

STATUS REPORT
FY 20-21

VIII. 15% LOWER ENERGY USAGE INTENSITY BY 2025





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Target Actions

- Implement Cost Effective Conservation Investments
- Expand Campus Meter Monitor O&M Program
- Purchase Only Energy Star Appliances

Sustainability Plan guiding principle

Use resources responsibly

BASELINE METRIC(S):

- Net energy usage intensity reduction
- Reduction of annual costs
- Percentage of Energy Star Appliances

Q1 ACTIVITY:

- Contact and socializing of the project to leadership and vendors
 - Creating a working group
- Configuration of Hardware and the Population Health building
- Creating a reporting mechanism

CHALLENGES:

- The primary challenge is funding, particularly given the pandemic.
- We have concerns about the trade resources (availability of staff to do the work)

Action Owner:	Norm Menter
Target Team:	Claudia Christensen Aleanna Kondelis - action 3

ACTION STATUS:



Action: Implement Cost Effective Conservation Investments	
Action: Expand Campus Meter Monitor O&M Program	
Action: Purchase Only Energy Star Appliances	

RISKS:

We have an upcoming Department of Commerce Clean Building Rule that will need to be incorporated for our campus. We have been working with other universities and colleges in the state to determine how this will be implemented for us.

NEXT QUARTER ACTION:

- Formalize a working team to develop communication/education plan.
- Have MBCx process become online and operational by the end of the year.
- Begin executing projects.



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Target Actions


- Implement Cost Effective Conservation Investments
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Sustainability Plan guiding principle


Use resources responsibly

STEPS STATUS:

<p>Action 1: Implement Cost Effective Conservation Investments</p>	<p>Step 1: Conservation projects</p>	<p>Step 2: WCUP project</p>	<p>Step 3: Major renovation/deep retrofit</p>
<p>Action 2: Expand Campus Meter Monitor O&M Program</p>	<p>Step 1: Hardware/software</p>	<p>Step 2: Staffing</p>	<p>Step 3: Future investment</p>
<p>Action 3: Purchase Only Energy Star Appliances</p>	<p>Step 1: Communications</p>	<p>Step 2: Reporting</p>	<p>Step 3: Promoting</p>

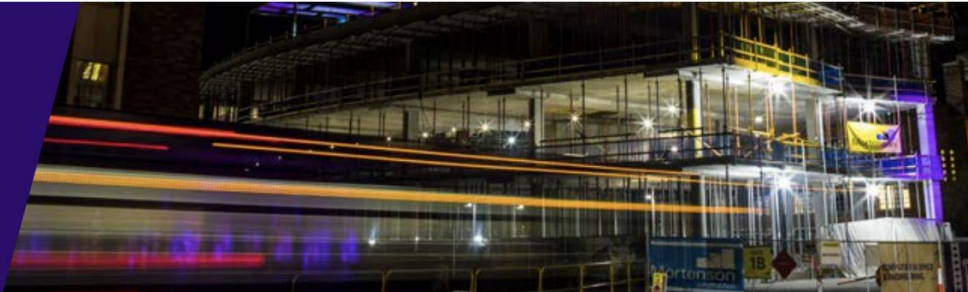
 **Note:** Copy and Paste the appropriate 'status icon' into the upper right hand corner of each **step** above to complete the Steps Status.





ACTION:

Implement Cost Effective Conservation Investments



Steps we will take in FY 2021

1. Execute 17 minor conservation projects in 32 campus buildings avoiding an estimated \$1 million annual utility cost (starting mid FY22). Estimated capital cost will be \$3.2M, of which \$1.6 million can be recovered in utility rebates.
2. Begin initial design, permitting and equipment procurement for a Phase II expansion of the West Campus Utility Plant. This project will pilot seasonal hot water energy transfer to a select group of high-EUI buildings in west and south campus, using a new, 1,300 ton heat recovery chiller.
3. Conduct in-house energy engineering analysis in coordination with the One Capital Plan and other initiatives to identify one or more co-funding opportunities for a major renovation or deep retrofit in FY2022-FY2023, that can support future revolving fund revenues.

Statuses and linkages

From 2015 to present, the resource conservation program has invested \$5 million in 32 projects capturing \$2.2 million in utility rebates and avoiding \$624,000 in annual utility cost. These past and future building efficiency activities incrementally bring the campus into compliance with Washington State Clean Buildings Code, City of Seattle Benchmarking and Tune-up Ordinances. These Actions also support the overarching initiative to meet State greenhouse gas reduction targets (see Target X below).

Future investments must be coordinated and augmented with the One Capital Plan, facility preservation fund and program renewal investment funds. Additionally, resource conservation investments must be coordinated with self-sustaining units' capital investment programs.

Financing



A centralized energy management revolving investment fund has been conceptually approved by senior leadership. Currently, the detailed design of the fund is underway. Assuming the conceptual intent is borne out in the detailed design and approved by UW decision makers, the revolving fund will be seeded with sufficient funding to generate future revenue.

For Phase II expansion of the West Campus Utility Plant, an ongoing feasibility study suggests a \$1.2M utility cost avoidance on an \$8M capital investment. \$1.8 million of the initial investment is required in FY2021.

Metrics

- Net energy usage intensity (EUI) reduction (weather and gross square footage use intensity normalized).
- Return on investment (lifetime utility cost avoided/net value invested).
- Simple payback (net capital invested/annual utility cost avoided).

This action may impact STARS credits OP-2 *Greenhouse Gas Emissions* where UW shows a points gap of 3.91, and OP-5 *Building Energy Efficiency* where UW shows a points gap of 2.16.

3.91 AAHSE STARS POINTS OPPORTUNITY

2.16 AAHSE STARS POINTS OPPORTUNITY

NO
PROGRESS

ON TIME

SOME
PROGRESS

Implement Cost Effective Conservation Investments

STEP 1: Conservation Projects

Execute 17 minor conservation projects in 32 campus buildings avoiding an estimated \$1 million annual utility cost (starting mid FY22). Estimated capital cost will be \$3.2M, of which \$1.6 million can be recovered in utility rebates

ACTIONS THAT OCCURRED/ONGOING JULY-SEPTEMBER 2020:

- The scope for each of these 17 projects has been fleshed out
- Shops/vendors have been contacted and are developing proposals
- We've made significant progress in funding (local funds have been allocated, have set up budgets and have been working on creating a Green Revolving Fund that can be used for these projects)

CHALLENGES ENCOUNTERED JULY-SEPTEMBER 2020:

- The primary challenge is funding, particularly given the pandemic.
- We have concerns about the trade resources (availability of staff to do the work)

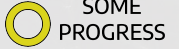
PLAN FOR OCTOBER 2020-DECEMBER 2020:

- Make the Green Revolving Fund active to supply the remaining funded needed.
- Begin executing these projects

Implement Cost Effective Conservation Investments

NO
PROGRESS

ON TIME

SOME
PROGRESS

STEP 2: WCUP project

Begin initial design, permitting and equipment procurement for a Phase II expansion of the West Campus Utility Plant. This project will pilot seasonal hot water energy transfer to a select group of high-EUI buildings in west and south campus, using a new, 1,300 ton heat recovery chiller.

ACTIONS THAT OCCURRED/ONGOING JULY-SEPTEMBER 2020:

- We're socializing this project with senior leadership
- We're making sure the operation staff are comfortable with the scope of the work
- Engineering Services is providing comments on the project
- This project is intended to be one of the first that will ask for a significant amount of debt: \$3 million from the Green Revolving Fund in addition to \$2 million from minor capital funds. This project works well as a candidate for the Revolving Fund since it will create significant revenue from avoided utility costs.

CHALLENGES ENCOUNTERED JULY-SEPTEMBER 2020:

Securing the funding

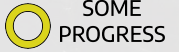
PLAN FOR OCTOBER 2020-DECEMBER 2020:

This project has a significant design component. We're now creating the requirements for the design and will use the engineering scope of work to inform a request for a vendor to do the design work. We would like to start design during this time frame (provided we get the needed approvals). If we can't use an existing contract, we will start the competitive process to choose a vendor during this time frame).

Implement Cost Effective Conservation Investments

NO
PROGRESS

ON TIME

SOME
PROGRESS

STEP 3: Major Renovation/Deep Retrofit

Conduct in-house energy engineering analysis in coordination with the One Capital Plan and other initiatives to identify one or more co-funding opportunities for a major renovation or deep retrofit in FY2022-FY2023, that can support future revolving fund revenues.

ACTIONS THAT OCCURRED/ONGOING JULY-SEPTEMBER 2020:

The planning process to identify which projects are priority is ongoing (it is being hindered by the need to work on other priorities and address the financial aspect of this work).

UWF Campus Stewardship Committee has formed to ensure coordination across the various fund sources with the goal of ensuring that all the projects are optimized to support the SAP as well as other goals such as deferred maintenance, academic needs, and state funding priorities. This is also an opportunity to align and leverage other fund sources for projects that incidentally support SAP goals.

CHALLENGES ENCOUNTERED JULY-SEPTEMBER 2020:

There are a lot of business processes that support this work and it takes time to work through the complexities involved.

PLAN FOR OCTOBER 2020-DECEMBER 2020:

- Put in place a well-coordinated process by November.
- We can begin working on looking forward to the next funding cycle to scope projects to leverage major renovations for a deep retrofit.
- The Energy Leader will come on board creating an opportunity to engage in a more comprehensive way (i.e. alignment with the Utilities Recapitalization plan).

METRICS & LINKAGES:

The metrics for this action include:

- Net energy usage intensity (EUI) reduction (weather and gross square footage use intensity normalized)
- Return on investment (lifetime utility cost avoided/net value invested)
- Simple payback (net capital invested/annual utility cost avoided)

METRICS:

We have created the metrics in the process of developing the Green Revolving Fund financial model. This model allows us to measure the benefit of projects and programs against campus EUI (energy use intensity), GHG emission avoidance, and utility budget reduction to screen projects and report on the actual realized benefits.

LINKAGES:

Make sure finance team and campus stewardship are involved, getting Treasury & Provost on board.

ACTION:


Expand Campus Meter Monitor O&M Program



Steps we will take in FY 2021

1. Fund \$250k to purchase, configure, and document equipment, and train UW Facilities operators. Existing staff time will be turned toward new information technology hardware and software per May 11, 2020 recommendations by the UW Meter Monitor Team. Operationalize the Meter Monitor Program's "MBCx process" in seven additional campus buildings.
2. Fund \$250k in on-going annual program operations & maintenance, hire a Meter Monitor Program Manager, operationalize MBCx process in 14 buildings by end of FY2021.
3. Conduct analysis for future Meter Monitor investment strategy, including investments in additional steam and water meters at all state funded buildings.

Financing

 Financing for this Action is shared with *Action Implement Cost Effective Conservation Investments* above.

Step 3 will likely identify a funding gap in the \$6 million to \$7 million range for some metering equipment that cannot be fully covered with the associated return on investment.

Metrics

- Maintenance of net EUI reduction over time.
- Reduction of annual Operations and Maintenance cost, divided by work order cost of implementing target EUI outcome.

This action may induce indirect points gains in STARS credits OP-4 *Building Operations and Maintenance* where UW shows a point gap of 3.50, and OP-5 *Building Energy Efficiency* where UW shows a point gap of 2.16.

3.50 AAHSE STARS POINTS OPPORTUNITY

2.16 AAHSE STARS POINTS OPPORTUNITY

Statuses and linkages

The Meter Monitor Program is an extension of a American Recovery and Reinvestment Act legacy Smart Grid program.

In addition to ensuring the persistence of utility costs avoided by the Action Implement Cost Effective Conservation Investments above, this Action is an early contributor to the Portfolio Management Strategy that is a UW Facilities strategic priority for FY2021. This Action will significantly improve UW Facilities operational and maintenance efficiency.

Expand Campus Meter Monitor O&M Program

NO
PROGRESS

ON TIME

SOME
PROGRESS

STEP 1: Hardware/software

Fund \$250k to purchase, configure, and document equipment, and train UW Facilities operators. Existing staff time will be turned toward new information technology hardware and software per May 11, 2020 recommendations by the UW Meter Monitor Team. Operationalize the Meter Monitor Program's "MBCx process" in seven additional campus buildings.

ACTIONS THAT OCCURRED/ONGOING JULY-SEPTEMBER 2020:

- We're in the process of configuring the hardware, now we need to load the software (this will happen over the next 30-60 days).

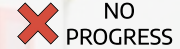
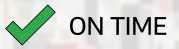
CHALLENGES ENCOUNTERED JULY-SEPTEMBER 2020:

We had to complete funding and procurement processes. They aren't yet resolved, but are well underway.

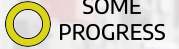
PLAN FOR OCTOBER 2020-DECEMBER 2020:

The system will come online and be operational. We'll retire the old EEM system by the end of the year.

Expand Campus Meter Monitor O&M Program

NO
PROGRESS

ON TIME

SOME
PROGRESS

STEP 2: Staffing

Fund \$250k in on-going annual program operations & maintenance, hire a Meter Monitor Program Manager, operationalize MBCx process in 14 buildings by end of FY2021.

ACTIONS THAT OCCURRED/ONGOING JULY-SEPTEMBER 2020:

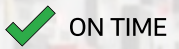
- The MBCX (Monitoring-Based Commissioning) process is ongoing. We're currently configuring the Population Health Building. Kincaid and Parrington will start soon. We'll have real time monitoring of those systems when they become operational in the fall. (We currently have 7 buildings configured so this will be buildings #8-10).

CHALLENGES ENCOUNTERED JULY-SEPTEMBER 2020:

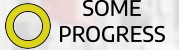
We continue to engage with PDG (Project Development Group) to raise awareness and work out the bugs in the development process to reinforce the program with construction and project managers.

PLAN FOR OCTOBER 2020-DECEMBER 2020:

We'll have 12 buildings up and running by the end of the year.

NO
PROGRESS

ON TIME

SOME
PROGRESS

Expand Campus Meter Monitor O&M Program

STEP 3: Future Investment

Conduct analysis for future Meter Monitor investment strategy, including investments in additional steam and water meters at all state funded buildings.

ACTIONS THAT OCCURRED/ONGOING JULY-SEPTEMBER 2020:

This work hasn't reached the front burner due to the pandemic and the focus on creating the Revolving Fund, but work has been done: CUO (Campus Utilities & Operations) has updated their metering specifications and standards, which is a foundational element of creating a plan for prioritizing the mixed group of buildings to install steam and water metering in. The water meters have been the subject of planning efforts as we build alignment with organizations within UWF that need to support more robust water metering.

CHALLENGES ENCOUNTERED JULY-SEPTEMBER 2020:

We've uncovered a gap: to date CUO is not funded to support water metering. The meters have been maintained and operated by the outdoor zone of FMC (Facilities Maintenance & Construction). They've been only focused on irrigation water metering. No one has seen it as their job to meter water on campus. We have work to do at the leadership level to make decisions about owning and operating the system.

PLAN FOR OCTOBER 2020-DECEMBER 2020:

Complete the work of developing an ROI for water metering (we anticipate that it will be robust because it will allow a deduct on sewer charges).

METRICS & LINKAGES:

The Meter Monitor Program is an extension of a American Recovery and Reinvestment Act legacy Smart Grid program. In addition to ensuring the persistence of utility costs avoided by the Action Implement Cost Effective Conservation Investments above, this Action is an early contributor to the Portfolio Management Strategy that is a UW Facilities strategic priority for FY2021. This Action will significantly improve UW Facilities operational and maintenance efficiency.

METRICS:

- See Action 2 step 3

We're moving toward more precise EUI calculations. Our engineers are developing matrices showing how these various regulation requirements align with each other and our campus data systems.

LINKAGES:

This is aligned with code compliance.

Besides informing the revolving fund and creating metrics for internal coordination we're also creating metrics for State and Local regulatory reporting requirements (Building Tune-up Ordinance, WA State Clean Buildings Code, State GHG Emission Reporting).

ACTION:

Purchase Only Energy Star Appliances



Steps we will take in FY 2021

1. Develop regular communications highlighting Procurement guidelines for Energy Star purchasing requirements.
2. Develop annual reporting for Energy Star appliances.
3. Work with UW Facilities and HFS to promote Energy Star appliances for all new buildings.

Financing



No additional financing needed in FY 2021.

Metrics

- Percentage of Energy Star appliance purchases compared to total spend on a quarterly basis.

This action may impact STARS credit OP-5 *Building Energy Efficiency* where UW shows a points gap of 2.16.

Statuses and linkages

Procurement Services promotes environmentally preferred purchasing (EPP) as defined by the National Associate of Educational Procurement, meaning that environmental and social considerations are “taken with equal weight to the price, availability and performance criteria that colleges and universities use to make purchasing decisions.”

The University's buying staff leverage current supplier relationships to raise awareness of the purchasing considerations necessary to reduce our environmental impact and to maximize resource efficiency.

In order to further the University's commitment to sustainability, individual departments are encouraged to purchase recycled and environmentally preferable products, when quality, performance and price are comparable to alternatives.

Procurement works with manufacturers and Seattle City Light to identify equipment subject to Seattle City Light energy rebates.

Purchase Only Energy Star Appliances

NO
PROGRESS

ON TIME

SOME
PROGRESS

STEP 1: Communications

Develop regular communications highlighting Procurement guidelines for Energy Star purchasing requirements.

ACTIONS THAT OCCURRED/ONGOING JULY-SEPTEMBER 2020:

- We're organizing the team to work on this action
- Guidance and info about energy star requirements along with ultra-low freezers (including a link to qualified models) is published here:
<https://finance.uw.edu/ps/resources/sustainable-green-purchasing>

CHALLENGES ENCOUNTERED JULY-SEPTEMBER 2020:

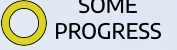
Consider engaging students in this effort

PLAN FOR OCTOBER 2020-DECEMBER 2020:

- Formalize Team and develop communication/education plan
- Ensure all sourcing and contract documents incorporate energy star as a mandatory requirement
- Expand communication regarding ultra-low freezer purchases and City Light Rebates

NO
PROGRESS

ON TIME

SOME
PROGRESS

Purchase Only Energy Star Appliances

STEP 2: Reporting

Develop annual reporting for Energy Star appliances.

ACTIONS THAT OCCURRED/ONGOING JULY-SEPTEMBER 2020:

- Establish a reporting mechanism and centralized reporting location.

CHALLENGES ENCOUNTERED JULY-SEPTEMBER 2020:

This should be a tri-campus activity- engage students where possible

PLAN FOR OCTOBER 2020-DECEMBER 2020:

Purchase Only Energy Star Appliances

NO
PROGRESS

ON TIME

SOME
PROGRESS

STEP 3: Promoting

Work with UW Facilities and HFS to promote Energy Star appliances for all new buildings.

ACTIONS THAT OCCURRED/ONGOING JULY-SEPTEMBER 2020:

- Procurement solicitations/purchases shall include Energy Star as a mandatory requirement.
- Guidance published on Procurement Services Website
- Contract suppliers are required/where feasible to highlight energy star products in their on-line catalogs

CHALLENGES ENCOUNTERED JULY-SEPTEMBER 2020:

PLAN FOR OCTOBER 2020-DECEMBER 2020:

- Obtain reports of energy star products and purchases from contract suppliers.
- Continue to identify additional products/equipment subject to energy saving rebates from City of Seattle

METRICS & LINKAGES:

Procurement Services promotes environmentally preferred purchasing (EPP) as defined by the National Associate of Educational Procurement, meaning that environmental and social considerations are “taken with equal weight to the price, availability and performance criteria that colleges and ACTION: Purchase Only Energy Star Appliances universities use to make purchasing decisions.” The University’s buying staff leverage current supplier relationships to raise awareness of the purchasing considerations necessary to reduce our environmental impact and to maximize resource efficiency. In order to further the University’s commitment to sustainability, individual departments are encouraged to purchase recycled and environmentally preferable products, when quality, performance and price are comparable to alternatives. Procurement works with manufacturers and Seattle City Light to identify equipment subject to Seattle City Light energy rebates.

METRICS:

Baseline Metric:

- Quantity and value of Energy Star products purchased year over year - Goal - 100%
- Quantity purchased and energy savings associated with Ultra-low freezers subject to City Light energy rebates measured annually.

LINKAGES:

