities Natural Gas Usage (Therm)



Source: WSDOT HQ Facilities Operations and Investment Management

Using Geographic Information Systems (GIS) to Report Energy Data

In 2008 WSDOT began using GIS to better understand agency-wide energy usage. We are still exploring how to use GIS to its full potential and the steps needed to use it as a reporting tool. The GIS maps are a new tool for facilities management. The selection of facility sites using crew work hours data from the accounting system is now possible.

When we were tasked to associate our energy consumption by square footage, we took advantage of the link between the energy expenditures and the control sections to see if they would plot. Preliminary test maps offer encouraging results. We hope that future GIS map will demonstrate the capabilities for identifying energy consumption.

With our current methodology we hope to do some

random audits of using our detailed spreadsheet of consumption by site. Our goal is to isolate those sites with high energy consumption and determine the causes and potential solutions. The maps should help with that effort. One potential benefit of using the maps is to capture energy consumption over time. We plan to break down the consumption by month, quarter, or year and map it for any trends or unusual cycles of energy usage.

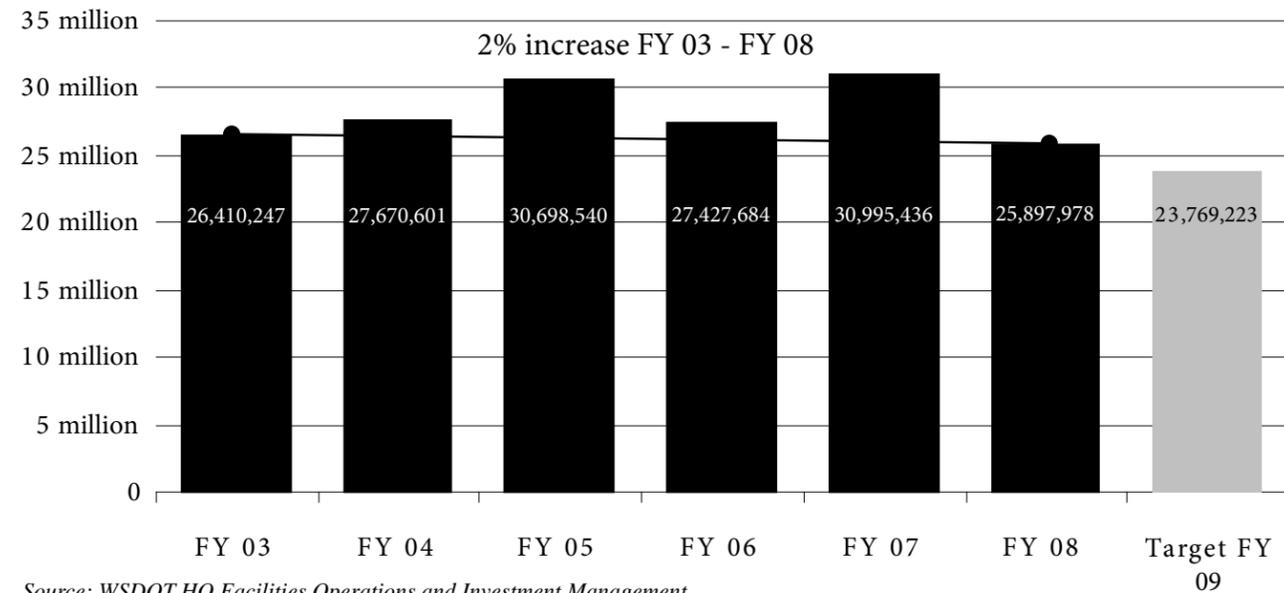
Since our energy consumption is not just related to the facility and its design, but may be impacted by the facility operations, capturing data without these references can be misleading. For example, the energy consumption associated at many of our facilities may actually be used by the equipment needed to maintain our fleet. We will experiment to find the best way to filter the GIS data by facility type to do comparisons and analysis.

WSDOT Electricity Usage (KWh)

Figure 21 illustrates progress toward meeting the electricity reduction target. While electricity usage decreased by 16% from FY07 to FY08, there is a net increase of 2% from FY03 to FY08. In addition, the new formula for calculating energy usage was used for this year's report. Greater energy use reductions

can be realized in the future through education on policies for computer, printer, and copier use. Education and outreach efforts will address impacts on energy conservation.

Figure 21
WSDOT Electricity Usage (Kwh)



Source: WSDOT HQ Facilities Operations and Investment Management

IT Implements a Power Saving Solution for WSDOT

The Office of Information Technology implemented a new power saving software on WSDOT computers. The software detects idle machines and puts them into stand-by mode to reduce power consumption during night and weekend hours. The power-saving solution was applied to all WSDOT computers statewide, at different intervals.

WSDOT currently has over 8,500 PC's and when left powered on for extended periods, they consume a large amount of energy. Studies show that PC's and monitors use as much as 14% of all power consumed in office environments. As a result, a solution has been identified that will save WSDOT nearly 50% of its annual power costs for PC's. At this rate of return, the investment to implement the power savings solution should realize a payback within one year.

In addition to the monetary savings, WSDOT will also be helping the environment with reduction of Greenhouse Gas emissions. For each kWh of power consumed, 0.921 pounds of CO₂ are released into the atmosphere; each PC consumes over 667 kWh per year. This means WSDOT hopes to reduce Greenhouse CO₂ Gas Emissions by 2,191,536 lbs.

WSDOT Fluorescent Lighting: An Energy Reduction Effort

WSDOT does not have a formal statewide policy in place for replacing inefficient lights in owned or leased buildings. Northwest Region selects projects with the best technology and that qualify for utility rebates. This process, unfortunately, does not lend itself to replace lighting in larger facilities (e.g. Dayton Avenue). The following WSDOT regions, however, have taken the following steps to upgrade lighting in facilities:

Northwest Region

1. Efficiency of existing lighting (using 1 watt/sf or less)
2. Energy rebates (Puget Sound Energy)
3. State of technology (LED fixtures available in the next couple of years for exterior lighting)
4. Available funds (spending fewer dollars for a higher return on investment)
5. Labor (Since contracted electrical work is costly, most projects are completed with WSDOT employees. Some work forces have been reduced.)

To save on the cost of stocking multiple lamp and ballast combinations, Northwest Region has standardized a few types of lamps and are now adding high output T5 lamps for high-bay shop fixtures. T5 lamps are designed to peak in their lumen ratings at 95°, compared to 77° for T12 and T8 lamps. This thermal characteristic provides higher light output in confined applications where there is little or no air circulation, and it provides more usable lumens per watt in indirect fixtures.

North Central Region

For the Euclid Avenue lighting upgrade project, the total cost was \$64,960. After receiving utility rebates, WSDOT only paid \$26,500 for the project. Benefits include:

- All new lights in the Area One vehicle storage and Maintenance shops with new motion sensors or twist timers.
- All new lights in the new Regional TEF shop (which increases the light level to an average of around 75 foot candles and motion sensors on each light).
- Wall mounted motion sensor for each shop bay in the new shop.

Although there is no single statewide effort, individual WSDOT regions have implemented efficient lighting projects at various WSDOT facilities. In some instances, contractors are brought in to determine the cost-benefit of changing out lighting. This can take two forms: changing the bulbs to fluorescent or changing out the entire fixture and any other supporting electrical equipment (e.g., putting in timer switches).

WSDOT North Central Region prefers to replace lights within seven years or less, for a maximized return on investment. To ensure this, any additional equipment or lighting is monitored, as additional energy usage can skew energy consumption benchmarks.

Persistent Bioaccumulative Toxins Use Summary

Executive Order or Statute	Topic	Requirement	Target Date
E O 04-01	Persistent Bioaccumulative Toxins	Adopt measures to reduce the use of equipment, supplies, and other products that contain persistent, bioaccumulative toxins	9/1 annually

Target: Adopt Measures to Reduce Use of Equipment, Supplies, and Other Products Containing Persistent Bioaccumulative Toxins as specified in WAC 173-333-310.

Target Date: September 1, annually

Reducing Herbicide Use through Integrated Vegetation Management

WSDOT uses herbicides in combination with mechanical, manual, and biological methods to control vegetation along roadsides through an ongoing process referred to as Integrated Vegetation Management (IVM). In recent years, WSDOT has refined policy in relation to herbicide use, based on the most recent scientific studies of product toxicity, mobility, and persistence in the environment. From 2003 to 2007, WSDOT reduced overall herbicide used by 70% based on pounds of active ingredients applied.

Integrated Vegetation Management

Roadside Vegetation Management Plans address the care and control of plants along highways. These plans define Integrated Vegetation Management (IVM) practices for each maintenance area throughout the state. These geographically based plans include an inventory of routine maintenance activities, weed infestations, sensitive areas, and other relevant information. WSDOT uses a computerized record-keeping system to document and evaluate site-specific treatments for vegetation management and prescribed treatments for various types of vegetation. WSDOT developed a set of statewide vegetation management plans to guide roadside vegetation treatments. The plans serve as a baseline for annual roadside vegetation maintenance as well as evaluation, review, and refinement of treatment methods. Crews attend annual spring training

sessions, which include opportunities for both training and discussion. Roadside vegetation management plans help to reduce maintenance needs and herbicide use by determining the most efficient and cost effective approaches over the life-cycle of the highway. WSDOT weighs the following considerations for each situation:

- Safety of highway users and WSDOT employees
- Preservation of the highway pavement and infrastructure
- Preservation of the natural environment, including streams, wetlands, and lakes, and using noxious weed control and biodiversity
- Reduction of life-cycle costs to minimize impacts to taxpayers

Through proper management, roadside vegetation can become naturally self-sustaining over time, thereby reducing costs, herbicide use, and overall maintenance requirements.

Herbicide Risk Assessment and Added Precautions

WSDOT placed specific limitations and buffers on product use based upon peer-reviewed scientific findings, as presented in our 2003/2005 Herbicide Risk Assessment Report and corresponding product fact sheets. WSDOT reduced the herbicide-maintained, vegetation-free zone at the edge of pavement from eight feet to three feet over the past ten years on most state highways, and completely eliminated this zone on many sections of highway.

WSDOT is currently studying the benefit to cost ratio of alternatives to herbicides for maintenance of vegetation at the pavement edge. Emphasis is placed on precise spot treatments for noxious weeds and other unwanted vegetation, in lieu of broadcast spraying. Crews must attend annual training on proper herbicide application and handling.

Records are kept of all herbicide applications. Use patterns are tracked and analyzed annually and throughout the year as applications occur.

Agency Responsiveness

Area roadside vegetation management plans serve as a basis for communication and accountability with the public, neighbors, and other stakeholders. The plans document where and why roadside vegetation management activities occur. The plans allow for adaptation and refinement of methods based on public input and lessons learned.

Cost Effectiveness

WSDOT is currently conducting a five-year research project to study the long-term benefit to cost ratio of a variety of alternatives to herbicide use for managing vegetation at the edge of pavement. This study will be completed and results published early in 2009.

Wetland Replacement Monitoring

A wetland is an area that is transitional between aquatic and terrestrial ecosystems, and is saturated by water for at least part of the growing season. WSDOT works to avoid and minimize wetland disturbances, but when transportation projects incur unavoidable wetland impacts, wetlands are enhanced, restored, created, or preserved to achieve WSDOT's no net loss policy. Replacement wetlands are monitored to evaluate progress toward replacement goals. WSDOT actively manages these sites to increase the likelihood of success at the end of the monitoring period. Based on monitoring results, management activities are recommended by monitoring staff, funded by the regions, implemented by staff or contract remediation crews, and tracked in the GNB. At the end of 2007, 94 percent of the recommended management activities had been completed.

Monitoring was initiated on 21 new replacement wetlands in 2007, totaling 149 acres. These sites added 20 acres of created wetlands, 59 acres of enhanced wetlands, 6 acres of restored wetlands, 50 acres of buffer, and 14 acres of preserved wetlands to WSDOT's inventory of replacement acreage. WSDOT has 158 replacement wetland sites totaling 890 acres.

Thirty of the 158 replacement wetlands have reached their replacement goals and WSDOT has proposed that their federal permits be closed. As of the end of 2007, the U. S. Army Corps of Engineers has agreed that 15 sites have met all their permit requirements. At this point, these replacement wetland sites are considered to be self-sustaining. WSDOT is in the process of transferring closed replacement wetland sites to regional maintenance divisions for their future care.

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