



STATE OF WASHINGTON
DEPARTMENT OF HEALTH
Olympia, Washington 98504

December 2016

Dear Ms. Albert:

Attached are the Department of Health's (DOH) Executive Order 12-06 Reporting Form and the Agency Progress Checklist.

Tumwater DOH worked with the building owner, Vine Street Inc. to have an energy audit performed on our four leased facilities in Tumwater. The audit identified several opportunities to reduce our consumption of electricity.

In 2015, we completed the retrofiting of lighting in the parking lots and in our parking garage with LED fixtures that are motion activated. Implementation of the HVAC upgrade has begun at the Tumwater campus and will be completed within the next year.

The Public Health Lab (PHL) has upgraded the HVAC systems in the Microbiology (M-wing) and Environmental Laboratory (E-wing) wings from constant volume systems to variable air volume systems. The Air Handling Units (AHUs), installed in 1985, were replaced with Heat Recovery Units (HRUs). Also installed in the HVAC upgrade was a chilled beam system that reduced the size of the new HRUs required for cooling.

Earlier this year, McKinstry conducted an energy audit at the Tumwater campus. We expect to receive the results and begin implementing recommended improvements to further decrease our energy usage in the upcoming years.

In addition DOH Tumwater campus will be updating the building use guidelines to include instructions to employees regarding turning off electronics, overhead lighting, etc. at the end of the work day. We will also continue to work with our Health Technology Solutions and Procurement offices to ensure we are purchasing energy star rated appliances and equipment when available.

We will continue these and other efforts in support of Executive Order 12-06. If there are any questions regarding our report or our proposed activities, please feel free to contact Kendra Morrison at (360) 236-3783 or at kendra.morrison@doh.wa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Jessica Todorovich".

Jessica Todorovich
Chief of Staff

Executive Order 12-06 Report

ACHIEVING ENERGY EFFICIENCY IN STATE BUILDINGS

December 2016

Agency Name:	WA State Department of Health
Agency Point of Contact:	Kendra Morrison
Point of Contact Title:	Business Services Manager
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Describe benchmarking, metering, audits, and energy retrofits completed by the agency in 2012 through 2016 to meet the requirements of EO 12-06. What percentage of agency owned square footage has been audited (all systems) and all life-cycle cost effective measures installed, since 2012?

Tumwater –

Tumwater DOH worked with the building owner, Vine Street Inc. to have an energy audit performed on our four leased facilities in Tumwater. The audit identified several opportunities to reduce our consumption of electricity.

In 2015, we completed the retrofitting of lighting in the parking lots and in our parking garage with LED fixtures that are motion activated. By 2017 we will complete the HVAC upgrades identified in the energy audit.

Some of our current work includes;

- Updating the HVAC units
- Removal of thermostats from exterior walls
- Implementing web based controls
- Installing new exhausts fans
- Installing occupancy sensors in conference room and select offices
- Standardizing set points to 70 degrees (+ or – 2 degrees)
- Updating the building use guidelines
- Removing forced air heaters (unless exception request is approved)
- Purchasing of energy star rated appliances and equipment

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Shoreline –

The Public Health Lab (PHL) in Shoreline, has upgraded the HVAC systems in the Microbiology (M-wing) and Environmental Laboratory (E-wing) wings from constant volume systems to variable air volume systems. The Air Handling Units (AHUs), installed in 1985, were replaced with Heat Recovery Units (HRUs). Also installed in the HVAC upgrade was a chilled beam system that reduced the size of the new HRUs required for cooling.

Installed a new electrical metering system using the “Skyspark” energy monitoring program. Installed metering system includes metering of all major mechanical systems, i.e. chiller plant, HRUs, individual wing monitoring, main electrical switchgear, and plugs in the laboratory wings.

All fluorescent T12 ceiling fixture lamps have been replaced with T8 lamps. This change also included changing of the ballast.

All interior/exterior recessed lighting has been replaced with LED lighting. All parking lot lighting has been changed to LED lighting.

Part of the old pneumatic Building Automation System (BAS) has been replaced with a new Direct Digital Control (DDC) system. The existing M, B, and E-wings, Chiller Plant, and emergency generator system are all on the new BAS. The new BAS allows for more control over all systems such as night time setbacks and changes in scheduling. Trending of systems allows maintenance to look for systems not performing to design specifications.

An energy audit was completed by McKinstry in 2014 which included EUI savings from the E-wing HVAC Upgrade and Facility Improvement Measures for future energy savings. Total Energy Utilization Index (EUI) has dropped from 263.7 to 220.4.

Describe benchmarking, metering, audits, and energy retrofits that the agency plans to implement in the next 5 years to meet the requirements of EO 12-06. What percentage of agency owned square footage will be audited (all systems) and all life-cycle cost effective measured installed, from 2012 – 2022?

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Tumwater –

- 2016 McKinstry will complete an energy audit.
- From that audit opportunities will be identified and implemented where appropriate and as funds are available.

Shoreline –

- Conduct an Electrical Survey and add lights and the support wings to the existing metering system.
- Use the “Skyspark” metering system to determine which laboratory wings use the most energy and determine which control methods work best.

Describe how the agency used Energy Star Portfolio Manager benchmarking in lease negotiations for new or renewed leases in 2012 – 2016, and how benchmarking will be used in future leased negotiations:

Tumwater –

All current Tumwater facilities achieve an acceptable energy star rating, as a result this was not something negotiated as part of our lease renewal conversations.

Shoreline –

PHL in Shoreline is an owned facility, as a result – *Not Applicable*

Describe actions that will be taken in 2017 to save energy through operational changes and continuous monitoring using Portfolio Manager. Describe how you will engage occupants and staff to reduce energy use in the next 5 years:

Agency Wide –

- Update the building use guidelines to include recommendations regarding turning off electronics, overhead lighting, etc. while not occupying a workspace.
- Continue to work with Health Technology Solutions and Procurement to ensure we are purchasing energy star rated appliances and equipment when

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available.

Shoreline –

- Air-change Rate Reduction in labs/Laboratory Air Quality monitoring – This will allow the PHL to reduce air changes per hour (ACH) from the nominal 12 ACH to approximately 6 ACH through the monitoring of air quality.
- Upgrade constant volume (CV) laboratory hoods to variable air volume (VAV) in all laboratories. Include common manifold for hoods with VFDs controlled exhaust fans.
- New laboratory additions will include metering, air quality monitoring, and HVAC commissioning.
- Create solar design for at least 10% of energy costs. This could include both PV panels and hot-water pre-heat panels.
- Provide night-time set-backs in B-wing containment lab.
- Upgrade HVAC system and controls in support wings from pneumatic to DDC.
- Upgrade Older HVAC controls – We will upgrade the old BAS system to the newer system in the NBS laboratory.
- Central Boiler Plant – Will allow PHL to switch from steam to hot water for heat. Utility cost savings would be achieved by switching to a cheaper fuel, gas is currently less than steam, and hot water heat is more efficient.
- Continue to replace old electric motors with newer energy efficient motors.
- Re-commission laboratories as required.
- Creating energy efficient standards when ordering laboratory equipment for replacement of older equipment, especially -80 & -20 freezers.
- Provide policies to turn off equipment in laboratories and offices when leaving at night.
- Create energy conservation challenges between the various laboratory wings.

Attachment:

A - Agency Progress in Implementing EO 12-06 (by building)

Executive Order 12-06 Reporting Form

Resources:

Go to the DES Portfolio Manager webpage for a link to EO 12-06, previous reports, RCWs, EPA resources and training, Step by Step Instructions, and Frequently Asked Questions at <http://des.wa.gov/services/facilities-leasing/energy-program/energy-star-portfolio-manager>