

# Asset Management: Capital Facilities Annual Report

## Capital Facilities Program

### Capital Facilities Highlights

40% of primary buildings are in “poor” condition and need significant repairs.

66% of primary buildings have been identified as more than 25 years old, with a \$142.7 million backlog of necessary work.

92% of identified ADA deficiencies have been corrected, with the remaining to be completed in 2011-13.

### New for this report in 2011:

- WSDOT 2011-2013 capital facilities budget, see page 10.
- Improved method for developing repair backlogs in 2012, see page 11.
- Capital facility minor works projects for the 2011-2013 biennium, see page 12.
- 2010 preventative maintenance workload by criticality data, see page 14.
- ADA transition plan update, see page 14.

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

Facilities assets, which contain many unique uses and complex building systems, include region headquarters complexes, traffic management centers, maintenance crew facilities, commercial vehicle repair, welding and fabrication shops, project engineer offices, testing laboratories, materials storage, and wireless communications sites.

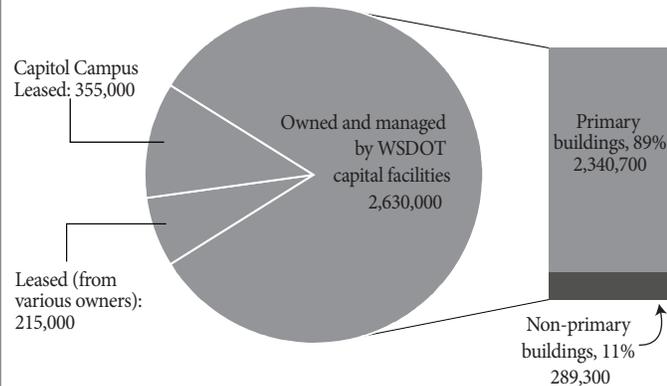
### \$3.7 million available to preserve facilities assets in the 2011-2013 biennium

WSDOT’s budget for capital facilities in the 2011-13 biennium is \$30.85 million, with \$25.4 million for operations and \$5.4 million for capital expenditures. Of the \$5.4 million, \$3.7 million is available to repair and preserve facilities assets, and \$0.4 million is available to comply with storm-water permit requirements. At the current funding level, 2% of identified building repairs can be performed each year.

This article presents methodologies for identifying facilities needs and priorities that the capital facilities program has in place to implement the strategies presented in Business Directions, WSDOT’s 2011-2017 Strategic Plan.

### WSDOT occupied building space

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



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

### WSDOT primary building condition rating

Number of primary buildings by condition rating

Condition	2008	2010
Good	31 (11%)	24 (8%)
Fair	142 (52%)	150 (52%)
Poor	100 (37%)	113 (40%)
<b>Total<sup>1</sup></b>	<b>273</b>	<b>288</b>

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

Data source: WSDOT Capital Facilities Office.

### Identifying high priority preservation and improvement needs

Of the 3.2 million square feet of buildings that WSDOT occupies, 2.6 million square feet are managed by the Department’s capital facilities program. About 89% (2.3 million square feet) of this building space is contained in 288 “primary buildings:” office and crew space that support a majority of the department’s staff and provides storage space for vehicles and equipment. For more information on why WSDOT now focuses on primary buildings see *Gray Notebook* 38, page 9.

### 40% of primary buildings are rated “poor”

In 2010, 113 of 288 primary buildings were rated in poor condition. This is up from 100 buildings rated poor in 2008, a 13% increase. Since 2008, the capital facilities program has focused on high priority preservation and improvement projects for the 288 primary buildings. For more information on the condition, age, and backlog of these facilities, see page 11.

## Capital Construction Program

Primary buildings are a focus for high priority preservation and improvement projects. In order to prioritize needs among these buildings, WSDOT assesses impacts to department operation through biennial Facility Condition Assessments (FCA).

FCAs use building industry standards and are conducted every two years. Unlike some of its other asset management programs, WSDOT does not conduct these assessments annually, as results do not change significantly every year. The condition of individual building systems is evaluated, and used to identify repair backlogs and to determine facility replacement priorities.

The FCA rates the building system on a scale of 1–5, with 1 being good and 5 being poor. If a building system is found to be deficient, it is rated 4 or 5 and a preliminary repair cost is estimated. The sum of building system ratings is the total building rating, this is used to define its condition as good, fair, or poor. Preliminary repair cost estimates for buildings are then used to define the statewide repair backlog.

### In 2012, WSDOT will improve the way it estimates repair backlogs

The method for developing the statewide repair backlog has been modified for the next round of backlog information submittals, due on January 30th, 2012 from the regions. An estimating spreadsheet has been created using RSMeans as the source for building out repair cost estimates. The intent is to make repair cost estimating consistent statewide. The 2012 estimates will contain updated repair backlog costs and building condition ratings. This information will be reported in a future edition of the *Gray Notebook*.

### 191 aged and obsolete primary buildings need preservation and replacement

The main cause of the preservation and repair backlog is the steady aging of buildings: 66% of primary buildings are more than 25 years old, with a \$142.7 million dollar backlog, and 27% exceed 50 years old. Major building systems – such as heating, plumbing, lighting, roofing, and structural elements – require substantial repair or replacement after 20 or 25 years. Older buildings are more likely to be inefficient or unsuitable for today’s operations, with problems that range from an inadequate number of vehicle bays and bay sizes too small for modern trucks, to insufficient crew facilities and material storage.

Based on 2010 condition assessments, WSDOT faces an accelerating repair backlog at each building as facility age increases.

The 288 primary buildings add up to a total deficiency backlog of \$160 million. The table shows the backlog per building by age group for primary buildings.

### WSDOT primary building age and backlog

*As of October 2011; Dollars in millions*

Age	Number of buildings	Backlog per building	Backlog total
25 years or less	97 (34%)	\$0.18	\$17.2
26 to 50 years	112 (39%)	\$0.77	\$85.7
50 years or more	79 (27%)	\$0.72	\$57.0
<b>Total</b>	<b>288</b>		<b>\$159.9</b>

Data source: WSDOT Capital Facilities Office.

The total deficiency backlog for all facilities has increased \$8.3 million (4%) since 2008, increasing from \$188 million to \$196.3 million. Primary buildings make up \$159.9 million, or 82%, of the 2010 backlog.

A building replacement backlog of about \$280 million has been identified in the 2010 Capital Facilities Strategic Plan. This 16-year plan was finalized in October 2010 and will be updated each biennium.

### Prioritizing projects - Minor works

Based on condition assessment data, region facility managers request prioritization of minor works projects valued under \$1 million. Projects generally consist of building system and structural repair, roofing, paving, siding, lighting and electrical improvements, and radio tower installation.

Minor works projects are prioritized into three categories (occupant, preservation, and operational) with occupant projects addressed first.

- **Occupant** projects are those that contain hazardous site or building conditions that may jeopardize health and safety of staff, the public, and the environment, and/or are immediate violations of local, state, or federal regulations.
- **Preservation** projects replace and preserve failing buildings systems or elements that have a high risk of failure and require constant corrective maintenance.
- **Operational** projects correct insufficient building space, provide wireless communication, and/or improve facility components that impact ‘mission critical’ operations.

# Asset Management: Capital Facilities Annual Report

## Emergent Needs

### Select capital facility minor works projects: 2009 – 11 *Completed in the 2009 - 2011 biennium*

	Project budget	Description
<b>Projects addressing occupant safety</b>		
Electric City Ridge Radio Tower Replacement	\$139,000	S/CC
Union Gap Sign Shop Ventilation Repairs	\$19,000	S/CC
Raymond Prewash Pad and Treatment System Improvements	\$46,600	EC
Goldendale Drainage Improvements	\$27,500	EC
Hyak Prewash Building	\$471,500	EC
Colville Vehicle Storage Environmental Improvements	\$57,300	EC
<b>Projects addressing preservation</b>		
Corson Ave. Mats Lab Roof Replacement	\$174,800	BP
Mottman Modular Roof/HVAC Replacement	\$262,000	BP
Woodland Roof Replacement	\$95,300	BP
<b>Projects addressing operations</b>		
Wandermere Vehicle Storage Building	\$292,800	EN

Data source: WSDOT Capital Facilities Office.

Note: Description codes indicate S/CC – Safety/Code Compliance; EC – Environmental Compliance; BP – Building Preservation; EN – Emergent Need (Facility failure or immediate operational need).

### Select capital facility minor works projects: 2011 – 13 *Planned for completion in the 2011 - 2013 biennium*

	Project budget	Description
<b>Projects addressing occupant safety</b>		
Arlington Sand Shed Replacement	\$121,000	S/CC
Dayton Ave. Electrical Distribution System Assessment	\$16,500	S/CC
Central Park ADA Compliance	\$65,300	S/CC
Packwood Creosote Loading Dock Removal	\$6,600	EC
Bullfrog Pre-Wash Pad and Treatment System Improvements	\$106,000	EC
<b>Projects addressing preservation</b>		
Tumwater Materials Lab Roof Replacement	\$114,800	BP
Dayton Ave. Boiler Replacement	\$340,000	BP
Okanogan Well Improvements	\$74,300	BP
Chehalis Floor Moisture and Wall Repairs	\$464,000	BP
Olympic Region 06 Bldg Roof Replacement	\$105,000	BP
<b>Projects addressing operations</b>		
Shuksan Radio Tower	\$225,000	O
Schrag Radio Building	\$75,000	O

Data source: WSDOT Capital Facilities Office.

Note: Description codes indicate S/CC - Safety/Code Compliance; EC - Environmental Compliance; BP - Building Preservation; O - Operational.

### Accommodating emergent need projects

The prioritized list of minor works projects is affected when new unexpected projects are identified. These unplanned projects typically arise because an existing system has failed, or an immediate operational need has emerged. These projects are generally paid for through the deferral of other funded projects.

#### Chehalis siding project

As work was under way to correct floor moisture issues at the Chehalis area maintenance facility/project engineering office building, workers found extensive moisture damage and mold within the wall systems and repairs to correct the damage was required. The damage to the walls was caused by failures to the building's exterior systems. About \$240,000 in prioritized minor works projects must be deferred to fund this emergent need.



*Chehalis AMF/PE office building. Above: damaged walls can be seen throughout. Right: repairs to the damaged walls are under way.*

## Operating Program

### Major upgrade and replacement projects

Facility projects range from minor remodels to large-scale site acquisition and commercial development. Projects valued at \$20 million or more are typically Regional Complex replacement projects, such as the Olympic Region Headquarters and the Vancouver Light Industrial Replacement project. Projects valued at more than \$5 million are generally large maintenance facility such as the Northwest Region maintenance facility replacement project. Projects under \$5 million are smaller scale, such as replacement of the Hazel facility and the Sekiu building.

Projects over \$1 million are typically regarded as facility replacement or major upgrade projects needing line item appropriation; they are generally requested separately using OFM pre-design study guidelines. No facility replacement or major upgrade projects are planned for 2011-13.

### Capital facility replacement costs

*Estimated costs as of June 2010*

Project type	Value
Projects worth less than \$5 million	\$42,294,000
Projects worth between \$5 and \$19 million	\$121,041,000
Projects worth more than \$20 million	\$117,100,000

Data source: WSDOT Capital Facilities Office.

### Operating program addresses facilities maintenance

Daily operations and maintenance activities help keep WSDOT buildings and structures open for use. Implementation of a coordinated statewide facility maintenance system has allowed WSDOT to benchmark and identify critical equipment and systems, outline required maintenance schedules, and develop predefined levels of service. Elements of this program are used to evaluate, quantify, and provide funding to each region for daily facility maintenance and operational needs.

To further refine and prioritize work, WSDOT reassessed levels of service and developed methods to measure work performance. For example, quarterly preventative maintenance activities achieved are compared to planned activities, allowing WSDOT to better understand completion rates. This data will allow the agency to prioritize future allocation and workforce needs.

### Preventive maintenance

Preventive maintenance is regularly scheduled maintenance work necessary to prevent equipment breakdown and to maintain proper facility and equipment operations.

Inspection, calibration, adjustment, cleaning, lubrication, and parts replacement are all components of preservation work. The most important aspect of such maintenance is that it is planned work: identifying need, then maintaining and replacing items before a failure occurs.

To mitigate equipment failures and manage preventive maintenance, WSDOT uses a Computerized Maintenance Management System (CMMS). Each building system and/or piece of equipment associated with a site or building is inventoried and maintained in the CMMS system with an assigned level of priority, or criticality. Assigning a criticality level to systems and equipment helps WSDOT prioritize preventive maintenance activities and assists in communicating which activities are funded.

Criticality levels are prioritized by nine categories (see table below). Failure to complete life safety (10) or code compliance (9) activities could jeopardize employee health or safety, while categories 8, 7, and 6 ensure operation of critical systems. Categories 5 and below are not funded within the current budget.

### Preventative Maintenance Criticality Matrix

Funded criticality	Activities
<b>10 - Life safety</b>	Hazardous building or site conditions that jeopardize life safety of occupants and impacts building occupancy
<b>9 - Code compliance</b>	Mandated compliance with local, state or federal building regulations
<b>8 - Critical systems</b>	Prevention of serious facility deterioration and significantly higher costs if not immediately addressed
<b>7 - Environmental compliance</b>	Mandated compliance with local, state, or federal environmental regulations, which do not impact building occupancy
<b>6 - Primary systems</b>	Required to support primary systems and equipment. Comprises the majority of site and building equipment and systems

### Unfunded criticalities and activities

<b>5 - Secondary systems</b>	Work required to support secondary systems and equipment
<b>4 - Long-term cost effective measures</b>	Energy or functional conservation measures with a rapid return on investment
<b>3 - Non-structural maintenance</b>	Prevents facility component deterioration and/or potential loss of use or affects economies of operation
<b>2 - Appearance</b>	Required to maintain the image of WSDOT facilities

Data source: WSDOT Capital Facilities Office.

# Asset Management: Capital Facilities Annual Report

## Other Program Highlights

### Corrective maintenance

Corrective maintenance is one-time, emergency, breakdown, or corrective work, such as repairs to equipment bay doors, roofs, or plumbing, or replacing heating and ventilation equipment. These unexpected, urgent repairs require immediate response with labor and materials.

Increases in corrective maintenance costs are often linked to decreases in preventive maintenance efforts. Preventive maintenance should typically account for the largest part of a maintenance budget, and deferral of preventive activities tends to change that balance. Additionally, increasing failure rates of aging equipment and systems results in increased effort to replace and repair those components, which impacts the resources available maintain all equipment and systems.

### Preventive maintenance workload by criticality

2008-2010

Criticality	2008	2009	2010
10	12%	8%	8%
9	12%	14%	10%
8	27%	29%	28%
7	1%	3%	4%
6	48%	46%	50%
<b>Total</b>	100%	100%	100%

Data source: WSDOT Capital Facilities Office.

The table identifies the relatively consistent levels in WSDOT's facility maintenance efforts, by criticality. The results were derived by evaluating completed service requests on equipment or systems within a criticality and compared to the overall effort. WSDOT expends the largest effort in facility maintenance on equipment in criticality 6, which contains the most equipment in our inventory, and includes HVAC, lighting, and air compressors. By contrast, criticality 7 has fewest equipment/systems in the inventory (criticalities 6 – 10) and receives the smallest investment in effort.

### Other program highlights

#### Agency energy performance

All state agencies are required to report energy consumption, strategize energy conservation measures, and benchmark facility energy performance. WSDOT completed benchmarking its reporting public facilities, submitted strategies to reduce emissions by 2020, and has engaged in annual emissions reporting.

In its effort to track, measure and report energy reductions, the WSDOT is developing tools that will enable the agency to calculate energy savings related to projects. These tools can be applied to most projects, and will enable better quantification of how established reduction goals and emission reduction strategies are being met.

#### ADA transition plan update

In the 2007-2009 biennium, WSDOT hired a team of consultants to assess WSDOT-owned public access buildings statewide for compliance with the Americans with Disabilities Act.

As a basis, the 2009 WSDOT Statewide Capital Facilities ADA Transition Plan identified 221 non-compliant capital facilities items with an estimated cost of \$167,000 needed to bring them up to code. Sixty of these items were addressed operationally or were determined to be not applicable.

With the addition of four items at the Central Park Maintenance Facility, 19 items remain, and they will be complete before July 31, 2012.

### WSDOT Facilities and Lease Board

In the 2011-13 biennium there is a requirement under Section 604 of the final Transportation Budget Bill (ESHB 1175), which requires a plan to be developed to improve the oversight of departmental facilities assets including owned, leased, tunnel, bridge, maintenance, traffic management centers, and ferries facilities. The plan must be submitted to the governor and the joint transportation committee by September 1, 2012.

To improve oversight of department facilities, WSDOT has created a Facilities and Lease Board to ensure that the department is transparent and proactive in identifying and implementing cost-effective solutions for ongoing and future facilities needs. WSDOT Executive Order E 1079.00 details the purpose and responsibilities of the Facilities and Lease Board.

Included in this effort is the considerations of the Workforce Business Strategy impact on facilities, which details WSDOT's future plans to eliminate a number of regional offices over the next several years. This is expected to have a low impact on WSDOT owned capital facilities, as most of the offices to be closed are leased space. As these leases are terminated, some staff may be consolidated into remaining WSDOT owned spaces.