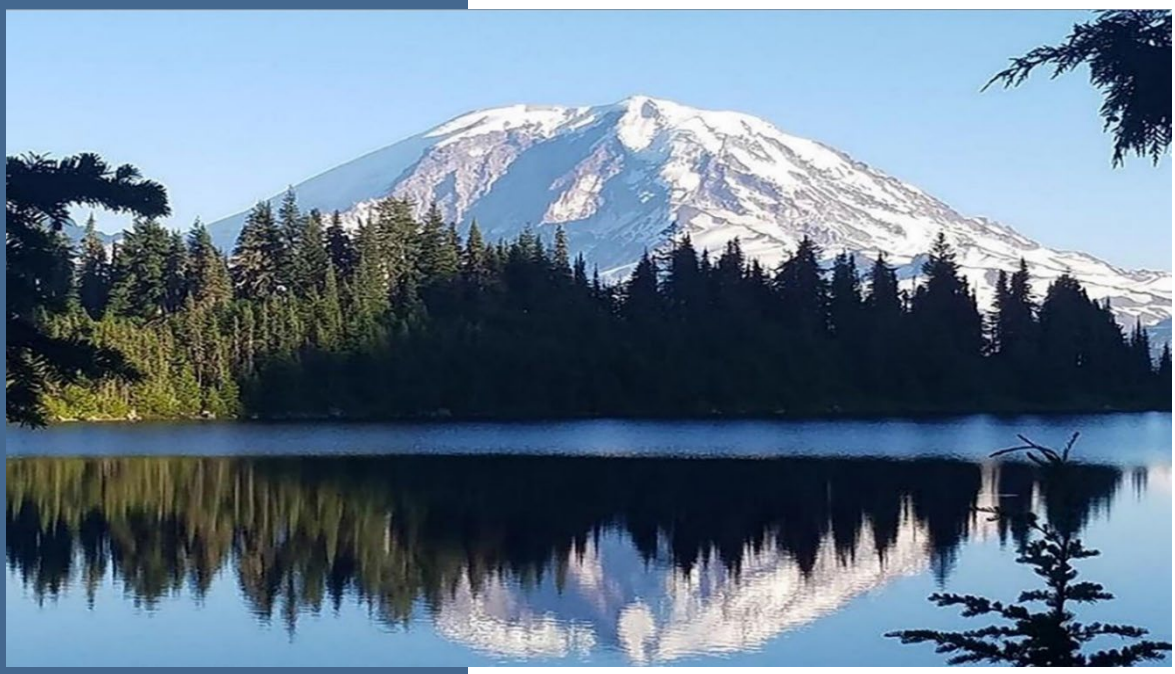


Reducing Greenhouse Gas Emissions in State Government

Climate Pollution Reduction Program
Washington Department of Ecology, Headquarters

State Efficiency and Environmental Performance Office
Washington State Department of Commerce

Olympia, Washington

March 2025, Publication 25-14-021

DEPARTMENT OF ECOLOGY
State of Washington

Washington State Department of Commerce

Publication Information

This document is available on the Department of Ecology's website at:
https://apps.ecology.wa.gov/publications/summarypages/2514021.html

Cover photo credit

- Standard Ecology image, 2019

Contact Information

Climate Pollution Reduction Program

Lacey Headquarters

P.O. Box 47600

Olympia, WA 98504-7600

Phone: 360-407-6800

Website[1]: Washington State Department of Ecology

ADA Accessibility

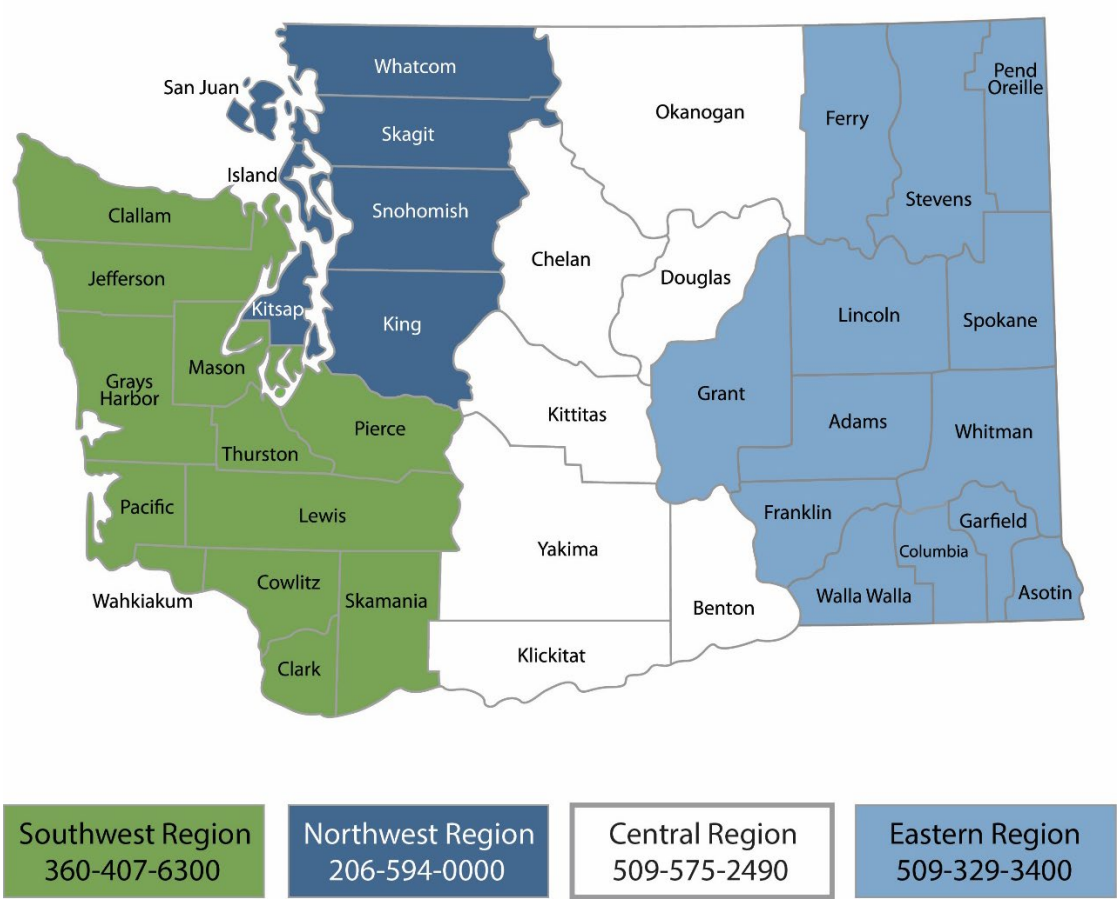
The Department of Ecology is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act, and Washington State Policy #188.

To request an ADA accommodation, contact Ecology by phone at 360-407-6831 or email at ecyadacoordinator@ecy.wa.gov. For Washington Relay Service or TTY call 711 or 877-833-6341. Visit Ecology's website for more information.

[1] www.ecology.wa.gov/contact

Department of Ecology's Regional Offices

Map of Counties Served



Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400

Region	Counties served	Mailing address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W. Alder St. Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N. Monroe St. Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 46700 Olympia, WA 98504	360-407-6000

Reducing Greenhouse Gas Emissions in State Government

Climate Pollution Reduction Program

Washington State Department of Ecology

Olympia, WA

March 2025 | Publication 25-14-021

Table of Contents

List of Figures and Tables

Figures

Tables

Acknowledgements

The authors of this report thank the following people for their contribution to this study:

Agency	Executive lead	Emissions reporter
Central Washington University	Jeremiah Eilers	Jeremiah Eilers
Community Colleges of Spokane	Andrew Lemberg	Reed Williams
Eastern Washington University	Mary Voves	Erik Budsberg
Office of Financial Management	Nona Snell	Nadia Sarno
Puget Sound Partnership	Brent Barnes	Brent Barnes
Seattle Community College	Julienne DeGeyter	Carolyn Burch
Spokane Community Colleges	Nichole Hanna	Kim Arman
The Evergreen State College	William Ward	Scott Morgan
University of Washington	David Woodson	Jessica Canet
Washington Department of Agriculture	Julia Terlinchamp	Tracie Lindeblom
Washington Department of Children, Youth, and Families	Rene Newkirk	Brandon Teffeteller
Washington Department of Commerce	Marissa VanHoozer	Tamara Roberts
Washington Department of Corrections	Chris Idso	Julie Vanneste
Washington Department of Ecology	James Pendowski	William Hannah
Washington Department of Enterprise Services	Maurice Perigo	David Baker
Washington Department of Fish and Wildlife	Addie Bash	Jennifer Bass
Washington Department of Health	Jeannie Beirne	Reed Williams
Washington Department of Labor and Industries	Doug Rohr	Mark Young
Washington Department of Natural Resources	Hilary Franz	Dylan Davis-Bloom
Washington Department of Social and Health Services	Kelly Lerner	Ann Brunt
Washington Department of Transportation	Kelly Woehler	Stephanie Ignell
Washington Department of Veterans Affairs	Yacob Zekarias	Carlos Chaidez
Washington State Liquor and Cannabis Board	Rachel Swanner	Tia Livingood
Washington State Parks and Recreation Commission	Ryan Karlson	Raechel Youngberg
Washington State Patrol	Captain Chris Old	Tawni Andrews
Washington State University	Joe Kline	Jason Sampson
Western Washington University	Joyce Lopes	Jeff Aslan

Executive Summary

In 2020, the Legislature and Governor Jay Inslee updated the State Agency Climate Leadership Act codified in RCW 70A.45.050 .[2] The Act directs state agencies, including universities, colleges, and community and technical colleges to lead by example in reducing their greenhouse gas emissions, compared to a 2005 baseline, and report on their progress every two years. This is part of Washington's comprehensive strategy to address climate change and achieve legal limits on statewide greenhouse gas emissions.

This report, which focuses on agency-reported emissions for 2022 and 2023, finds that the cumulative emissions of the 21 highest-emitting state agencies were 662,302 metric tons of carbon dioxide-equivalent (MT CO_2e) in 2022 and 667,175 MT CO_2e in 2023. These 21 agencies represented 93% of the emissions footprint captured in the original 2005 baseline.

Collectively, Washington state government has remained below its 2020 greenhouse gas emissions limit in each year since 2019. Emissions for state agencies in 2022 and 2023 were both 11% below the 2020 state government emissions limit of 747,181 MT CO_2e. The COVID-19 pandemic likely contributed in part to these reductions. Agency-reported emissions in 2022 and 2023 remained 16% lower than prior to the pandemic in 2019. State agencies must reduce their greenhouse gases by an additional 38%, or 183,705 MT CO_2e, to meet the 2030 limit of 483,470 MT CO_2e.

The same 21 agencies also submitted mitigation strategies covering short- and long-term greenhouse gas reduction interventions, barriers, and challenges, and planned mitigation actions to reduce greenhouse gas emissions for the next two biennia. The most common short-term strategies focused on facilities, transportation, and planning and budget development. Long-term strategies similarly focused on facilities and transportation and incorporated clean and/or renewable electricity. Barriers and challenges included lack of funding, lack of infrastructure, deferred maintenance, and insufficient electrical system capacity. Given the requirement for agencies to drop emissions by 38% by 2030, adequate funding and coordinated action should be prioritized by the Legislature and agency executive offices.

This document includes emissions and mitigation reports from 26 agencies, but only the emissions from the 21 agencies included in the original baseline count toward the state's emission limits. Reports for each agency are included in Appendix A.

[2] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.45.050

Introduction

The Washington State Department of Ecology's State Agency Greenhouse Gas Report Unit collects and summarizes greenhouse gas emissions data from the highest-emitting state agencies and compares to emissions limits established in statute.

RCW 70A.45.060(3)[3] states:

> By December 31 of each even-numbered year beginning in 2010, the department shall report to the governor and to the appropriate committees of the senate and house of representatives the total state agencies' emissions of greenhouse gases for 2005 and the preceding two years and actions taken to meet the emissions reduction targets.

This report fulfills this requirement.

RCW 70A.45.050[4] requires reporting agencies to submit greenhouse gas mitigation reports to the State Efficiency and Environmental Performance (SEEP) Office at the Washington Department of Commerce each even-numbered year starting June 1, 2022. These are included in this report as well.

Greenhouse gas limits

RCW 70A.45.050[4] codifies the current baseline for state agency emissions relative to their 2005 levels.[5] The 2005 baseline, reflecting emissions from the 21 largest agencies, is 879,036 MT CO_2e, or about 93% of all state agency emissions. State agencies are required to:

- By 2020, reduce emissions to 15% below 2005 levels (747,181 MT CO_2e).
- By 2030, reduce emissions to 45% below 2005 levels (483,470 MT CO_2e).

[3] https://app.leg.wa.gov/rcw/default.aspx?cite=70A.45.060
[4] https://app.leg.wa.gov/rcw/default.aspx?cite=70A.45.050
[5] The State Agency Climate Leadership Act passed in 2009 originally applied to 140 state agencies in Washington, including all administrative, legislative, judicial, and elected offices, boards and commissions, community and technical colleges, and universities. Emissions reports were submitted by 120 agencies for the first biennial report in 2010. The State Agency Climate Act greenhouse gas limits codified in RCW 70A.45.050 remained unchanged until 2020, when they were updated by Engrossed Second Substitute House Bill 2311 Laws of 2020, Chapter 79 Section 3 (https://lawfilesext.leg.wa.gov/biennium/2019-20/Pdf/Bills/Session Laws/House/2311-S2.SL.pdf?cite=2020%20c%2079%20s%203). In 2016, Ecology led an interagency working group to reexamine the law's reporting requirements to improve reporting efficiency and data quality, which determined that 22 agencies accounted for ~93% of state agency emissions. To minimize the reporting burden on small agencies, the interagency working group established a 2005 baseline focusing on a subset of agencies (https://apps.ecology.wa.gov/publications/documents/1802030.pdf). However, one of the 22 agencies (Highline College) has not reported since 2012, so only 21 threshold agencies report emissions. Additional agencies report voluntarily or as covered agencies under Executive Order 20-01 (https://governor.wa.gov/sites/default/files/exe_order/20-01%20SEEP%20Executive%20Order%20%28tmp%29.pdf). Additionally, greenhouse gas calculation methods and reporting conventions varied among biennial reports. Since 2019, agency reports have quantified operational emissions from energy consumption, solely.

- By 2040, reduce emissions to 70% below 2005 levels (263,711 MT CO_2e).
- By 2050, reduce emissions to 95% below 2005 levels (43,952 MT CO_2e) and achieve net zero greenhouse gas emissions by state government as a whole.

In recent years, 5 smaller agencies began reporting their emissions as well, although they do not all have 2005 baselines. The agencies that are included in the report are distinguished in varying ways as described in the following lists. Those marked with an asterisk are covered under Executive Order 20-01.

Agencies (16 total) included in the threshold with estimated 2005 baseline > 10,000 MT CO2e: Central Washington University, Department of Corrections*, Department of Enterprise Services*, Department of Fish and Wildlife, Department of Natural Resources, Department of Social and Health Services*, Department of Transportation*, Eastern Washington University, Seattle Community Colleges, Spokane Community College, State Parks and Recreation Commission, The Evergreen State College, University of Washington, Washington State Patrol*, Washington State University, Western Washington University.

Agencies (5 total) included in the threshold with estimated 2005 baseline > 5,000 MT CO2e: Department of Ecology, Department of Health*, Department of Veterans Affairs*, Labor and Industries*, Liquor and Cannabis Board*

Agency included in the threshold for which data is no longer reported: Highline Community College

Agencies covered by Executive Order 20-01 (5 total) not included in threshold: Department of Agriculture*, Department of Children Youth and Families*, Department of Commerce*, Office of Financial Management*, Puget Sound Partnership*

Each year, Ecology provides an excel calculator tool for state agencies to aggregate their emissions, as required under RCW 70A.45.060(1).[3] This tool estimates emissions from major sources based on energy consumed by the operation of buildings and transportation fleets. Agencies must return a completed spreadsheet to Ecology by June 30th of each year and Ecology aggregates the data from all reporting agencies for summary in this report. The individual greenhouse gas emission totals for each agency are included in the profiles provided in Appendix A.

Ecology collaborates with SEEP, which produces a template for state agencies to submit their greenhouse gas reduction strategies for this report. These reported strategies are summarized in the individual state agency profiles in Appendix A and provided word for word in Appendix B. The emissions calculator and reduction strategy template are available on Ecology's website.[6]

[6] https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/tracking-greenhouse-gases/state-agency-greenhouse-gas-reports

Greenhouse gases and emissions included

This emissions assessment relies on a bottom-up, consumption-based methodology, which accounts for operational emissions from energy used at each agency. State agencies reported on their largest sources of emissions from energy consumption, including:

- Natural gas, electricity, and other fuels used in buildings and stationary equipment owned or operated by the state agency
- Diesel, gasoline, and other fuels used in vehicles and non-stationary equipment owned and operated by the state agency, including light and heavy duty, on-road vehicles, non-road or off-road vehicles, ferries, boats, and aircraft

The data provided by state agencies is further separated into the three main greenhouse gas gases: carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Greenhouse gas emission assessments use a common metric—carbon dioxide equivalent (CO_2e)—to report greenhouse gas emissions. For any quantity and type of greenhouse gas, CO_2e signifies the amount of carbon dioxide that would have the same global warming impact. This report uses the common abbreviation for metric tons of carbon dioxide equivalent, which is MT CO_2e. The Global Warming Potential (GWP) is the factor used to convert all greenhouse gases to this common unit. GWP values are developed and updated by the Intergovernmental Panel on Climate Change (IPCC) based on emerging science. Washington used GWP values for a 100-year time horizon (GWP_{100}) from the Fourth Assessment Report of the Intergovernmental Panel on Climate Change[7] for this report where: GWP_{100} for CO_2 = 1, GWP_{100} for CH_4 = 25, and GWP_{100} for N_2O = 298.

Emissions Summary for State Agency Operations

The 21 state agencies analyzed for this report emitted a total of 667,175 MT CO_2e in 2023, which is a 1% increase from the 2022 total of 661,1225 MT CO_2e (Figure 1). State agencies must decrease emissions by an additional 183,705 MT CO_2e (38% of 2023 emissions) to meet the 2030 limit of 483,470 MT CO_2e (or 45% below 2005 levels).

[7] https://www.epa.gov/ghgemissions/understanding-global-warming-potentials

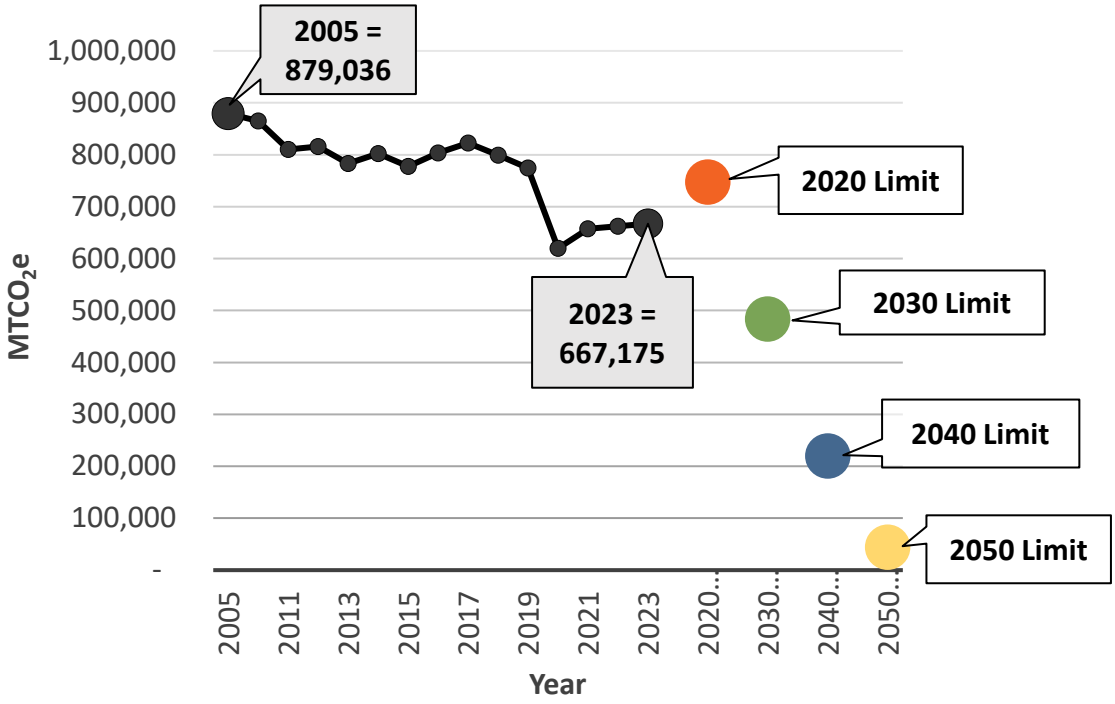


Figure 1: Greenhouse gas emissions from Washington state government operations, 2005-2023, and emission limits through 2050.

In 2023, 14 of the 21 reporting agencies' emissions were below their individual 2020 limits. Total emissions from all agencies combined were 11% below the 2020 limits. The COVID-19 pandemic caused a persistent drop in agency-wide emissions. In 2023, agency emissions remained 16% lower than they were prior to the pandemic in 2019. However, it is notable that prior to 2019, 12 agencies had already met the 2020 limits, and all agencies combined were just 4% over the limit. In 2023, six agencies had already achieved their 2030 limits.

Looking at the data across sectors over the last five years (Table 1 and Figure 2), buildings decreased the most in terms of total emissions (in MT CO_2e), followed by ferries. In contrast, ferries dropped at the fastest rate with buildings following at 24% and 18%, respectively. Non-ferry transportation emissions have remained relatively steady throughout this period.

Table 1: Emissions by sector from 2018 to 2023 in MT CO_2e.

Sector	Emissions 2018	Emissions 2023	Reduction 2018-2023	2023 Proportions	Reduction 2018-2023
Buildings	537,178	439,960	97,218	66%	18%
Ferries	182,448	139,375	43,073	21%	24%
Non-ferry Transportation	88,954	87,840	1,114	13%	1%

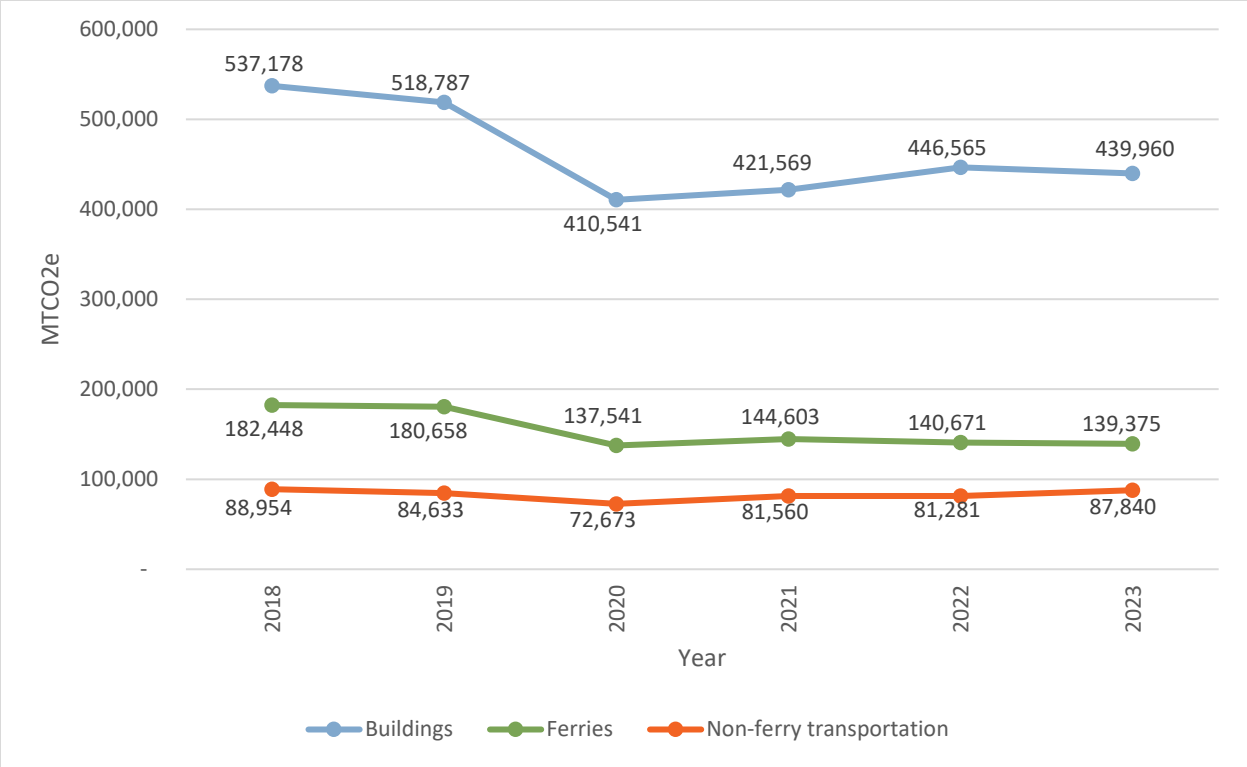


Figure 2: Washington state agency operational greenhouse gas emissions by sector, 2018-2023.

Greenhouse Gas Mitigation Summary

SEEP provides a mitigation template for agencies to document their emission reduction activities. These narratives describe greenhouse gas mitigation actions taken during 2022 and 2023 and actions agencies plan to take in the next four years (biennia 2025-27 and 2027-29). Short- and long-term strategies are separated by the following focus areas: transportation, facilities, clean and renewable electricity, equity and environmental justice, planning and budget development, and agency-specific or other actions.

The results show that strategies related to transportation and facilities were the most common approaches to lowering greenhouse gas emissions overall (Table 2). Many state agencies also identified mitigation strategies addressing clean and renewable electricity, equity and environmental justice, and planning and budget development as key areas of focus. All the reported strategies span both time horizons except for clean and renewable electricity strategies, which were identified solely as long-term mitigation efforts.

Table 2: Distribution of mitigation strategies by time horizon and category.

GHG Reduction Strategy	Short-Term	Long-Term
Transportation	21	24
Facilities	23	25
Clean & Renewable Electricity	0	18
Equity & Environmental Justice	15	16
Planning & Budget Development	17	17
Agency Specific/Other	8	13

Long-term strategies were separated by category to obtain more detail from state agencies (See Table 4 in Appendix A for summary table). Transportation-related long-term strategies include replacing internal combustion engine vehicles with battery electric vehicles (BEVs); limiting trips in state vehicles by replacing in-person meetings with remote options; electrifying vessels and equipment where possible; and utilizing biofuels or other alternative strategies to lower emissions where BEVs are not feasible.

The top three long-term strategies related to facilities include buying efficient information technology equipment and appliances, tracking building energy use by metering and benchmarking buildings over 10,000 square feet, and electrifying building space heating, hot water, and cooking. Other facilities strategies identified include improving building energy performance and energy efficiency using Department of Enterprise Services (DES) Energy Savings Performance Contracting or other proven building efficiency delivery methods; considering organizational or service delivery changes that use less building space or energy;

encouraging occupant behavior that reduces energy consumption; and changing space use allocations to reduce occupied square footage.

The long-term renewable electricity strategies identified by agencies include developing on-site renewable energy generation and implementing power purchase agreements (PPAs).

The long-term planning and budgeting strategies identified by agencies include using deferred maintenance and equipment replacement schedules; funding greenhouse gas emissions reduction priorities; establishing sustainability action plans; establishing facility or campus master plans; conducting electrification and feasibility plans/studies for district heating systems; and (for SEEP agencies only) implementing Carbon Reduction Investment Budget (CRIB) priorities.

State agencies also reported long-term barriers and challenges to reducing greenhouse gas emissions. The two most common barriers and challenges agencies encountered while pursuing mitigation activities were funding and infrastructure (Table 3). SEEP and Ecology continue to work with state agencies to provide guidance and resources for greenhouse gas emissions reporting and mitigation strategies.

Table 3: Distribution of long-term barriers and challenges.

Barriers & Challenges	Number of Agencies Encountering Barrier
Funding	18
Electricity capacity	3
Resource constraints	5
Infrastructure	10
Deferred maintenance	4

Recommendations

Since 2020, RCW 70A.45.050[4] has required that this legislative report "…include recommendations for budgetary or other actions that will assist state agencies in achieving the greenhouse gas emissions reductions specified in this section."

Implementing the recommendations below would support state agencies in achieving greenhouse gas limits.

Provide necessary funding for state agencies and institutions to comply with Clean Buildings Performance Standards

Buildings are the largest source of state agency greenhouse gas emissions. Investing in building energy efficiency is a cost-efficient way to significantly reduce greenhouse gas emissions and

improve occupant comfort. Complying with these standards is required by law (RCW 19.27A.210[8]). Funding projects will support agency compliance.

Install electric vehicle charging infrastructure at state facilities

Supporting state agency fleet electrification efforts directly lowers transportation-related greenhouse gas emissions. However, the lack of charging infrastructure at state facilities represents a barrier to the adoption of electric vehicles. SEEP works in partnership with DES to evaluate electric vehicle (EV) charging priorities for agencies covered by Executive Order 21-04[9] and will continue to support funding to install Electric Vehicle Supply Equipment (EVSE) at state facilities. Installing EVSE at state buildings also supports workplace charging, which can encourage staff to switch their own vehicles to EVs. In locations where EVSE is made accessible to visitors, customers, and the public, it supports community adoption of EVs and can lower greenhouse gas emissions, contributing to better health outcomes and cleaner air.

Electrify district energy systems

Several state agencies and institutions rely on district energy systems to power buildings, especially in campus environments. Some of these systems are inefficient and past their useful operational life. It is possible that some state agencies will not meet statutory greenhouse gas limits without upgrading or electrifying these systems. With new requirements established in law in 2023, these systems are being integrated with Clean Buildings standards, and campus district energy systems will complete decarbonization plans by June 30, 2025. State agencies will need funding to implement these projects.

Maintain zero-energy standards for new construction

Executive Order 20-01[10] requires that all newly constructed state-owned buildings be designed to be zero energy or zero-energy capable and to "exceed the current state building code for energy efficiency to the greatest extent possible." Since this executive order was implemented, state agencies have had mixed success with zero-energy building projects. Reinforcing or incentivizing this requirement for agencies covered by the State Efficiency and Environmental Performance order would help ensure new buildings are high performance and climate friendly.

Explore innovative funding and financing mechanisms and maximize federal funding opportunities

There are several innovative funding and financing mechanisms that other public jurisdictions rely on to support projects that reduce greenhouse gas emissions. These include, but are not limited to, public-private partnerships, energy efficiency as a service, revolving loan funds,

[8] https://apps.leg.wa.gov/rcW/default.aspx?cite=19.27A&full=true#19.27A.210
[9] https://www.commerce.wa.gov/wp-content/uploads/2022/07/Executive-Order-21-04_ZEV-FAQs.pdf
[10] https://governor.wa.gov/sites/default/files/exe_order/20-01 SEEP Executive Order %28tmp%29.pdf

green banks, and expanding access to the DES Energy Savings Performance Contracting program. States may also pursue federal tax credits through Elective Pay provisions in the Inflation Reduction Act (IRA) for EV purchases, EVSE projects, and clean energy projects. Providing supportive resources, like access to tax experts, can help state agencies maximize this and other federal funding opportunities. Exploring alternative financing mechanisms and federal funding opportunities could support cost-effective infrastructure projects and identify project pathways that align with the state's climate goals.

Improve accuracy of state agency greenhouse gas reporting

Ecology plans to engage a consultant to provide guidance to improve the accuracy of state agency greenhouse gas emissions data. This consultant will work with Ecology and SEEP to resolve technical issues, reduce inconsistencies in data collection, and support the development of agency procedures that can efficiently meet statutory obligations and reduce uncertainty. This will improve the quality of data feeding these reports and inform strategic climate policy for agencies and the Legislature.

This project will also develop greenhouse gas emissions accounting guidance and training materials for state agencies, including:

- Capacity-building to improve the knowledge, skills, and abilities of agency staff. While SEEP and Ecology do offer informal training and guidance, neither organization has the capacity to problem-solve specific agency data quality issues or validate data.
- Developing process improvements to ensure consistent reporting, strengthen reporting systems, and support strategy development.
- Institutionalizing robust, specific, and consistent processes for routine data gathering and recordkeeping to ensure accurate results that can support agency decision-making.
- Adjusting greenhouse gas emissions baselines and developing guidance for future adjustments. This is especially important for agencies who have been through significant operational changes since baselines were initially set in 2005.
- Providing guidance for incorporating new sources of greenhouse gas emissions and aligning the reporting process with existing policies, such as:
    - Including fuel used for landscaping, construction, forestry, and agricultural equipment.
- Reducing hydrofluorocarbons (HFCs) and complying with Ecology's Refrigerant Management Program.
    - Complying with the Clean Buildings Performance Standard, including building energy benchmarking and related planning activities.
    - Developing tools for estimating and projecting emission reductions from projects.

State agency leadership, including the interagency SEEP Governing Council, broadly supports an update to greenhouse gas reporting best practices to improve data quality. SEEP working groups identify this as a critical need to support greenhouse gas emissions reporting and build expertise.

Conclusion

While Washington state agencies collectively met 2020 greenhouse gas emissions limits, increased effort is required to reduce an additional 183,705 MT CO_2e from current emissions to meet the 2030 limit. All reported greenhouse gas emissions from state agencies come from buildings (i.e., electricity and natural gas used for power and heat), transportation from state motor vehicles (including watercraft and aircraft), and the Washington ferry system. In 2023, buildings and transportation were responsible for 66% and 34% of agency emissions, respectively.

Even with the impact of the COVID-19 pandemic considered, investing in the projects described in state agency emissions reduction strategies is driving change. In 2023, overall emissions remained 16% lower than prior to the pandemic. Continuing to link emissions reduction priorities to agency decision making will help agencies meet greenhouse gas emissions limits.

The top challenges state agencies encountered when pursuing mitigation activities centered on funding constraints and lack of infrastructure. The lack of funding continues to be a challenge for many state agencies. Deferred maintenance and electrical capacity were also notable challenges for state agencies which will further impact their ability to reduce emissions as required.

Appendix A – Agency Greenhouse Gas Emissions Profiles

This appendix provides the greenhouse gas profile for each of the 26 reporting agencies, along with a summary of mitigation actions taken during the last two years. One agency (Highline College) did not submit its greenhouse gas inventory and mitigation narrative, and its data from the last reported annual inventory is provided with no mitigation narrative. Whenever historical data is available, it is included in the agency profile, along with their 2020, 2030, 2040 and 2050 greenhouse gas limits. In developing strategies to meet these limits, the SEEP Office is a critical asset to agencies.

Table 4: Summary of agency long-term mitigation strategies.

Transportation Strategies	Number of Agencies Using Strategy
Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEVs)	23
Electrify vessels and equipment where possible	13
Limit trips in state vehicles by replacing in-person meetings with remote options	19
Utilize biofuels or other alternative strategies to lower emissions where BEVs are not feasible	8
Clean & Renewable Electricity Strategies	
On-site renewable energy generation	15
Power purchase agreements (PPAs)	10
Planning & Budget Strategies	
Facility or campus master plans	10
Deferred maintenance and equipment replacement schedules	13
Sustainability action plans	12
Funding GHG emissions reduction priorities	13
Carbon Reduction Investment Budget (CRIB) priorities	8
Electrification and feasibility plans/studies for district heating systems	10

Agriculture, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	470
Fossil Fleet Energy Use Emissions	1,371
Annual Fossil Greenhouse Gas Emissions	1,841

In 2023, the Department of Agriculture emissions were 20% over their 2020 limit and 86% above their 2030 limit.

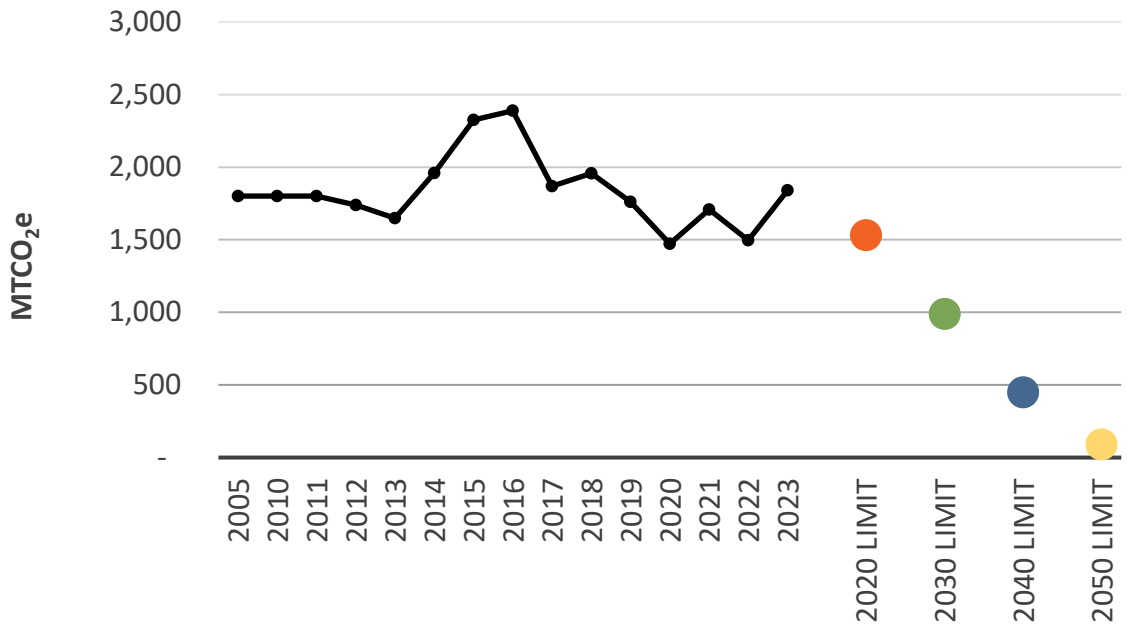


Figure 3. Department of Agriculture Historic Emissions and Future Limits.

In 2023, 26% of Department of Agriculture's emissions were from buildings and 74% were from fleets. They reported a total of 147,484 square feet of conditioned building space. Natural gas combustion totaled 19% of building related emissions and indirect electricity emissions were the remaining 81%. Their building space is leased by DES (33%) as well as by private building owners (67%).

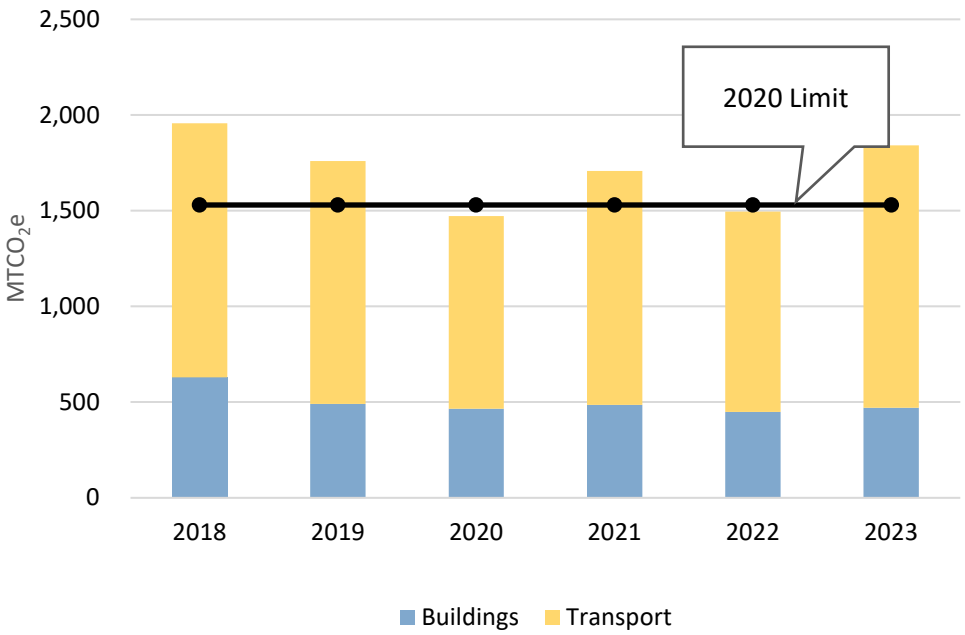


Figure 4. Department of Agriculture Emissions from Building and Fleets, 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Over the last two years, WSDA has begun to implement EVs where practicable. WSDA began the move to the shared space with L&I in Tumwater, a LEED Silver building.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

WSDA will continue to implement EVs where practicable. The agency is exploring installing EV charging stations in Yakima as well as policies and procedures for home-based charging stations for inspectors.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

WSDA's long-term strategy is to continue to take direction from both DES Fleet Operations and DES Real Estate Services to aid in implementation of EV's and upgrading facilities to the extent practicable that we can. WSDA leases all their facilities and if landlords to not wish to install chargers or upgrade facilities, funding would need to be sought to make improvements.

Central Washington University

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	21,489
Fossil Fleet Energy Use Emissions	1,278
Annual Fossil Greenhouse Gas Emissions	22,767

In 2023, Central Washington University's emissions were 26% above their 2020 limit and 94% above their 2030 limit. Between 2022 and 2023, their emissions decreased 4%.

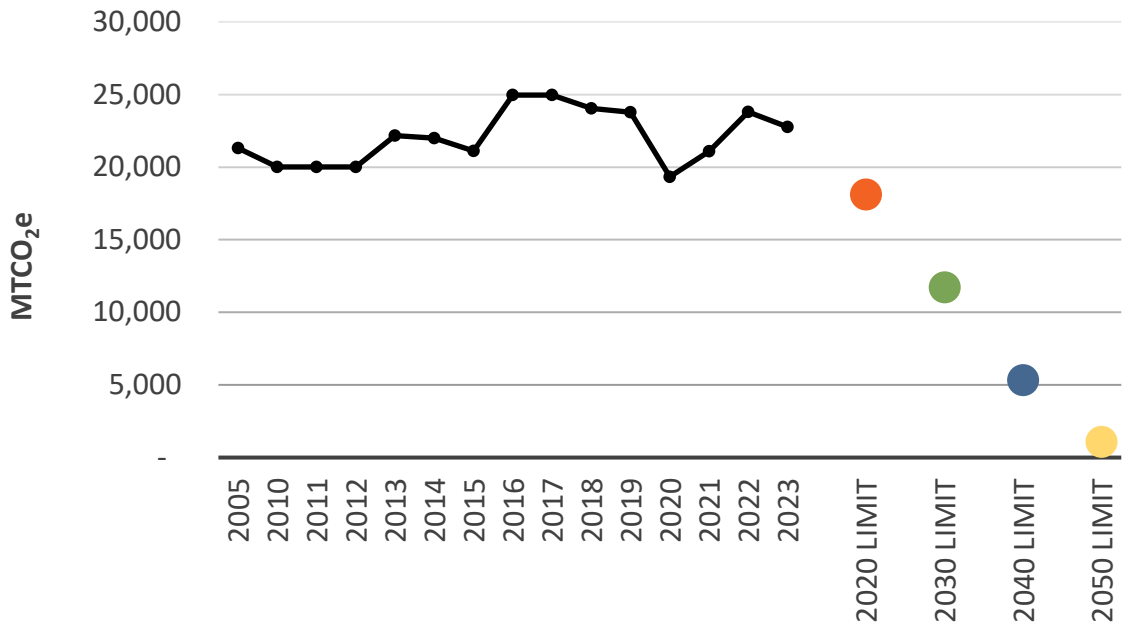


Figure 5. Central Washington University Historic Emissions and Future Limits.

In 2023, the university reported that 94% of emissions were from buildings and 6% were from transportation. The agency reported 3,497,903 sf of space, 99.8% of which they owned. In 2023, 60% of the building sector emissions were from natural gas combustion while 40% were indirect electricity emissions. The university's transportation emissions were 66% aviation gas, 34% vehicle fuel use.

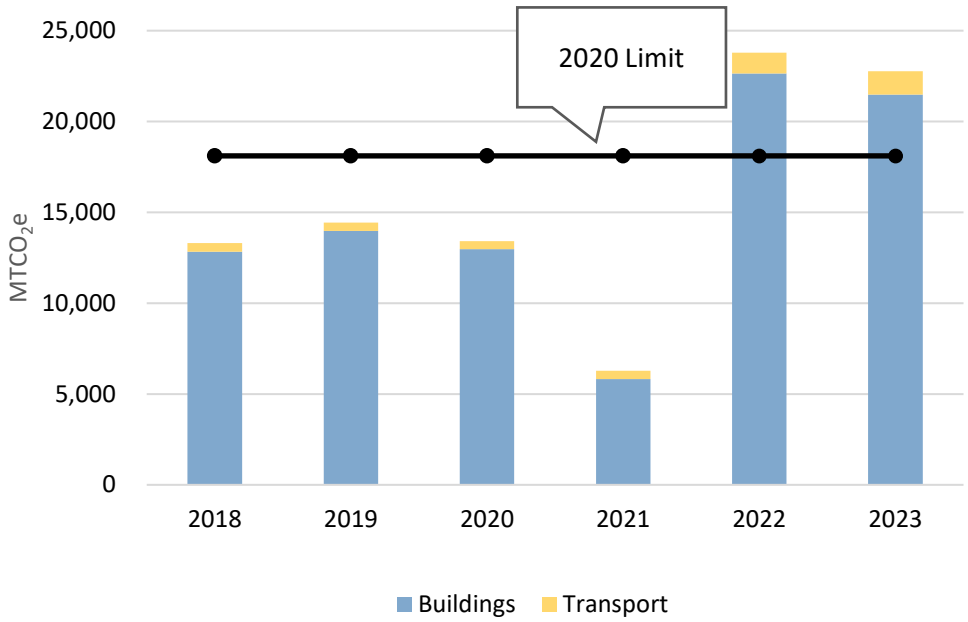


Figure 6. Central Washington University Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

CWU received State Capital Funding to install our first geothermal plant, which will provide a renewable source of heating and cooling for CWU's North Academic Complex in addition to three other academic buildings. Test well construction will begin in October 2024. CWU received funding for the development of a total campus decarbonization plan. 30-40% complete with plan. Chosen solution is in line with the first geothermal plant construction and funding received for the second geothermal plant. CWU performed investment level energy audits of five additional buildings over 50K GSF. This totals 10 buildings that have undergone ASHRAE level 2 audits. These audits result in energy efficiency measures identified that can tremendously reduce the Energy Use Intensity of each building. CWU's Board of Trustees adopted CWU's new Institutional Strategic Plan in July 2023. Per CWU's Institutional Strategic Plan, CWU is committed to developing and implementing our first-official, university-wide Climate Change Action Plan (CAP), which will serve as a holistic roadmap to decarbonize CWU's infrastructure and operations, develop impactful sustainability programming for the campus community, advance environmental justice, and prepare our students for successful careers. Additionally, CWU is committed to integrating sustainability into university-wide curriculum to provide students with the knowledge, skills, competencies, and values necessary to shape an equitable and sustainable future. CWU hired its first-ever Sustainability Officer, who is responsible for leading the development and implementation of CWU's first-official Climate Change Action Plan (CAP). In 2023, CWU Sustainability engaged over 500 students, staff, faculty, and local community members as CWU designed and prioritized measurable objectives and near-term strategies for the CAP. As a result, CWU's CAP is comprised of 11 focus areas (e.g., energy efficiency and conservation, buildings, transportation, on-site renewable

electricity, waste diversion, etc.) and equips CWU with a realistic pathway to achieve its goals of reducing its greenhouse gas emissions by 45% by 2030, and 70% by 2040, compared to 2005 levels. CWU strives to be a zero-carbon campus no later than 2050. CWU received Climate Commitment Act funds to implement large-scale, energy efficiency upgrades at our most energy intensive and inefficient (EUI of 245) building, Science 1. CWU demolished one of our largest energy-intensive buildings and began construction of our LEED Gold minimum North Academic Complex. CWU filed applications for Audit Incentive funding through Washington Department of Commerce to finish conducting ASHRAE Level 2 energy audits for CWUs' remaining 11 Tier 1 buildings. CWU submitted two grant applications to the WA Department of Commerce. CWU is requesting funds for a planning and predevelopment study required to implement large-scale onsite solar generation across multiple areas of campus. The solar planning and predevelopment study would detail all aspects and mechanics of installing up to 1.1+ MW of photovoltaic solar across multiple campus buildings, while also evaluating the possibility of large-scale photovoltaic arrays on vacant land owned by CWU. CWU has also requested funding for the installation of a 100+KW photovoltaic System on Dugmore Residence Hall. PROJECTS: SEE ATTACHED 2023CY_Updates_greenhouse gas Reduction Strategy document for more

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

GEOECO PLANT 1 - Complete CWU's first geothermal plant providing over 1000 tons of energy efficient heating and cooling. GEOECO PLANT 2 - Received Climate Commitment Act funds for a second geothermal plant. This project is pending CCA Fund approval on the ballet in November. (Pending Available Funding) CLEAN BUILDING ENERGY AUDITS - Complete ASHRAE Level 2 energy audits on the remaining 12 Tier 1 buildings that have not undergone audits. (Pending Available Funding) 4. NORTH ACADEMIC COMPLEX - Complete the new energy efficient North Academic Complex facility. LARGE SCALE SOLAR STUDY - Complete a large-scale solar study to identify a plan for the implementation of a large-scale solar array(s). (Pending Available Funding) DUGMORE PV SOLAR - Installation of a 100+KW PV Solar System on Dugmore Residence Hall. (Pending Available Funding) HEAT PUMP DOMESTIC HOT WATER UPGRADE - Central Washington University plans to upgrade four campus facilities from carbon producing natural gas domestic water boilers to modern electric air source heat pump domestic water heaters. HOGUE PV SOLAR EXPANSION – Central Washington University plans to replace failed 28KW PV solar system. SCIENCE 1 CARBON REDUCTION PROJECT – Central Washington University plans to aggressively help bring our Science 1 building in closer in compliance of the Clean Building Standard Performance (HSB 1257) for our campus. LIBRARY ENERGY EFFICIENCY UPGRADE – Central Washington University plans to help bring Library closer to complying with the Clean Building Standard Performance (HSB 1390). BOUILLON ENERGY EFFICIENCY UPGRADE – Central Washington University plans to help bring Bouillon Hall into compliance with the Clean Building Standard Performance (HSB 1390). SAMUELSON ENERGY EFFICIENCY UPGRADE - Central Washington University plans to help bring Samuelson closer to complying with the Clean Building Standard Performance (HSB 1390). DISCOVERY HALL ENERGY EFFICIENCY UPGRADE – Central Washington University plans to help bring Discovery closer to complying

with the Clean Building Standard Performance (HSB 1390). BLACK HALL ENERGY EFFICIENCY UPGRADE – Central Washington University plans to help bring Black Hall closer to complying with the Clean Building Standard Performance (HSB 1390). BLACK HALL HEATING/COOLING PUMP CONTROLS- Variable Speed Heating and Cooling Pump Control Replacement. SCIENCE 1 HEATING/COOLING PUMP CONTROLS - Variable Speed Heating and Cooling Pump Control Replacement. HEATING WATER LOOP CHEMICAL TREATMENT - Installation of automated chemical treatment systems for all Heating Water Loops. FIRST AND SECOND YEAR EBCx - Retro Commissioning of 13 Existing Buildings to help reduce campus EUI to achieve campus EUIt per HB1390. LARGE SCALE SOLAR ARRAY – This project includes the addition of 5MW of Solar on the 40 Acres N of Campus. BOILER BLOWER CONTROL UPGRADE – This project will result in the addition of a VFD to the blower motor on the remaining two of our 60,000LB steam per hour boilers. SEE ATTACHED 2023CY_Updates_greenhouse gas Reduction Strategy document for more details.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

CWU has taken a more dedicated approach to sustainability and the reduction in our greenhouse gas output. Upon completion of the recent energy studies, we have a good idea on the proper path to success. Finish the configuration of our sub-meters so we can measure our successes. We plan to utilize consultants to further develop, refine, and measure progress towards our carbon reduction goals. Upon deciding the best path for total campus decarbonization, we will request state funds to design the systems required to meet the goals of that path. This will likely result in the continued expansion of our low temp heating water and chilled water to added geothermal plants. With the long-term plan of upgrading building level HVAC systems to accommodate the low temperature heating water as their primary source of heating. Request state funds to complete as many identified energy efficiency measures as possible, starting with those that make the greatest impact and address both backlog maintenance as well as energy savings. CWU plans to establish a $1 million Green Revolving Loan Fund to finance energy efficiency projects with demonstrable energy cost savings. CWU hires three student peer-to-peer educators to engage, educate, and empower students to incorporate sustainability practices (e.g., energy conservation, waste diversion, alternative modes of transportation, etc.) in their daily lives. Continue to complete clean building energy audits until we have identified all energy efficiency measures that are cost effective to implement. Work towards development of an Energy Management Plan, Operations and Maintenance Plan and Decarbonization Plan per HB1390. Use the deliverables to continue to advocate for additional funds. Continue applying for any known available energy related grant opportunity and utilize Climate Commitment Act Funds and Inflation Reduction Act Funds as they become available.

Children, Youth, and Family Services, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	3,886
Fossil Fleet Energy Use Emissions	2,167
Annual Fossil Greenhouse Gas Emissions	6,052

DCYF is a relatively new agency and began reporting in 2022. They were not included in the original emissions baseline and have not yet established emission limits. 64% of their emissions are from buildings, the remaining 36% is from fleet vehicles. DCYF owns 39% of their building space, leases 3% from DES, leases 18% from other state agencies and 39% from private building owners. 58% of building related emissions are from fossil fuel combustion, 42% is from electricity use.

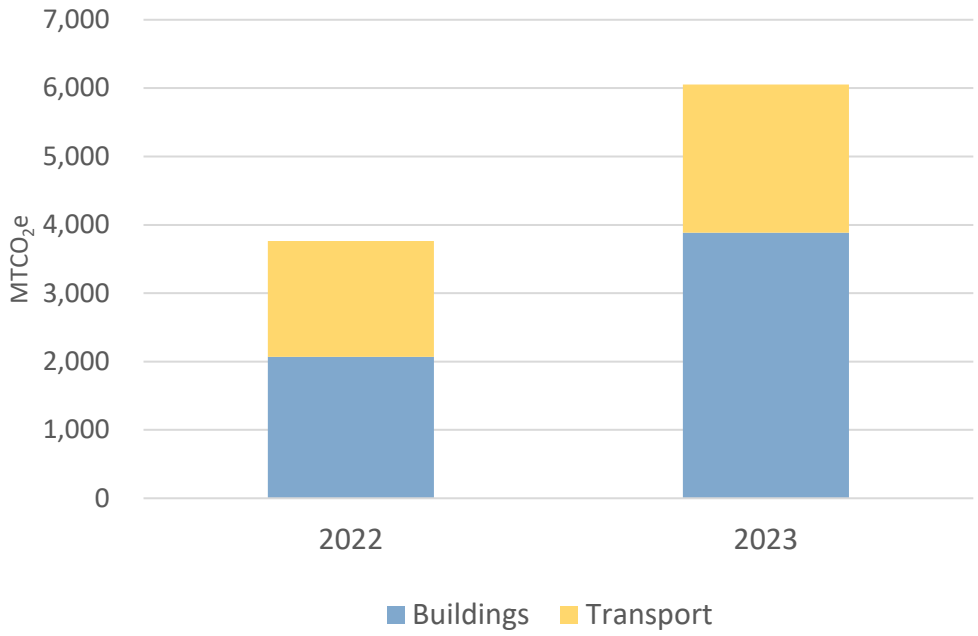


Figure 7. Department of Children, Youth and Families Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

DCYF has been working toward downsizing our leased facility inventory to “right size” our offices in a post pandemic work environment as well as improving energy efficiency in our leased and owned spaces with the implementation of modern energy codes during construction projects. We have also been working with our current lessors at the time of lease

renewals to look at upgrades to lighting, HVAC, and water conservation via the deferred maintenance and tenant improvement negotiations. We have also been working to convert our state fleet per Executive Order 21-04 to BEV as well as installing or scoping EV charging stations to support the future growth of our BEV fleet.

Priority actions planned for the 2025-27 & 2027-29 Biennia (short-term strategy)

DCYF is looking to continue to downsize our leased square footage and install EV charging infrastructure to support converting our ICE fleet over to a BEV fleet. We are also going to continue to look at creative and innovative ways to improve our energy efficiency within our offices and owned spaces.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040 and 2050

While this is proving to be a bit more difficult for DCYF vs. other agencies considering our lack of standalone historical data we are still looking to decrease our metric tons of greenhouse gas emissions with every passing year. We will be doing so by looking to convert our ICE fleet, create offices that meet and or exceed modern energy codes, convert our heating systems to be more efficient as they near end of life and decrease our non-emergent travel impacts by using modern technology to conduct our work remotely. We are also looking to embrace a telework first philosophy for our employees that will result in an indirect reduction of greenhouse gas emissions that employees would personally create.

Commerce, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	236
Fossil Fleet Energy Use Emissions	8
Annual Fossil Greenhouse Gas Emissions	244

The Department of Commerce is a small agency which was not included in the original emissions baseline and has not yet established emission limits. 97% of their emissions are from buildings, the remaining 3% is from fleet vehicles. 100% of Commerce buildings are leased from private building owners. 62% of building related emissions are from fossil fuel combustion, 38% is from electricity use.

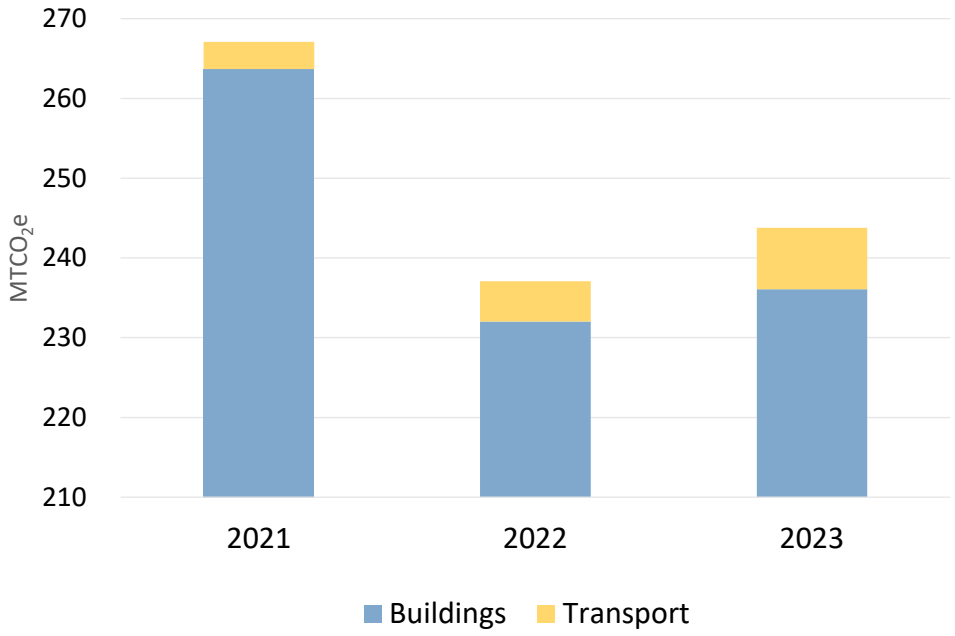


Figure 8. Department of Commerce Emissions from Building and Fleets, 2021-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

We moved into a net-zero building in Spokane. We also have successfully reduced down to only one electric car left. All other vehicles are EVs.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

We are committed to reducing our leased space and buying environmentally safe products.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

We would like to continue reducing leased space and hopefully find a building that uses solar power in Olympia. We will get rid of our last remaining electric vehicle and replace it with an EV. We have already switched to purchasing only green office supplies and are well on our way to reducing our emissions.

Community Colleges of Spokane

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	7,799
Fossil Fleet Energy Use Emissions	108
Annual Fossil Greenhouse Gas Emissions	7,907

In 2023, Spokane Community Colleges emissions were 3% below their 2020 limit and 50% above their 2030 limit. Between 2022 and 2023 their emissions decreased 7%.

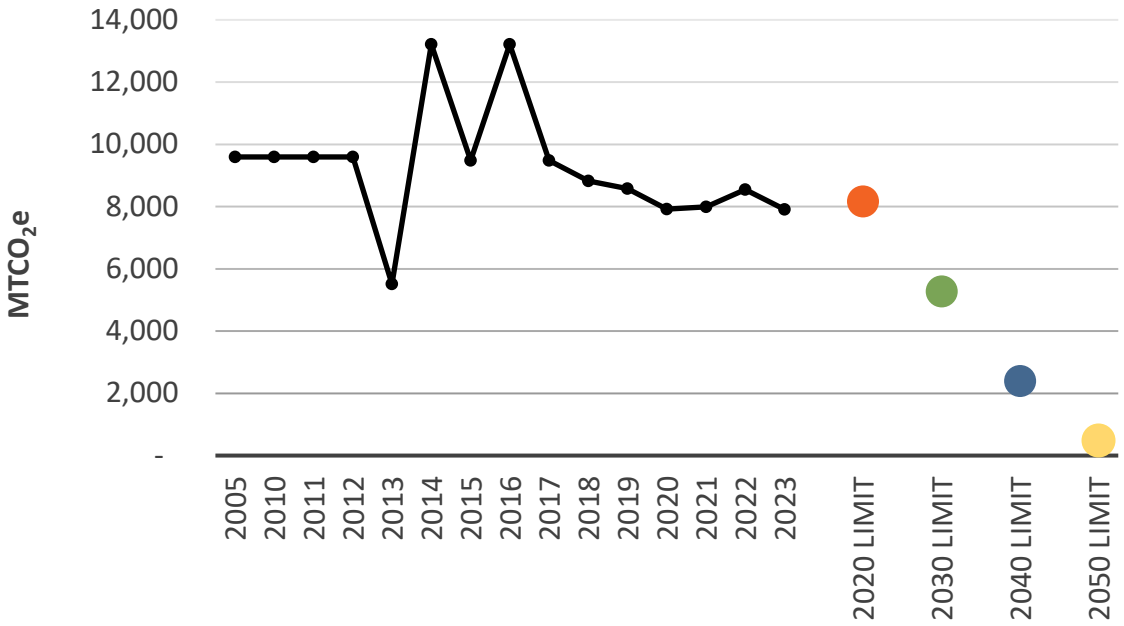


Figure 9. Community Colleges of Spokane Historic Emissions and Future Limits.

In 2023, the colleges reported that 99% of emissions were from buildings and 1% were from transportation. The agency reported 2,012,146 sf of space, 92% of which they owned and 8% privately leased. In 2023, 58% of the building sector emissions were from natural gas combustion while 42% were indirect electricity emissions. The college's transportation emissions were entirely related to vehicle fuel use.

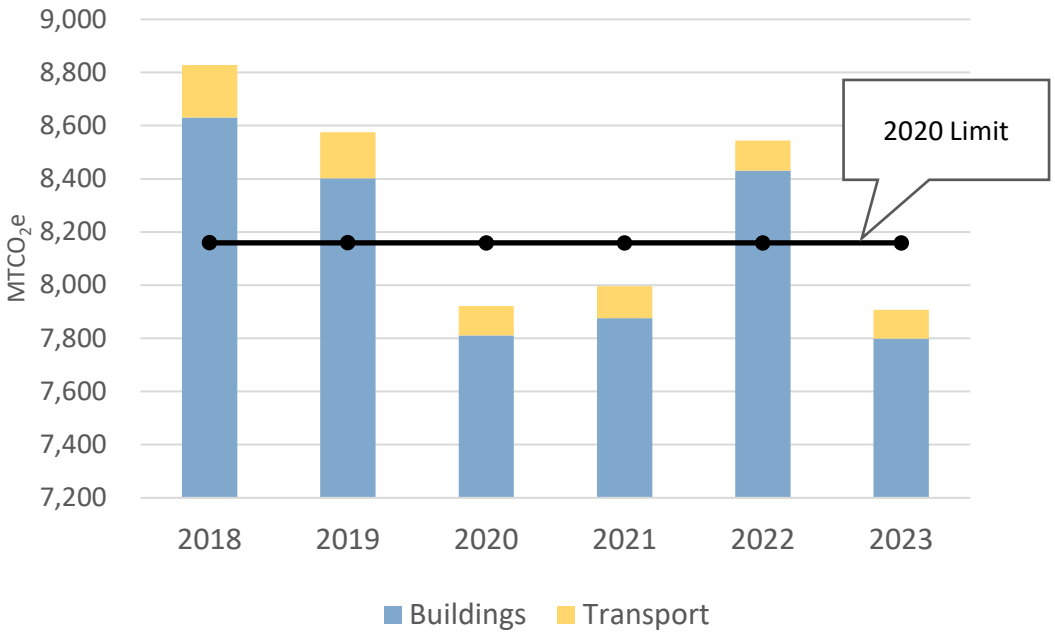


Figure 10. Community Colleges of Spokane Emissions from Building and Fleets, 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

22-167: Colville HVAC updates provided a guaranteed annual savings of 8,000 therms and 4,500 kWh. 22-115: SFCC building 19 chiller replacement provided a guaranteed annual savings of 9,000 kWh and removed the existing system's refrigerant and replaced with a new, lower greenhouse gas impact refrigerant. Small-scale LED retrofit projects.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

The current focus to reduce greenhouse gas emissions in the short-term is to utilize analytics for HVAC scheduling and optimization, LED lighting retrofits, and submetering of individual buildings. With the award of the WAEVCP Commerce grant to install EV chargers we are looking to transition our current fleet to plug-in EV's, as budgets allow.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

After a full mechanical audit of all systems on campus, we hope to transition away from in-kind end-of-life replacements and focus on every replacement increasing efficiency and/or transition fuel source to reduce greenhouse gas emissions. With the installation of fleet EV chargers in 2024, we hope to transition out any end-of-life internal combustion engine (ICE) vehicles for electric vehicles. Additionally, if financially feasible, we hope to create solar micro-grids with battery backup to power small units, such as the chargers and some consistent, low-usage buildings.

Corrections, Department of

Emissions Profile

Total Emissions Source	2022 Greenhouse Gas Emissions (MT CO_2e)*
Building Energy Use Emissions	48,124
Fossil Fleet Energy Use Emissions	2,762
Annual Fossil Greenhouse Gas Emissions	50,886

* Note reporting year variance.

The data shown in this section represents data reported by the agency in 2022. The Department of Corrections (DOC) was unable to complete the emissions reporting requirements for 2023. During this reporting period DOC was missing significant utility data making the aggregate emissions data for the Department incomplete, and not representative of DOC's actual greenhouse gas emissions. They are working with their facility staff to rebuild their reporting process; however, some areas of operations continue to struggle to meet reporting requirements as they lack adequate staff resources.

At the agency's request, the aggregate total data reported for all state agencies combined uses a placeholder value based on Correction's 2019 emissions report, as DOC indicated that most likely resembled their current emissions. As the agency addresses staffing shortages, they intend to provide revised data for future reporting.

Using the agency's 2022 report, the Department of Corrections emissions were 34% below the agency's 2020 limit. DOC's 2022 emissions are 2% above their 2030 limit. The Department reports emissions from 8,896,593 sf of buildings, of which they own 99% and DES owns 1%.

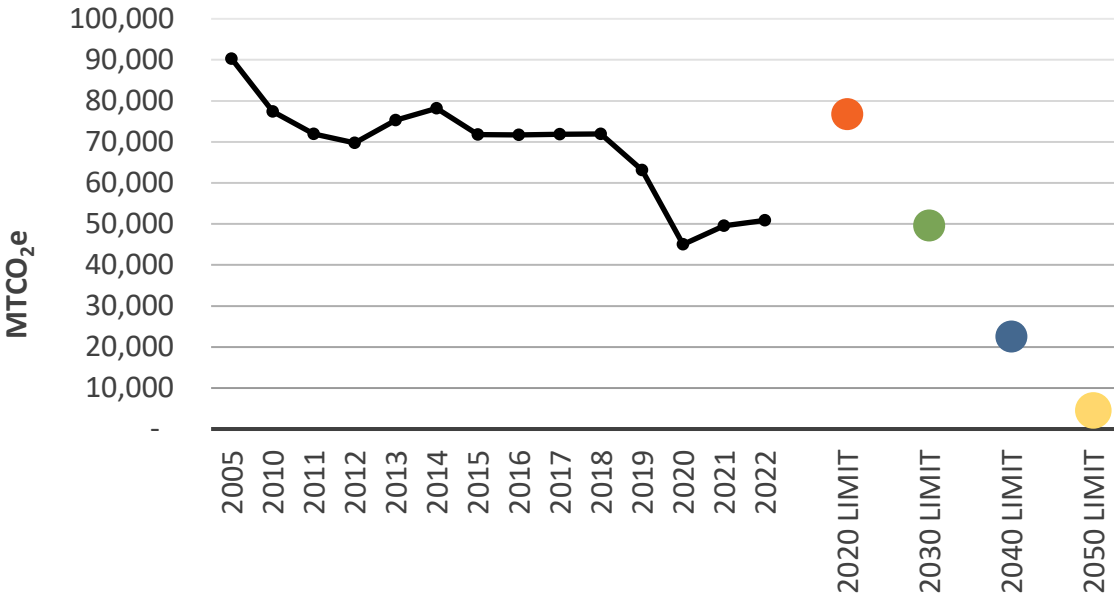


Figure 11. Department of Corrections Historic Emissions and Future Limits.

In 2022, 95% of DOC's emissions were from buildings and 5% from fleets. Fossil fuel combustion for heating and cooling represent 66% of their building emissions, the remaining 34% was from electricity use.

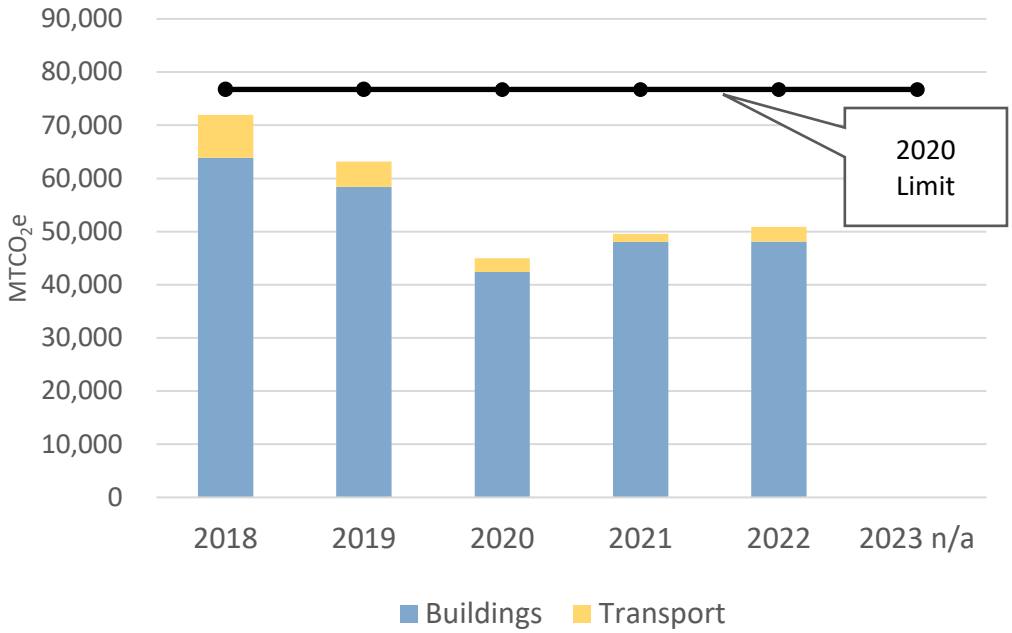


Figure 12: Department of Corrections Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Actions taken over the last two years focused on: Replacing obsolete and failing security, fire alarm and communication systems. Replacing building electrical, mechanical, plumbing, and structural systems that are at the end of their useful life. Replacing failing roofs that are well beyond their life span and threatening structural damage to the buildings beneath them. Repairing and replacing deteriorating utility and infrastructure systems that are unsafe for staff and incarcerated individuals and cause significant energy and water losses. Protecting the environment and complying with environmental and health regulations for air quality, water, wastewater, and storm water systems while reducing the carbon emission impacts from our activities. Program and Team Development (Process improvements and behavioral change): The Capital Planning and Development leadership has invested significantly in the facility maintenance team's development and support for them by leading the agency's dedicated facility managers in several efforts to strengthen the foundations and outcomes of proactive facility maintenance, preservation, and resource conservation efforts. Notable efforts during 2023 included: -Investments in building out electric vehicle infrastructure and converting the statewide fleet to zero emissions vehicles. -Resource conservation efforts focused on water conservation and energy and emissions reductions projects across the state. Planning to meet the Clean Building Standard.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

In compliance with Executive Order 21-04, DOC works towards 100% electrical vehicle usage by 2035. DOC continues to focus on increasing the number of BEVs (Battery Electric Vehicles, also referred to as EVs or Electric Vehicles). In 2023, DOC reached 30% BEV obtainment. Forty-one of the 108 DES (Department of Enterprise Services) leased vehicles were BEV. 11 of the 62 DOC-owned vehicles were BEV. DOC also installed a new DC Faster Charging station at the Airway Heights Correction Center (AHCC). This station allows DOC employees to travel from eastern Washington to Western Washington without detours for charging. DOC plans to continue to increase the BEVS leased and owned while continuing to invest in infrastructure to support BEVS.

Water project at WSP - In 2023, DOC completed a larger water conservation project at the Washington State Penitentiary (WSP). This project included upgrades to the domestic water fixtures/piping and added a control-systems to the fixtures. This targeted renewal project will significantly reduce energy consumption for the facility, cutting water usage by over 3,100 kgal/yr. Work progressing on Clean Building Standard (CBS) and District Heating Decarbonization (HB1390) This past year saw the Department efforts on the new Clean Buildings Standard legislation and in particular House Bill 1390 presenting an opportunity to decarbonize our campuses with District heating systems. The DOC started to work on the decarbonization plans at five of our largest campuses: AHCC, CBCC, MCC, WCC and WSP. Below are the goals of this project:

This work will target district energy decarbonization projects that will deliver needed energy and infrastructure upgrades.

Identify mechanisms to replace fossil fuels in the heating plants, including a schedule for replacement.

Evaluate possible options to partner with nearby sources and uses of waste heat and cooling.

Examine opportunities to add buildings or other facilities to the system once it is decarbonized, a strategy to incentivize growth of a decarbonized system, and requirements for facilities joining the system.

Evaluate, prioritize reducing energy use through conservation efforts both at the central plant and in the buildings connected to the district energy systems.

The audit and planning phase of this effort over the past year has begun a multi-year and multi-phase project on these campuses with the end goal of significantly reducing resource consumption as well as decarbonizing these campuses as funding and cost effectiveness criteria allow. The master planning approach afforded by HB 1390 allows the department to assess what the best long-term solution is for the campuses. In this way, immediate maintenance needs can be assessed to ensure public funds are spent in the most efficient manner possible. Without neglecting the need to keep critical systems operational. In addition, we hope this planning can help the department avoid funding infrastructure that will become obsolete in the near future, and rather be directed toward solutions that fit the longer-term plans for the campus.

Current projects (2022 & 2023) include WSP Unit Six Roof and HVAC Replacement - Project to replace the roof and the heating, ventilation, and air conditioning (HVAC) systems for Housing Unit 6 in the East Complex at WSP $13,994,000.00. WSP East Complex CI Kitchen Roof and Cooler Repairs - Repair cooler and roof in EC CI Kitchen $1,395,000.00. AHCC/CBCC/MCC/WCC/WSP District Energy Systems - HB 1390, Identify and develop statewide district energy decarbonization focused Resource Conservation Measures (RCM's) that can be implemented to improve campus energy efficiency, enhance sustainability, and improve equipment operation, $1,600,000.00. SCCC D, E, F Building Roof Replacement- Replace the failing roof system and roof mounted equipment on Buildings D, E, and F. Part of the D building has been done. $6,194,000.00 MCCCW Mission Unit Roof Replacement Schematic Design-Design

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

Future projects – Seeking legislative funding:

AHCC/CBCC/MCC/WCC/WSP District Energy Systems - HB 1390, Identify and develop statewide district energy decarbonization focused Resource Conservation Measures (RCM's) that can be implemented to improve campus energy efficiency, enhance sustainability, and improve equipment operation.

MCC SOU and TRU Domestic Hot Water Piping Replace failing water lines at SOU and TRU

Low-cost projects:

Supporting Maintained teams in optimizing HVAC to reduce energy consumption

Optimizing HVACs by Supporting Facility maintenance by providing them with easier access, through remote access, to technical support and software upgrades to facility HVAC systems. This will help ensure these systems and the staff maintaining them have the tools they need to perform the task required. (SR306160 Building Control Systems Remote Access) Cost for this project will be embedded into the existing vendor support contracts and necessary software upgrades. (timing of funding requests for software upgrades will be triggered by our asset management program, maintenance module)

Connect Fuel Card readers at Prisons:

In an effort to accurately and efficiently track fleet usage, fuel consumption and vehicle mileage this project will connect facility fueling stations with fuel card readers and establish APIs with all fuel cards used in vehicles utilized by agency staff

Currently fleet usage, mileage and fuel consumption at DOC facilities are tracked in one of six ways; (1) paper logs, (2) DNR owned Card Reader, (3) PetroVend 100 Card Reader (4) Master Card Reader or with (5) WEX cards (any commercial pump), and (6) DOT cards (from any DOT pump).

This makes it difficult to accurately track fleet usage, mileage and fuel consumption, which in turn makes it difficult or impossible to track true costs and consumption.

In priority order:

- Establish APIs between WEX and DOT with Asset Planner. (DOT cannot establish an API-Discontinue use of DOT cards/fueling option)
- Connect DOC fuel pumps to Ameresco Asset Planner system, via SGN.
- Standardize all fuel pumps to PetroVend 100 Card Readers.

Waste and Toxics reduction strategies include, improve recycling at prison campuses, collaborate with DES and SEEP performing a healthier furniture pilot project, participate in Solar Select, solar energy purchase for electricity at AHCC, through Avista.

Eastern Washington University

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	19,259
Fossil Fleet Energy Use Emissions	366
Annual Fossil Greenhouse Gas Emissions	19,626

In 2023, Eastern Washington University's (EWU) emissions were 11% above their 2020 limit. In and 71% above their 2030 limit. EWU reported that 98% of emissions were from buildings and 2% were from transportation fleets. The university reported 3,196,115 sf of space, 94% of which they owned, 3% privately leased, and 2% leased from other state agencies. In 2023, 73% of the building emissions were from natural gas combustion while 27% was indirect electricity emissions.

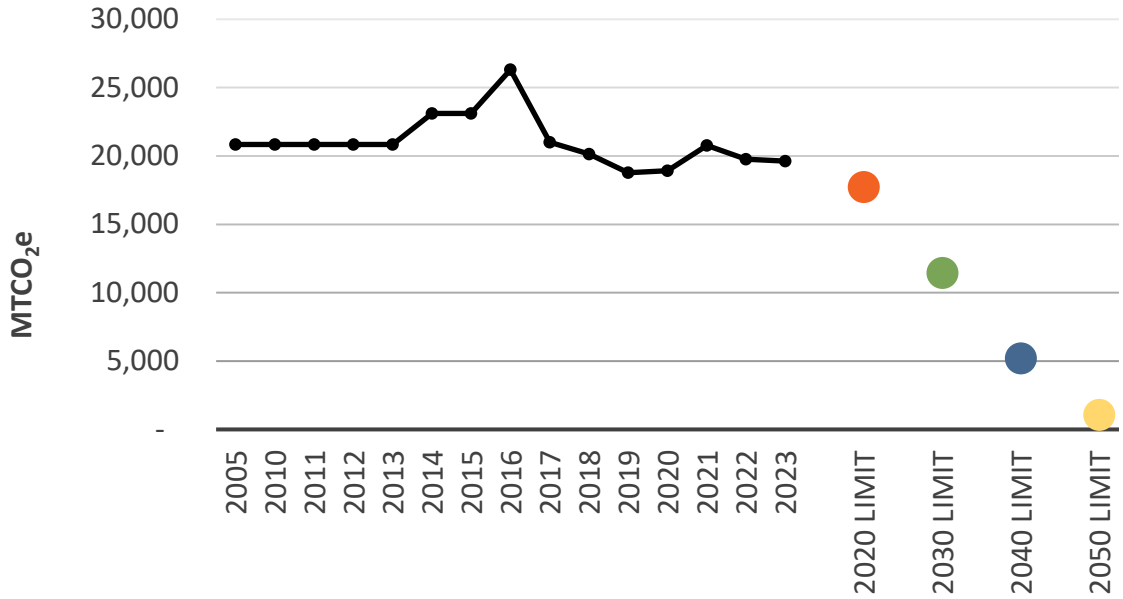


Figure 13. Eastern Washington University Historic Emissions and Future Limits.

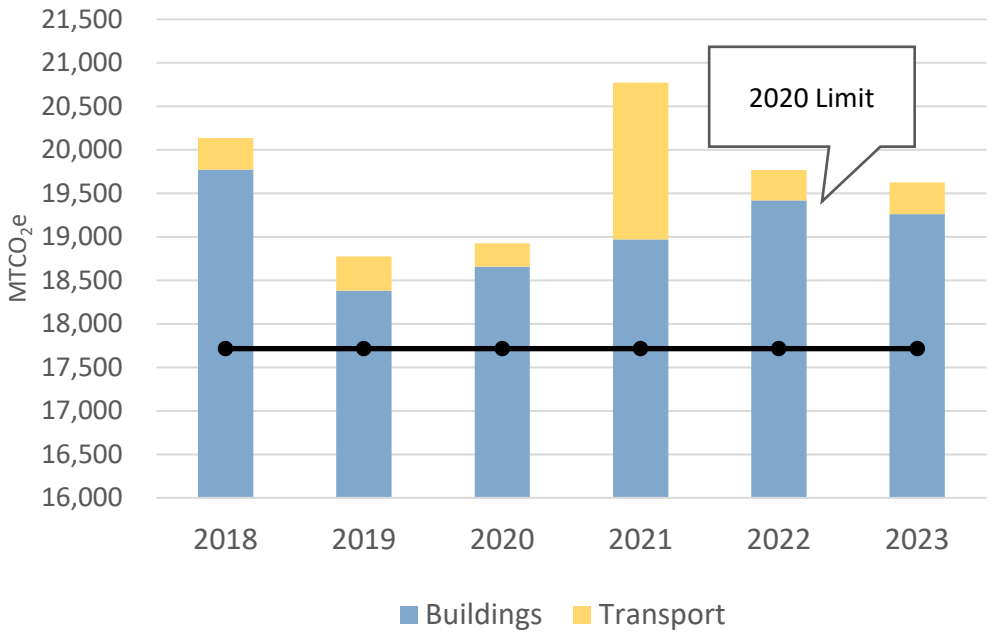


Figure 14. EWU Emissions from Building and Fleets, 2018-2023.

EWU leases space in the privately-owned Catalyst building in Spokane. The Catalyst is designed as a net-zero building, although they haven't quite completed the transition to building-sourced energy. They expect the energy use from this building to decline in the coming years. EWU also leases space in the WSU Health Sciences building at the Riverpoint campus in Spokane. WSU tracks the energy use for this space and includes it in their reporting metrics.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Sports and Recreation Complex (PHASE Building Complex) - Completed level 2 energy audit and requested legislative funding appropriation for energy retrofitting to reduce energy usage and greenhouse gas emissions. $10 million was allocated to EWU for this project during the 2024 supplemental cycle. Once completed, building energy usage is estimated to be reduced by 38% and total campus greenhouse gas emissions reduced by 4%. The first phase of the Science Building (SCI) remodel began in 2022 and was completed early winter 2024. Phase 2 has begun. Once completed, building energy use and greenhouse gas emissions are estimated to decrease by 40%. Martin (MAR) and Williamson (WLM) building complex remodel predesign began in 2023 and is expected to be completed by summer 2024. Significant energy savings/greenhouse gas reductions are expected to be identified once the predesign process is complete. Annual ongoing upgrade/repair of building sub metering equipment to better manage campus energy usage. As light fixtures break and areas of campus are remodeled, lighting is upgraded to LEDs to reduce energy usage, maintenance, and waste. Replacement with LED lighting is a standard and ongoing practice at EWU. Preventative Maintenance - Routinely perform ongoing monitoring and replacement of infrastructure across campus to ensure proper operations and energy conservation. Roofing repairs and replacements help better seal the building envelope

and conserve energy. Major roofing repairs were completed on Isle Hall, JFK Library, and Tawanka. Routinely perform ongoing monitoring and replacement of HVAC equipment across campus to ensure proper operations and energy conservation. Routinely perform ongoing maintenance of building envelopes across campus to ensure proper operations and energy conservation. New boiler (#3) was installed in 2023 and became operational January 2024. The new boiler, while still reliant on natural gas, replaces an original boiler installed in the 1960s. Efficiencies in boiler operations are expected to conserve energy and thereby reduce greenhouse gas emissions. New chillers were expected to be installed and operational in 2023, however due to delays related to supply chain issues the electrical switchboard that will power the new chillers has been delayed. Project now expected to be completed by end of 2024. New chillers feature variable speed drives that will conserve energy and reduce greenhouse gas emissions. Medium Voltage Upgrade o Ongoing project to upgrade electrical switching equipment and infrastructure to better prepare EWU campus for further electrification. Campus heating temperature set point dropped from 72F to 68F to conserve energy and reduce greenhouse gas emissions. Completed new Climate Resiliency Landscape Masterplan that will convert campus landscaping to native, drought tolerant plants that promote biodiversity in a changing climate. The landscape masterplan is included in the documentation materials. Completed a Climate Action Plan for 2022 – 2025. The action plan is included in the documentation materials. Geothermal Ground Source Heat Pump Assessment. An initial assessment conducted by an engineering firm identified the potential to meet most of the campus heating requirements from a ground source system. The initial assessment is included in the documentation section. Conversion to an eco-district model to meet campus heating and cooling needs will significantly reduce campus greenhouse gas emissions and put EWU on track to meet reduction targets.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Develop a 15-year decarbonization plan: EWU is currently under contract with an engineering consulting firm to develop a 15-year decarbonization plan per HB 1390 to transition away from fossil fuels for campus heating. This report will serve as the guiding plan to prioritize and ensure EWU decarbonizes operations as quickly as possible. Additionally, the decarbonization plan will serve as the central pillar to the development of a new campus masterplan and climate action plan.

Conduct building energy audits and retrofitting: Conduct level 2 energy audits of buildings across campus to identify work needed to conserve energy and reduce greenhouse gas emissions. EWU is currently under contract with an engineering consulting firm to perform energy audits of 7 buildings on campus. The energy audits will be included in our 2025 – 2027 biennium request for infrastructure improvements and as part of our process to meet Clean Building Performance Standards.

Geothermal ground source eco-district design and construction: EWU recently completed an initial geothermal ground source heat pump eco-district assessment. The report indicated the potential to meet most of the campus heating requirements from a ground source system. The

initial assessment is included in the documentation section. Next steps are to drill a pilot test well, followed by design and construction. A funding request to support design and construction of our first eco-district will be included in our 2025 – 2027 biennium request.

Prairie Restoration Project: The EWU Restoration project seeks to restore more than one third of campus land back to native habitat, and through this process, support research, educational, and recreational opportunities. More information regarding the Prairie Restoration Project can be found at (https://www.ewu.edu/give/funds/prairie-restoration). Restoration of the land has the potential to sequester carbon, helping to offset greenhouse gas emissions elsewhere. In addition to natural carbon sequestration through plant photosynthesis, we are conducting ongoing research on the use of biochar and other soil amendments to boost plant growth and carbon storage. As this project develops, it has the potential to sequester carbon on an annual basis and plays an important role in EWU's greenhouse gas reduction pathway.

Climate Resiliency Landscape Masterplan: Implement Climate Resiliency Landscape Masterplan through phased projects to transition the campus landscape to one that uses less water, chemical inputs, and energy over time while increasing biodiversity and resiliency to a changing climate. See landscape plan in documentation.

Electric vehicle charging station infrastructure: Add electric vehicle charging stations across campus for both public and fleet use. Installation of vehicle charging stations will be phased as funding allows. Currently pursuing state and federal grants to support funding. See electric vehicle charging assessment/plans in documentation.

Micro-steam turbine co-generation system in central plant: Add micro-steam turbines to new campus boilers to generate electrical power. High pressure steam will pass through turbine generators to create electrical power for the central plant. Steam is then directed to campus steam loop. This upgrade to the central plant increases boiler energy efficiency while reducing electrical consumption and providing a source of backup power.

Carbon capture system in central plant: EWU is currently seeking funding to install a demonstration carbon capture system at our central plant to remove carbon dioxide emissions from the combustion of natural gas to provide building heating. This system would be developed as part of a demonstration facility with a local engineering firm that has developed the technology. It would serve as a place to test carbon reduction technologies for hard-to-decarbonize

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

EWU is currently under contract with an engineering consulting firm to develop a 15-year decarbonization plan per HB 1390 to transition away from fossil fuels for campus heating. The detailed plan is expected to be completed by early winter 2025. Initial analysis indicates that EWU should pursue a geothermal based eco-district model to provide campus heating and cooling. Additionally, EWU will conduct energy audits and retrofitting of all buildings on campus to improve energy efficiencies, design and build a PV microgrid, transition to an EV fleet, and

implement climate resilient landscape management practices. The full decarbonization plan will be shared with Department of Commerce upon completion.

Ecology, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	1,064
Fossil Fleet Energy Use Emissions	1,287
Annual Fossil Greenhouse Gas Emissions	2,351

In 2023, Department of Ecology's emissions were 41% below their 2020 limit and 9% below their 2030 limit.

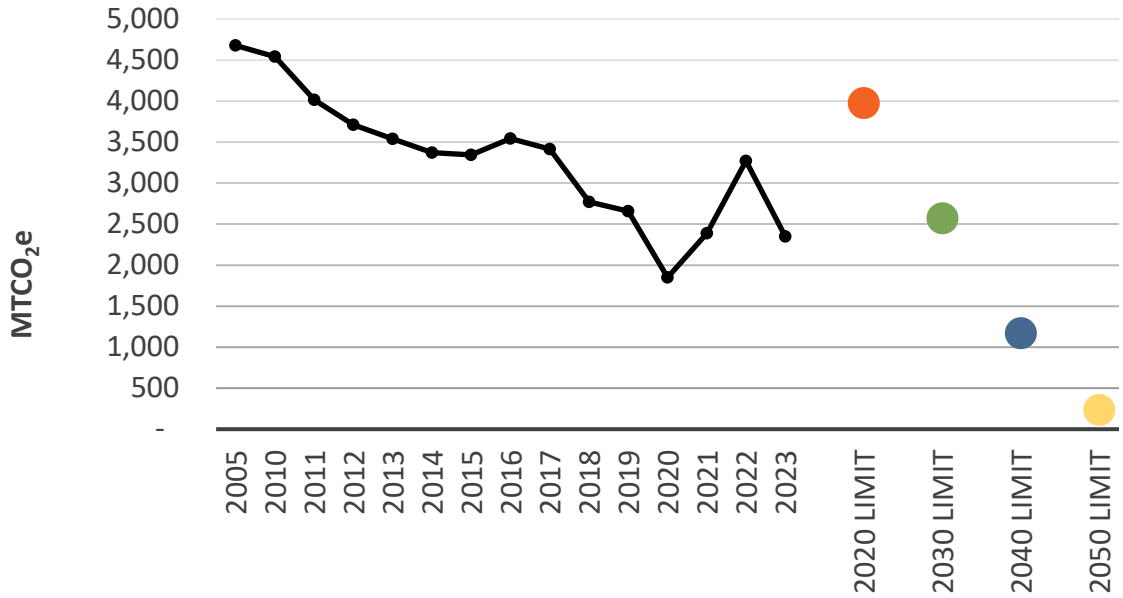


Figure 15. Department of Ecology Historic Emissions and Future Limits.

In 2023, Ecology reported that 45% of emissions were from buildings and 55% were from transportation. The agency reported 497,148 sf of space, 81% of which they owned and 19% privately leased. In 2023, 23% of the building sector emissions were from natural gas combustion while 77% was indirect electricity emissions.

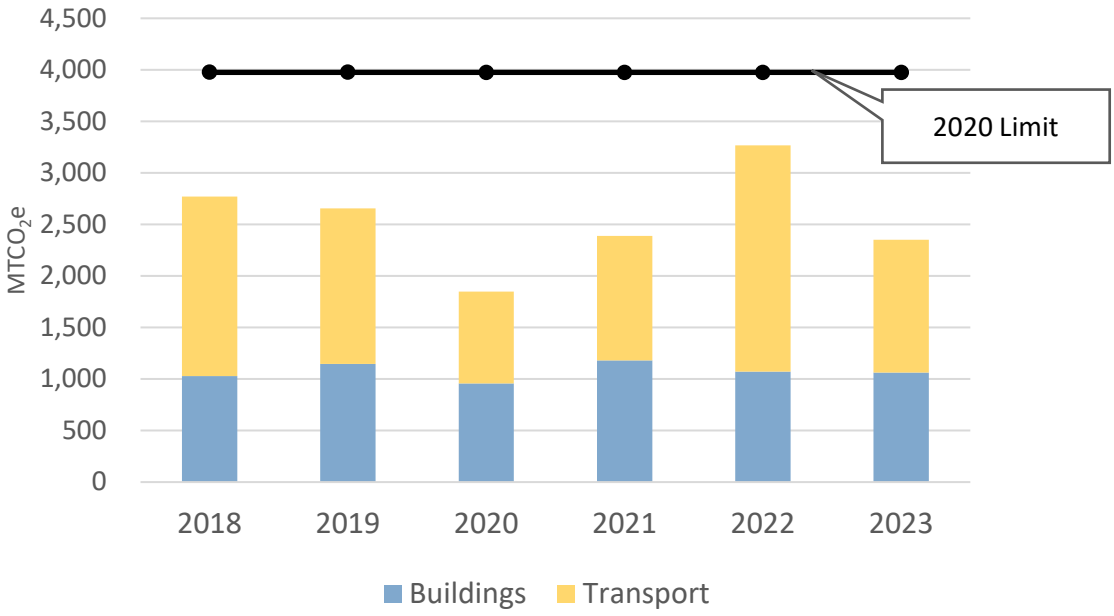


Figure 16. Department of Ecology Emissions from Building and Fleets 2018-2023.

Ecology generated 60,449 kWh of electricity from solar photovoltaic systems from the Central Regional Office. The Lacey headquarters buildings have a ground-source heat pump designed to produce 200 tons of cooling capacity (about 2.4 million BTUs) which saves the equivalent of approximately 77,000 kWh of electricity annually.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

The objective of our Electric Vehicle Charging Infrastructure Site Survey was to provide sufficient information to allow Ecology to produce a charging station infrastructure utilization and development plan.

The Washington State Department of Enterprise Services (DES) hired a contractor, Willdan, to conduct a fleet electrification plan and infrastructure assessment for Ecology. The plan took the form of an energy savings performance contracting (ESPC) investment grade audit (IGA). The project began by identifying two different charging strategies that could support a fully electric fleet based on a review of Ecology's existing conditions, including the current fleet makeup, fleet utilization, available electrical infrastructure, and replacement plan. A phased electrification plan was then developed that included recommendations for which vehicles could be electrified when they are replaced, how many EVCS need to be installed each year to support the growing EV fleet, and what infrastructure upgrades may be required at each of Ecology's facilities. An annual financial forecast was also developed to assist Ecology in budgeting for fleet electrification needs through 2040.

Electric Vehicle Transition: Of the 229 vehicles ready for replacement in 2023, 16 transitioned to Zero Emissions Vehicles (ZEV) and another 49 are in the order queue.

Eastern Regional Office Water Heater Replacement: The gas water heater was replaced with an electric water heater.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Ecology will prioritize the following greenhouse gas emissions reduction strategies in the short-term:

- Significantly expand its EV infrastructure to support the growing fleet, as the Infrastructure Study indicated would be necessary.
- Transition agency vehicles to ZEV. Around 180 vehicles will be ready for replacement between 2025-2029.
- Remove Lighting & HVAC Systems from the Card Key System Interface
- Adapt Lighting & HVAC Systems to Infrared Sensors with Operations by Established Zones. As Ecology continues to adapt to the "Modern Work Environment", the existing lighting and HVAC construction strategy is simply problematic to maintain and operate and therefore needs to be moved up from the OFM 2025-27 Maintenance Backlog Reduction Plan to implementation in the 2023-25 Biennium.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

Ecology's greenhouse gas emissions reduction strategies have already helped us surpass our 2030 goal and include the primary areas of workforce, vehicles, and facilities.

Our workforce strategies focus on reducing the number of commute days by expanding and encouraging telecommuting and compressed work schedules as flexible options for employees. We want to incentivize and enable low-emissions commute modes by continuing the incentive for employees commuting via carpool, public transit, bicycle, walking, and vanpool, captured via our Commute Trip Reduction (CTR) program.

Ecology seeks to increase ZEV and EV support equipment by tracking technology development for ZEV trucks – specifically medium- and heavy-duty – and acquiring and testing these emerging technologies against business needs as viable options become available. We intend to increase EV chargers at our facilities and replace internal combustion engine vehicles with ZEVs wherever possible.

Ecology wants to increase the use of alternative electric transportation options and will acquire and test zero emission alternatives to other motorized vehicles and equipment. These efforts are meant to reduce the vehicle miles driven metrics by continuing the promotion of our CTR program and minimizing driving to meetings and/or trainings through the utilization of hybrid meeting technology and efficient scheduling. Ecology encourages the use of ZEVs as we continue to develop an internal education and outreach campaign that increases knowledge, familiarization, and comfort with the use of ZEVs.

Ecology's facilities strategies continue to maximize our energy efficiency in new and existing buildings. We are implementing all energy efficiency upgrades as they become known and available. Ecology focuses on reducing the solid waste generated by operations by implementing office waste reduction measures and practices that improve recycling and minimize single-use disposables and plastics.

Enterprise Services, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	6,886
Fossil Fleet Energy Use Emissions	1,066
Annual Fossil Greenhouse Gas Emissions	7,951

In 2023, Department of Enterprise Services' (DES) emissions were 59% below their 2020 limit and 37% below their 2030 limit, nearly approaching their 2040 limit.

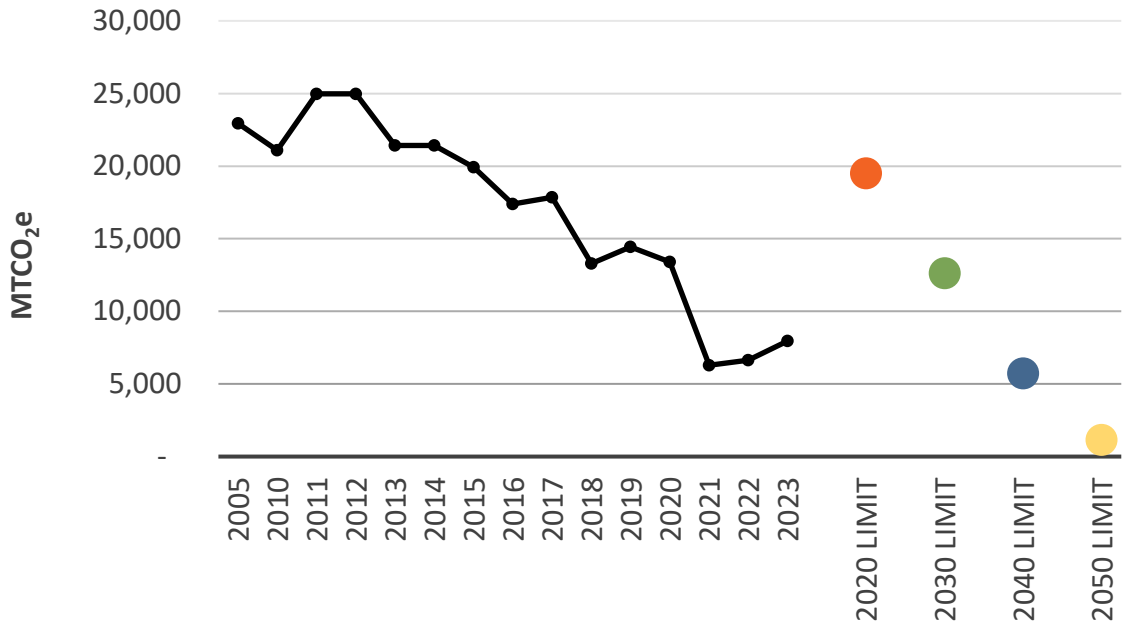


Figure 17. Department of Enterprise Services' Historic Emissions and Future Limits.

In 2023, the Department reported that 87% of emissions were from buildings and 13% were from transportation. The agency reported 4,498,305 sf of space, 90% of which they owned, 7% privately leased, and the remaining 2% leased from other state agencies. The square footage reported by the agency is significantly reduced from past reports due to changes in the calculations and building demolitions.

In 2023, 92% of the building sector emissions were from natural gas combustion while 8% was indirect electricity emissions. DES purchased over 41 million kWh of electricity through a zero-carbon green power contract, therefore reducing their electricity emissions significantly.

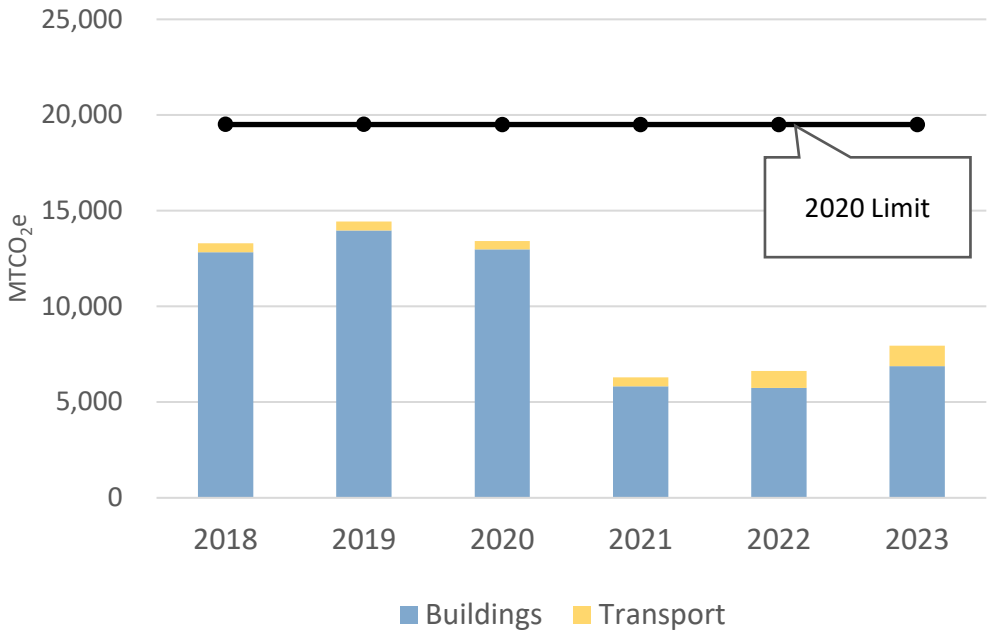


Figure 18. Department of Enterprise Services' Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

In the last two years, DES has: Increased number of electric vehicles for the agency. Rebuilt a natural gas boiler for the district energy system on the Capitol Campus to improve operational efficiency and safety. Installed submeters on the Capitol Campus to monitor energy use at the facility level as well as the district energy system. Major renovation of an historic building to upgrade the heating, cooling and lighting. Building replacement project to increase space, utility, and efficiency. Added electric vehicle charging sites to support increasing demand. Began work on district energy system replacement decarbonization plan. Reduced leased space.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

In the next four years, DES plans to: Continue planning efforts to decarbonize the Capitol Campus. Reduce building energy use through improvements such as lighting upgrades, building operating systems and controls, equipment replacement, additional solar installations. New facility construction targeting net-zero. Increase number of electric vehicles for the agency. Increase number of EV charging stations at agency facilities.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

The Department of Enterprise Services (DES) provides centralized business services to state government agencies; to other public entities such as cities and counties; to tribal

governments; and to Washington residents. Our mission is strengthening the business of government for a sustainable and just future. DES is prioritizing decarbonization strategies for our facilities and operations across all our lines of business. This includes everything from battery powered landscaping equipment and electric vehicles to facility upgrades and the replacement of the Capitol Campus district energy system. In 2023 we undertook a Facility Condition Assessment and a building submetering project. We will use this information to identify status of the buildings and the efficiency of their operations. These highlight deficiencies and potential opportunities to improve the effectiveness of a system, not just replace a part. It also provides needed details for the development of capital plans by using data to show the value of efficiency in the life cycle cost analysis tool. DES helps other agencies improve their operations through energy project management services. This includes project development and contracting with performance guarantees resulting in reduced energy use. DES is proud of its efforts and successes to electrify our fleet. We also oversee state agency vehicles, including contracts, leases and purchases. This gives agencies more tools to electrify their fleets as well. DES Real Estate services is responsible for housing agencies in private facilities. As part of this work, we prioritize facilities with a low Energy Use Intensity score when considering leasing space. DES also oversees statewide vendors and services. This includes contract prioritization and support for veteran, women and minority owned businesses, small businesses, and also for green products and services. This helps DES support diversity, equity, inclusion, and environmentally preferred purchasing.

Evergreen State College

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	6,602
Fossil Fleet Energy Use Emissions	195
Annual Fossil Greenhouse Gas Emissions	6,797

In 2023, The Evergreen State College (TESC) emissions were 15% below their 2020 limit and 31% over their 2030 limit.

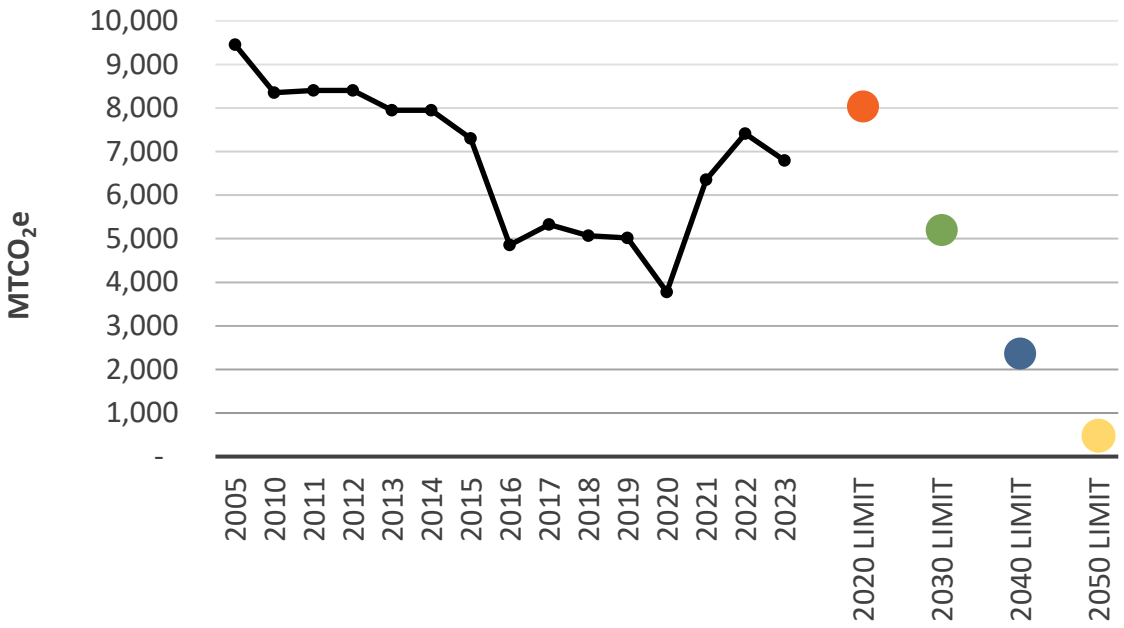


Figure 19. The Evergreen State College Historic Emissions and Future Limits.

In 2023, TESC reported that 97% of emissions were from buildings and 3% were from transportation. They reported 1,690,468 sf of building space, all owned by the college. 61% of building emissions were from natural gas combustion and 39% was indirect electricity emissions. Small amounts of diesel, propane and fuel oil also contributed to emissions from buildings.

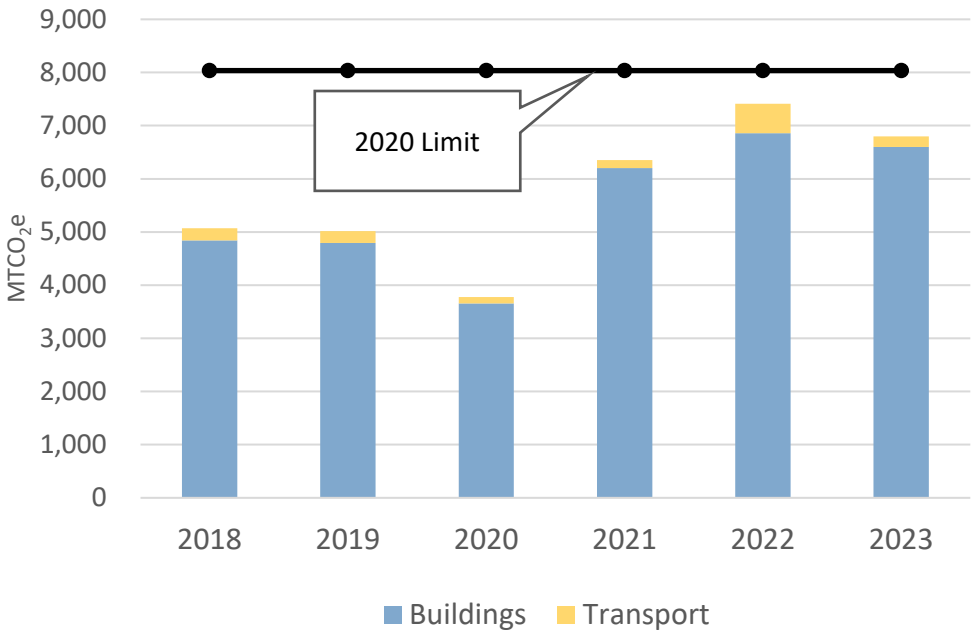


Figure 20. The Evergreen State College Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Early development of an asset management system CBPS compliance planning. Planning and funding a 94 kW solar PV project (starting construction in the summer of '24) Seminar 1 building final design, which includes disconnecting from the campus distributed steam and chilled water loops and installing heat pumps for building HVAC.

Priority actions planned for the 2025-27 & 2027-29 Biennia (short-term strategy)

Replace steam appliances where possible – main campus kitchen, science labs, swimming pool heat, and various building DHW – with electric Convert 19 student residence buildings from steam heat to electric Convert Seminar 1 from steam & chilled water to heat pumps Continue building out the asset management system Add more building electric sub-meters Address energy efficiency opportunistically during major repairs

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040 and 2050

Steam system Decarbonization Plan, which will include converting distributed steam system to building-specific heat pump systems and electrifying all steam and natural gas appliances (kitchens, labs, swimming pool heating, DHW).

Financial Management, Office of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	123
Fossil Fleet Energy Use Emissions	4
Annual Fossil Greenhouse Gas Emissions	127

Office of Financial Management (OFM) began reporting emissions in 2020 and have not yet established emission limits.

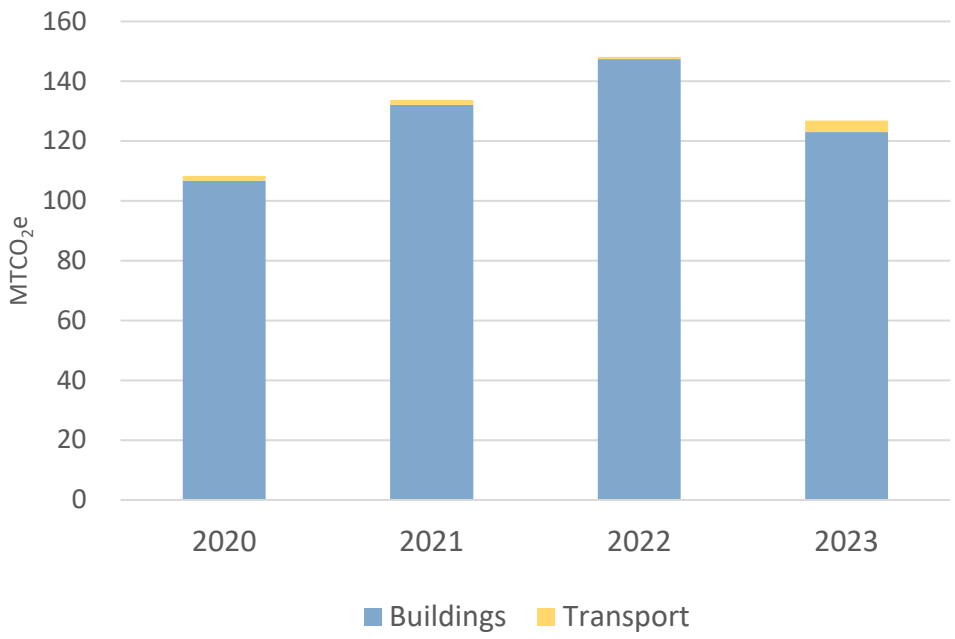


Figure 21. Office of Financial Management Emissions from Building and Fleets 2020-2023.

In 2023, OFM reported that 97% of emissions were from buildings and 3% was from transportation. They reported 111,778 sf of building space, 33% leased from DES, 27% privately leased and 40% leased from other state agencies. In 2023, 99% of building emissions were indirect electricity emissions and 1% was from natural gas combustion.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

OFM has reduced agency square footage by consolidating staff from four building locations into two due to many agency staff using telework as their primary work location. OFM has moved out of higher greenhouse gas producing buildings and consolidated into state owned LEED space. OFM was appropriated money as part of the Climate Ready Communities Act (ESHB 1176). Our Serve Washington division has used those funds to set up the Washington Climate

Corps Network (WCCN) which is a network of organizations, young adults, veterans, and professionals working together to build a climate resilient Washington. Serve Washington coordinates this network to conduct service projects building climate resilient communities, economies, and ecosystems. Serve Washington prioritizes service to overburdened communities where people face disproportionate environmental harms and risks and are often disproportionately comprised of vulnerable populations. OFM also received $1,500,000 of Climate Commitment Account funding to build a grant writing, tracking, and management database for state acquisition of federal funds and to support the development of state strategies for bringing specific types of federal funding to Washington in the form of a Federal Grant Database Solution.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Continue to monitor space usage and reduce our footprint accordingly. Reduce employee use of items that add additional electrical loads to agency facilities through adoption of agency rules, education, and monitoring. Implement the new WSDOT free Vanpool program for state agency staff supported by the OFM Commute Trip Reduction program to include OFM, GOV, and OII. Continue development of the Serve Washington WCCN program which will work towards achieving the following goals: increase participation in addressing climate challenges in overburdened communities. Expand the diversity, awareness, and accessibility of climate service opportunities in Washington. Create a service-learning program for funded network partners and their members. The service-learning program will increase awareness of and access to clean energy and climate-related career opportunities and networks. OFM will continue work on the Federal Grant Database Solution.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Continue to monitor space usage and optimize our footprint accordingly. Support DES efforts to modernize building system replacements in the Insurance Building that will lower greenhouse gas emissions. Work with DES to identify electric vehicle options for replacement of our fleet vehicles as they come up for replacement. Continue support of the Climate Commitment Act through development and support of the WCCN and database solution.

Fish & Wildlife, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	5,719
Fossil Fleet Energy Use Emissions	8,317
Annual Fossil Greenhouse Gas Emissions	14,036

In 2023, Department of Fish and Wildlife (WDFW) emissions were 10% over their 2020 limit and 71% above their 2030 limit. In 2021, WDFW conducted an extensive review of emissions data and identified new sources of emissions not previously reported, resulting in an apparent increase in emissions. This does not mean they are emitting more than in that past, but rather, that their emissions reporting is more accurate than in the past.

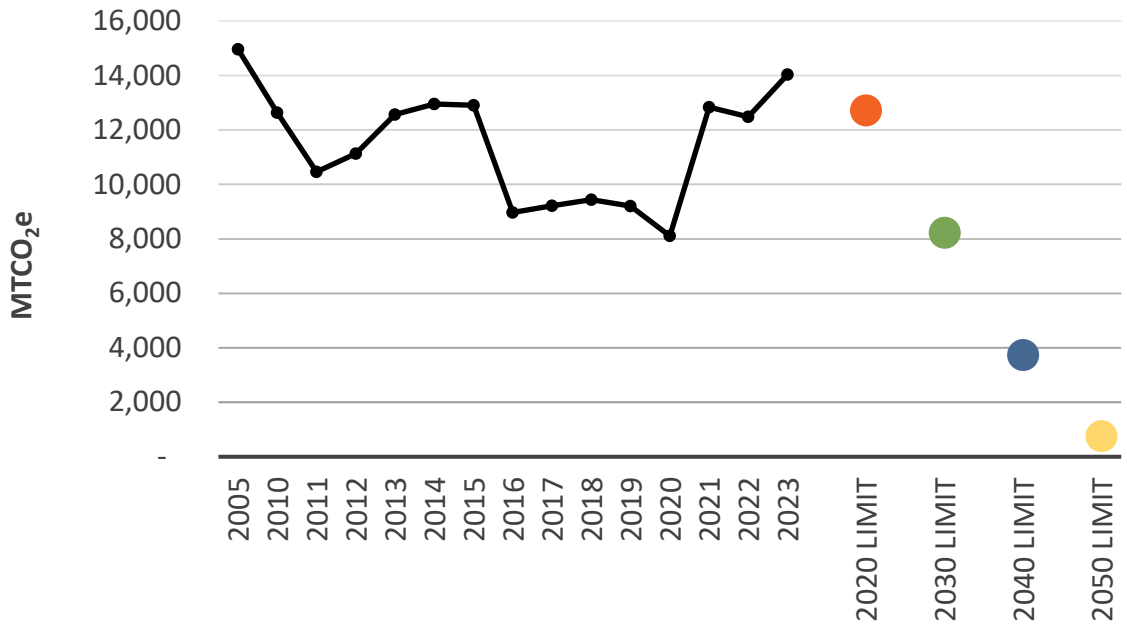


Figure 22. Washington Department of Fish and Wildlife's Historic Emissions and Future Limits.

In 2023, WDFW reported that 41% of emissions were from buildings and 59% were from transportation. The department reported 1,780,774 sf of building space, 80% of which they owned, 12% privately leased and the remaining 8% leased from DES. 8% of the building sector emissions were from natural gas combustion while 92% was indirect electricity emissions.

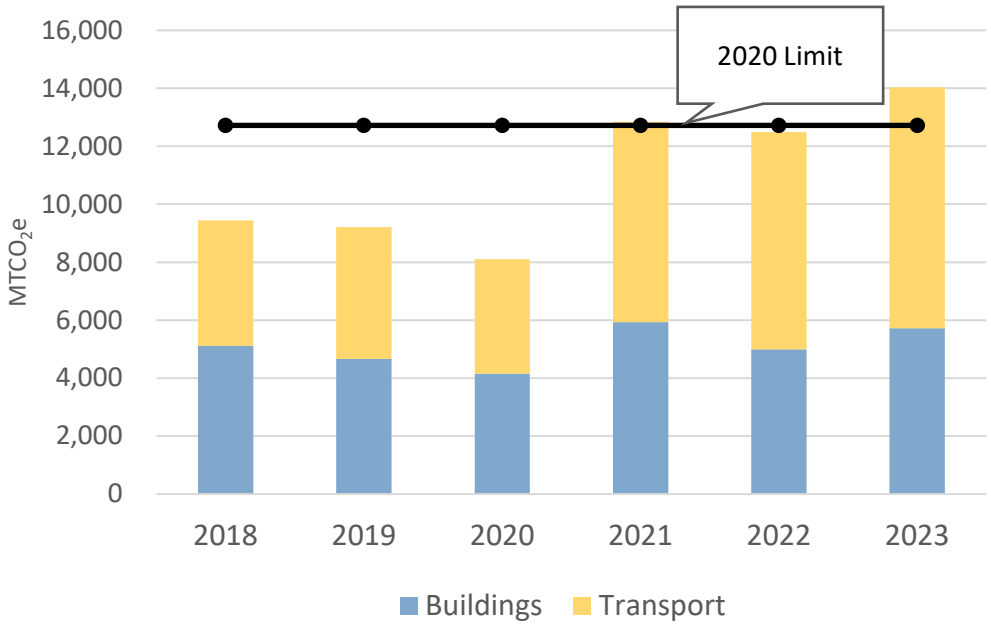


Figure 23. Washington Department of Fish and Wildlife's Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

In 2022 and 2023, WDFW took the following actions to reduce greenhouse gas Emissions:

- Install electric vehicle chargers at agency-owned offices, hatcheries, and wildlife areas and seek grant funding.
    - Successfully installed four Level-2 chargers at the WDFW Montesano Region 6 Headquarters, one charger at the WDFW Yakima Office, and two at the Tumwater Enforcement Shop. We are in the process of installing chargers at our regional offices in Ephrata, Mill Creek, Ridgefield, Spokane, Stanwood, and Ellensburg as well as other high priority facilities by the end of the 23-25 biennium. Based on these installations, we are also working to standardize the installation model in preparation for additional installations in the next budget cycle. Installing EV chargers where drivers can charge vehicles overnight and during the day while they work is our immediate priority.
    - Received $120,000.00 in funding from DES for charger installations.
- Develop an electric fleet transition plan that addresses which vehicles can be converted when given operational demands, charging infrastructure needs, costs, maintenance, and policy questions like pricing and public access.
    - Created a fleet electrification plan with the help of consultants from Washington State University that outlines an ambitious pathway to electrifying most of our fleet by 2030. We used the plan and insight from our fleet and facilities team to

strategically select the first round of EV Charger locations. We are refining the plan with internal calculations and updated data to identify locations for the next round of EV Charger installations, identify high priority vehicles to electrify, and plan for their transition (including forecasted impacts to our fleet budgets). In Spring 2024, we participated in the Breaking Barriers Fleet Decarbonization conference and training hosted by the Electrification Coalition and will use the tools and insights gained from this training to further refine our fleet electrification planning.

- Collaborate with DES to train staff on electric vehicle charging, driving, and troubleshooting in the field. Communicate resources to address common concerns.
    - Developed several training resources to support drivers including a New EV Driver Guide, Vehicle Transition Guide, EV Charging Guide, WDFW EV Charger Use Standard of Practice, and WDFW Home Charging Standard of Practice. ·
    - Conducted internal outreach to encourage Electric Vehicle use and adoption. Internal outreach included a Coffee Chat on EVs with the WDFW Deputy Director, a Director's Bulletin highlighting sustainability and fleet electrification efforts, a regularly updated Sustainability Intranet page, a Climate Seminar Series that included EV dedicated presentations, and meetings with drivers interested in transitioning to an EV.
    - Collected information about driving habits and EV driver experiences. We introduced a driving habits survey to better understand driver needs and routes frequently traveled. We are using the survey results to understand how our driving patterns as an agency impact communities across Washington and to prioritize which vehicles to transition first and where to install EV chargers. We also introduced an EV experience survey to better understand the challenges of using an EV and to guide resource development for future EV drivers
    - Leased a Ford F-150 Lightning to share with WDFW drivers across the state to better understand where it might be a good fit to transition to a permanent electric truck.
    - Leased a three shared EVs for WDFW offices to increase exposure to EVs, gather feedback, and encourage a shared vehicle model.
- Utilize new central fleet coordinator role to assist in implementing fleet actions.
    - Collaborated with the WDFW fleet manager to update our fleet procurement processes to streamline EV adoption.
- Implement energy efficiency improvements through ESPC contracts.
    - Received $750,000 in our 23-25 operating budget to fund energy efficiency retrofits primarily at fish hatcheries (our largest energy users). We opted to complete work internally instead of through ESPC.

- Assess feasibility and siting for solar energy systems on buildings and fish hatchery ponds; assess feasibility and siting for micro-hydro systems in fish hatchery pipes. Implement installations.
    - Contracted with an outside consulting firm, UMC, to identify how solar and micro-hydro systems might align with four goals: emissions reduction, cost savings, support for habitat renewable energy planning, and increased energy resilience. The assessment is ongoing, and the results will be used to direct future capital budget requests for energy efficiency and renewable energy projects.
- Increase staff capacity to implement energy efficiency and renewable energy projects and improve data and tracking of energy use.
    - In late 2023, hired a Sustainability Project Coordinator, who is leading updates to our Energy Star database to improve energy data tracking as well as a Facilities Sustainability Planner to lead facility energy efficiency and renewable energy projects.
- Provide financial incentives for commuting via sustainable modes (bike, walk, transit, vanpool, carpool); create a Commute Trip Reduction Program to implement commute actions; and hire an employee to administer the CTR program.
    - Expanded the agency commute trip reduction (CTR) program to include a financial incentive for employees using low or zero carbon transportation. The expanded CTR program launched in January 2024 under the leadership of our new Sustainability Project Coordinator and awards $1 per trip and up to $2 per day for employees who commute using low or zero carbon transportation.
- Provide employees with information and resources on how to use sustainable commute modes through an intranet page, trainings, etc.
    - Developed a CTR Intranet Page and facilitated monthly presentations at New Employee Orientation.
    - Engaged with employees through surveys and other outreach to identify and address barriers to participating in CTR. Current efforts underway to address barriers include installing new bike infrastructure at select offices.
- Participate consistently in Thurston Regional Planning Council biennial employee commute survey. Develop a supplemental commute survey for staff outside Thurston County.
    - Distributed the Thurston Regional Planning Council biennial employee commute survey and a supplemental commute survey for staff outside Thurston County in 2023.
- Track advances in the literature and support research to identify approaches to reduce hatchery fish digestion emissions.

    - Partnered with researchers from the University of Washington to measure Nitrous Oxide emissions generated from fish digestion at hatcheries. This project will serve as a starting point for collaborating with other state Fish and Wildlife agencies to develop more of a refined emissions tracking protocol and potentially identify a pathway for reducing these emissions.
- Develop and provide staff training of climate change to build capacity, knowledge, and motivation.
    - Planned and facilitated a lunchtime climate seminar series on Climate Mitigation, Resilience, and Sequestration.
- Participate in and advance interagency and interstate climate initiatives, conferences, and community of practice.
    - Participated in the Zero Electric Vehicle Working group, Breaking Barriers Conference, and regular Employee Transportation Coordinator meetings.
- Build on UW "How Can WDFW Increase Carbon Sequestration to Mitigate Climate Change?" report's research on carbon sequestration in WDFW lands. Implement recommendation to develop an inventory of carbon sequestration and storage.
    - Partnered with Ecology and consultants from the Greenhouse Gas Management Institute to develop a manual for tracking statewide carbon storage rates across six land use categories and an inventory of carbon stored in grasslands both statewide and within WDFW-managed lands.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

To reach the goals outlined in the WDFW Sustainability Plan, WDFW plans to take the following actions in the next four years. The following are actions described in the Sustainability Plan and sub bulleted items are planned efforts to support the Sustainability Plan action.

- Install electric vehicle chargers at agency-owned offices, hatcheries, and wildlife areas. Seek grant funding.
    - Install electric vehicle charging infrastructure at 15 agency-owned facilities (requested in 25-27 capital budget).
    - Hire a 1 FTE to support the agency's head electrician in installing EV chargers (requested 25-27 decision package).
    - Complete facility electricity assessments to understand long-term electrical needs and plan for future EV Charger installations (requested in 25-27 decision package).
    - Pursue Clean Fuel Standard Credits for WDFW owned chargers.

- Develop an electric fleet transition plan that addresses which vehicles can be converted when given operational demands, charging infrastructure needs, costs, maintenance, and policy questions like pricing and public access.
    - Refine electric fleet transition plan with new data and forecasting tools.
- Update lease terms to require installation of electric vehicle chargers at leased offices, hatcheries, and wildlife areas.
    - Install electric vehicle charging infrastructure at 5 leased facilities (requested in 25-27 decision package).
- Collaborate with DES to train staff on electric vehicle charging, driving, and troubleshooting in the field. Communicate resources to address common concerns.
    - Develop and update outreach materials to support WDFW staff in the transition to electric vehicles including launching EV driving trainings, expanding written resources, hosting panels with EV drivers, and hosting Ride and Drive events.
- Track technology advances for electric UTVs, snowmobiles, motorcycles, etc.; acquire and test as they come on market.
    - Purchase 10 E-bikes to replace vehicle miles traveled on UTVs (requested in 25-27 decision package).
- Assess the potential of shifting more vehicles into a shared/pool approach rather than being assigned to individuals to encourage carpooling between work sites.
    - Encourage carpooling and sharing fleet vehicles by more strategically analyzing fleet data to identify underutilized fleet vehicles and match them with drivers.
    - Develop a standard model for managing shared vehicles within the agency.
- Work with DES to modify vehicle utilization requirements that create incentives to drive more.
    - Work to create a leaner fleet with shared vehicles and carpooling. Address vehicle utilization category classifications to eliminate unnecessary driving to meet requirements.
- Improve data on fleet inventory, fuel use, utilization, and MPG to enable better understanding of trends and opportunities to reduce emissions.
    - Support agency fleet manager in optimizing and managing agency fleet vehicle data, through surveys, employee outreach, and data analysis and storage tools like Excel and PowerBI.
- Assess feasibility and siting for solar energy systems on buildings and fish hatchery ponds; assess feasibility and siting for micro- hydro systems in fish hatchery pipes and implement installations.

    - Install renewable energy systems based on the results of the solar and micro-hydro renewable energy assessment (requested in 25-27 decision package).

- Improve data on energy use, facilities inventory, and utilities inventory through systems like Energy Star Portfolio Manager and meters/sub-meters to enable better understanding of trends and opportunities to reduce energy use. Implement recommendations in Washington State University Energy Program report.
    - Collaborate with Facilities Team to update addresses and facilities data in the Facilities Portfolio Management Tool.
- Utilize Energy Saving Performance Contracting to identify, prioritize, and implement energy efficiency improvements, such as pumps, insulation, lighting, windows, and weatherproofing.
    - Complete energy efficiency and electrification upgrades at select agency facilities and hatcheries and identify additional energy efficiency retrofits through facility audits (requested in 25-27 capital budget).
- Institute a policy to require electric heating systems rather than gas in renovations and new construction. Develop and implement a plan to replace existing gas heating systems.
    - Conduct feasibility study to plan for electrification of highest Natural Gas facilities (requested in 25-27 decision package).
- Provide financial incentives for commuting via sustainable modes (bike, walk, transit, vanpool, carpool).
    - Participate in and promote the statewide fare-free vanpool benefit for benefit eligible state employees.
    - Continue to expand CTR program to increase participation in CTR incentive program launched the in 23-25 biennium.
- Communicate to staff implementation updates, sustainability resources, and answers to common questions and concerns through intranet, emails, and presentations.
    - Maintain updated Intranet Page with Sustainability resources and offer regular presentations and engagement opportunities with programs.
    - Complete internal greenhouse gas calculations on mandatory and voluntary sectors every two years (2024, 2026).
    - Share progress towards 2030, 2040, and 2050 goals agency wide.
- Develop public communications materials about climate change, sustainability actions the agency is taking, and what actions partners and the public can take.

    - Update the public facing WDFW Climate Change website to include more details on the agency's climate resiliency initiatives; launch a new Sustainability Webpage with details on internal agency greenhouse gas emissions reduction efforts.

- Integrate Sustainability Plan implementation into the biennial budget process to identify which actions to implement and secure the necessary resources.
    - Pursue decision package funding for the 2025-2027 and 2027-2029 biennial budgets to support Sustainability Plan implementation.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

The WDFW Sustainability Plan outlines a path to reducing emissions from mandatory sources including fleet and buildings and voluntary sources including employee commuting, business flights, hatchery fish digestion, solid waste, water, purchased materials, and toxic chemicals. The plan is forecasted to reduce emissions in line with 2030 RCW requirements but falls short of meeting the 2040 and 2050 goals because low-emissions technologies are not yet available for some aspects of WDFW operations. We plan to update the plan in 2027 to reflect new technological advancements. In the meantime, we remain focused on implementing the current version of the Sustainability Plan and will continue to focus efforts on reducing our largest emissions sources by building upon the realized and expected momentum built to date and in the coming years. Our long-term strategies are therefore a continuation of our current efforts to (1) reduce fleet emissions by transitioning to electric vehicles, vessels, and equipment, reduce vehicle miles traveled, and develop a leaner fleet; and (2) reduce building emissions by reducing energy use through energy efficiency projects, converting gas systems to electric, transitioning to renewable energy, and improving facilities management.

Health, Department of

Emissions Profile

In 2024, the Department of Health (DOH) revised their historic emissions back to 2018. The data in this report reflects these revisions.

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	1,335
Fossil Fleet Energy Use Emissions	197
Annual Fossil Greenhouse Gas Emissions	1,532

In 2023, DOH's emissions were 78% below their 2020 limit and 66% below their 2030 limit.

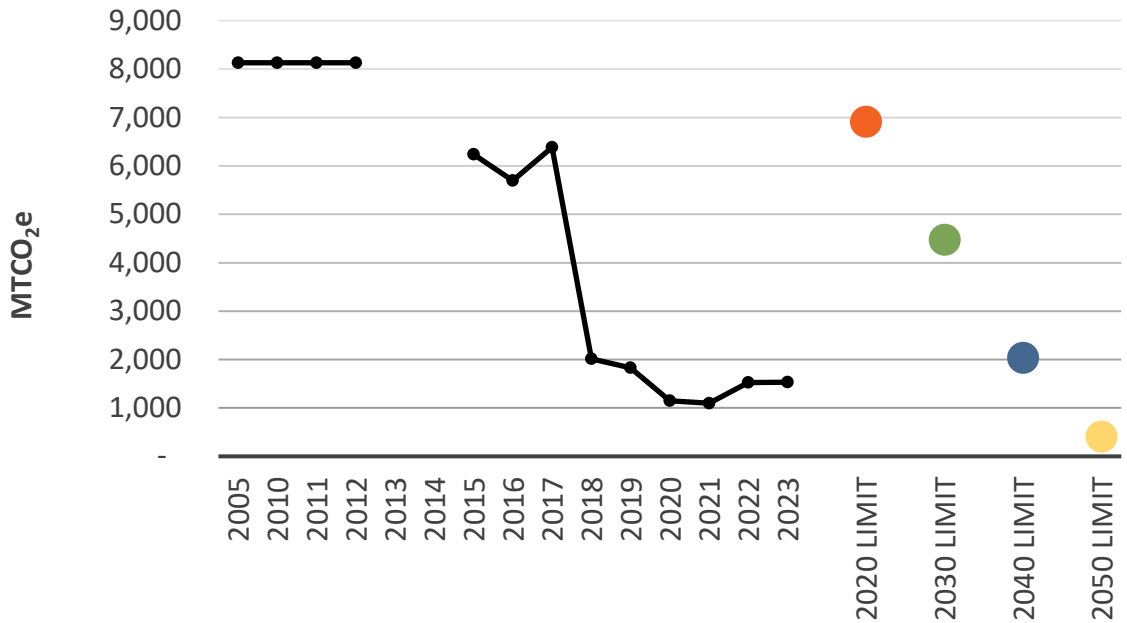


Figure 24. Department of Health Historic Emissions and Future Limits (note: data revised after 2018).

In 2023, the DOH reported that 87% of emissions were from buildings and 13% were from transportation. The department reported 549,123 sf of building space, 16% of which they owned and 84% privately leased. In 2023, 35% of building emissions were indirect emissions from steam purchased through a district heating system. An additional 11% of building emissions were from natural gas combustion and 54% was indirect electricity emissions. 100% of DOH's transportation emissions are from motor vehicles.

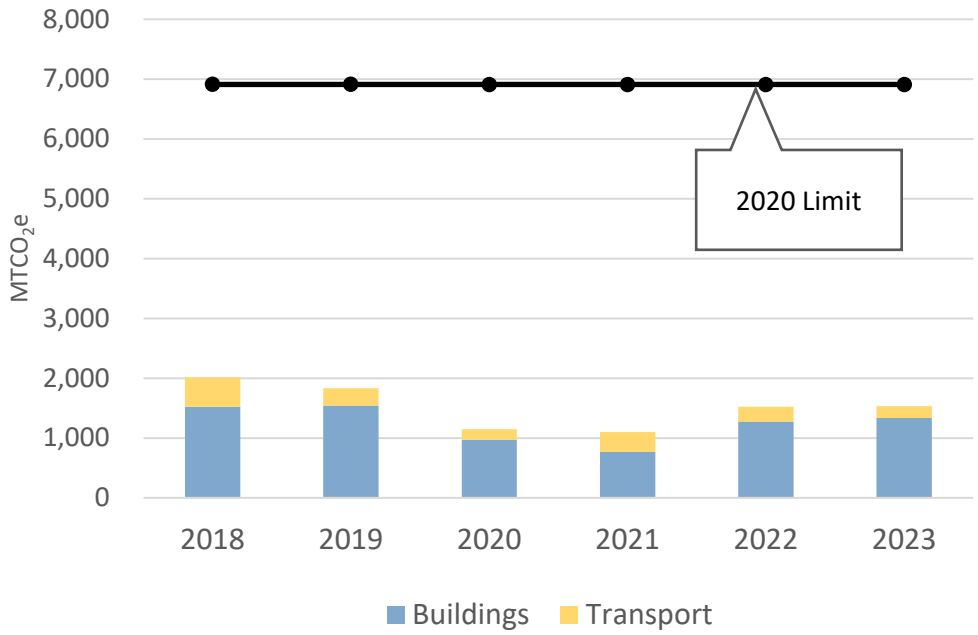


Figure 25. Department of Health Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Public Health Lab (PHL) in Shoreline: Ongoing installation of a geothermal heat pump to replace outdated steam system. Expected operational by Fall 2024. Ongoing installation of a 12-kW solar array. Expected operational by Fall 2024 , Installation of 6 additional L2 charging ports (12 total L2 ports on site by Fall 2024) Town Center East #1, #2, and Garage (TC 1, TC 2, TC garage) in Tumwater: HVAC scheduling and controls optimization, Scheduling completed in October 2023, Setpoint optimization completed in May 2024, Thermal-reducing window shades installed by July 2024 ,LEDs, Currently installed in stairwells and bathrooms; project approved to finalize 100% LED installation w/ occupancy sensors and daylight harvesting capabilities -EVSE, 15xL2 40amp charging units to be installed by end of 2024 Spokane Office: Reduced DOH's facility footprint in Spokane by 40%, LEDs w/ occupancy sensors (completed by the end of 2024), EVSE L2 ports (x3)

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Agencywide replacement of ICE vehicles for BEV alternative, as they reach EOL. Installation of charging stations at TC (15xL2), PHL (12xL2), Spokane (2xL2), and MLC (5xL1). Continued support for telework options for employees Facilities: Transition remaining fluorescent fixtures to LEDs at the following sites: TC campus , MLC, Boat shed, EPR/Facilities Warehouse, Spokane Office, Richland Office: Weatherization of building envelopes (where applicable and fiscally sound), Occupy new, right-sized, modernized space (Spokane Office), Transition of all appliances (microwaves, printers, refrigerators, etc.) to EnergyStar rated equipment as they

reach end of life, Deep Freezers at PHL: temperature increase from neg.80deg.F to neg.70deg.F, Routine checks on HVAC operational thresholds (i.e., occupancy schedules, setpoints, etc.) and equipment health for all DOH sites, upgrading units to more energy-efficient alternatives where applicable/feasible/reasonable. Clean & Renewable: Commissioning of geothermal heat pump at PHL -12-kW solar array currently being installed, DOH will pursue funding to increase array size beyond it's what was currently funded by legislature (i.e. minimum size to meet building code), Continuation of Green Power Purchasing Contracts at: TC campus, EPR/Facilities Warehouse, Boat Shed , Assess feasibility of Green Power Purchasing Contract at: MLC, Spokane Office, Richland Office Planning and Budget Development: Pursue grant funding where applicable (i.e., building decarbonization and weatherization, renewable energy generation, EVSE, etc.), Funding requests (i.e., increased lease costs for EVs, building improvements, EVSE, etc.).

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

DOH's long-term strategy to meet the emissions limits in RCW 70A.45.050 (i.e. by 2050, reduce greenhouse gas by 95% below 2005 levels) are centered around the decarbonization of our fleet and facilities through electrification of existing gas-powered equipment (i.e. transition of ICE vehicles, gas appliances/boilers/water heaters, etc. to a zero-emission alternative). As equipment and facilities electrify, DOH will continue to utilize Green Power Purchasing Agreements through electric utility services and, wherever possible, pursue generation of on-site renewable energy (i.e., solar, geothermal, etc.). Additionally, DOH will continue to educate employees of proper practice as it relates to environmentally preferred purchasing, optimal waste diversion/disposal, and increasing operational efficiency at the agency workplace.

Labor & Industries, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	189
Fossil Fleet Energy Use Emissions	2,658
Annual Fossil Greenhouse Gas Emissions	2,847

In 2023, the Department of Labor and Industries (L&I) emissions were 38% below their 2020 limit and 4% below their 2030 limit. In 2023, the agency significantly reduced their emissions by purchasing green power.

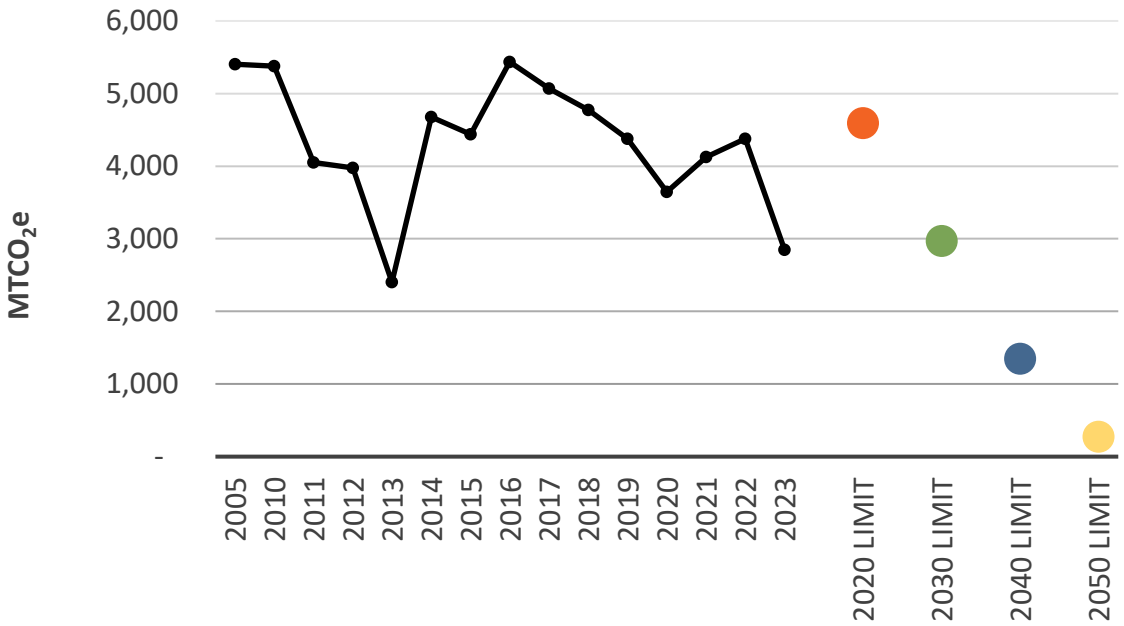


Figure 26. Department of Labor and Industries Historic Emissions and Future Limits.

In 2023, L&I reported that 7% of emissions were from buildings and 93% were from transportation. The department reported 854,997 sf of building space, 54% of which they owned, 44% privately leased and the remaining 1% leased from DES. Beginning in 2023, 100% of building emissions were from natural gas combustion as their green power contract eliminated emissions from electricity use. 100% of L&I's transportation emissions were from gasoline used in motor vehicles.

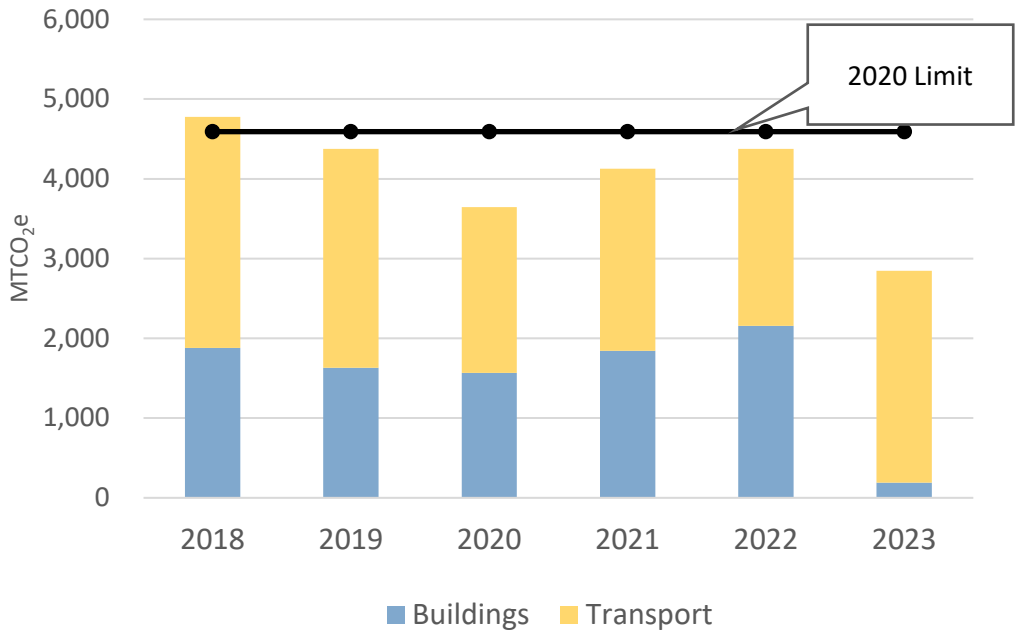


Figure 27. Department of Labor and Industries Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

HQ Building Investments: During 2022 & 2023, Labor and Industries has continued partnership with the DES Energy Program and Energy Services Contractor and invest in HQ building infrastructure to replace mechanical and electrical equipment with efficient new technology and has completed phase 2 of multi-phase project with a goal of net zero. These initiatives have a guaranteed energy savings of 126,000 kWh/yr and contribute to Labor and Industries overall reduction in Greenhouse Gas Emissions and meeting target goals. The following were completed in 2022-2023: Purchased 100% of our energy for the Tumwater HQ building the PSE Green-e Energy Certified Voluntary Market Sale - Utility Green Pricing Program. This change resulted from a reduction of approximately 1,300 MT CO2e, Retrofitted two main Air Handlers with efficient fan wall system. Replaced 12 building exhaust fans with Variable frequency drives that modulate speed. Replaced building cooling tower, Removed building fluid cooler Data and UPS units replaced with temp controlled heat pumps, Configured data racks to allow for hot and cold rows Installed curtain wall containing the data racks--reduced the cooling footprint Safety and Health Lab and Training Center The Department of Labor and Industries and Department of Agriculture completed construction of a new Safety and Health Lab and Training Center. Building Energy System Features: Zero Net Energy Capable with a predicted energy usage of 85 EUI [kBtu/SF/yr.], achieving over 50% savings as compared to the 2015 WSEC and designed with the ability to achieve Zero Net Energy with onsite renewables. Project is designed to be Zero Net Energy Capable and meet Governor's Order 20-01 for State Agencies, with roof space and site infrastructure to accommodate photovoltaic panels to offset all annual energy usage. All-electric heat pump-based HVAC system with geo-exchange serves the entire building

with no fossil fuel consumption. Ground-source and air-source heat pumps use heat recovery to maximize energy efficiency and water conservation. Enhanced commissioning included design and construction review of mechanical, electrical and plumbing systems and envelope, with monitoring-based system for optimal energy use. All significant energy uses are sub-metered. Domestic and irrigation water is sub-metered. Building is designed for demand response, to reduce energy usage by 10% during peak. All-LED interior lighting minimizing downlight. Several skylights provide an abundance of natural light into the corridors and break areas. Ambient light sensors adjust light levels based on natural light. Office and training program areas include natural and mixed mode ventilation systems providing a healthy and efficient environment. Ceiling fans and radiant heating and cooling improve occupant comfort while saving energy. Additional Note: The current LEED rating for the building is Silver. We are two points away from achieving Gold and our final target is Gold. Solar panels were installed on the roof in 2024. With the incorporation of Solar panels on the roof and parking lots, which is out next project, we will achieve Gold and bringing the building closer to net-zero. Fleet: During 2022 & 2023 and continuing to 2024, Labor and Industries continued to replace as many internal combustible vehicles with BEV with added capacity as they have become available. Currently Labor and Industries has 40 BEV's in its fleet. They consist of; 5 Chevy Bolts about 240-mile range, 33 Ford Mach E's about 300-mile range, 2 Volkswagen ID.4's about 290-mile range. To further allow for increased drivability, Labor and Industries installed 15 outlets in employee's homes that allow for a level 2 charge. A total of 18 fleet vehicle chargers and 6 employee vehicle chargers are available at HQ. We recently installed 4 level 2 chargers in Bellevue and 2 at the Tacoma field office. Additional electric vehicle charging station.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Labor and Industries will continue to invest in the Tumwater HQ as well as Lab and training Center infrastructure and equipment. Planning is underway to retrofit 4,200 fluorescent fixtures in HQ to LED with integrated occupancy sensors. This project will be fully funded through Department of Commerce grant and PSE Energy incentives. The project has an estimated savings of $44,400/ yr. and guaranteed energy savings of $21,700/yr. respectively. Labor and Industries will evaluate possibility of purchasing energy from renewable sources as well as installing Secondary Commercial Window units in the headquarters building to further increase efficiency and r value of existing windows.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

The Department of Labor and Industries has plans to install solar panels on the HQ roof and Safety and Health Lab and Training Center and parking lots; HQ building controls, VAV boxes and associated other equipment not replaced during other projects will be replaced as budget allows with a goal of net-zero for each building as funding allows.

Liquor & Cannabis Board

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	110
Fossil Fleet Energy Use Emissions	539
Annual Fossil Greenhouse Gas Emissions	649

The Liquor and Cannabis Board (LCB) emissions dropped significantly when they sold the state-owned liquor stores between 2011 and 2013. In 2023, they were 84% below their 2020 limit and 76% below their 2030 limit.

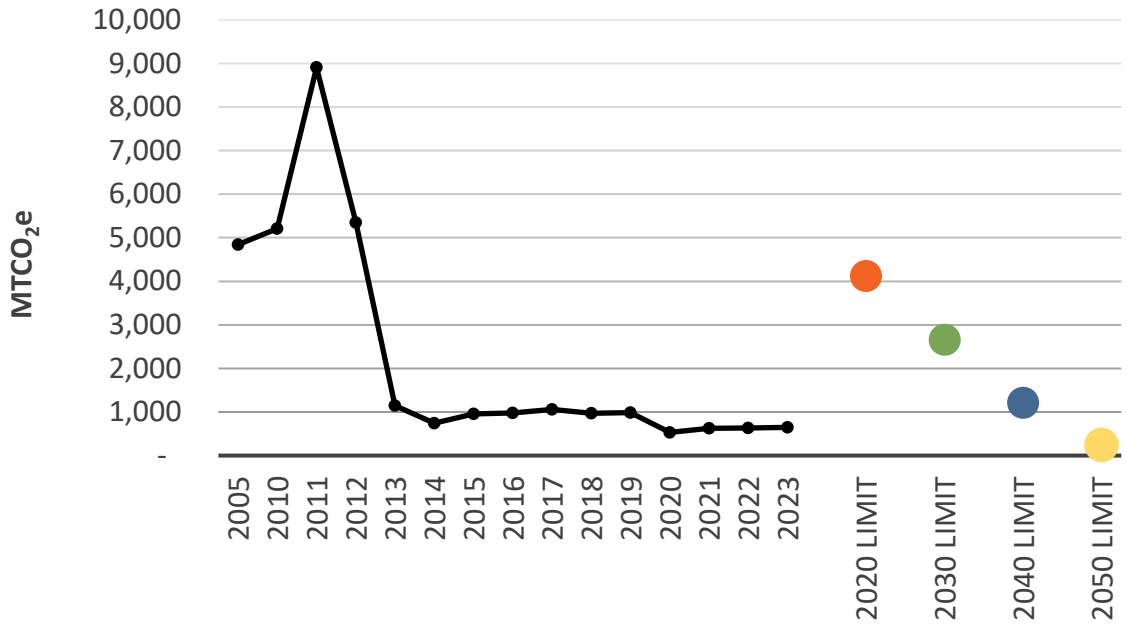


Figure 28. Liquor and Cannabis Board Historic Emissions and Future Limits.

In 2023, the LCB reported that 17% of emissions were from buildings and 83% were from transportation. They reported 81,930 sf of building space, 98% privately leased and the remaining 2% leased from other state agencies. LCB leases an additional 15,740 sf of space (7 facilities), but do not have data for those facilities. They have attempted to work with property owners to acquire the data, but those spaces may not be sub metered since they are each under 5,000 sf (the average space is about 2,300 sf).

In 2023, 17% of building emissions were from natural gas combustion and 83% was indirect electricity emissions.

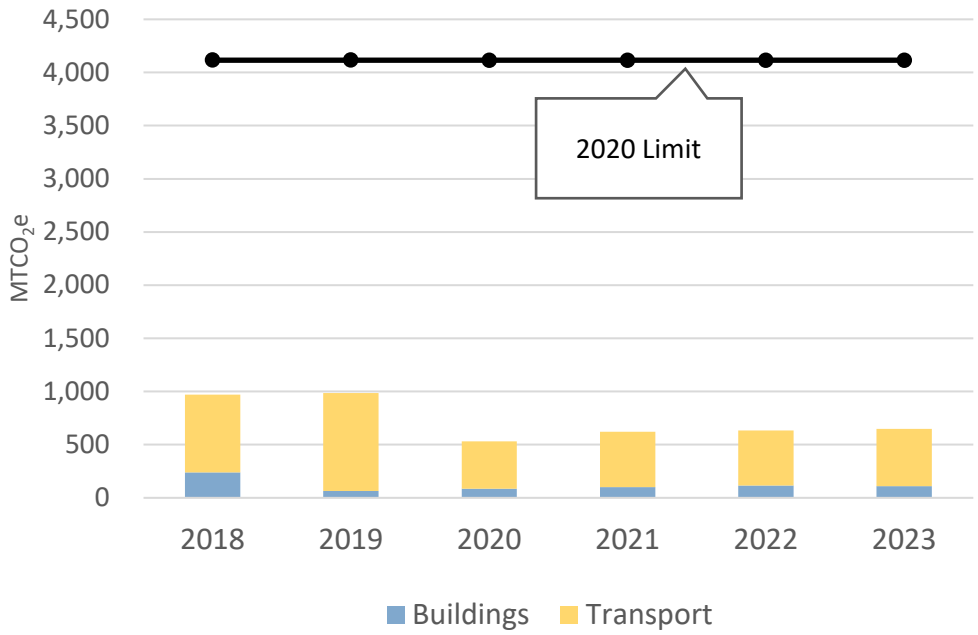


Figure 29. Liquor and Cannabis Board Emissions from Building and Fleets, 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Budget and Finance The agency has exceeded investment targets under the CRIB since 2020. WSLCB expects to continue that trend. A major contribution to CRIB is the 10-year investment in our headquarters lease. The lease was negotiated to include upgrades in the amount of $1,158,127.00 to the building to reduce energy consumption and increase efficiency of building systems. This investment runs through 2029. Additionally, there have been significant contributions for EVSE at agency facilities in the amount of $527,162.52 Environmental Purchasing, Toxic and Waste Reduction The agency has established standards for office products and equipment to adhere to EPP guidelines. Operational Support website is updated monthly “Efficiency & Environmental Performance Guidance” for purchases to avoid/reduce with acceptable alternatives and has links to additional resources. The standards are reviewed quarterly and revised in collaboration with IT. The Agency has implemented purchasing audits to monitor EPP compliance. 9% of supply orders audited had a compliance issue. The agency took a pause from audits in October 2023 to customize Purchasing Training for users within the agency. Mandated DES Purchasing training is at 100% compliance. Users are required to complete training within 90 days of approved delegation or training refresh date. Compliance went from 32% to 100% from 2022-2023. SEEP communications were distributed to the Operational Support team members to review and act upon. New vendors and state contracts required the agency to adjust current processes to allow for increased use of Diverse vendors along with green purchasing options. System policies applied in Amazon for Diversity show that 53% of spend in 2023 Jan-Oct was with a registered supplier with diverse certifications. Applied new policy for EPP to see if it drives users to climate pledge friendly products. Safety Data

Sheets (SDS) are located on the agency intranet containing all office products supplied by the agency. Products are reviewed quarterly to ensure the items are less toxic or non-toxic then the prior item. During review items are compared to the DES environmental calculator to ensure substantial compliance. Facilities EVSE equipment purchased for four (4) facilities. Three (3) facilities completed construction in 2023. Two facilities share EVSE equipment with other agencies through an IAA negotiated in 2023. Created a position and hired a Building Operations Supervisor. Transportation 16% of agency fleet transitioned to BEV by end of 2023. Outreach was conducted to staff eligible for ORCA card program. As a result, participation grew from 26% to 28% of authorized users.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Environmental Purchasing, Toxic and Waste Reduction as DES environmental and purchasing policies are updated, the Agency will mandate training for affected staff, alter processes, and update forms & templates to ensure compliance. The agency will ensure all employees with delegated purchase authority take mandated training within 90 days of authorization. Agency specific training will also continue as needs arise to reduce non-compliance. The agency will continue to review agency standards quarterly to adjust to updated specification guidelines as contracts, technology, and products evolve. Remove standards that are obsolete and update Safety Data sheets (SDS) as necessary. The agency will be standing up a new website internal and external. During the design phase Operational Support will make efforts to integrate SEEP topics throughout the platform to promote education, direction, and support to our employees. The agency is committing significant resources and effort to environmental purchasing. The agency will be conducting a study of current process and provide recommendations for improvement to streamline administration and increase compliance with policy. The agency will continue to conduct audits to ensure significant compliance as outlined under the DES Risk Assessment policy. Data from 2023 internal audits show that 9% of equipment and supply orders were non-compliant. Develop a plan to extend replacement cycles on assets where possible (i.e., computers, cell phones, etc.) Facilities The agency will provide staff options to work in field locations closest to their home to reduce commute length. As leases in our field offices come due, the agency is reviewing the options with DES Real Estate Services to reduce the environmental impacts whenever feasible. Some examples of things already implemented, green cleaning contract at headquarters, heating and lighting at headquarters, EVSE at several facilities. Three (3) leases are due to end 2024-2026. Two (2) leases fall within a high-risk health disparity area. Other Strategies Employees required to be in the office one day per week and encouraged to use TEAM's meetings to reduce commuting and driving agency vehicles. The agency will continue to serve on the SEEP Guidance Team, Governing Council, and workgroups. WSLCB will continue to lead efforts to increase compliance across the SEEP suite of projects, and initiatives. Transportation The Agency Transportation Officer (ATO) will assemble a Fleet Decarbonization Plan by end of CY 2024. Continue with fleet transition to BEV. By end of calendar year 2024 fleet should meet or exceed RCW target of 40% for 2025.The Agency will replace a minimum of 22 vehicles between 2025-2027. Agency evidence van will utilize WSDOT

fuel stations, when possible, to increase use of R99 biofuel. The agency has signed an IAA with WSDOT to promote vanpool use by providing subsidies to users.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

Environmental Purchasing, Toxic and Waste Reduction The agency will explore use of lead-free ammo and electric hand dryers. Facilities As leases in our field offices come due, the agency is reviewing the options with DES Real Estate Services to reduce the environmental impacts whenever feasible. Some examples of things already implemented, green cleaning contract at headquarters, heating, and lighting at headquarters, EVSE at several facilities. Eight (8) leases are due to end 2027-2029. Five (5) leases fall within a high-risk health disparity area. The agency will be working with landowners to ensure compliance with clean building laws. Some other areas being explored are energy benchmarking, maximize space utilization, enterprise-wide tenant policies, tenant training, green cleaning, energy star appliances, and the agency will endeavor to stand up a recycling program at all facilities to cover agency needs and reduce landfill waste. Transportation The agency Transportation office (ATO) will continue to update the Fleet Decarbonization Plan. The Agency will replace a minimum of 7 vehicles between 2027-2029.

Natural Resources, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	2,054
Fossil Fleet Energy Use Emissions	9,351
Annual Fossil Greenhouse Gas Emissions	11,405

In 2023, Department of Natural Resources (DNR) emissions were 28% above their 2020 limit and 97% above their 2030 limit.

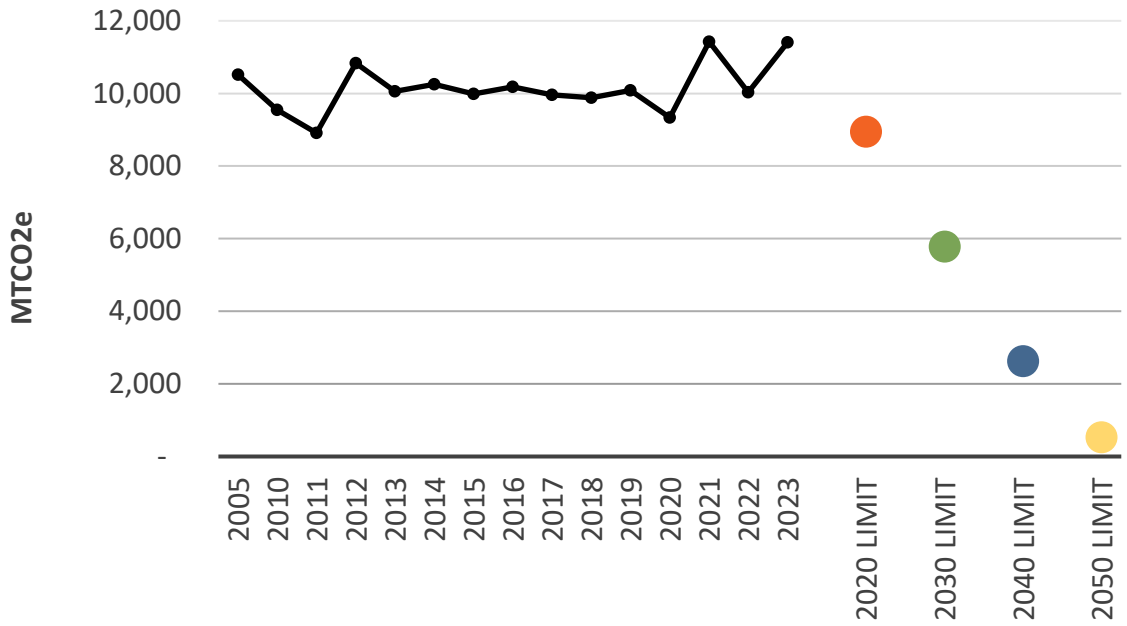


Figure 30. Department of Natural Resources Historic Emissions and Future Limits.

In 2023, DNR reported 18% of emissions were from buildings and 82% were from transportation. The department reported 1,033,275 sf of building space, 80% of which they owned, 15% leased by DES, and 6% privately leased. In 2023, 36% of building emissions were from natural gas combustion, and 64% was indirect electricity emissions.

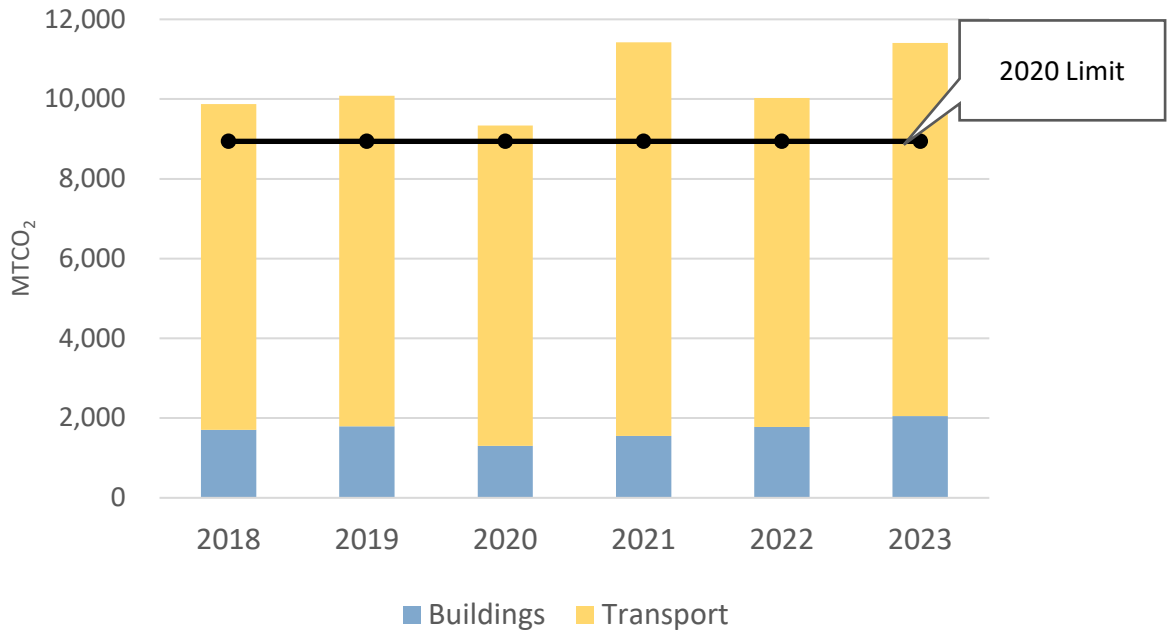


Figure 31. Department of Natural Resources Emissions from Building and Fleets, 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

DNR's "Net Zero" decision package was reviewed by the legislature and funded in the 23–25 Biennium. In response to the climate commitment act (CCA), the agency created a program dedicated to reducing the greenhouse gas emissions (greenhouse gas) attributed to its fleet and facilities operations: the Sustainable Operations program. The new program went "live" in December 2023, perhaps the first time a program within Washington state government has been wholly dedicated to emissions reductions instead of book-ending this work onto other programmatic responsibilities. The Sustainable Operations program has already begun engaging in agency-wide coordination of greenhouse gas mitigations, measures, and planning efforts. The Sustainable Operations program is currently using an Energy Savings Performance Contracting (ESPC) contract via Department of Enterprise Services (DES) and working with MacDonald Miller Facilities Solutions to complete a technical assessment of the electrical infrastructure at key agency-owned locations throughout the state. The data from the assessment will help gauge the cost and feasibility of installing Electric Vehicle Supply Equipment (EVSE), also known as EV chargers, that would be required to support large-scale fleet electrification. Current planning efforts are focused on electrification of the agency's light fleet, which is made up of passenger vehicles, including all sedans, SUVs, and pickup trucks up to a ½ ton capacity. The approximately 950 vehicles in this category are stationed at locations across the state. The agency is also using its funding to create a formal battery-electric vehicle (BEV) 4x4 truck pilot. The pilot is gathering real-world working knowledge and user experience operating 15 fully electric trucks on a daily basis in standard DNR work environments across the state. To facilitate use in DNR work environments, all 15 BEV trucks

have been up-fitted with standard DNR off-road-capable tires and state radio systems. DNR has continued planning and implementing improvements across agency facilities. These improvements include ESPC contracts for the agency's Tumwater compound and SE region Ellensburg Facility. DNR continues to facilitate virtual or online communication tools for staff engagement in lieu of in-person required meetings. DNR continues in our commitment to procure the most efficient Internal Combustion Engine or ICE-powered vehicles and equipment for all aspects of the agency's fleet. Along with alternative-fuel vehicles for administrative staff not needing to go off-road.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

In the next two biennia, the Department of Natural Resources (DNR) will make major strides in the electrification of its fleet, based on planning initiated in 2023. Transportation is by far the agency's most significant source of greenhouse gas emissions. As noted, the agency created a new program last year, the Sustainable Operations Program, which is focused on meeting the legislative goals. The Sustainable Operations Program plans to significantly reduce the agency's emissions by: Transitioning to electric-powered light fleet vehicles and installing required infrastructure to the furthest extent possible, contingent on future funding, utility provider upgrade ability, and the availability of required products (i.e., electrical transformers, charging stations, and vehicles). Transitioning to electric equipment used for maintenance; that is, replacing the "small motored" lawn and grounds type equipment, that is traditionally powered by gasoline or diesel. Using change management principles to foster adoption and consistent usage by staff. Continuing to improve the efficiency of the agency's many facilities throughout the state.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

The agency will continue to support its new Sustainable Operations Program, created in 2023. Allowing the program to focus on agency emissions reductions efforts and other programmatic responsibilities. This program will lead implementation of DNR's primary long-term strategy for meeting the emissions limits: electrifying its fleet of equipment and vehicles, as continuing improvements in technology and available funding make this operationally possible. Full electrification of the DNR fleet will transform how many field staff perform their work, and thus systematic encouragement will be important to foster adoption. The Sustainable Operations Program will also manage the implementation of other vital strategies for greenhouse gas reduction, especially improving the efficiency of the agency's many facilities. The program will ensure that applicable facilities meet the standards of the Clean Buildings Act as well as Energy Star reporting requirements. Working to prioritize facility upgrades, ensure facility energy efficiency, and reduce current grid reliance, will continue to apply of the agency's facilities across the state.

Parks & Recreation Commission

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	4,732
Fossil Fleet Energy Use Emissions	2,987
Annual Fossil Greenhouse Gas Emissions	7,719

In 2023, Washington State Parks and Recreation Commission (WSPRC) emissions were 3% above their 2020 limit and 59% above their 2030 limit.

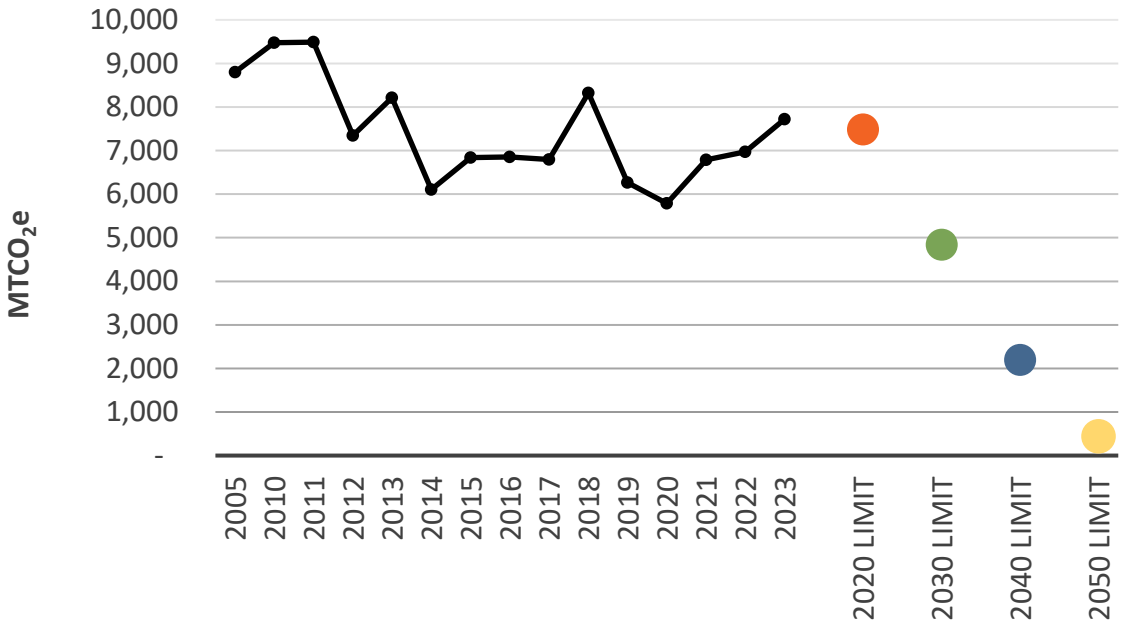


Figure 32. State Parks and Recreation Commission Historic Emissions and Future Limits.

In 2023, the WSPRC reported that 61% of emissions were from buildings and 39% were from transportation. The department reported 3,287,547 sf of building space, 98% owned by the agency, 2% leased by Department of Enterprise Services. In 2023, 13% of building emissions were from fossil fuel combustion (mostly propane and fuel oil) and 87% was indirect electricity emissions. 99% of WSPRC's transportation emissions are from motor vehicles and the remaining 1% are from boats.

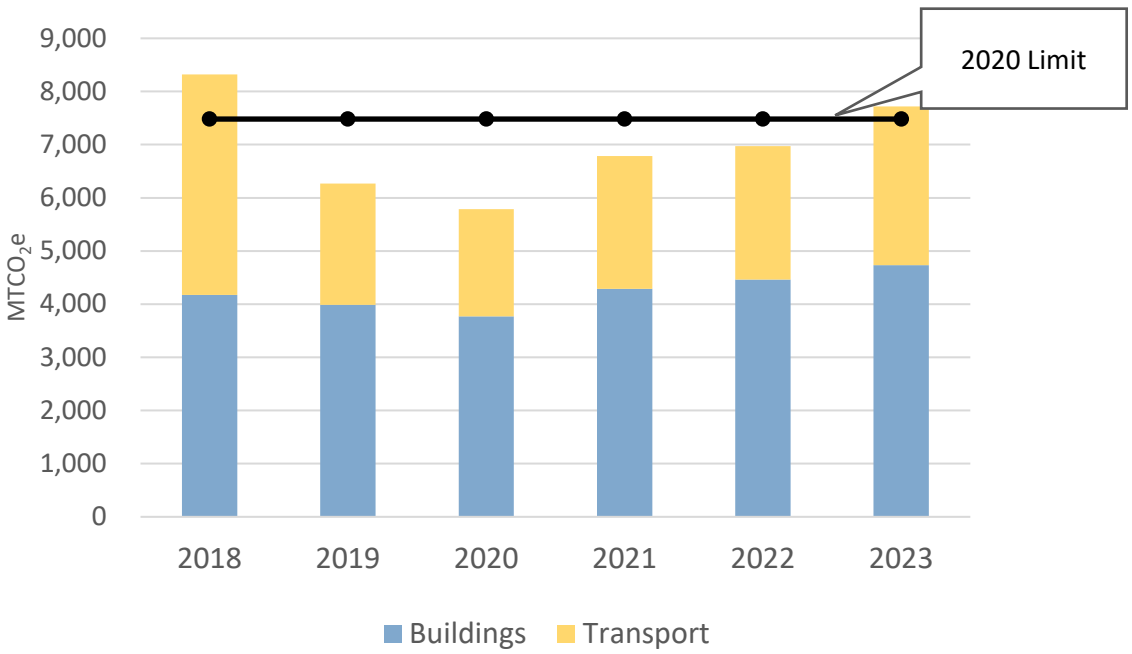


Figure 33. State Parks and Recreation Commission Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Following is a summary of reported actions taken by the Washington State Parks and Recreation Commission (WSPRC) in the last two calendar years to reduce greenhouse gas emissions, organized by activity. These results are informed by a statewide survey of greenhouse gas emission reduction improvements to agency facilities and fleet. The level of survey participation includes 11 of 26 Management Areas (42%). Thus, additional greenhouse gas emission reduction investments were made yet data is not available at this time for reporting. Heating and Cooling System Improvements Several parks received significant upgrades to heating and cooling systems, enhancing comfort for visitors and staff while minimizing our carbon footprint. The installation of energy-efficient heating, ventilation, and air conditioning (HVAC) systems and heat pumps at key locations was prioritized, ensuring these systems meet or exceed current energy codes and efficiency standards. Upgrades included replacing old furnaces with high-efficiency models that significantly reduce energy use and greenhouse gas emissions. Statewide Facility Improvement Survey Results: Six heat pump systems were installed. One air conditioning system was replaced. Three furnace systems were replaced. Three ductless mini split units were installed. Facility Improvements The WSPRC undertook renovations and improvements in a range of building infrastructure. Efforts focused on enhancing thermal efficiency of buildings through upgraded insulation, roofing materials, and weather-sealed doors and windows. These investments contribute directly to reducing energy needed for heating and cooling, thereby decreasing overall greenhouse gas emissions. Statewide Facility Improvement Survey Results: Building insulation was upgraded in three parks. Weather sealing of windows and doors was completed in 10 parks. Air gap sealing was

performed in one park, targeting multiple historic log buildings to improve energy efficiency. Roof systems were replaced in three buildings to increase energy efficiency. Investment in Energy Efficient Equipment and Appliances The agency phased out numerous outdated and inefficient appliances and systems across the park system, replacing them with energy-efficient alternatives. Investments were made in updating water heating systems to more efficient on-demand units, which conserve both water and energy. Statewide Facility Improvement Survey Results: Fifteen parks replaced hot water tanks (some parks with multiple tanks). Two parks replaced gas-powered appliances with Energy Star appliances, and four others upgraded to Energy Star-rated electrical appliances. Fifteen parks transitioned from internal combustion engine (ICE) equipment to electric handheld tools. Five parks upgraded to electric utility terrain vehicles (UTVs). Five parks acquired e-bikes to replace vehicle or UTV in-park travel. Lighting Improvements Throughout the park system outdated lighting systems were replaced with high-efficiency alternatives. Statewide Facility Improvement Survey Results: LED lighting systems were installed in 12 parks. One park installed a solar-powered lighting system. Agency Fleet The agency has actively pursued modernization of its fleet by investing in more sustainable transportation options, focusing on electric and hybrid vehicles where feasible. During the 2022-2023 reporting period the agency acquired 21 battery electric vehicles (BEVs) and 15 hybrid vehicles. Additionally, the agency has installed 30 non-networked, level two EV charging units for internal fleet use. This strategic shift to electric vehicles not only contributes to reduction in greenhouse gas emissions but also sets a foundation for long-term sustainable transportation within agency operations. To further enhance efficiency and monitoring, the WSPRC has implemented the AssetWorks fleet management system, which improves the tracking of fuel usage and other critical performance metrics.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

To position the WSPRC to achieve the greenhouse gas emission reduction target of 4,842 MT CO_2 established for 2030, significant investment in the 2025-27 and 2027-29 biennial timeframes will be required. The following are key areas of investment need. Resource Use Tracking Assessment The agency is launching an assessment of its Resource Use Tracking Program which aims to document internal scope 1 emissions. This assessment will identify gaps and barriers in greenhouse gas emission tracking systems, enhance efficiency and provide for better understanding of the agency's overall carbon footprint. Additional capacity is needed within the 2025-2029 budget timeframe to advance this program at the statewide scale of over 120 developed parks. Key assessment outcomes include identifying feasible solutions to existing data reporting and tracking barriers and the resources and staff capacity needed for successful implementation. Statewide Assessment of Facility Energy Use - The WSPRC has initiated a Facility Energy Use Audit Program to address its inventory of over 2,000 buildings. The first phase includes the energy audit of approximately 30 historic buildings identified and funded in the 2024 Supplemental Budget request. This initial phase represents a small sample of the facilities in need of energy use audits. Phase 1 energy use audits results will be used to develop 2025-27 and 2027-29 capital budget requests and grant proposals to address high priority energy use reduction opportunities. Within the 2025-2029 budget timeframe the

agency plans to request Phase 2 (2025-27) and Phase 3 (2027-29) facility energy use audits within its operating budget to focus on the following key actions: Establish staff capacity while reducing reliance on consultants to conduct facility energy use analysis to identify and evaluate facilities with the most feasible potential for greenhouse gas emission reduction. Identify parks and facilities without adequate energy metering systems and request funding for the installation of necessary equipment to monitor and manage energy use more effectively. Facility Energy Use Reduction Investments The tracking of facility energy use as outlined above will occur in conjunction with implementation of energy use reduction strategies. Ensure development of 2025-27 and 2027-29 operating and capital budget requests are informed by facility energy use audit priorities with identified cost estimates for energy efficiency investments that support achievement of greenhouse gas emissions reduction limits. Develop design criteria to integrate renewable energy generation into existing and new facility projects. Upgrade facility maintenance project management systems to better track the need, scoping and implementation of energy conservation project elements. Electric Vehicle (EVSE) Infrastructure Investments The first phase of the agency's transition was funded in the 2023-25 operating budget. This involves assessment of electrical systems at approximately 100 administrative sites identified for internal EV charging stations. Subsequent phases of work will involve design and implementation of internal EV charging stations. The agency will require a considerable increase in programmatic funding to make substantial progress towards implementation of a statewide network of EV charging stations within the next six years to reach 2030 greenhouse gas emission limits. Renewable Energy Assessment In conjunction with the assessment of internal EV charging stations the agency is working with the DES Energy Program to evaluate the feasibility of renewable energy generation on state parks properties. Currently, the agency is evaluating the feasibility of solar power generation at approximately 100 sites. This assessment will identify rough order of magnitude cost estimates to request funding to design and construct renewable energy infrastructure at feasible sites within the 2025-29 budget timeframe.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

The WSPRC is a natural resource agency that possesses an inventory of over 2,000 facilities, including one of the largest inventories of historic buildings in the state. Additionally, the agency operates a fleet of 700+ vehicles to service over 150+ state park properties. The majority being trucks and vocational vehicles. These public assets and service responsibilities bring distinct challenges to the need for rapid greenhouse gas emission reduction. Recognizing the urgency to act, the agency is working to request and prioritize resources to make systematic progress towards the goal of achieving a 95% reduction in greenhouse gas emissions by 2050. Key to our long-term approach is the integration of a Clean Energy Transition Strategy that aligns with emerging technological advancements and evolving operational practices. This strategy includes electrification of the agency's fleet, including prioritizing investment in EV charging infrastructure, the ongoing purchase of BEVs and adopting alternative fuels or hybrid options where BEVs are not viable. Developing and maintaining a Facility Energy Performance Team focused on systematic assessment, monitoring and enhancement of agency facility

energy use and methods to increase operational cost savings. This statewide team will incorporate emerging best practices into facility maintenance and operation training and provide technical consultation in the design and replacement of facility energy systems using best available technologies. Prioritizing incorporation of greenhouse gas emission reduction measures into facility project planning and budgeting decision making, ensuring climate mitigation and adaptation is central to agency operations. Investing in sustainable development and operation of renewable energy infrastructure to reduce dependency on purchased energy, with a focus on reducing reliance on fossil fuels (propane, etc.). Evaluating use of state park lands for sustainable carbon sequestration opportunities to enhance natural carbon storage that is consistent with the agency's mission and values. Adopting green procurement policies that favor low-carbon materials and construction services.

Puget Sound Partnership

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	0.0
Fossil Fleet Energy Use Emissions	1.03
Annual Fossil Greenhouse Gas Emissions	1.03

Puget Sound Partnership (PSP) began reporting emissions in 2021. All the emissions reported were from transportation. They reported 3,468 sf of building space, 40% leased from DES and 60% leased from private owners.

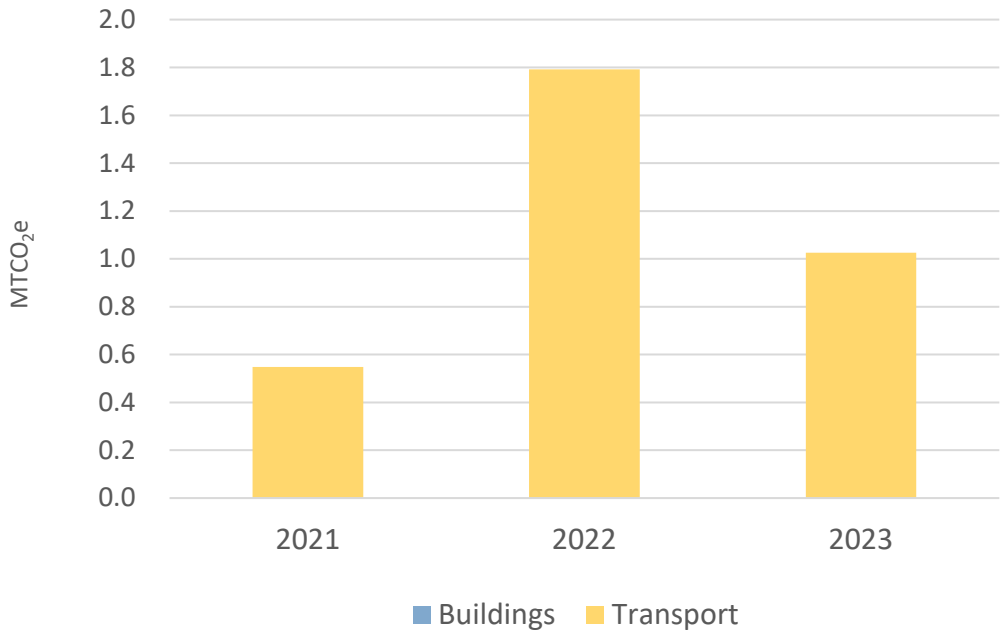


Figure 34. State Parks and Recreation Commission Emissions from Fleets 2021-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Transitioned one hybrid-electric vehicle to BEV. Agency implemented a 1 day a week in person requirement for staff at one of our three Puget Sound office locations. We also have seen an uptick in in person partner meeting attendance travel. These two together would have a negative greenhouse gas impact. Being that we were 100% remote and not attending meetings there would be nowhere to implement greenhouse gas decreases. In 2020 we downsized our facility footprint by 60% while growing the agency by 20%, so there is not much room there for further decreases in greenhouse gas facility wise.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Transition the last agency hybrid vehicle to BEV.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

We are a small agency, what we have done is about as much as we can realistically contribute to decreasing greenhouse gas emissions.

Seattle Community College

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	7,354
Fossil Fleet Energy Use Emissions	51
Annual Fossil Greenhouse Gas Emissions	7,404

In 2023, Seattle Community College (SCC) emissions were 6% below their 2020 limit and 46% above their 2030 limit.

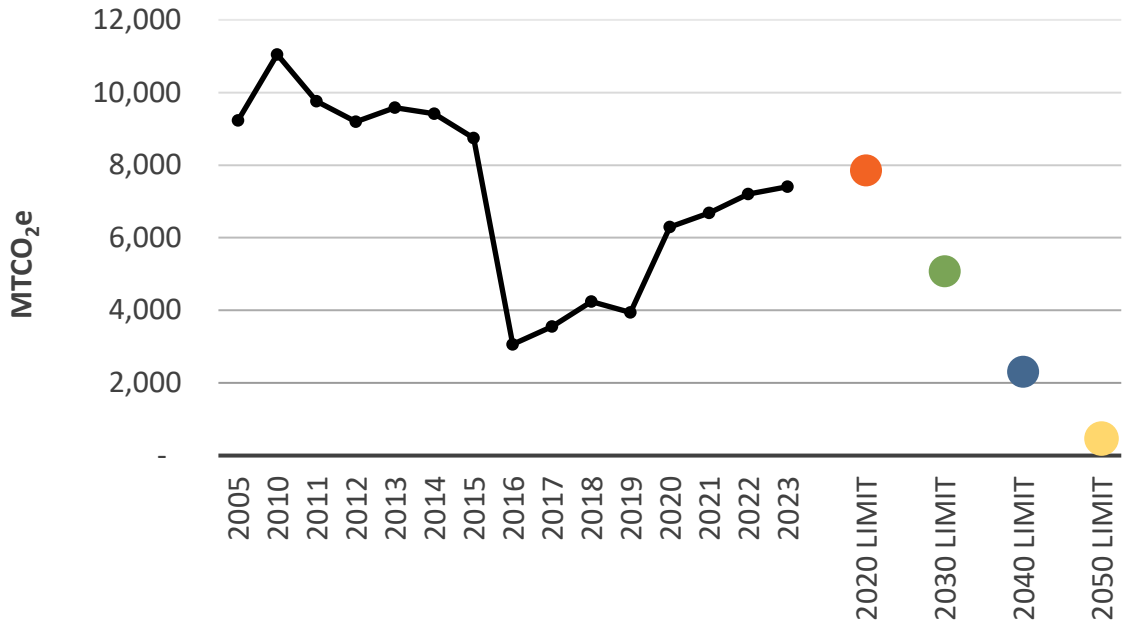


Figure 35. Seattle Community College Historic Emissions and Future Limits.

In 2023, the SCC reported 99% of emissions were from buildings and 1% was from transportation. The agency reported 2,177,286 sf of building space, all of which they owned.

In 2023, 13% of building emissions were indirect emissions from a steam district heating system. Natural gas combustion accounted for 58% of building emissions and the remaining 29% was indirect electricity emissions.

Motor vehicles accounted for 85% of SCC's transportation emissions, boats for 14%, and aircrafts for 0.5%.

A contractor flooded an electricity vault at North Seattle College, which resulted in the campus using a diesel generator during 10 months in 2023. Estimated fuel consumption was 250 gallons a day for 9 months that year.

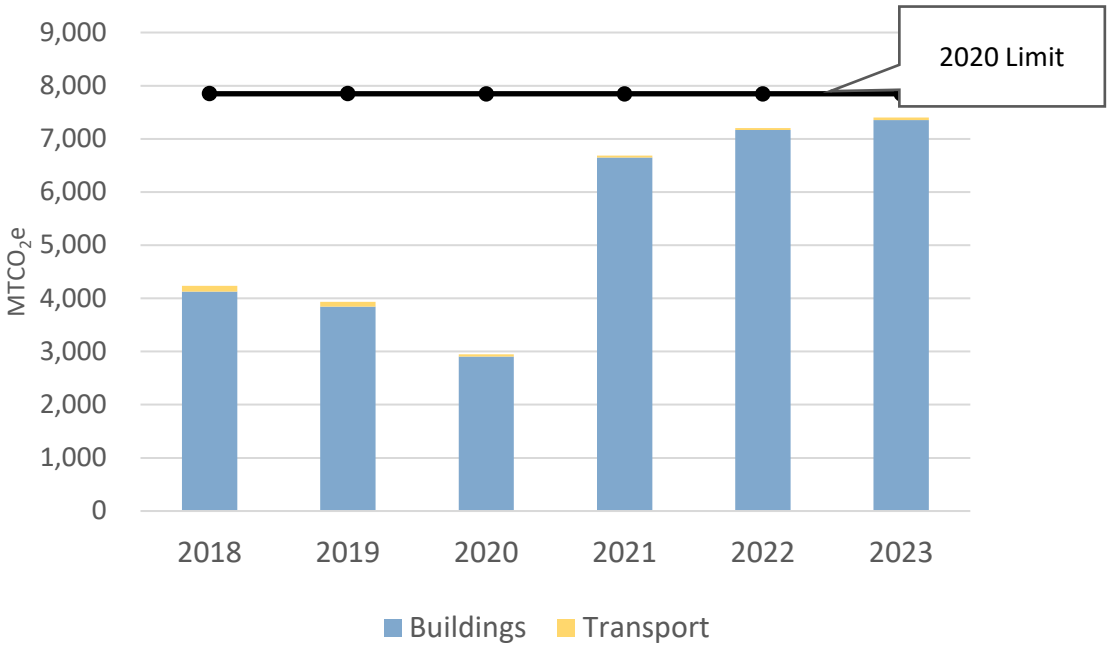


Figure 36. Seattle Community Colleges Emissions from Building and Fleets, 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Seattle Colleges has undertaken a comprehensive building-focused energy savings performance program led by McKinstry. Further we are actively investing in renewable energy on all new buildings and installed rooftop solar at each campus funded by a Commerce Clean Energy Grant and Seattle City Light Green Up Grant. While the renewable energy credit of this array is sold to Seattle City light, it represents the college's commitment to developing clean energy resources in collaboration with local and state partners. Each of the Seattle Colleges campuses are unique and thus require different approaches for energy efficiency improvements. A quick summary of the projects implemented is below. North: In partnership with McKinstry, North Seattle College installed a 100-kW array on the OCEE building. This project was funded through a Department of Commerce grant, the sales of a certificate of participation, and through Seattle City Light Green Up funding. Grant funding totals are below: Seattle City Light: $150,600 Department of Commerce Solar: $117,961 This array has produced 86 MWh of clean electricity since coming online in July of 2023 through the time of writing (May 2024). Alongside clean energy development, the college has made significant investments in energy efficiency and water savings financed through a COP as an Energy Savings Performance Contract. The total project cost was XXX and included upgrades to the HVAC system, LED lighting upgrades, building envelope sealing, and water efficient appliances upgrades. Most of this work was completed by 2023 and is expected to reduce campus emissions by an estimated 102 MT CO2e per year.

Reductions in campus energy use in 2023 are in part a result of this work. Although, North Seattle College had to use a backup generator in 2023 for 10 months, leading to a spike in energy consumption. 2024 is expected to be a better reflection of campus energy consumption and the impact of energy efficiency upgrades. Central: In partnership with McKinstry, North Seattle College installed a 96 kW AC array on the Broadway Edison building. This project was funded through a Department of Commerce grant, the sales of a certificate of participation, and through Seattle City Light Green Up funding. Grant funding totals are below: Seattle City Light: $150,600 Department of Commerce Solar: $119,905 This array has produced 51 MWh of clean electricity since coming online November 2023 through the time of writing (May 2024). Alongside clean energy development, the college has made significant investments in energy efficiency and water savings financed through a COP as an Energy Savings Performance Contract. The project included installing an electrified air to water heat pump in the Broadway Edison building, upgrading an electrical panel in Broadway Edison, and lighting upgrades to LEDs in the Science and Math building. This work was completed by 2023 and is expected to reduce campus emissions by an estimated 267 MT CO2e per year. South: In partnership with McKinstry, North Seattle College installed an 86 kW AC array on the Cascade Hall building. This project was funded through a Department of Commerce grant, the sales of a certificate of participation, and through Seattle City Light Green Up funding. Grant funding totals are below: Seattle City Light: $123,960 Department of Commerce Solar: $119,905 This array has produced 96 MWh of clean electricity since coming online July of 2023 through the time of writing (May 2024). Alongside clean energy development, the college has made significant investments in energy efficiency and water savings financed through a COP and commerce grants as an Energy Savings Performance Contract. The total project cost was XXX and included upgrades to the HVAC system, LED lighting upgrades, building envelope sealing, and water efficient appliances upgrades. Most of this work was complete.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Compliance with the Clean Building Performance Standard is a unique opportunity to advance emissions reductions in the coming biennia. As a part of Seattle Colleges compliance strategy, each campus will be developing and implementing operation and maintenance programs and energy management plans. The Operations and Maintenance programs will standardize and document procedures for preventative maintenance of energy consuming equipment to ensure efficient operations. The Energy Management Plans will include outreach and engagement to promote energy efficient practices for building occupants and consolidate and prioritize energy efficiency opportunities on campus. Funding has been allocated by the State Board of Community and Technical Colleges to advance submetering across the Seattle Colleges district to support better energy monitoring and reporting. This will enable building by building energy benchmarking. Alongside this, the district is investigating opportunities to implement an Energy Management Information software on campus to advance proactive energy management Alongside this, Seattle Central College and North Seattle College will be developing decarbonization plans as required by HB 1390. These plans will map up the campus strategies for deep decarbonization of heating and cooling systems and the pathway to compliance in the

15-year implementation timeframe. North Seattle College will be completing a facilities condition assessment to evaluate the useful life and replacement of campus equipment, which will support the identification of equipment nearing the end of useful life that can be replaced with electrified or higher efficiency equipment. Seattle Central College is in a multiyear effort to replace its fossil-fueled steam with an all-electric, heat pump based, low carbon impact heating and cooling system to serve a network of campus buildings. Decarbonizing district heating and cooling systems is identified as a key action in the State Energy Strategy, with publicly owned buildings presenting a key opportunity to lead by example. The project, called the Eco District, is finalizing the capital stack to begin construction and the purchase of equipment. The intention is to leverage HB 1777 energy as a service financing model. Seattle Central College has invested significant time and capital to evaluate the feasibility of the project, working with consulting partners who have completed the permit design drawings. All elements of the conversion have been bid out through a competitive process run by the state and supported through an interagency agreement. The initial implementation is sized to serve over 500,000 square feet of buildings and for future expansion to four additional districts on campus. Seattle Colleges will also continue to take advantage of opportunities to develop clean energy resources on campus through grant funding opportunities, with a focus on solar energy development.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Seattle Colleges is committed to meeting state and local regulations for greenhouse gas emissions. By 2030, Seattle Colleges need to reduce emissions by 45% from our 2005 baseline. By 2040, Seattle Colleges will need to reduce emissions by 70%. Seattle Colleges is subject to the City of Seattle Building Emissions Performance Standard, which requires the campus to hit emissions intensity targets for our larger buildings beginning in 2031. Across Seattle Colleges, we plan to aggressively pursue energy efficiency and resource conservation strategies. A key part of this work is the development of an updated sustainability plan for the district to facilitate the identification and prioritization of greenhouse gas emissions reducing measures. Alongside this effort, the Seattle Colleges district sustainability committee will be reconvened as a governance body for sustainability initiatives and to bring together campus stakeholders to advance emissions reduction and sustainability measures. The core focus for greenhouse gas reduction will be on colleges' facilities as the largest source of campus emissions, representing 99% of all emissions from Seattle Colleges. The district sustainability plan will set out targets for energy efficiency, clean energy development, and electrification of transportation that will provide a data driven strategy to come into compliance with the State Agency Greenhouse Gas Leadership Act and the Seattle Building Emissions Performance Standard.

Social and Health Services, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	33,664
Fossil Fleet Energy Use Emissions	7,852
Annual Fossil Greenhouse Gas Emissions	41,516

In 2023, Department of Social and Health Services (DSHS) emissions were 11% below their 2020 limit and 38% over their 2030 limit.

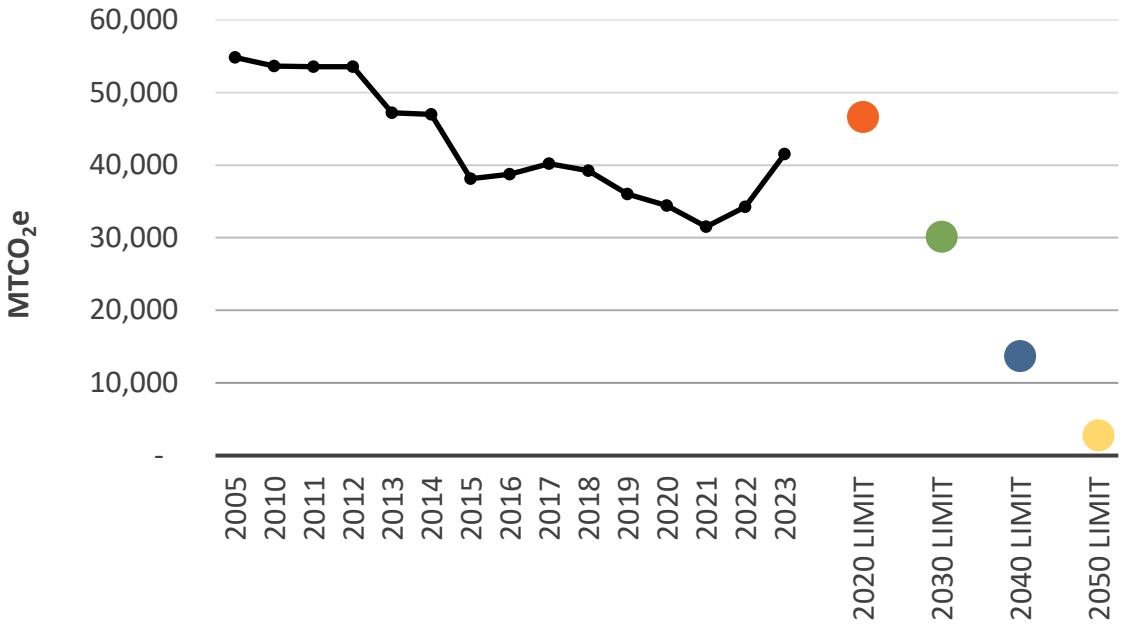


Figure 37. Department of Social and Health Services Historic Emissions and Future Limits.

In 2023, the DSHS reported that 81% of emissions were from buildings and 19% were from transportation. The department reported 6,649,655 sf of building space, 67% of which they owned, 27% privately leased and the remaining 5% leased from DES or other state agencies. Natural gas combustion accounted for 57% of building emissions and the remaining 43% was indirect electricity emissions.

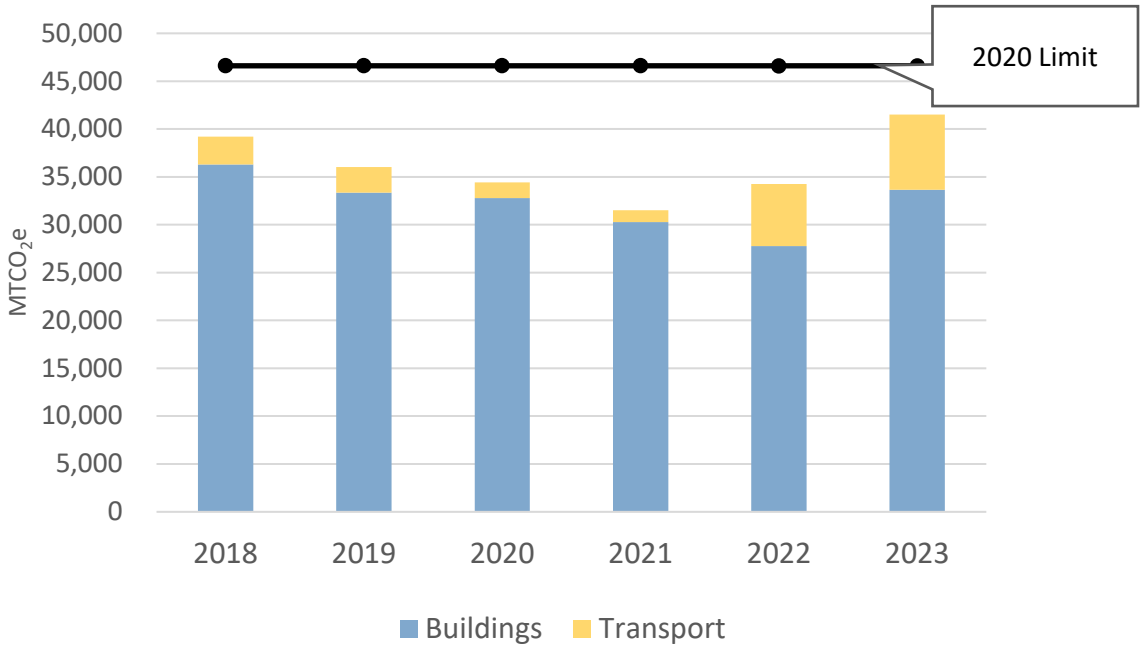


Figure 38. Department of Social and Health Services Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Fleet Electrification and EVSE Planning and Installation DSHS utilizes two separate fleets, DES leased (located at a majority of the leased facilities) and DSHS owned vehicles (located at the agency owned facilities). There are currently 518 leased vehicles and 600 owned vehicles. During 2022 and 2023 DSHS replaced a total of 63 vehicles with Electric Vehicles (EV), as well as increased the EV infrastructure to support the increased EV fleet. Below is a breakdown of the EV fleet since 2021. 2021 – Leased 22 Owned 1 = 23 EVs 2022 – Leased 24 Owned 21 = 45 EVs (22 added to fleet in 2022) 2023 – Leased 58 Owned 28 = 86 EVs (41 added to fleet in 2023) Current – Leased 66 + Owned 28 = 94 EVs (8 added to fleet YTD) Installed EVSE at Leased and Owned Facilities 2022 - 4 ports 2023 - 4 ports Created an EVSE Implementation plan and opened EVSE design projects with DES Real Estate Services (RES) for 28 leased facilities, many of which are collocations with DCYF. Requested funding to install electrical infrastructure to support the planned increased use of battery electric vehicles (BEVs) for both DSHS fleet and staff-owned vehicles. Endorsed the use of electric vehicles through the agency. Leased Facilities Right sized square footage in the leased facilities portfolio. 2022– 2,221,797 square feet 2023– 2,117,463 square feet Owned Facilities. Requested funding to install electrical infrastructure to support the planned increased use of battery electric vehicles (BEVs) for both DSHS fleet and staff-owned vehicles. Endorsed the use of electric vehicles on all our campuses. Western State Hospital. Constructed a state of the art 350 bed forensic hospital and 120 bed nursing facility. Both facilities are planned to be Zero Energy. Demolished several older buildings on the Western State Hospital campus to make room for the new 350 bed forensic hospital. Eastern State Hospital. Installed additional photovoltaic systems on campus to support energy

independence. Requested and received funding through the Department of Commerce to install electric vehicle charging stations. Fircrest School. Removed the Fircrest School campus from a distributed steam heating to decentralized heating sources. The Legislature has approved funding to continue to the installation heating and cooling systems for the living cottages. Requested funding to install decentralized heating systems at multiple buildings at the Fircrest School Campus. Completing design efforts to construct a Net Zero Energy Capable nursing facility. Design calculates production of nearly 40% of the energy consumed. Rainier School. Evaluated the thermal load for the campus related to the existing centralized steam plant. Increased the efficiency of HVAC units on the campus by installing modernized systems.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Fleet Electrification Install EVSE at all DSHS owned facilities and leased facilities to support fleet electrification as funding allows. Replace ICE vehicles with BEV vehicles when vehicle type is available. Leased Facilities Continue to right size DSHS leased facilities and move from privately owned properties to State owned properties when the locations support our business needs. Owned Facilities. Request funding to install electrical infrastructure to support the planned increased use of battery electric vehicles (BEVs) for both DSHS fleet and staff-owned vehicles. Endorse the use of electric vehicles on all our campuses. Western State Hospital. Begin construction efforts on a state of the art 350 bed forensic hospital and 120 bed nursing facility. Both facilities are planned to be Zero Energy. Eastern State Hospital. Replace existing roofing systems at several buildings while adding additional insulation and reflective roofing systems to reduce heat island effect. Olympic Heritage Behavioral Health. Replace existing roofing system while adding additional insulation and reflective roofing systems to reduce heat island effect.

Improve existing heating, ventilation, and air conditions systems and controls building wide. Total Confinement Center – McNeil Island. Replace existing heating, ventilation, and air conditions systems and controls at several buildings on campus. Fircrest School Residential Habilitation Center. Remove the Fircrest School campus from a distributed steam heating to decentralized heating sources. The Legislature has approved funding to continue to the installation heating and cooling systems for the living cottages.

Request funding to install decentralized heating systems at multiple buildings at the Fircrest School Campus. Construct a Net Zero Energy Capable nursing facility. Design calculates production of nearly 40% of the energy consumed. Lakeland Village Residential Habilitation Center. Replace leaking steam lines campuswide to be more efficient. Yakima Valley School Residential Habilitation Center. Replace exterior failed windows on the main administrative building.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

The DSHS long-term strategy to reduce greenhouse gas emissions falls in three categories: 1) Leased Facilities We will continue to right-size our leased facilities to meet our business needs

and promote telework for our employees whenever practical and effective. We will utilize remote meeting technology to reduce commuting requirements and improve equity. We will seek out energy efficient buildings that are close and convenient for our clients through the DES RES RFP process. 2) Owned Facilities and Campuses We will continue to assess our buildings and request funding and execute capital improvement projects to improve the energy efficiency of our buildings. We will design new buildings to be zero net-energy capable with low-embodied carbon construction. We will request funding and execute projects to electrify our campus operations. We will analyze our maintenance operations and create operating energy management systems. 3) Fleet and Transportation We will continue to electrify our owned and leased vehicle fleets following vehicle replacement schedules. We will analyze our owned fleets and campuses and update our fleet electrification and EVSE implementation plan to include both owned and leased facilities and fleets. When BEV replacement vehicles are not available, we will seek out other lower-carbon fuel vehicles.

Transportation, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	23,743.2
Non-Ferry Fossil Fleet Energy Use Emissions	26,209
Ferry Fleet Energy Use Emissions	139,375
Annual Fossil Greenhouse Gas Emissions	189,327

In 2023, Department of Transportation (DOT) total emissions were 8% below their 2020 limit and 42% above their 2030 limit.

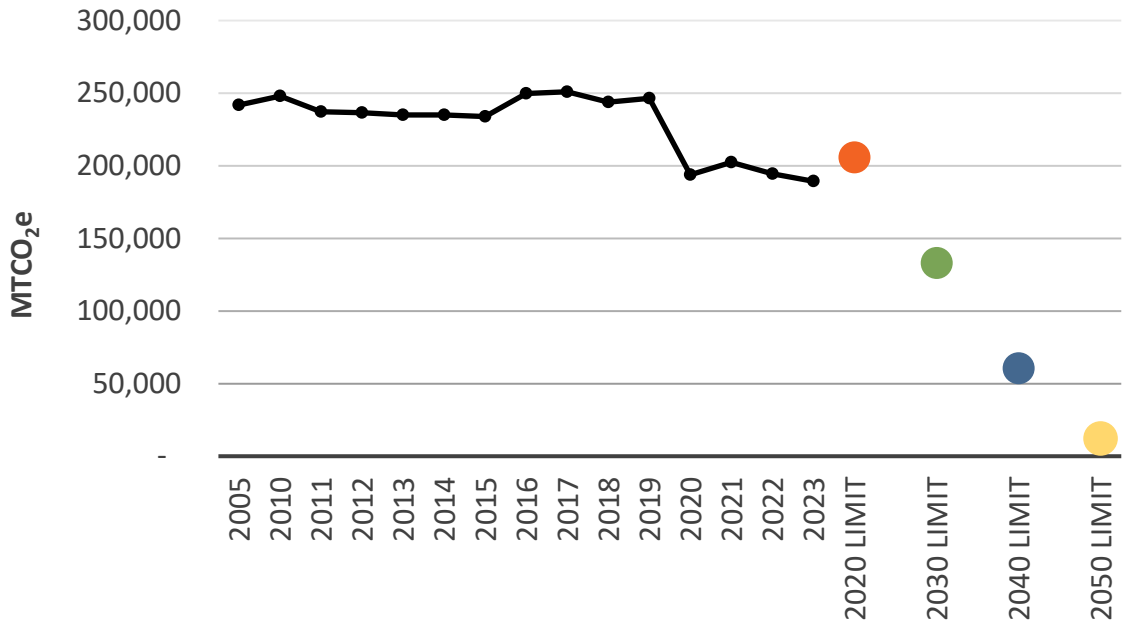


Figure 39. Department of Transportation Historic Emissions and Future Limits.

In 2023, DOT reported that 13% of emissions were from buildings and 87% were from transportation. Excluding the ferries, 48% of the DOT's emissions would be buildings and 52% transportation fleets. They reported 4,422,261 sf of building space, 89% owned by the department, 6% leased from DES and 5% leased from private building owners. In 2023, 16% of building emissions were from natural gas combustion, 3% from combustion of diesel, propane, and fuel oil, and 81% was indirect electricity emissions.

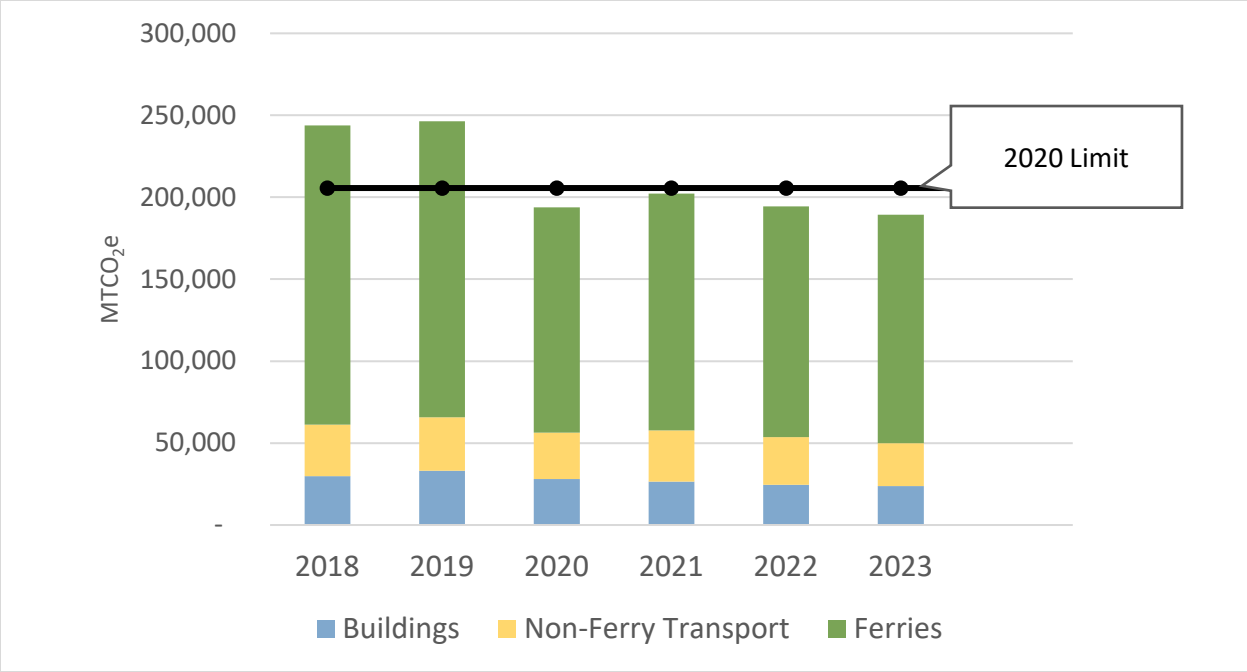


Figure 40. Department of Transportation Emissions from Building and Fleets 2018-2021.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

During the 2022 and 2023 calendar years, the Washington State Department of Transportation (WSDOT) completed the following actions to reduce our Scope 1 and 2 greenhouse gas emissions per SEEP category:

Facilities Emissions Reduction Actions:

- On-site solar generation installed at ORMAF Administration and Shops buildings.
- Boiler replacement at SWR HQ to move buildings towards all electric heating.
- Preliminary Energy Savings Performance Contracting (ESPC) program audit completed for Northwest Region Headquarters.
- Preliminary ESPC program audit completed for Southwest Region Headquarters (SWR HQ).
- ESCO Hood Canal Bridge project through DES completed for bridge lighting, heating, and cooling in control towers.
- UPS battery replacement at the Dayton Avenue TMC.
- HVAC replacement at the Vancouver Regional Headquarters Building 1.
- Canopy roof replacement at Corson Avenue Regional Headquarters Building 1.
- Power purchasing agreements with PSE Green Direct and Avista Solar Select.
- HVAC replacement at the Forest Learning Center safety rest area.
- Dayton Regional Headquarters Building Renovation.
- Toutle NB/SB Roof Replacements.

Transportation – Fleet Vehicle Emissions Reduction Actions:

- Replaced 20% of total diesel fuel consumption with biodiesel and renewable diesel (R99).
- Replaced 20% of total gasoline fuel consumption with renewable gasoline.
- Continuing replacement of fleet vehicles with EVs, some highlights include:
- All-electric van received.
- VW ID4 received.
- Three Teslas received.
- Two Ford lightnings received.
- Two Chevy Silverados received.
- Installed solar power EV charging station (DES) in Bellevue.
- Installed DC fast charger in Pasco.

Transportation – Aviation Emissions Reduction Actions:

- Implemented efficient taxi, takeoff, and landing practices to reduce jet fuel consumption.
- Installation of pilot-controlled airport lighting that only turns on when an aircraft is using the facility.

Transportation – Washington State Ferries Emissions Reduction Actions:

- Washington State Ferries agreement with Puget Sound Energy for PSE Green Direct to purchase renewable electricity.
- Washington State Ferries agreements with utility providers outside of Puget Sound Energy's jurisdiction (SnoPUD, SCL, and Tacoma Power) for enrollment in green tariff programs to cover% of grid electricity that is non-renewable.
- Solar panel installations at the Mukilteo Ferry Terminal and Bainbridge Island Ferry Terminal.
- Continual use of biodiesel fuel to supplement 10% of diesel use in vessels.
- Began design of new 160 Car Class Hybrid Electric Vessels.
- Awarded shipbuilding contract to Vigor for Jumbo Mark II Hybrid Electric Conversions.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

WSDOT is taking progressive action to reduce our Scope 1 and 2 greenhouse gas emissions over the next two biennia. These actions align with our long-term strategy discussed in the following section and showcase our intentions towards taking meaningful climate action to reduce emissions in line with the statutory requirements for state agencies. Below are the actions WSDOT plans to take per SEEP category over the next two biennia (2025-27 and 2027 -29):

Facilities Reduction Actions:

- Energy efficiency improvements through roof replacements scheduled at 60 WSDOT facilities.

- Energy efficiency improvements through HVAC replacements scheduled at 43 WSDOT facilities.
- Energy efficiency improvements through HVAC control updates scheduled at 7 WSDOT facilities.
- Energy efficiency efforts through HVAC improvements scheduled at 2 WSDOT facilities.
- Energy efficiency efforts through lighting replacements scheduled at 2 WSDOT facilities.
- Implementing clean energy compliance at the Southwest Regional Headquarters Administrative building.
- Hire a Resource Conservation Manager (RCM) Position and a Supporting RCM Staff Position to help manage energy efficiency and electrification efforts.

Transportation – Fleet Vehicle Emissions Reduction Actions:

- Continue replacing vehicles with electric vehicles as EVs become available on the market.
- Increase renewable diesel (R99) usage in vehicles after trial on east side is completed.
- Continue B20 usage for diesel vehicles. Start phasing out B20 to move towards R99 use.
- Pilot units for proof of concept with hydrogen fuel cells technologies for heavy duty vehicles.
- Installation of hydrogen cell fuel site(s), pending success of pilot units.
- Hydrogen fuel cell vehicles to replace heavy-duty diesel vehicles, pending success of pilot units.
- Scoping studies to be completed across WSDOT sites to identify EVSE infrastructure opportunities.
- Continue EVSE install at facilities once scoping is completed.

Transportation – Aviation Emissions Reduction Actions:

- Replace piston airplane with electric vertical take-off and landing (eVTOL) airplane.

Transportation – Washington State Ferries Emissions Reduction Actions:

- Awarded contract for JMII Conversion #1- Wenatchee - completion expected 2025.
- Awarded contract for JMII conversion #2 – Tacoma – completion expected 2026.
- Awarded contract JMII conversion with option for vessel #3 – Puyallup – completion expected 2027 (option not yet awarded).
- Begin Design for Shoreside Charging – Seattle - completion expected 2025.
- Begin Design for Shoreside Charging - Bainbridge -completion expected 2025.
- Begin Design for Shoreside Charging - Bremerton -completion expected 2025.
- Design for Shoreside Charging – Clinton - completion expected 2025.
- Issued an Invitation for Bid for 5 Hybrid Electric 160 Car Class Vessels - completion expected October 2024
- Award Construction Contract for Clinton Shoreside Charging – 2026.
- Begin Design Shoreside charging – Kingston – completion expected 2026.
- Award Construction Contract for Bainbridge Shoreside Charging – 2026.

- Award Construction Contract for Bremerton Shoreside Charging – 2026.
- 160 Car Class Hybrid – completion expected 2028.
- 160 Car Class Hybrid – completion expected 2028.
- 160 Car Class Hybrid – completion expected 2029.
- 160 Car Class Hybrid – completion expected 2029.
- 160 Car Class Hybrid – completion expected 2030.
- Shoreside charging – Seattle (Slip #3 for Bainbridge) – completion expected 2028.
- Shoreside charging – Seattle (Slip #1 for Bremerton) – completion expected 2028.
- Shoreside charging – Kingston – completion expected 2028.
- Shoreside charging – Bremerton – completion expected 2028.
- Shoreside charging – Southworth – completion expected TBD.
- Shoreside charging – Vashon – completion expected TBD.
- Washington State Ferries agreement with Puget Sound Energy for PSE Green Direct to purchase renewable electricity.
- Washington State Ferries agreements with utility pro

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

WSDOT has developed and maintains a greenhouse gas reduction plan that identified the actions we plan to take to reduce agency emissions to meet statutory greenhouse gas limits. This plan identifies our long-term strategy to improve agency energy efficiency and switch to low- or zero-carbon energy sources. This transition will take time, but investments and meaningful climate actions are underway. Currently, the agency already has electric vehicles, upgraded building heating and lighting to improve efficiency, and is working on the first hybrid ferry vessels. Over the coming decades, the agency will continue these efforts and focus on expanding electric vehicle use and infrastructure, improving building efficiency to meet Clean Building Act requirements, and implementing the Washington State Ferries' System Electrification Plan. This work takes time, investments, and planning. Our strategy considers current and expected technologies and includes meeting related requirements. Not all the technologies we need are available today. Fully meeting long-term greenhouse gas limits will depend on the availability of renewable fuels and new technologies. This makes progress tracking and monitoring a critical feedback loop into our strategy. We will continue monitoring our annual greenhouse gas emissions inventory and tracking progress towards our 2030, 2040, and 2050 goals. If progress indicates we are not making reductions as expected, we will re-evaluate and identify alternative pathways to mitigate residual emissions. WSDOT is committed to evaluating this long-term strategy every two years in line with state expectations and will ensure assumption and actions are updated accordingly.

University of Washington

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	88,241
Fossil Fleet Energy Use Emissions	1,578
Annual Fossil Greenhouse Gas Emissions	89,819

In 2023, the University of Washington (UW) emissions were 33% below their 2020 limit and 4% above their 2030 limit.

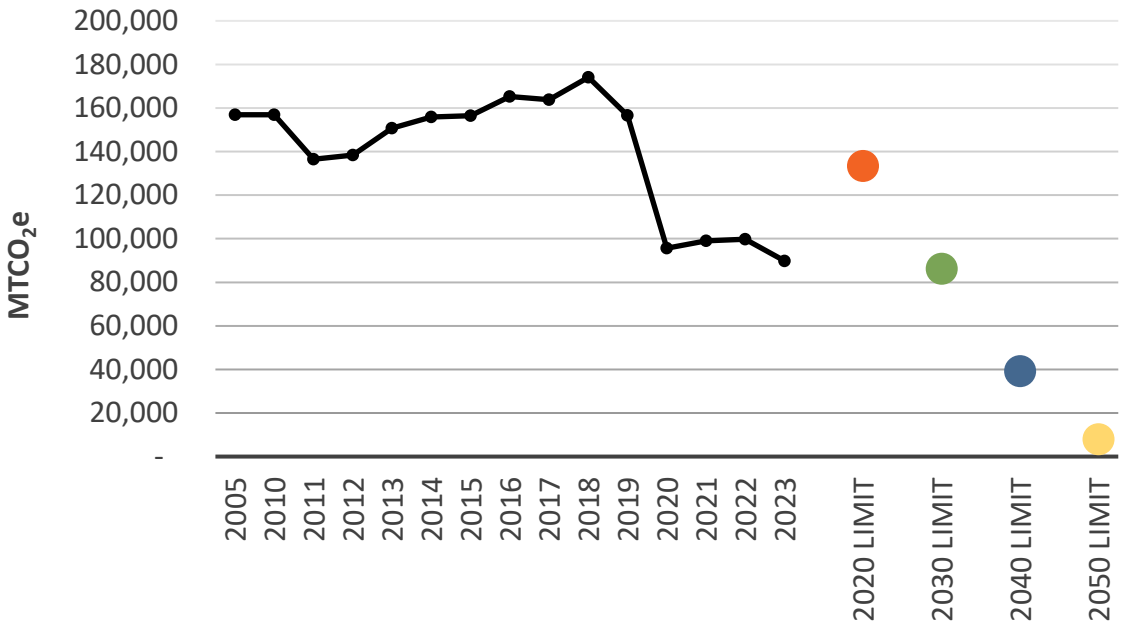


Figure 41. University of Washington Historic Emissions and Future Limits.

In 2023, UW reported that 98% of emissions were from buildings and 2% were from transportation. They only reported emissions from buildings owned by the university, which totals 25,047,566 sf of space. Beginning in 2023, they are including emissions from Northwest Hospital in their building portfolio.

In 2023, 97% of building emissions were from natural gas and fuel oil combustion and 3% was indirect electricity emissions. All the transportation emissions UW reported were from motor vehicles.

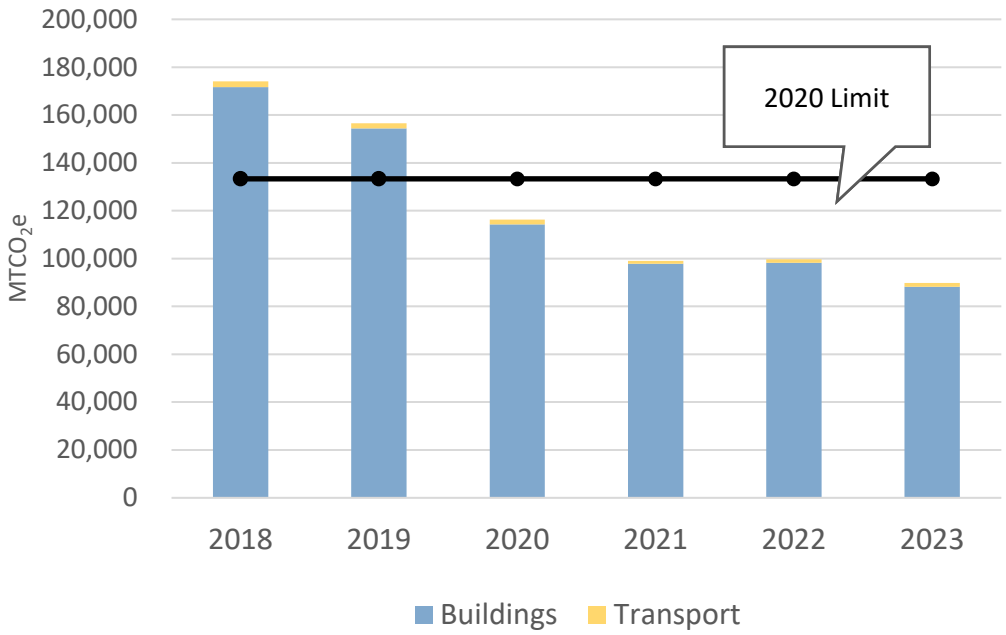


Figure 42. University of Washington Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

2023: Completed a new, comprehensive greenhouse gas Inventory that includes embodied emissions in purchased goods and services as well as sources we have traditionally inventoried. (See attached document). 2023: Hired a project manager to establish and oversee the CARP (Campus Asset Renewal Program) which consists of two sub-programs: the ERP (Energy Renewal Program) to decarbonize our district energy system and the BRP (Building Renewal Program) to address deferred maintenance, which will result in higher-performing buildings that generate fewer emissions. 2023: Hired a consultant engineering firm (AEI) who is bringing in subconsultants Shannon & Wilson for geologic and permitting expertise and financing firm Ernst & Young, construction estimator firm Whiting-Turner. AEI is analyzing our district energy system and defining projects and estimating costs for decarbonizing the Seattle campus (the projects include recovering heat from chillers, from sewer lines and from Lake Washington, using thermal storage to create efficiencies, converting from using steam to distribute heat to using hot water, and upgrading electrical capacity to enable these electrification strategies). The project also involves exploring financing options: we are pursuing funds from the Inflation Reduction Act and the Climate Commitment Act. Ongoing work by CEUO (Campus Energy, Utilities and Operations) to expand our utility and building control metering and monitoring capacity to increase our ability to identify and correct poor performance or system failures. Ongoing work by CEUO (Campus Energy, Utilities and Operations) to identify and implement conservation opportunities. In 2024 we updated our ESCO contract to enable us to bring in outside firms for projects we have insufficient internal capacity to complete. In 2023 we increased our funding of the conservation program from $1M/year to $3M/year. Hired a

Planning and Policy Specialist (in the UW Sustainability office) to help update the UW Sustainability Action Plan (which includes decarbonization along with many other sustainability efforts). 2022-present: Developed a proposal for an air travel emission reduction program and gave presentations to the campus community and to other sustainability professionals in Washington and Oregon describing this work. 2022-present: Updating the UW Green Building Standard to provide guidelines and requirements for construction projects. In addition to energy, this standard addresses water consumption, embodied carbon, health & well-being, ecology and equity. In 2022 completed a steam plant resiliency project upgrading the existing natural-gas-burning infrastructure. This resulted in a reduction of 10,000 mt CO2 in 2023. Submitted for $292 in CCA dollars to fund the Clean Energy Transformation. These are projects that UW is seeking approval for from the State as part of the FY 2025 Capital Budget In 2022, the University of Washington-Fleet Services established a 10-year vehicle replacement plan focusing on electrification. Replacement times are based on depreciation end dates and vehicle class of a fleet inventory of over 700 vehicles. Three vehicle charging station construction projects were launched in the fall of 2022 and are at various phases of construction from design, project bidding to mobilization and construction. Projects: N-26 parking lot: Install (38) (level 2) EV charging stations. E-02 parking lot: Install (74) (level 2) EV charging stations and provide infrastructure for future installation of (4) (level 3, fast) EV charging stations. E18 Solar Canopy Project. Installation of a 84 kW AC (100 kW DC) solar array with infrastructure for additional EV charging stations for UW visitors, students, and employees Projects are funded by Transportation Services with grant funding by Seattle City Light (E18 Solar Canopy project $126,000) and Department of Commerce grant for implementation of charging infrastructure and charging stations all three sites ($355,500

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

We will use the results of the greenhouse gas inventory published in early 2024 to inform the Sustainability Action Plan which we expect to complete in 2025. The planning process will solicit input from individuals across campus importantly including historically underrepresented perspectives. The plan will address many aspects of the university's operations that result in greenhouse gas emissions: energy, fleet, commuting, waste management, refrigerant management, anesthesia management, purchasing and air travel. The plan will also address environmental injustice. The engineering consultant group led by AEI will complete their initial report by the end of 2024. In 2025-2027 we will hire design and construction firms to implement the projects. By 2027-29 we anticipate that these projects will be in construction. As referenced above, UW has already made capital budget requests for clean energy and energy efficiency projects, plus supplemental budget requests for CCA dollars to decarbonize our campus infrastructure. By the end of 2027 we expect to have completed replacing our remaining pneumatically controlled buildings with digital controls and by 2030 will have added all major buildings to our OSI Pi database and analytics platform. By 2025 we expect to be spending $3M/year on conservation work and will maintain that level of funding indefinitely. UW has a draft proposal to start a new university-wide air travel emission reduction program. We anticipate that this program will include education/awareness, guidelines and support for

developing and implementing policies and working with other institutions across the academy to develop initiatives and guidelines to reduce incentives to travel and to develop alternatives that support the mission of the university while reducing the need to fly. The targeted start date for phase I of this new program is July 2025. UW's new Green Building standard will be published in summer of 2024. Key elements of the plan include targets for energy use intensity, embodied carbon, water use intensity, life cycle cost assessments, and other holistic elements of sustainable buildings. The fleet electrification program will continue to be implemented. We anticipate that 50% of the fleet will be all-electric by 2027 and over 90% by 2032.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

At a very high level, the long-term strategy for decarbonizing the district energy system on the Seattle campus is our 5-part strategy which consists of 1. Energy efficiency, 2. Converting from steam distribution to hot water distribution, 3. Centralizing cooling to enable heat recovery, 4. Electrifying heating with heat recovery/heat pump technologies plus thermal storage, and 5. Addressing process steam requirements when new, cost-effective technologies emerge. Building Renewal Plan & Green Building Standard: a #-year strategy to renovate or demolish poor-performing buildings. Renovation will follow the Green Building Standard which calls for high-performing buildings that exceed energy codes and prohibit new fossil fuel uses. Fleet electrification: Continue the 10-year plan to fully electrify the fleet. Implement a Green Revolving Fund to finance and incentive efficiency projects.

Veterans Affairs, Department of

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	5,827
Fossil Fleet Energy Use Emissions	276
Annual Fossil Greenhouse Gas Emissions	6,103

Department of Veteran's Affairs (DVA) reported emissions in the early phases of the program and was included in the establishing the statewide limits. However, DVA discontinued reporting in 2011 and resumed reporting in 2021, which is why there is no chart tracking progress over time.

Currently, DVA is 36% over their 2020 limits and 111% over their 2030 limits.

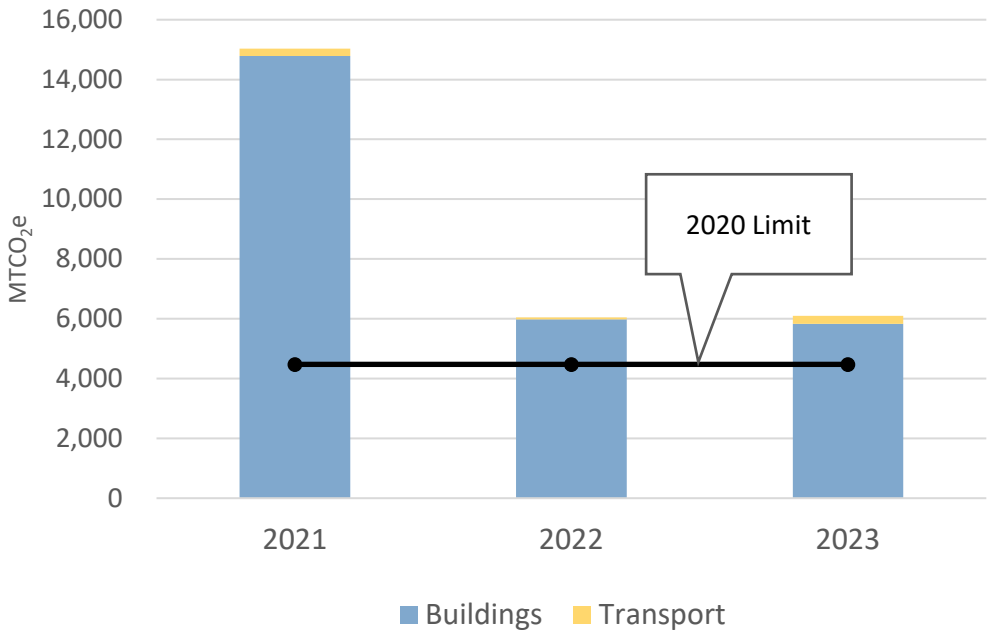


Figure 43. Department of Veteran/s Affairs, 2021 MT CO_2e from Buildings and Transportation.

In 2023, the DVA reported that 95% of emissions were from buildings and 5% were from transportation. The square footage of building space DVA uses was not included in the report. In 2023, 70% of building emissions were from natural gas combustion and 30% was indirect electricity emissions.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

To meet greenhouse gas emissions limits, the focus of WDVA's long-term greenhouse gas reduction strategy is based on the need to get sub-meters in place at our Port Orchard and Orting Facilities. This will provide WDVA with the proper data to understand and truly prioritize areas of need. Without the information WDVA's highest priority is to remove the overall reliance on steam heat at these facilities. This is currently being started at our largest building with the removal of steam heat and additional of electric HVAC systems for the 160,000 SF skilled nursing facility. Our current plan to add EV infrastructure to our owned facilities and start replacing vehicles to EV's as they become available will help to support the reduction of emissions. WDVA looks forward to adding planning and growth as we continue to reduce emissions and understand our biggest emission uses. Since WDVA's largest source of emissions are the two steam plants at the Washington Soldiers Home in Orting and the Washington Veterans Home in Port Orchard, our agency will be working to remove the need for the steam plant of over coming years. These two facilities have more than three quarters of our agency's owned footprint and the steam plants are operated on gas. Our first step in the process will be removing most of the 160,000 SF skilled nursing building in Port Orchard from steam heat. This will start in 2023 and continue through 2024. - DVA is working to replace the skilled nursing building in Orting, and this will be a zero-net-ready structure, replacing another high use building from the steam plant. DVA is also working to replace the skilled nursing building in Spokane, and this will be a zero-net-ready structure. The Washington Department of Veterans Affairs (WDVA) has completed installation of three new EV chargers at our Washington Veterans Home, Port Orchard facility in 2023 and 2024. In 2021, WDVA's Central Office installed its first EV Charger for the agency.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

WDVA is continuing to move away from our steam heat at our Washington Soldiers Home in Orting and Washington Veterans Home in Port Orchard. As part of that we will be moving forward with the removal of steam heat and installing new heating and cooling system at the Washington Veterans Home in Port Orchard. This will reduce the reliance on the inefficient steam system as we move over to an all-electric system for the heating and cooling of the building. The design was completed in early 2024 and will enter construction in Mid-2024. WDVA will be working to transition vehicles to EVs in the next few years. This will include expanding the build-out of infrastructure at our owned state facilities.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

To meet greenhouse gas emissions limits, the focus of WDVA's long-term greenhouse gas reduction strategy is based on the need to get sub-meters in place at our Port Orchard and Orting Facilities. This will provide WDVA with the proper data to understand and truly prioritize areas of need. Without the information WDVA's highest priority is to remove the overall reliance on steam heat at these facilities. This is currently being started at our largest building with the removal of steam heat and additional of electric HVAC systems for the 160,000 SF skilled nursing facility. Our current plan to add EV infrastructure to our owned facilities and

start replacing vehicles to EV's as they become available will help to support the reduction of emissions. WDVA looks forward to adding planning and growth as we continue to reduce emissions and understand our biggest emission uses. Since WDVA's largest source of emissions are the two steam plants at the Washington Soldiers Home in Orting and the Washington Veterans Home in Port Orchard, our agency will be working to remove the need for the steam plant of over coming years. These two facilities have more than three quarters of our agency's owned footprint and the steam plants are operated on gas. Our first step in the process will be removing most of the 160,000 SF skilled nursing building in Port Orchard from steam heat. This will start in 2023 and continue through 2024. DVA is working to replace the skilled nursing building in Orting, and this will be a zero-net-ready structure, replacing another high use building from the steam plant. DVA is also working to replace the skilled nursing building in Spokane, and this will be a zero-net-ready structure.

Washington State Patrol

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	2,518
Fossil Fleet Energy Use Emissions	16,369
Annual Fossil Greenhouse Gas Emissions	18,887

In 2023, Washington State Patrol (WSP) emissions were 55% below their 2020 limit and 31% below their 2030 limit.

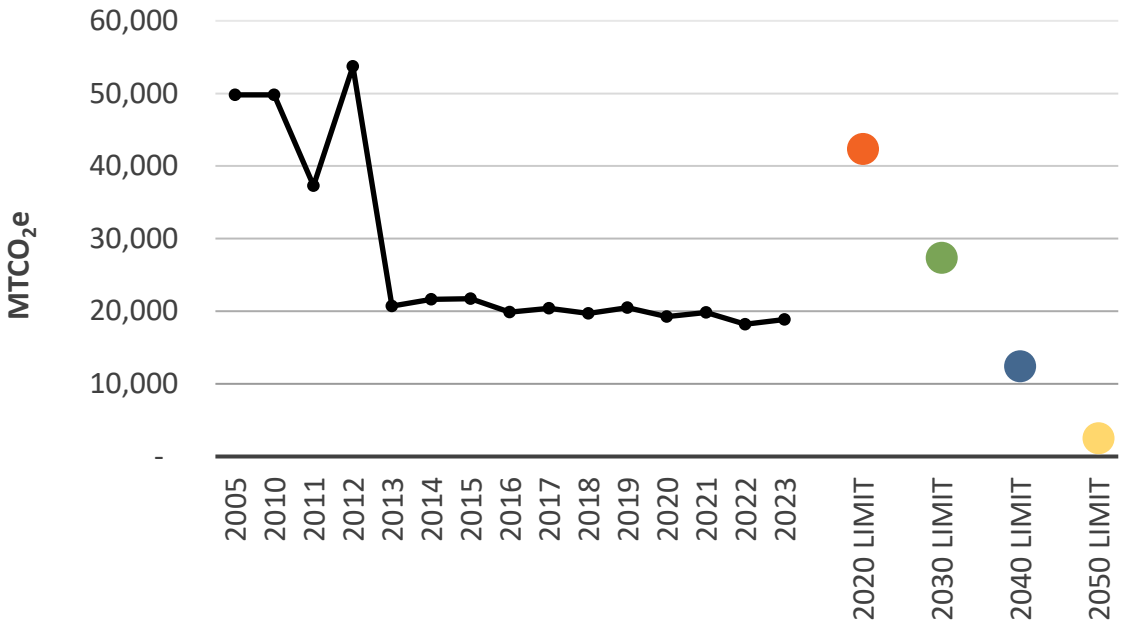


Figure 44: Washington State Patrol Historic Emissions and Future Limits.

In 2023, the WSP reported that 13% of agency emissions were from buildings and 87% were from transportation. The department reported 867,000 sf of building space, 68% of which they owned, 16% leased from DES, 12% privately leased and the remaining 4% leased from other state agencies.

In 2023, 31% of building emissions was from natural gas combustion, 69% was indirect electricity emissions, and a small amount was from diesel or propane systems. The agency purchased renewable energy for two facilities through utility green power contracts totaling 818,972 kWh, which significantly reduced emissions from their buildings. 98% of WSP's transportation emissions are from motor vehicles, and 2% are from aircraft.

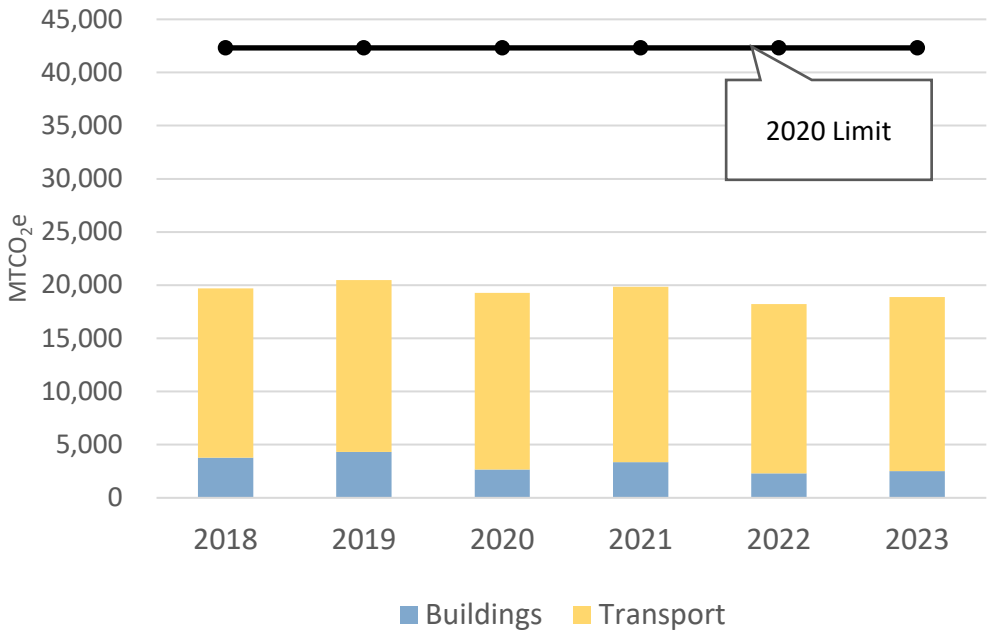


Figure 45: Washington State Patrol Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

In the 2023-2025 biennium budget request, the Washington State Patrol (WSP) was approved for the following projects: HVAC system upgrades to increase energy efficiency and performance at the Tacoma District Office (HVAC pre-design), Fleet Operations (HVAC major system upgrade) and Shelton Training Academy (HVAC major system upgrade). Also roof replacement projects were approved utilizing energy efficient materials that reflect heat and lower the amount of cooling. The agency purchased 11 additional battery-operated vehicles (BEVs); three 2023 Chevrolet Bolts, a Rivian R1S SUV and seven 2023 Tesla Model Ys. We purchased a Mustang Mach E in 2022. The WSP continues to purchase and operate pursuit rated hybrid vehicles (HEVs) in appropriate assignments. In non-pursuit assignments we will continue to explore if a BEV is appropriate. In 2024 we ordered the first pursuit rated BEV a Chevrolet Blazer for testing.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

In the 2025-27 biennium the WSP plans to submit a Capital Budget Request for energy efficient improvement projects that include HVAC system upgrades at the Tacoma District Office (HVAC system upgrade) and the Spokane District Office (HVAC system upgrade and pre-design). We are also going to request for EV charging infrastructure for each of our District headquarters. The agency will continue to transition our non-pursuit rated vehicles from internal combustion engine (ICE) vehicles to BEVs. We are working with our local utility to plan for EV infrastructure at our Fleet location. In the 2027-29 biennium, the agency will assess the needs of energy

efficiency improvements through lighting upgrades, air compressors, and freezers. WSP will also work to improve energy efficiencies through products used for projects such as roof replacements, exterior preservation, etc. As technology advances, we are hoping for more EV options and range extension to enhance our fleet.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

WSP will continue to include Capital Budget funding request for energy efficient projects and/or systems through HVAC system upgrades as well as utilizing energy efficient products in all facility upgrade projects. We will continue to monitor energy consumption in all facilities for outstanding anomalies. Our agency will continue to explore ways to lower our carbon footprint through more efforts in our fleet management, facilities management and supply purchasing practices.

Washington State University

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	130,492
Fossil Fleet Energy Use Emissions	1,988
Annual Fossil Greenhouse Gas Emissions	132,481

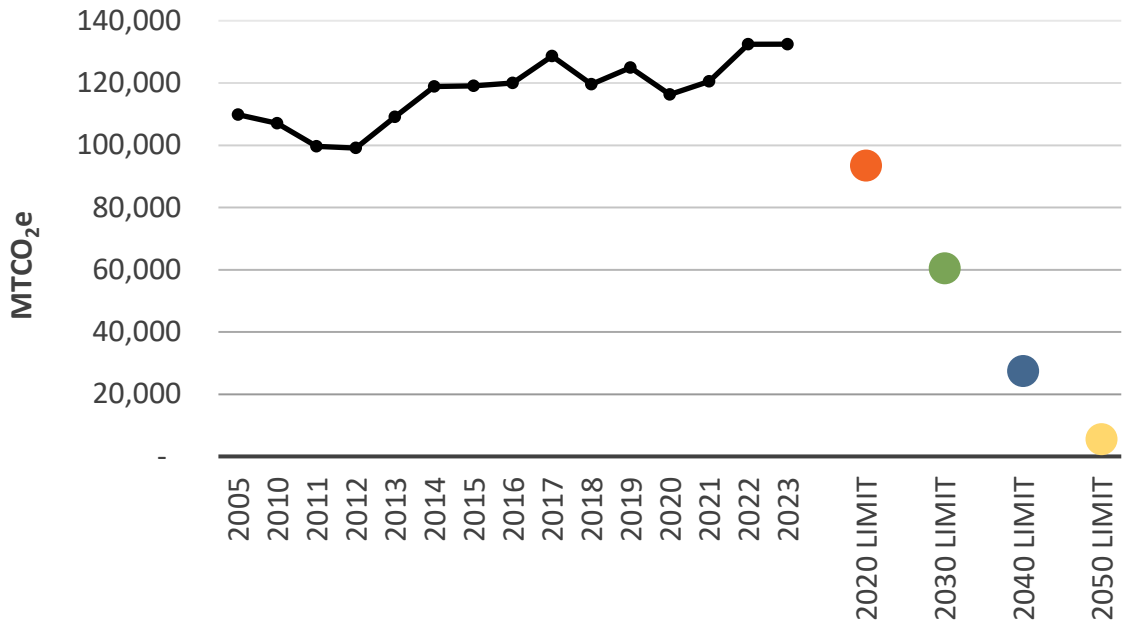


Figure 46: Washington State University Historic Emissions and Future Limits.

In 2023, Washington State University (WSU) emissions were 42% above their 2020 limit and 119% over their 2030 limit.

In 2021, WSU reported that 98% of emissions were from buildings and 2% were from transportation. The university reported 14,629,732 sf of building space, all owned by the university. In 2021, 68% of building emissions were from stationary combustion and 32% was indirect electricity emissions. WSU has a solar system, but the generation was not reported. All of WSU's transportation emissions are from motor vehicles.

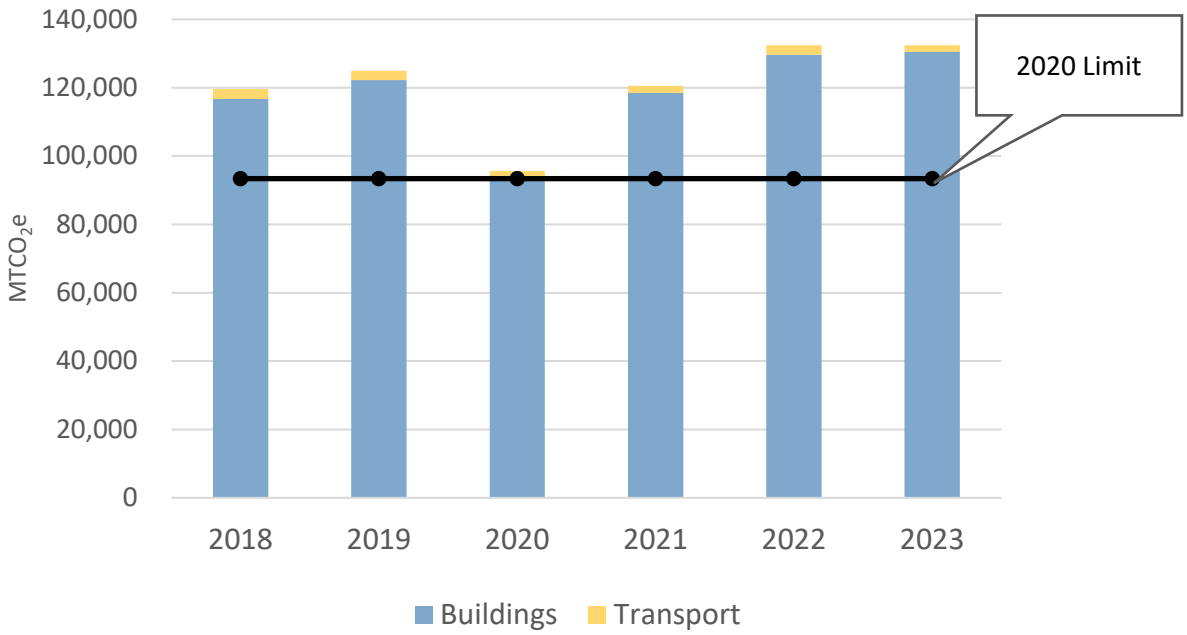


Figure 47: Washington State University Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Hired a consultant to begin developing a plan for transitioning steam plants to low temperature hot water. Started design on the first nodal heat pump plant on the Pullman campus with the goal to eventually transition nearby buildings off of steam and on to low temperature hot water. Investigated energy savings impact of increasing dead band temperature range in buildings on the Pullman campus. Continued a Revolving Energy Fund (REF) program focused on identifying and executing energy savings projects on the Pullman campus. Continued focus on improving metering infrastructure (installation, replacement, calibration, automation, data acquisition, etc.). Energy reduction through LED lighting upgrades in multiple facilities system-wide. Implemented a tenant engagement program in partnership with the Integrated Design and Construction Lab (ID+CL) on the Pullman campus to improve energy saving behavior amongst building occupants.

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

$5M request in 2023-25 State Capital Budget to initiate compliance with the Clean Building Standard and House Bill 1390. Include similar, reoccurring asks in 2025-27 and 2027-29 to continue towards compliance. $40M request in 2023-25 State Capital Budget for Minor Capital Renewal (MCR) projects focused on addressing deferred maintenance (in buildings and infrastructure) and optimizing space. Include similar, reoccurring asks 2025-27 and 2027-29. $13M request in the 2024 State Capital Supplemental Budget to be expensed if the CCA is NOT repealed in the upcoming November 2024 vote. Pursue all federal/state funding opportunities (including grants, IRA/ITC credits, CCA, etc.) in an attempt to find significant funding ($500M+)

for the system-wide decarbonization effort. Continue identifying and executing energy savings project using the university's internal REF program. Continue investing in the metering program. Continue LED lighting improvements. Continue ID+CL tenant engagement program.

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

In addition to enhancing the reoccurring funding requests and programs noted above, WSU plans to emphasize the following high-level strategies: Investigate emerging technology and alternatives for building heating and cooling. Explore affordable electrification opportunities. Establish an official sustainability management team to represent the entire WSU system.

Western Washington University

Emissions Profile

Total Emissions Source	2023 Greenhouse Gas Emissions (MT CO_2e)
Building Energy Use Emissions	12,464
Fossil Fleet Energy Use Emissions	442
Annual Fossil Greenhouse Gas Emissions	12,906

In 2023, Western Washington University (WWU) emissions were 22% below their 2020 limit and 20% above their 2030 limit.

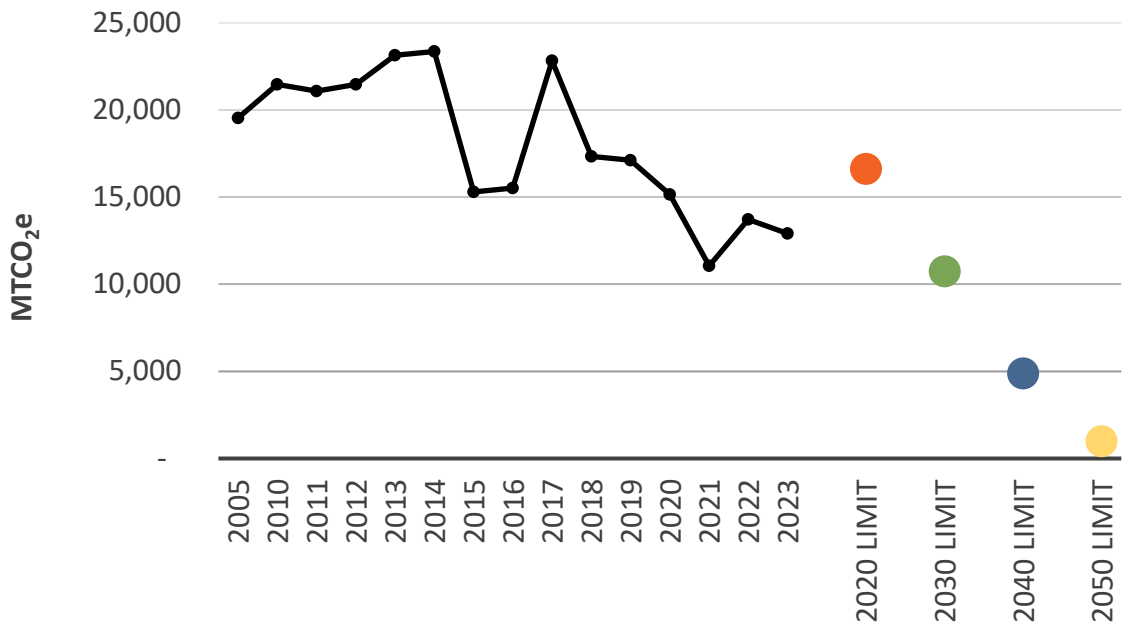


Figure 48: Western Washington University Historic Emissions and Future Limits.

In 2023, WWU reported that 97% of emissions were from buildings and 3% were from transportation. The university reported 3,547,032 sf of building space, 99% of which they owned, 1% leased from a private building owner. In 2023, 98% of building emissions were from stationary combustion, and the remaining 2% was indirect electricity emissions. 96% of WWU's electricity was purchased using a green power contract. 94% of WWU's transportation emissions are from motor vehicles and the remaining 6% are from boats.

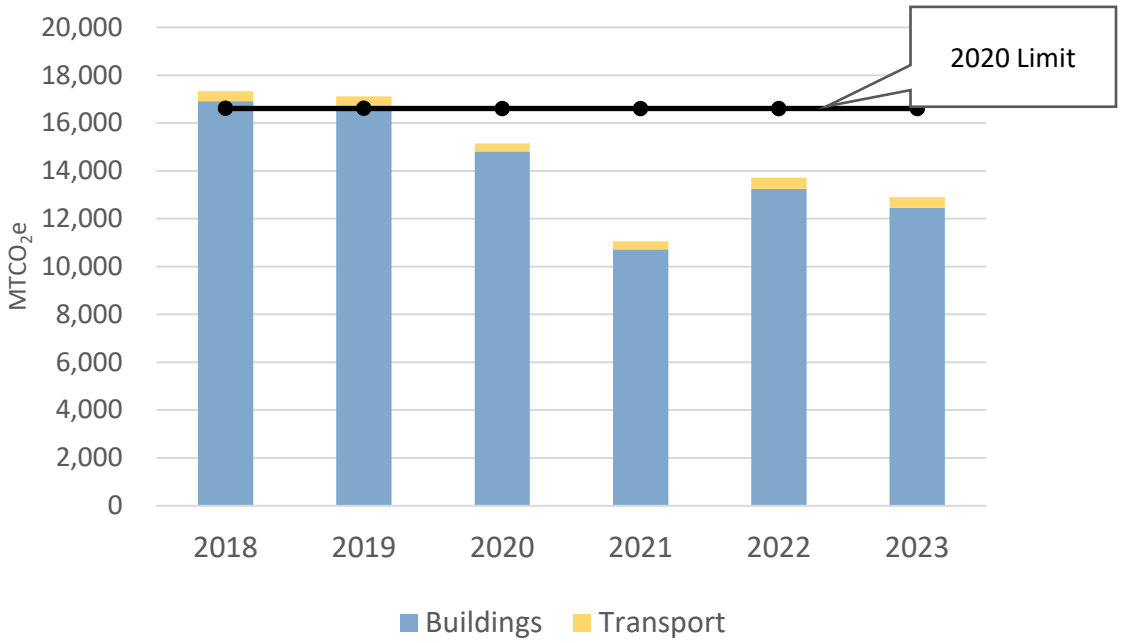


Figure 49: Western Washington University Emissions from Building and Fleets 2018-2023.

Actions taken to reduce greenhouse gas emissions during the 2022-2023 calendar years

Buildings - A feasibility study was completed for transitioning WWU's district heating system to a low carbon source. The vast majority (94%) of Western Washington University (WWU's) scope 1 and scope 2 emissions emanate from our district heating system. With steam distribution, a significant portion of the heat generated is lost in tunnels and utilidors. Moreover, the plant and associated infrastructure are aging. In 2022, WWU commissioned the Heating System Conversion Feasibility Study. The Study evaluated four different technology options comparing lifecycle costs, carbon emissions, technical feasibility and resiliency. The Preferred Alternative that emerged from the study was shifting to multiple nodal plants instead of one central plant, moving off steam to a 4-pipe hot and chilled water distribution system, incorporating air source heat pumps for heating, having heat recovery chillers for cooling, and geoexchange to maximize efficiency and heat pump performance on cold days. Construction began on Kaiser Borsari Hall, seeking Zero Carbon certification. Kaiser Borsari Hall is a new 52,000 sq ft building on WWU's campus that will house WWU's electrical and computer engineering, energy science, and computer science departments. The building was designed to achieve the Zero Carbon certification, which requires both a 20% reduction in embodied carbon from building materials along with offsets for remaining embodied carbon, and 100% of the operational energy use of the project be met with renewable energy. The building will feature high performance networked LED lighting and VRF mechanical systems and an 80 kW rooftop solar PV array. When complete, the facility will be the first publicly funded zero-energy academic building on a university campus in Washington State. The building is scheduled to open in fall 2024. Exterior lighting retrofits were completed across the campus perimeter

In 2022 and 2023, 480 exterior lighting fixtures across WWU's campus were upgraded to LED. This includes campus perimeter pathway and streetlights, parking lot lights, and wallpacks in residential communities. New fixtures are dark-sky compliant to reduce light pollution. These lights use on average 50% less energy, reduce maintenance and material waste and improve safety. HVAC and Controls upgrades were completed in many buildings on campus o WWU installed CO2 and VOC sensors in many classrooms and lab buildings across campus. These sensors combined with new programming in our building automation system will allow us to better monitor ventilation levels and supply the right amount of outdoor air to occupied rooms while minimizing waste from over-ventilating unoccupied spaces. Significant mechanical upgrades included a new soft starter for a large chiller on campus to reduce unnecessary chiller operation and cycling and new exhaust fume fans and heat recovery coils for a lab building. WWU purchased 95% of its electricity usage through PSE's Green Direct renewable PPA. WWU's main campus and Shannon point participate in a power purchase agreement (PPA) with Puget Sound Energy (PSE). The program provides us with an option to purchase renewable energy from a dedicated, local source. The program has funded two projects thus far – the 137 MW Skookumchuck Wind Facility which went into operation November 2020, and the 194 MW Lund Hill Solar project which went into operation in December 2022. Lund Hill Solar is the largest solar project in Washington to date. [Continued in greenhouse gas Emission Strategy Worksheet in Appendix C]

Priority actions planned for the 2025-27 and 2027-29 Biennia (short-term strategy)

Accelerate the District Heating Conversion - WWU has hired an owner's representative team for the district heating conversion tasked with determining the project delivery method, assist with identifying designers and contractors, and providing construction project management services. The team will develop an Implementation Plan that will address design, construction, scheduling and sequencing, building retrofits, operational impacts, future adaptability and funding plans. Draft phasing shows completing the design phase in the 2025-27 biennium and construction taking place during the 2027-28 biennium. This draft phasing will be subject to funding availability, permitting timeline, and minimizing construction disruption on a busy campus. Complete Clean Buildings Compliance as a District. WWU will be using the decarbonization plan pathway as prescribed in HB1390 and recent Department of Commerce rulemaking for state-owned district energy systems. The decarbonization plan will be submitted by June 2025 and we will be developing the operations and maintenance plan and energy management plan for buildings over 90,000 sq ft by June 2027. Develop On-Site Solar. Kaiser Bosari hall will be WWU's first commercial-scale solar system when it is installed in summer 2025. WWU has submitted a grant request to help fund an additional 100 kW solar system. We will be submitting a grant request in summer 2024 to draft a solar and battery storage plan for additional buildings. Retro-commission existing buildings. WWU is currently drafting a work scope to perform comprehensive retro-commissioning of three of our existing buildings. This will involves systematically reviewing, optimizing, and adjusting the HVAC and associated controls systems within a building to ensure they operate as efficiently as possible. We will also continue to fine tune HVAC controls across campus. Install Heat Recovery on Lab Exhaust

Systems. WWU has submitted a grant request to install heat recovery systems at two main lab buildings and install CO2 sensors and demand-controlled ventilation in an additional six other buildings. Perform deep energy retrofits at the time of building renewal. WWU is currently developing a Capital Development and Strategic Vision Plan that will guide ongoing decision making around capital planning and development. The plan, due in Fall 2024, is expected to identify building renewal and renovation as a key strategy for modernizing our campus. As part of building renovations, deep energy retrofits could be integrated that will fortify the building's thermal enclosure, integrate lower temperature hot water and chilled water distribution, and upgrade lighting and electrical infrastructure. Our Environmental Studies building is currently in predesign and will likely be our first renovation that will include a deep energy retrofit. Ensure new buildings are low or zero carbon. WWU will have two new buildings in the upcoming biennia that will be designed to meet green building certifications. Construction began in Spring 2024 on the 4,200 sq ft House of Healing. The building design reflects the architecture of a Coast Salish style longhouse. It will serve as a gathering and ceremonial space for native students as well as Coast Salish tribal nations. The House of Healing will be all-electric and target LEED Gold certification. In addition, the 40,985 sq ft Student Success Center, currently in design, will begin construction in 2025.The building will co-locate student advising, admissions and financial aid representatives, counseling, and career development, and serve as a welcoming beacon to recruit and support students. The Student Success center will target Zero Energy certification for operating and embodied carbon. [Continued in greenhouse gas Emission Strategy Worksheet in Appendix C]

Long-term strategy for meeting greenhouse gas emissions limits in 2030, 2040, and 2050

WWU has a goal of achieving carbon neutrality by 2035, ahead of the timeline prescribed by RCW 70A.45.050. Our largest source of scope 1 and 2 emissions (94%) continues to be from our district heating system. The approach we have identified is multifaceted and will require multiple biennia to complete. To reduce these emissions, our targeted approach is to: Switch from natural gas boilers to a heat pump system combined with geo-exchange. Switch from steam distribution to hot water utilizing the lowest temperature hot water that our buildings will allow for. Provide district-level cooling with heat recovery chillers that can capture and redistribute waste heat. Complete building upgrades including new heat exchangers, replacing direct steam and high temperature hot water piping and coils, with low temperature hot water, and adding chilled water piping and coils. Improve building efficiency generally to reduce overall thermal loads. Acquire additional renewable electricity to offset increased electric usage with a combination of on-site solar and power purchase agreements (PPAs).

Appendix B – Agency Greenhouse Gas Emissions Mitigation Strategies

This appendix provides the greenhouse gas emissions mitigation strategies for each of the 26 reporters, as submitted by each reporting agency. Agencies were able to select from a variety of strategies and provided descriptions for long-term and short-term strategies which are separated by focus areas such as, transportation, facilities, clean and renewable electricity, equity and environmental justice, planning and budget development, and agency-specific or other actions.

Agriculture, Department of

The following subsections describe the greenhouse gas emissions mitigation strategies and descriptions provided by the agency.

Agency Actions

Over the last two years, WSDA has begun to implement EV's where practicable. WSDA began the move to the shared space with L&I in Tumwater, a LEED Silver building.

Short-Term Strategy

- Transportation
- Planning & Budget Development

WSDA will continue to implement EV's where practicable. The agency is exploring installing EV charging stations in Yakima as well as policies and procedures for home-based charging stations for inspectors.

Long-Term Strategy

- Transportation
- Facilities
- Planning & Budget Development

WSDA's long-term strategy is to continue to take direction from both DES Fleet Operations and DES Real Estate Services to aid in implementation of EV's and upgrading facilities to the extent practicable that we can. WSDA leases all of their facilities and if landlords to not wish to install chargers or upgrade facilities, funding would need to be sought to make improvements.

Transportation Strategy

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Limit trips in state vehicles by replacing in-person meetings with remote options

WSDA will pursue funding for installation of charging stations at facilities where landlords are amenable. WSDA leases all of our vehicles from Fleet Operations and will continue to utilize EV's where we can.

Facilities Strategy

- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Buy efficient IT equipment and appliances
- Leverage new leases and lease renewals to electrify heating and reduce energy use
- Change space use allocations to reduce occupied square footage

WSDA will take advice and direction from DES Real Estate Services for any leased facility upgrades.

Planning/Budget Strategy

- Sustainability Action Plans
- Funding greenhouse gas emissions reduction priorities
- For SEEP agencies, Carbon Reduction Investment Budget (CRIB) priorities

We are in the beginning stages of planning and budget development.

Challenges/Barriers

WSDA is only 16% General Fund - remaining funds come from Fee for Service, Grants, Federal Funding - we are beholden to our stakeholders to ensure we get our inspections done per many RCW's/WAC's - EV's are not always the best option Needs and timelines for our staff/inspectors to be able to do their jobs Charging station timeframes - staff are losing time and money (fee for service) when staff have to stop and charge Majority of inspectors are home based - developing policies and procedures Leased facilities - landlords not willing to do upgrades for facilities or charging stations Funding - finding appropriate available funding and a central location to know what funding opportunities are available Fleet Operations only provides certain charging levels/charging vendors with EV's - no upgrades to Level 3 charging stations (either with the vehicle or charge card) means staff must pay out of pocket and get reimbursed.

Central Washington University

Agency Actions

CWU received State Capital Funding to install our first geothermal plant., which will provide a renewable source of heating and cooling for CWU's North Academic Complex in addition to three other academic buildings. Test well construction to begin in October 2024. CWU received funding for the development of a total campus decarbonization plan. 30-40% complete with plan. Chosen solution is in line with the first geothermal plant construction and funding received for the second geothermal plant. CWU performed investment level energy audits of

five additional buildings over 50K GSF. This totals 10 buildings that have undergone ASHRAE level 2 audits. These audits result in energy efficiency measures identified that can tremendously reduce the Energy Use Intensity of each building. CWU's Board of Trustees adopted CWU's new Institutional Strategic Plan in July 2023. Per CWU's Institutional Strategic Plan, CWU is committed to developing and implementing our first-official, university-wide Climate Change Action Plan (CAP), which will serve as a holistic roadmap to decarbonize CWU's infrastructure and operations, develop impactful sustainability programming for the campus community, advance environmental justice, and prepare our students for successful careers. Additionally, CWU is committed to integrating sustainability into university-wide curriculum to provide students with the knowledge, skills, competencies, and values necessary to shape an equitable and sustainable future. CWU hired its first-ever Sustainability Officer, who is responsible for leading the development and implementation of CWU's first-official Climate Change Action Plan (CAP). In 2023, CWU Sustainability engaged over 500 students, staff, faculty, and local community members as CWU designed and prioritized measurable objectives and near-term strategies for the CAP. As a result, CWU's CAP is comprised of 11 focus areas (e.g., energy efficiency and conservation, buildings, transportation, on-site renewable electricity, waste diversion, etc.) and equips CWU with a realistic pathway to achieve its goals of reducing its greenhouse gas emissions by 45% by 2030, and 70% by 2040, compared to 2005 levels. CWU strives to be a zero-carbon campus no later than 2050. CWU received Climate Commitment Act funds to implement large-scale, energy efficiency upgrades at our most energy intensive and inefficient (EUI of 245) building, Science 1. CWU demolished one of our largest energy-intensive buildings and began construction of our LEED Gold minimum North Academic Complex. CWU filed applications for Audit Incentive funding through Washington Department of Commerce to finish conducting ASHRAE Level 2 energy audits for CWUs' remaining 11 Tier 1 buildings. CWU submitted two grant applications to the WA Department of Commerce. CWU is requesting funds for a planning and predevelopment study required to implement large-scale onsite solar generation across multiple areas of campus. The solar planning and predevelopment study would detail all aspects and mechanics of installing up to 1.1+ MW of photovoltaic solar across multiple campus buildings, while also evaluating the possibility of large-scale photovoltaic arrays on vacant land owned by CWU. CWU has also requested funding for the installation of a 100+KW photovoltaic System on Dugmore Residence Hall. PROJECTS: SEE ATTACHED 2023CY_Updates_GHG Reduction Strategy document for more

Short-Term Strategy

- Transportation
- Facilities
- Equity & Environmental Justice
- Planning & Budget Development

GEOECO PLANT 1 - Complete CWU's first geothermal plant providing over 1000 tons of energy efficient heating and cooling. GEOECO PLANT 2 - Received Climate Commitment Act funds for a second geothermal plant. This project is pending CCA Fund approval on the ballet in November. (Pending Available Funding) CLEAN BUILDING ENERGY AUDITS - Complete ASHRAE Level 2

energy audits on the remaining 12 Tier 1 buildings that have not undergone audits. (Pending Available Funding) 4. NORTH ACADEMIC COMPLEX - Complete the new energy efficient North Academic Complex facility. LARGE SCALE SOLAR STUDY - Complete a large-scale solar study to identify a plan for the implementation of a large-scale solar array(s). (Pending Available Funding) DUGMORE PV SOLAR - Installation of a 100+KW PV Solar System on Dugmore Residence Hall. (Pending Available Funding) HEAT PUMP DOMESTIC HOT WATER UPGRADE - Central Washington University plans to upgrade four campus facilities from carbon producing natural gas domestic water boilers to modern electric air source heat pump domestic water heaters. HOGUE PV SOLAR EXPANSION – Central Washington University plans to replace failed 28KW PV solar system. SCIENCE 1 CARBON REDUCTION PROJECT – Central Washington University plans to aggressively help bring our Science 1 building in closer in compliance of the Clean Building Standard Performance (HSB 1257) for our campus. LIBRARY ENERGY EFFICIENCY UPGRADE – Central Washington University plans to help bring Library closer to complying with the Clean Building Standard Performance (HSB 1390). BOUILLON ENERGY EFFICIENCY UPGRADE – Central Washington University plans to help bring Bouillon Hall into compliance with the Clean Building Standard Performance (HSB 1390). SAMUELSON ENERGY EFFICIENCY UPGRADE - Central Washington University plans to help bring Samuelson closer to complying with the Clean Building Standard Performance (HSB 1390). DISCOVERY HALL ENERGY EFFICIENCY UPGRADE – Central Washington University plans to help bring Discovery closer to complying with the Clean Building Standard Performance (HSB 1390). BLACK HALL ENERGY EFFICIENCY UPGRADE – Central Washington University plans to help bring Black Hall closer to complying with the Clean Building Standard Performance (HSB 1390). BLACK HALL HEATING/COOLING PUMP CONTROLS- Variable Speed Heating and Cooling Pump Control Replacement. SCIENCE 1 HEATING/COOLING PUMP CONTROLS - Variable Speed Heating and Cooling Pump Control Replacement. HEATING WATER LOOP CHEMICAL TREATMENT - Installation of automated chemical treatment systems for all Heating Water Loops. FIRST AND SECOND YEAR EBCx - Retro Commissioning of 13 Existing Buildings to help reduce campus EUI to achieve campus EUIt per HB1390. LARGE SCALE SOLAR ARRAY – This project includes the addition of 5MW of Solar on the 40 Acres N of Campus. BOILER BLOWER CONTROL UPGRADE – This project will result in the addition of a VFD to the blower motor on the remaining two of our 60,000LB steam per hour boilers. SEE ATTACHED 2023CY_Updates_GHG Reduction Strategy document for more details.

Long-Term Strategy

- Transportation
- Facilities
- Equity & Environmental Justice
- Planning & Budget Development

CWU has taken a more dedicated approach to sustainability and the reduction in our greenhouse gas output. Upon completion of the recent energy studies, we have a good idea on the proper path to success. Finish the configuration of our sub-meters so we can measure our successes. We plan to utilize consultants to further develop, refine, and measure progress towards our carbon reduction goals. Upon deciding the best path for total campus

decarbonization, we will request state funds to design the systems required to meet the goals of that path. This will likely result in the continued expansion of our low temp heating water and chilled water to added geothermal plants. With the long-term plan of upgrading building level HVAC systems to accommodate the low temperature heating water as their primary source of heating. Request state funds to complete as many identified energy efficiency measures as possible, starting with those that make the greatest impact and address both backlog maintenance as well as energy savings. CWU plans to establish a $1 million Green Revolving Loan Fund to finance energy efficiency projects with demonstrable energy cost savings. CWU hires three student peer-to-peer educators to engage, educate, and empower students to incorporate sustainability practices (e.g., energy conservation, waste diversion, alternative modes of transportation, etc.) in their daily lives. Continue to complete clean building energy audits until we have identified all energy efficiency measures that are cost effective to implement. Work towards development of an Energy Management Plan, Operations and Maintenance Plan and Decarbonization Plan per HB1390. Use the deliverables to continue to advocate for additional funds. Continue applying for any known available energy related grant opportunity and utilize Climate Commitment Act Funds and Inflation Reduction Act Funds as they become available.

Transportation Strategy

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible
- Limit trips in state vehicles by replacing in-person meetings with remote options

Continue to install a minimum of 3-5 Level 2 electric vehicle chargers as part of each Major Capital Project. This will support CWU's efforts to electrify its campus fleet while also providing charging capacity for the local community. CWU will develop a fleet electrification plan no later than 2025, which will set CWU on course to fully electrify its 200+ campus fleet no later than 2040. Since Kittitas County does not have the necessary infrastructure to support composting of pre-consumer and post-consumer food and organic waste, CWU is seeking funding to install a 30' x 10' composing unit at its Wildcat Farm. If funded, CWU can divert up to 1,000 lbs. of compostable and organic waste from entering the landfill daily. This initiative will be instrumental for CWU to achieve its goal of diverting 25% of its waste from the landfill no later than 2030. CWU will invest in SIMAP, which is a platform designed for higher education institutions to calculate Scope 3 emissions. CWU will be collaborating with the students, staff, faculty, and the local community to design and build infrastructure that effectively supports alternative modes of transportation (e.g., public transit, bike share, etc.), which will support CWU's goal of reducing campus-wide, vehicle miles traveled by 20% by 2030, in comparison to 2024 levels. See Draft Climate Action Plan attachment for Additional Details.

Facilities Strategy

- Electrify building space heating, hot water and cooking
- Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

- Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Operational or organizational changes: Hire a resource conservation manager (RCM)
- Buy efficient IT equipment and appliances
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption
- Change space use allocations to reduce occupied square footage
- Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

ADDITIONAL GEOECO PLANTS– Upon completion of the 15-year Decarbonization Plan, continue to advocate for additional funding to build Geothermal plants until we are no longer dependent on the use of natural gas. LOW TEMP HEATING WATER INFRASTRUCTURE AND IMPLEMENTATION- As additional geothermal plants are added, we will need the low temperature heating water infrastructure expanded to buildings to connect individual buildings. We will also need building level infrastructure to implement the low temperature heating water at each building. CLEAN BUILDING ENERGY AUDITS - Complete ASHRAE Level 2 energy audits on the remaining 12 Tier 1 buildings and all Tier 2 Buildings that have not undergone audits. IMPLEMENT LARGE SCALE SOLAR - Complete a large scale-solar study to identify a plan for the implementation of a large-scale solar array(s). SITE SPECIFIC SOLAR - Installation of a 100+KW PV Solar System on any buildings that can sustain solar infrastructure. HEAT PUMP DOMESTIC HOT WATER UPGRADE - Central Washington University plans to continue to install modern electric air source heat pump domestic water heaters where applicable. BUILDING LEVEL ENERGY EFFICIENCY MEASURES (EEMS)– Central Washington University plans to aggressively help bring our campus EUI by implementing cost effective building level EEMs. This critical step in our efforts for campus compliance with Clean Building Performance standards. DECARBONIZATION PLAN - Continue to work towards development of an Energy Management Plan, Operations and Maintenance Plan and Decarbonization Plan per HB1390. Use the assembled data and plans to continue to advocate for additional funds. SUSTAINABLE PROCUREMENT - CWU Contracts, Purchasing, and Surplus will be collaborating with CWU Sustainability on developing and operationalizing CWU's Sustainability Procurement Policy.

Equity & Environmental Justice Strategy

Since April 2023, the CWU Sustainability Department has extensively engaged the campus and local community during the development process of the University's first-official Climate Change Action Plan (CAP). CWU Sustainability coordinated and facilitated five campus-wide Sustainability Forums in 2023 and early 2024. The purpose of the Sustainability Forums was to increase awareness of CWU's commitment to accelerating sustainability and climate change initiatives and provide opportunities for the campus community to share guidance and input as the university seeks to transform our infrastructure, operations, and culture amid a changing climate. CWU Sustainability also presented to over 25 classes, student groups, leadership

teams, and associations during the development of the CAP. As a result of engaging over 500 students, staff, and faculty, CWU Sustainability was able to identify focus areas, key pillars, and priority actions for the CAP, which includes an emphasis on installing on-site, renewable electricity across campus. Investing in and installing on-site renewable electricity emerged as one of the priority focus areas.

Planning & Budget Development

- Facility or campus master plans
- Deferred maintenance and equipment replacement schedules
- Sustainability action plans
- Funding greenhouse gas emissions reduction priorities
- Electrification and feasibility plans/studies for district heating systems

All projects found in section “Please describe your agency’s long-term facilities strategies and priorities for greenhouse gas emissions reductions will be completed using the following plans to pursue funding. We will be continuing to prioritize Minor Works Project Funding towards energy efficiency measures and upgrades that prioritize both backlog maintenance as well as energy savings. Upon completion of our 15-year Decarbonization Plan, we will use the plan to continue prioritizing funds to meet the goals defined within the plan. We will also continue applying for any known available energy related grant opportunity and utilize Climate Commitment Act Funds and Inflation Reduction Act Funds as they become available.

Challenges & Barriers

Up until the projected 2023-2025 Capital Funding biennium, we have not seen dedicated funding toward many of the energy goals set by State Legislators. We have struggled to self-fund the mandates resulting in less-than-ideal greenhouse gas reduction results. There are currently several redundant reporting requirements across multiple state agencies, which requires our team to duplicate efforts by submitting the same data to multiple agencies. This process reduces our bandwidth by taking time away from our efforts to implement projects across the university. Auxiliary-funded buildings are difficult to make improvements to and are difficult to include in our strategy because Washington State does not allow the use of Capital Funds for improvements to those buildings or building systems. Considering we and other higher education institutions are still experiencing low enrollment levels due to COVID-19, we are operating on reduced in-house maintenance and project funds.

Children, Youth, and Family Services, Department of

Agency Actions

DCYF has been working toward downsizing our leased facility inventory to “right size” our offices in a post pandemic work environment as well as improving energy efficiency in our leased and owned spaces with the implementation of modern energy codes during construction projects. We have also been working with our current lessors at the time of lease renewals to look at upgrades to lighting, HVAC, and water conservation via the deferred maintenance and tenant improvement negotiations. We have also been working to convert our state fleet per Executive Order 21-04 to BEV as well as installing or scoping EV charging stations to support the future growth of our BEV fleet.

Short-Term Strategy

- Transportation
- Facilities
- Planning & Budget Development

DCYF is looking to continue to downsize our leased square footage and install EV charging infrastructure to support converting our ICE fleet over to a BEV fleet. We are also going to continue to look at creative and innovative ways to improve our energy efficiency within our offices and owned spaces.

Long-Term Strategy

- Transportation
- Facilities
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

While this is proving to be a bit more difficult for DCYF vs. other agencies considering our lack of standalone historical data we are still looking to decrease our metric tons of greenhouse gas emissions with every passing year. We will be doing so by looking to convert our ICE fleet, create offices that meet and or exceed modern energy codes, convert our heating systems to be more efficient as they near end of life and decrease our non-emergent travel impacts by using modern technology to conduct our work remotely. We are also looking to embrace a telework first philosophy for our employees that will result in an indirect reduction of greenhouse gas emissions that employees would personally create.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Limit trips in state vehicles by replacing in-person meetings with remote options

DCYF is currently working toward installing 220 level 2 charging ports across the state to support converting our ICE vehicles to BEV. We are looking forward to having those projects completed by the end of FY25 if our funding sources are available. In several of those locations DCYF is co-located with our sister agency DSHS and are looking to support each other's fleet needs with those 220 ports. This effort will result in converting fleet at approximately 1/3rd of our leased offices, once this work is completed, we will work to convert portions of our fleet to BEV at these and other sites.

Facilities

- Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Track building energy use by metering and benchmarking each building over 10,000 square feet
- Buy efficient IT equipment and appliances
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption
- Leverage new leases and lease renewals to electrify heating and reduce energy use
- Change space use allocations to reduce occupied square footage

DCYF has and will continue to commit to NZE building practices in all its new construction. Most recently DCYF constructed an NZE recreation facility at its Green Hill School campus. We were able to partner with DES and the DLR group to achieve this goal. DCYF is also planning to partner with a lessor in Sunnyside to build a new field office that will utilize all modern energy codes, energy efficient HVAC systems and lighting systems to replace a previous location that was very out of date and not energy efficient. DCYF is also planning to upgrade the cooling and controls system in three housing units at Green Hill School in the upcoming fiscal year with more modern and energy efficient units. We will also continue to commit to leverage lease renewals to convert systems to be closer to ZE and NZE as allowable by Lessors in our leased asset portfolio.

Equity & Environmental Justice

DCYF has and will continue to prioritize the installation of EV charging infrastructure in communities that have been identified as overburdened. We will also be working with our agency partners at DES, and the Department of Commerce, to ensure that our projects meet not only our agency's needs but also benefiting the communities in which they have been in completed in.

Planning & Budget Development

- Facility or campus master plans
- Deferred maintenance and equipment replacement schedules
- For SEEP agencies: Carbon Reduction Investment Budget (CRIB) priorities

DCYF will continue to leverage our lease renewals for upgrades to energy efficiency appliances, lighting systems and heating systems. We also plan to work with OFM in developing an appropriate six-year leased facility plan that aligns with right sizing space to decrease our greenhouse gas emissions to support those locations. We have also put together a fleet electrification strategy and a CRIB to continue to reduce greenhouse gas emissions and meet the limits for greenhouse gas emissions by 2030 as per RCW and EO.

Agency-Specific and Other Strategies

DCYF is committed to maintaining a telework first philosophy to reduce our overarching carbon footprint when it comes to greenhouse gas emissions. We allow flex schedules when appropriate which allows us to decrease our leased square footage, decrease our energy consumption in offices, and decrease the emissions produced by employees commuting travel.

Challenges & Barriers

DCYF is a unique agency that supports clients in their path to adulthood, this includes several capital owned facilities that operate 24/7 as well as field offices across the state that respond to emergent requests to ensure the health, safety, and welfare of children. These support systems require us to act and respond at a moment's notice which can cause us to rely upon quick fuel sources in our buildings and vehicles. The other barriers that we face are apparent in that we do not directly control buildings that are leased by our agency and must work through a lessor to upgrade their building, with that comes the issue of funding said projects. We have and will continue to leverage our lease renewals to cover some of these expenses but continue to fall short as building costs and inflation grow.

Commerce, Department of

Agency Actions

We moved into a net-zero building in Spokane. We also have successfully reduced down to only one electric card left. All other vehicles are EVs.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity

We are committed to reducing our leased space and buying environmentally safe products.

Long-Term Strategy

- Facilities
- Clean & Renewable Electricity

We would like to continue reducing leased space and hopefully find a building that uses solar power in Olympia. We will get rid of our last remaining electric vehicle and replace it with an EV. We have already switched to purchasing only green office supplies and are well on our way to reducing our emissions.

Facilities

- Buy efficient IT equipment and appliances
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption
- Leverage new leases and lease renewals to electrify heating and reduce energy use
- Change space use allocations to reduce occupied square footage
- Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

Long-term facilities strategy is to reduce our leased space. We are planning to move out of our large building and hopefully move into a net-zero building with the help of DES real estate services.

Clean & Renewable Electricity

Power purchase agreements (PPAs) for renewable energy purchases (examples include PSE Green Direct and Avista Solar Select)

We are planning to reduce leased space and working with real estate services to obtain new net zero spaces.

Challenges & Barriers

We've been successful in the changes we have made. Our biggest challenge is waiting until leases are ended to be able to move and finding net zero spaces.

Community Colleges of Spokane

Agency Actions

22-167: Colville HVAC updates provided a guaranteed annual savings of 8,000 therms and 4,500 kWh. 22-115: SFCC building 19 chiller replacement provided a guaranteed annual savings of 9,000 kWh and removed the existing system’s refrigerant and replaced with a new, lower greenhouse gas impact refrigerant. Small-scale LED retrofit projects.

Short-Term Strategy

- Facilities
- Clean & Renewable Electricity

The current focus to reduce greenhouse gas emissions in the short-term is to utilize analytics for HVAC scheduling and optimization, LED lighting retrofits, and submetering of individual buildings. With the award of the WAEVCP Commerce grant to install EV chargers we are looking to transition our current fleet to plug-in EV's, as budgets allow.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity

After a full mechanical audit of all systems on campus, we hope to transition away from in-kind end-of-life replacements and focus on every replacement increasing efficiency and/or transition fuel source to reduce greenhouse gas emissions. With the installation of fleet EV chargers in 2024, we hope to transition out any end-of-life internal combustion engine (ICE) vehicles for electric vehicles. Additionally, if financially feasible, we hope to create solar micro-grids with battery backup to power small units, such as the chargers and some consistent, low-usage buildings.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible

Since being granted the Commerce WAEVCP grant, we are installing fleet EV chargers on both campuses by 6/2025 which will enable us to transition fleet vehicles to EV's where funding allows. EV's will be purchased in replacement of end-of-life vehicles or if funding is available.

Facilities

- Electrify building space heating, hot water and cooking
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Track building energy use by metering and benchmarking each building over 10,000 square feet.
- Operational or organizational changes: Hire a resource conservation manager (RCM)
- Buy efficient IT equipment and appliances

All buildings over 20,000 sq ft will be submetered by the end of 2024 to track individual building usage and monitor for optimization efforts. Looking into advanced analytics for HVAC systems to further optimize energy consumption where possible. CCS changed from a Resource Conservation Manager to a Sustainability Project Manager to be better positioned to include sustainability and conservation measures within construction projects. Within construction, all

new equipment purchased has an efficiency focus to ensure we are reducing energy consumption wherever possible. If feasible for the building, equipment type, and budget, systems are being electrified through capital projects.

Clean & Renewable Electricity

On-site renewable energy generation

In 2021 a large solar array was added to SCC building 1 which generates electricity that is sold back to the grid. Looking to pursue any available grants to increase solar array production with battery backup storage.

Challenges & Barriers

The largest barrier to greenhouse gas emission reduction is always financial. New EV's are significantly more expensive than replacing with ICE vehicles. Solar projects require a significant amount of capital to structurally prepare a roof. ESCO projects typically lack the required funding to complete all of the maintenance work needing to be done, and limits any potential upgrades to change fuel sources to reduce greenhouse gas emissions.

Corrections, Department of

Agency Actions

Actions taken over the last two years focused on: Replacing obsolete and failing security, fire alarm and communication systems. Replacing building electrical, mechanical, plumbing, and structural systems that are at the end of their useful life. Replacing failing roofs that are well beyond their life span and threatening structural damage to the buildings beneath them. Repairing and replacing deteriorating utility and infrastructure systems that are unsafe for staff and incarcerated individuals and cause significant energy and water losses. Protecting the environment and complying with environmental and health regulations for air quality, water, wastewater, and storm water systems while reducing the carbon emission impacts from our activities. Program and Team Development (Process improvements and behavioral change): The Capital Planning and Development leadership has invested significantly in the facility maintenance team's development and support for them by leading the agency's dedicated facility managers in several efforts to strengthen the foundations and outcomes of proactive facility maintenance, preservation, and resource conservation efforts. Notable efforts during 2023 included: -Investments in building out electric vehicle infrastructure and converting the statewide fleet to zero emissions vehicles. -Resource conservation efforts focused on water conservation and energy and emissions reductions projects across the state. Planning to meet the Clean Building Standard.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity

- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

In compliance with Executive Order 21-04, DOC works towards 100% electrical vehicle usage by 2035. DOC continues to focus on increasing the number of BEVs (Battery Electric Vehicles, also referred to as EVs or Electric Vehicles). In 2023, DOC reached 30% BEV obtainment. Forty-one of the 108 DES (Department of Enterprise Services) leased vehicles were BEV. 11 of the 62 DOC owned vehicles were BEV. DOC also installed a new DC Faster Charging station at the Airway Heights Correction Center (AHCC). This station allows DOC employees to travel from eastern Washington to Western Washington without detours for charging. DOC plans to continue to increase the BEVS leased and owned while continuing to invest in infrastructure to support BEVS.

Water project at WSP - In 2023, DOC completed a larger water conservation project at the Washington State Penitentiary (WSP). This project included upgrades to the domestic water fixtures/piping and added a control systems to the fixtures. This targeted renewal project will significantly reduce energy consumption for the facility, cutting water usage by over 3,100 kgal/yr. Work progressing on Clean Building Standard (CBS) and District Heating Decarbonization (HB1390) This past year saw the Department efforts on the new Clean Buildings Standard legislation and in particular House Bill 1390 presenting an opportunity to decarbonize our campuses with District heating systems. The DOC started to work on the decarbonization plans at five of our largest campuses: AHCC, CBCC, MCC, WCC and WSP. Below are the goals of this project:

This work will target district energy decarbonization projects that will deliver needed energy and infrastructure upgrades.

Identify mechanisms to replace fossil fuels in the heating plants, including a schedule for replacement.

Evaluate possible options to partner with nearby sources and uses of waste heat and cooling.

Examine opportunities to add buildings or other facilities to the system once it is decarbonized, a strategy to incentivize growth of a decarbonized system, and requirements for facilities joining the system.

Evaluate, prioritize reducing energy use through conservation efforts both at the central plant and in the buildings connected to the district energy systems.

The audit and planning phase of this effort over the past year has begun a multi-year and multi-phase project on these campuses with the end goal of significantly reducing resource consumption as well as decarbonizing these campuses as funding and cost effectiveness criteria allow. The master planning approach afforded by HB 1390 allows the department to assess what the best long-term solution is for the campuses. In this way, immediate maintenance needs can be assessed to ensure public funds are spent in the most efficient manner possible. Without neglecting the need to keep critical systems operational. In addition we hope this planning can help the department avoid funding infrastructure that will become obsolete in the

near future, and rather be directed toward solutions that fit the longer term plans for the campus.

Current projects (2022 & 2023) include WSP Unit Six Roof and HVAC Replacement - Project to replace the roof and the heating, ventilation, and air conditioning (HVAC) systems for Housing Unit 6 in the East Complex at WSP $13,994,000.00. WSP East Complex CI Kitchen Roof and Cooler Repairs - Repair cooler and roof in EC CI Kitchen $1,395,000.00. AHCC/CBCC/MCC/WCC/WSP District Energy Systems - HB 1390, Identify and develop statewide district energy decarbonization focused Resource Conservation Measures (RCM's) that can be implemented to improve campus energy efficiency, enhance sustainability, and improve equipment operation, $1,600,000.00. SCCC D, E, F Building Roof Replacement- Replace the failing roof system and roof mounted equipment on Buildings D, E, and F. Part of the D building has been done. $6,194,000.00 MCCCW Mission Unit Roof Replacement Schematic Design-Design

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

Future projects – Seeking legislative funding:

AHCC/CBCC/MCC/WCC/WSP District Energy Systems - HB 1390, Identify and develop statewide district energy decarbonization focused Resource Conservation Measures (RCM's) that can be implemented to improve campus energy efficiency, enhance sustainability, and improve equipment operation.

MCC SOU and TRU Domestic Hot Water Piping Replace failing water lines at SOU and TRU

Low-cost projects:

Supporting Maintained teams in optimizing HVAC to reduce energy consumption

Optimizing HVACs by Supporting Facility maintenance by providing them with easier access, through remote access, to technical support and software upgrades to facility HVAC systems. This will help ensure these systems and the staff maintaining them have the tools they need to perform the task required. (SR306160 Building Control Systems Remote Access) Cost for this project will be embedded into the existing vendor support contracts and necessary software upgrades. (timing of funding requests for software upgrades will be triggered by our asset management program, maintenance module)

Connect Fuel Card readers at Prisons:

In an effort to accurately and efficiently track fleet usage, fuel consumption and vehicle mileage this project will connect facility fueling stations with fuel card readers and establish APIs with all fuel cards used in vehicles utilized by agency staff

Currently fleet usage, mileage and fuel consumption at DOC facilities are tracked in one of six ways; (1) paper logs, (2) DNR owned Card Reader, (3) PetroVend 100 Card Reader (4) Master Card Reader or with (5) WEX cards (any commercial pump), and (6) DOT cards (from any DOT pump).

This makes it difficult to accurately track fleet usage, mileage and fuel consumption, which in turn makes it difficult or impossible to track true costs and consumption.

In priority order:

•Establish APIs between WEX and DOT with Asset Planner. (DOT cannot establish an API-Discontinue use of DOT cards/fueling option)

•Connect DOC fuel pumps to Ameresco Asset Planner system, via SGN.

•Standardize all fuel pumps to PetroVend 100 Card Readers.

Waste and Toxics reduction strategies include, improve recycling at prison campuses, collaborate with DES and SEEP performing a healthier furniture pilot project, participate in Solar Select, solar energy purchase for electricity at AHCC, through Avista.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible
- Limit trips in state vehicles by replacing in-person meetings with remote options

DOC plans to continue to increase the BEVS leased and owned while continuing to invest in infrastructure to support BEVS. DOC plans to: Install 4 more DC Fast chargers to be installed out at WSP, and working with vendors to procure DOC's first heavy duty rigs with two battery Garbage trucks. Install level 2 chargers at all facilities including Reentry facilities. Develop funding requests to support above work.

Facilities

- Electrify building space heating, hot water and cooking
- Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Operational or organizational changes: Hire a resource conservation manager (RCM)

- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption
- Leverage new leases and lease renewals to electrify heating and reduce energy use
- Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

The department will continue planning to meet compliance deadlines for all buildings subject to the Clean Buildings standard. Planned activities are to conduct ASHREA Level II audits on all Tier I and Tier II buildings that are not part of a district energy system, develop Energy management plans for all Tier I and Teir II buildings that are not part of a district energy system, continue work on development of district energy decarbonization plans that can be implemented to improve campus energy efficiency, enhance sustainability, and improve equipment operation, install 4 more DC Fast chargers to be installed out at WSP, and working with vendors for, procure DOC's first heavy duty rigs with two battery garbage trucks, install level 2 chargers at Reentry Facilities and develop funding requests to support above work.

Clean & Renewable Electricity

- Power purchase agreements (PPAs) for renewable energy purchases (examples include PSE Green Direct and Avista Solar Select)

Full participant of Solar Select, solar energy purchase for electricity at AHCC, through Avista utility.

Equity & Environmental Justice

Providing humane environments for staff and population.

Planning & Budget Development

- Facility or campus master plans
- Deferred maintenance and equipment replacement schedules
- Sustainability action plans
- Funding greenhouse gas emissions reduction priorities
- For SEEP agencies: Carbon Reduction Investment Budget (CRIB) priorities
- Electrification and feasibility plans/studies for district heating systems

The department will continue planning to meet compliance deadlines for all buildings subject to the Clean Buildings standard and develop funding requests to support planned activities to include:

- Conduct ASHREA Level II audits on all Teir I and Teir II buildings that are not part of a district energy system.
- Develop Energy management plans for all Teir I and Teir II buildings that are not part of a district energy system.

- Continue work on development of district energy decarbonization plans that can be implemented to improve campus energy efficiency, enhance sustainability, and improve equipment operation.
- Install 4 more DC Fast chargers to be installed out at WSP, and working with vendors for
- Procure DOC's first heavy duty rigs with two battery Garbage Trucks.
- Install level 2 chargers at Reentry Facilities

Agency-Specific and Other Strategies

Supporting facility maintenance teams by advocating for access to the tools and training necessary to preform job and strengthen team.

Challenges & Barriers

DOC has lost access to the treasures COP funding mechanism which allowed the agency to engage in dedicated energy projects and pay for them with the savings these projects achieve. Going forward all energy savings, greenhouse gas emission and carbon reduction efforts will need to be supported within another Capital or Operations legislatively funded project. These are projects that will be addressing a critical need of the facility and agency.

Eastern Washington University

Agency Actions

Sports and Recreation Complex (PHASE Building Complex) - Completed level 2 energy audit and requested legislative funding appropriation for energy retrofitting to reduce energy usage and greenhouse gas emissions. $10 million was allocated to EWU for this project during the 2024 supplemental cycle. Once completed, building energy usage is estimated to be reduced by 38% and total campus greenhouse gas emissions reduced by 4%. The first phase of the Science Building (SCI) remodel began in 2022 and was completed early winter 2024. Phase 2 has begun. Once completed, building energy use and greenhouse gas emissions are estimated to decrease by 40%. Martin (MAR) and Williamson (WLM) building complex remodel predesign began in 2023 and is expected to be completed by summer 2024. Significant energy savings/greenhouse gas reductions are expected to be identified once the predesign process is complete. Annual ongoing upgrade/repair of building sub metering equipment to better manage campus energy usage. As light fixtures break and areas of campus are remodeled, lighting is upgraded to LEDs to reduce energy usage, maintenance, and waste. Replacement with LED lighting is a standard and ongoing practice at EWU. Preventative Maintenance - Routinely perform ongoing monitoring and replacement of infrastructure across campus to ensure proper operations and energy conservation. Roofing repairs and replacements help better seal the building envelope and conserve energy. Major roofing repairs were completed on Isle Hall, JFK Library, and Tawanka. Routinely perform ongoing monitoring and replacement of HVAC equipment across campus to ensure proper operations and energy conservation. Routinely perform ongoing maintenance of building envelopes across campus to ensure proper operations and energy conservation. New boiler (#3) was installed in 2023 and became operational January 2024. The

new boiler, while still reliant on natural gas, replaces an original boiler installed in the 1960s. Efficiencies in boiler operations are expected to conserve energy and thereby reduce greenhouse gas emissions. New chillers were expected to be installed and operational in 2023, however due to delays related to supply chain issues the electrical switchboard that will power the new chillers has been delayed. Project now expected to be completed by end of 2024. New chillers feature variable speed drives that will conserve energy and reduce greenhouse gas emissions. Medium Voltage Upgrade - Ongoing project to upgrade electrical switching equipment and infrastructure to better prepare EWU campus for further electrification. Campus heating temperature set point dropped from 72F to 68F to conserve energy and reduce greenhouse gas emissions. Completed new Climate Resiliency Landscape Masterplan that will convert campus landscaping to native, drought tolerant plants that promote biodiversity in a changing climate. The landscape masterplan is included in the documentation materials. Completed a Climate Action Plan for 2022 – 2025. The action plan is included in the documentation materials. Geothermal Ground Source Heat Pump Assessment. An initial assessment conducted by an engineering firm identified the potential to meet most of the campus heating requirements from a ground source system. The initial assessment is included in the documentation section. Conversion to an eco-district model to meet campus heating and cooling needs will significantly reduce campus greenhouse gas emissions and put EWU on track to meet reduction targets.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

Develop a 15-year decarbonization plan: EWU is currently under contract with an engineering consulting firm to develop a 15-year decarbonization plan per HB 1390 to transition away from fossil fuels for campus heating. This report will serve as the guiding plan to prioritize and ensure EWU decarbonizes operations as quickly as possible. Additionally, the decarbonization plan will serve as the central pillar to the development of a new campus masterplan and climate action plan.

Conduct building energy audits and retrofitting: Conduct level 2 energy audits of buildings across campus to identify work needed to conserve energy and reduce greenhouse gas emissions. EWU is currently under contract with an engineering consulting firm to perform energy audits of 7 buildings on campus. The energy audits will be included in our 2025 – 2027 biennium request for infrastructure improvements and as part of our process to meet Clean Building Performance Standards.

Geothermal ground source eco-district design and construction: EWU recently completed an initial geothermal ground source heat pump eco-district assessment. The report indicated the

potential to meet most of the campus heating requirements from a ground source system. The initial assessment is included in the documentation section. Next steps are to drill a pilot test well, followed by design and construction. A funding request to support design and construction of our first eco-district will be included in our 2025 – 2027 biennium request.

Prairie Restoration Project: The EWU Restoration project seeks to restore more than one third of campus land back to native habitat, and through this process, support research, educational, and recreational opportunities. More information regarding the Prairie Restoration Project can be found at (https://www.ewu.edu/give/funds/prairie-restoration). Restoration of the land has the potential to sequester carbon, helping to offset greenhouse gas emissions elsewhere. In addition to natural carbon sequestration through plant photosynthesis, we are conducting ongoing research on the use of biochar and other soil amendments to boost plant growth and carbon storage. As this project develops, it has the potential to sequester carbon on an annual basis and plays an important role in EWU's greenhouse gas reduction pathway.

Climate Resiliency Landscape Masterplan: Implement Climate Resiliency Landscape Masterplan through phased projects to transition the campus landscape to one that uses less water, chemical inputs, and energy over time while increasing biodiversity and resiliency to a changing climate. See landscape plan in documentation.

Electric vehicle charging station infrastructure: Add electric vehicle charging stations across campus for both public and fleet use. Installation of vehicle charging stations will be phased as funding allows. Currently pursuing state and federal grants to support funding. See electric vehicle charging assessment/plans in documentation.

Micro-steam turbine co-generation system in central plant: Add micro-steam turbines to new campus boilers to generate electrical power. High pressure steam will pass through turbine generators to create electrical power for the central plant. Steam is then directed to campus steam loop. This upgrade to the central plant increases boiler energy efficiency while reducing electrical consumption and providing a source of backup power.

Carbon capture system in central plant: EWU is currently seeking funding to install a demonstration carbon capture system at our central plant to remove carbon dioxide emissions from the combustion of natural gas to provide building heating. This system would be developed as part of a demonstration facility with a local engineering firm that has developed the technology. It would serve as a place to test carbon reduction technologies.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

EWU is currently under contract with an engineering consulting firm to develop a 15-year decarbonization plan per HB 1390 to transition away from fossil fuels for campus heating. The detailed plan is expected to be completed by early winter 2025. Initial analysis indicates that EWU should pursue a geothermal based eco-district model to provide campus heating and cooling. Additionally, EWU will conduct energy audits and retrofitting of all buildings on campus to improve energy efficiencies, design and build a PV microgrid, transition to an EV fleet, and implement climate resilient landscape management practices. The full decarbonization plan will be shared with Department of Commerce upon completion.

Transportation

- Electrify vessels and equipment where possible

EWU's fleet and transportation needs account for only 2% of Scope 1 and 2 emissions. We intend to transition our fleet to EVs as funding becomes available and/or the price of EVs decrease. Currently our main priority is to transition away from fossil fuels for campus heating (72% of Scope 1 & 2 emissions) and to improve building energy use (26% of Scope 1 & 2 emissions). However, we will continue to seek additional funding opportunities through grants to support the installation of electric vehicle charging infrastructure to support the transition to electrified transportation.

Facilities

- Electrify building space heating, hot water and cooking
- Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.
- Track building energy use by metering and benchmarking each building over 10,000 square feet.
- Buy efficient IT equipment and appliances
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption

Develop a 15-year decarbonization plan: EWU is currently under contract with an engineering consulting firm to develop a 15-year decarbonization plan per HB 1390 to transition away from fossil fuels for campus heating. This report will serve as the guiding plan to prioritize and ensure EWU decarbonizes operations as quickly as possible. Additionally, the decarbonization plan will serve as the central pillar to the development of a new campus masterplan and climate action plan that is focused on sustainability and resilience.

Geothermal ground source heat pump eco-districts: EWU is currently under contract with an engineering consulting firm to develop a 15-year decarbonization plan per HB 1390 to transition away from fossil fuels for campus heating. The detailed plan is expected to be completed by early winter 2025, but early analysis indicates that EWU should pursue a geothermal based eco-

district model to provide campus heating and cooling. Conversion to an eco-district model to meet campus heating and cooling needs will significantly reduce campus greenhouse gas emissions and put EWU on track to meet reduction targets set by RCW 70A.45.050. The initial assessment is included in the documentation section. Next steps are to drill a pilot test well, followed by design and construction. A funding request to support design and construction of our first eco-district will be included in our 2025 – 2027 biennium request.

Energy audits and building energy retrofits: As noted above, EWU is conducting level 2 energy audits of buildings using a phased, ongoing approach. As audits are completed, funding will be requested from the legislature to make the upgrades as documented in the energy audits. We intend to follow this approach until all campus buildings have been updated to current energy standards and compliance with the Clean Buildings Performance Standards. This approach to building modernization will also help support the transition to an eco-district heating model through the efficient use of energy for building heating and cooling.

Solar micro-grid design and construction: EWU has submitted a grant request to the Department of Commerce Clean Energy Fund to support the design of a campus wide micro-grid photovoltaics system. If funded, this study will identify the potential pathways to install a solar electricity system that could provide between 1 – 3 megawatts of clean energy to campus and support the electrification of building heating. The study would take place during 2024 – 2025. Once the study is completed EWU will pursue funding to support construction of the micro-grid system.

Carbon capture system in central plant: EWU is currently seeking funding to install a demonstration carbon capture system at our central plant to remove carbon dioxide emissions from the combustion of natural gas to provide building heating. This system would be developed as part of demonstration facility with a local engineering firm that has developed the technology. It would serve as a place to test carbon reduction technologies for hard-to-decarbonize sectors and provide near-term carbon reductions for EWU while we work to develop and implement long-term reduction strategies. A carbon capture system would also give EWU flexibility to use natural gas boilers as backup a backup system for meeting heating demands during extreme winter events while still mitigating carbon emissions.

Clean & Renewable Electricity

- On-site renewable energy generation

Geothermal ground source heat pump eco-districts: EWU is currently under contract with an engineering consulting firm to develop a 15-year decarbonization plan per HB 1390 to transition away from fossil fuels for campus heating. The detailed plan is expected to be completed by early winter 2025, but early analysis indicates that EWU should pursue a geothermal based eco-district model to provide campus heating and cooling. Conversion to an eco-district model to meet campus heating and cooling needs will significantly reduce campus greenhouse gas emissions and put EWU on track to meet reduction targets set by RCW 70A.45.050. The initial assessment is included in the documentation section. Next steps are to drill a pilot test well, followed by design and construction. A funding request to support design and construction of our first eco-district will be included in our 2025 – 2027 biennium request.

Solar micro-grid design and construction: EWU has submitted a grant request to the Department of Commerce Clean Energy Fund to support the design of a campus wide micro-grid photovoltaics system. If funded, this study will identify the potential pathways to install a solar electricity system that could provide between 3 – 5 megawatts of clean energy to campus and support the electrification of building heating. The study would take place during 2024 – 2025. Once the study is completed EWU will pursue funding to support construction of the micro-grid system.

Equity & Environmental Justice

Eastern Washington University (EWU) is committed to becoming a carbon-neutral institution and a leader in sustainable practices. As a university composed of students, faculty, and staff from across the Pacific Northwest, it is paramount that we address our carbon footprint and do our part to reduce our Greenhouse Gas emissions and lessen the burden of climate change experienced by those who support EWU. Of the 10,746 students who attend EWU, 60% are from Eastern Washington, 35% are Pell-eligible, 37% of the students identify as non-white, and 30% of the students are the first in their families to earn a college degree. EWU is proud to be named the #1 college for diversity in Washington and to provide the lowest tuition of any public four-year institution in the state. Many of our students come from low-income, rural communities that are more likely to experience the effects of climate change. Therefore, we must not only quickly reduce our greenhouse gas emissions, but provide educational opportunities that will inspire and train the next generation of leaders to address all aspects of climate change in their communities and abroad.

Planning & Budget Development

- Facility or campus master plans
- Deferred maintenance and equipment replacement schedules
- Sustainability action plans
- Funding greenhouse gas emissions reduction priorities
- Electrification and feasibility plans/studies for district heating systems

Develop a 15-year decarbonization plan: EWU is currently under contract with an engineering consulting firm to develop a 15-year decarbonization plan per HB 1390 to transition away from fossil fuels for campus heating. This report will serve as the guiding plan to prioritize and ensure EWU decarbonizes operations as quickly as possible. Additionally, the decarbonization plan will serve as the central pillar to the development of a new campus masterplan and climate action plan that is focused on sustainability and resilience. As part of this plan, details regarding cost estimates and timelines for implementation will be included. This information will inform our long-term decarbonization budget strategy and structuring on biennium capitol requests. Other funding models linked to timelines will be identified as well including grants, federal regulatory/tax incentives, energy service performance contracting, and other options.

2025 – 2027 biennium draft capital budget requests. EWU intends to request funds from the legislature to invest in campus infrastructure projects that will improve energy efficiency, reduce greenhouse gas emissions, and meet compliance target requirements. Our 2025 – 2027

draft capital budget request will seek to secure funding for the following decarbonization related projects:

- Martin and Williamson building complex design: $4,200,000

Climate Commitment Act Funding:

- Geothermal eco-district design & construction: $50,000,000
- Energy retrofits based on level 2 energy audits:
- Arts Complex: $6,699,000
- JFK Library: $6,719,000
- Sutton Hall: $2,500,000
- Computer Engineering Building: $4,135,000
- Huston Hall: $2,500,000
- Building demolition of Streeter and Morrison Halls: $7,000,000

Minor works decarbonization projects: $2,000,000. Future biennium requests will follow a similar format of requesting funding to build geothermal based eco-districts, infrastructure improvements, and building energy retrofits, as well as additional projects as identified by decarbonization plan and campus masterplan.

Office of Sustainability and energy planning: As of spring 2024 the EWU Office of Sustainability manages energy planning for the university. Oversight includes evaluating all major projects and contracts to support energy conservation and strategic planning to reduce carbon emissions. Decarbonization of campus energy use is central to energy planning and will be informed by the decarbonization plan.

Agency-Specific and Other Strategies

Prairie Restoration Project: The EWU Restoration project seeks to restore more than one third of campus land back to native habitat, and through this process, support research, educational, and recreational opportunities. More information regarding the Prairie Restoration Project can be found at (https://www.ewu.edu/give/funds/prairie-restoration). Restoration of the land has the potential to sequester carbon, helping to offset greenhouse gas emissions elsewhere. In addition to natural carbon sequestration through plant photosynthesis, we are conducting ongoing research on the use of biochar and other soil amendments to boost plant growth and carbon storage. As this project develops, it has the potential to sequester carbon on an annual basis and plays an important role in EWU's greenhouse gas reduction pathway.

Climate Resiliency Landscape Masterplan: The EWU Climate Resiliency Landscape Master Plan directs the university community on managing and enhancing natural spaces by outlining Vision, Principles, Objectives, and Strategies for future planning. We will implement the masterplan through phased projects to transition the campus landscape to one that uses less water, chemical inputs, and energy over time while increasing biodiversity and resiliency to a changing climate. See landscape plan in documentation section.1L

Challenges & Barriers

Funding: Transitioning campus heating to a geothermal eco-district system and building energy retrofits to meet decarbonization and energy use compliance targets will take significant financial investment. Moving forward EWU will align infrastructure operations and maintenance with the decarbonization plan to use resources as effectively as possible, however we will not be able to complete all required work without substantial financial support. Financial investment into EWU will allow us to complete major infrastructure projects and hire staff to support the successful transition to a carbon neutral institution.

Ecology, Department of

Agency Actions

Electric Vehicle Charging Infrastructure Site Survey: The objective of this study was to provide sufficient data and options that would allow the Department of Ecology to produce a charging station infrastructure utilization and development plan. Willdan was hired by Washington State's Department of Enterprise Services (DES) to conduct a fleet electrification plan and infrastructure assessment for the Department of Ecology (ECY). The plan took the form of an energy savings performance contracting (ESPC) investment grade audit (IGA). Willdan reviewed ECY's existing conditions including the current fleet makeup, fleet utilization, available electrical infrastructure, and replacement plan. Using this information Willdan developed two different charging strategies ECY could consider that would support a fully electric fleet. Willdan then developed an electrification phase in plan, recommending which vehicles could be electrified when they are replaced, how many EVCS need to be installed each year to support the growing EV fleet, and identified when infrastructure upgrades may be required at each of ECY's facilities. Willdan developed an annual financial forecast to assist ECY in budgeting for fleet electrification needs through 2040. Electric Vehicle Transition: Of the 229 vehicles ready for replacement in 2023, 16 transitioned to ZEV, with another 49 in the order queue in support of the agency's strategy to reduce greenhouse gas emissions. Eastern Regional Office Water Heater Replacement: The gas water heater replaced with an electric water heater.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity

Electric Vehicle Charging Infrastructure: Based on the Infrastructure Study, the agency is looking at a significant expansion of its EV infrastructure to support the growing EV fleet. Electric Vehicle Transition: Around 180 vehicles will be ready for replacement between 2025-29, which nearly all may transition to ZEV in support of the agency's strategy to reduce greenhouse gas emissions. Lighting System Upgrades to Current Facilities: Remove Lighting & HVAC Systems from the Card Key System Interface. Adapt Lighting & HVAC Systems to Infrared Sensors with Operations by Established Zones. As Ecology continues to adapt to the "Modern Work Environment", the existing lighting and HVAC construction strategy is simply problematic to

maintain and operate and therefore needs to be moved up from the OFM 2025-27 Maintenance Backlog Reduction Plan to implementation in the 2023-25 Biennium.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

The Department of Ecology's (ECY) Greenhouse Gas emissions reduction strategies have already helped us surpass our 2030 goal and include the primary areas of workforce, vehicles, and facilities. Our workforce strategies include a focus on the reduction of the number of commute days by expanding and encouraging telecommuting and compressed work schedules as flexible options for employees. We want to incentivize and enable low-emissions commute modes by continuing the incentive for employees commuting via carpool, public transit, bicycle, walking, and vanpool, captured via our Automated Commute Trip Reduction (ACTR) system. ECY seeks to increase Zero Emission Vehicles (ZEV) and electric vehicle support equipment by tracking technology development for ZEV trucks – specifically medium- and heavy-duty – and acquire and test against business needs as viable options become available in the ZEV marketplace. We intend to increase electric vehicle chargers at our facilities and replace vehicles with ZEVs wherever possible. ECY wants to increase the use of alternative electric transportation options, as well as acquire and test zero emission alternatives to other motorized vehicles and equipment. These efforts are meant to reduce the vehicle miles driven metrics by continuing the promotion of our Commute Trip Reduction (CTR) program and minimizing driving to meetings and/or trainings through the utilization of hybrid meeting technology and efficient scheduling. ECY encourages the use of ZEVs as we continue to develop an internal education and outreach campaign that increases knowledge, familiarization, and comfort with the use of ZEVs while we transition our fleet to ZEVs. ECY's facilities strategies continue to maximize our energy efficiency in new and existing buildings. We are implementing all energy efficiency upgrades as they become known and available. Ecology focuses on reducing our solid waste generated by ECY operations by implementing office waste reduction measures and practices which improve recycling and minimize single-use disposables and plastics.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Limit trips in state vehicles by replacing in-person meetings with remote options

Continued, quarterly vehicles replacements transitioning to ZEVs.

Facilities

- Electrify building space heating, hot water and cooking

- Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption
- Change space use allocations to reduce occupied square footage

As systems meet their end of serviceable life, we will continue to replace with market products and their increasing sustainability effectiveness. Ecology also contracted to have a greenhouse gas study conducted on our Eastern Regional Office (ERO) in 2023. The study showed the replacement of certain mechanical systems could have the greatest impact in reducing our greenhouse gas emissions at this facility. Eastern Regional Office Improvements 2025-2029 The main boiler, oil burner, and HVAC rooftop condensers are at the end of their service lives and will need to be replaced. In addition to ensuring the usability of the ERO, Ecology can lower it's greenhouse gas emissions by installing a high efficiency boiler and heat pump condensers. Additionally, the roof on Ecology's Eastern Regional Office (ERO) has reached the end of its service life and is no longer economical to repair. In addition to replacing the roof at the ERO ASD will look to modernize the roofs insulation and maximize solar panels on the roof. Changes to Space: Incorporation of shared Ecology facility space with the WA State Parks.

Ecology's Modern Work Environment (MWE) group continues to implement workplace changes without the need for new construction. Ecology will use existing cubicle materials and restructure them into Hoteling Spots, Resource Workstations, and Touchdown Stations based on OFM definitions for Individually Assigned Workspaces, Assigned Shared Workspaces, and Unassigned Workspaces.

Clean & Renewable Electricity

Onsite renewable energy generation

Power purchase agreements (PPAs) for renewable energy purchases (examples include PSE Green Direct and Avista Solar Select)

Continued Power Purchase Agreements: PSE Green Direct—Lacey Headquarters Facility, data unknown, Avista Solar Select—Eastern Regional Office, Spokane, data unknown

Equity & Environmental Justice

Ecology is focused on transportation and facilities, when end of serviceable life is reached or based on business needs per each location. Our efforts to transition to EV's and lower our facilities greenhouse gas emissions will positively impact overburdened communities throughout Washington State.

Planning & Budget Development

- For SEEP Agencies, Carbon Reduction Investment Budget (CRIB) priorities

Continued fleet transition to ZEV and expansion of ZEV charging infrastructure.

Agency-Specific Strategies

The Sustainability Team (or S-Team) is a longstanding agency wide management-sponsored committee. Their mission is to guide and support the commitment to sustainability by understanding the results of our actions, by acknowledging that people, economies, and all life depend on healthy, functioning ecosystems; and by identifying sustainable alternatives. They strive to include representation from all Programs, regions, and field offices. The S-Team's 2021 projects brought results: Sustainable solutions, such as water-bottle refill stations, recycled paper, and onsite composting. Our annual Earth Day Celebration. The Desmond Meadows Food Bank Garden. An annual plant sale. Ecology Clothing Exchange. Waste Reduction Challenge. Lunchtime Learning workshops. Green meetings and CFD event consultation. Environmentally preferable purchasing.

Challenges & Barriers

Fleet Electrification and Charging Infrastructure: The ZEV marketplace, while expanding in available options, are not producing the stock needed for quick ordering turnaround. There continue to be extended waiting periods, upward of one year, before the ZEV replacement vehicle arrives. This continues to push the timeframes for reporting out on Ecology's transition. It is unclear when ZEV availability will increase to keep up with DES replacement schedules. Funding for EV charging infrastructure is difficult to come by and below what is required to properly charge the fleet. Issues with consistency and gaps in data provided to Energy Star Portfolio Management system. Also, ESPM seems to convert the kWhs used by both this report and the Utilities, to kBtus and makes calculation inputs inaccurate.

Enterprise Services, Department of

Agency Actions

In the last two years, DES has: Increased number of electric vehicles for the agency. Rebuilt a natural gas boiler for the district energy system on the Capitol Campus to improve operational efficiency and safety. Installed submeters on the Capitol Campus to monitor energy use at the facility level as well as the district energy system. Major renovation of an historic building to upgrade the heating, cooling and lighting. Building replacement project to increase space, utility, and efficiency. Added electric vehicle charging sites to support increasing demand. Began work on district energy system replacement decarbonization plan. Reduced leased space.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

In the next four years, DES plans to: Continue planning efforts to decarbonize the Capitol Campus. Reduce building energy use through improvements such as lighting upgrades, building operating systems and controls, equipment replacement, additional solar installations. New facility construction targeting net-zero. Increase number of electric vehicles for the agency. Increase number of electric vehicle charging stations at agency facilities.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

The Department of Enterprise Services (DES) provides centralized business services to state government agencies; to other public entities such as cities and counties; to tribal governments; and to Washington residents. Our mission is strengthening the business of government for a sustainable and just future. DES is prioritizing decarbonization strategies for our facilities and operations across all our lines of business. This includes everything from battery powered landscaping equipment and electric vehicles to facility upgrades and the replacement of the Capitol Campus district energy system. In 2023 we undertook a Facility Condition Assessment and a building submetering project. We will use this information to identify status of the buildings and the efficiency of their operations. These highlight deficiencies and potential opportunities to improve the effectiveness of a system, not just replace a part. It also provides needed details for the development of capital plans by using data to show the value of efficiency in the life cycle cost analysis tool. DES helps other agencies improve their operations through energy project management services. This includes project development and contracting with performance guarantees resulting in reduced energy use. DES is proud of its efforts and successes to electrify our fleet. We also oversee state agency vehicles, including contracts, leases and purchases. This gives agencies more tools to electrify their fleets as well. DES Real Estate services is responsible for housing agencies in private facilities. As part of this work, we prioritize facilities with a low Energy Use Intensity score when considering leasing space. DES also oversees statewide vendors and services. This includes contract prioritization and support for veteran, women and minority owned businesses, small businesses, and also for green products and services. This helps DES support diversity, equity, inclusion, and environmentally preferred purchasing.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible
- Limit trips in state vehicles by replacing in-person meetings with remote options

DES has been steadily increasing the number of BEVs and reducing the number of ICE vehicles. As the agency responsible for state fleet vehicles, DES is also able to assist other agencies with their transition from ICE to BEVs. DES's Zero Emission Electric Vehicles have logged over 4.2M in miles in travel. That is equivalent to an estimated cost of fuel saving of $175K or 1,562 metric tons of CO_2 reduction. DES EVSE Implementation team also partners with our state agency customers and has assisted in funding over $10M in EV charger installations statewide. DES Fleet Operations also carries a large supply of battery electric vehicles in its daily rental locations in Thurston County for state agencies to rent to try out/test these new EV models to see how they would work in their operations. This daily rental trip fleet has a wide array of various EV BEV models ranging from sedans to a ½ ton BEV truck. DES Fleet hosts ride and drive events for our state agency partners to check out BEV models in person and see how they operate. DES Fleet, in collaborating with the Department of Commerce's SEEP office, have created many resource training materials to help EV drivers with trip planning and best practices for using Plugshare.com.

Facilities

- Electrify building space heating, hot water and cooking
- Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Track building energy use by metering and benchmarking each building over 10,000 square feet.
- Buy efficient IT equipment and appliances
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption
- Leverage new leases and lease renewals to electrify heating and reduce energy use
- Change space use allocations to reduce occupied square footage
- Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

DES will be replacing the district energy system with a more efficient, zero-emissions strategy. This is in the planning stage as per HB1390. The current system burns natural gas to create steam and is the largest source of agency greenhouse gas emissions. Capital planning includes installations and upgrades for solar arrays to reduce electric grid demand. We utilize the Energy Saving Performance Contracts program for projects in owned buildings. Electric Vehicle Charging Stations are included in parking and facility planning. This indirectly supports greenhouse gas reduction by creating opportunities to reduce ICE vehicle use. Building energy use monitoring and modeling help us identify deficiencies and opportunities. The installation of submeters and supporting software brings accurate and reliable data to inform and support

decisions for future projects. We partner with PSE to identify potential incentives for efficiency upgrades. In the current biennium we have completed a lighting upgrade and are doing additional work that will qualify for incentives. Current biennium: Capitol Campus submeter project Systems renovation in the Temple of Justice Recommissioning of the Highway Licenses Building Newhouse Building replacement Pritchard Library remodel Future biennium (capital plan): District energy system decarbonization Recommissioning for owned buildings Major building systems replacement Solar installations on owned buildings LED lighting upgrades In addition to owned facilities, DES coordinates leases for state agencies. When seeking new space for agencies, we include in our solicitation documents that "Agencies will consider a facility with a documented or calculated low Energy Use Intensity score (EUI) advantageous." Here is the citation from the RFP: 3.5.3 Emission reduction initiatives are listed in Executive Order 20-01 State Efficiency and Environmental Performance (SEEP). SEEP directs State Agencies to pursue cost effective opportunities to reduce building energy use. Agencies will consider a facility with a documented or calculated low Energy Use Intensity score (EUI) to be advantageous. Building shell construction, air sealing, insulation, electrical and lighting systems, and HVAC systems in State leased facilities are required to meet or exceed the Washington State Energy Code. The State encourages building elements and systems that exceed code minimums set forth in the Washington State Energy Code, referenced in Chapter 4 Commercial Energy Efficiency, and Chapter 5 Existing Buildings, these systems and elements must be supported by documented energy savings.

Clean & Renewable Electricity

- Onsite renewable energy generation
- Power purchase agreements (PPAs) for renewable energy purchases (examples include PSE Green Direct and Avista Solar Select)

We currently purchase 96% of our electricity from PSE Green Direct. We will add renewable energy purchases at additional sites as possible. We participate in PSE's Commercial Strategic Energy Management program, which assists with guidance, analysis, and incentives. Several DES buildings have PV solar arrays. We have a geothermal system supporting building operations in a Tier 1 building.

Equity & Environmental Justice

All DES projects and contracts require a diverse business inclusion plan for minority, veteran, women owned, and small businesses. As the agency responsible for state contracting services and public works projects, we prioritize and support this portion of the business community, resulting in millions of dollars per year in diverse spending. Although this broadly applies beyond greenhouse gas reduction efforts, it does include goods and services related to projects which directly reduce greenhouse gas emissions. A few recent energy efficiency upgrade projects show the power of these contracts. The Union Gap school district last year spent 18.5% of energy efficiency project costs on diverse businesses. The Spokane airport spent 21.7% of their project budget on diverse businesses for their recent roofing, HVAC and lighting upgrades. Other projects may have a larger budget and lower percentage going to diverse businesses,

however the net dollars to the diverse business could make a big difference for their operations. It also exposes those businesses to energy efficiency projects, helping them incorporate more strategies and techniques in their work. In addition, it makes them more competitive for future projects.

Planning & Budget Development

- Facility or campus master plans
- Deferred maintenance and equipment replacement schedules
- Sustainability action plans
- Funding greenhouse gas emissions reduction priorities
- For SEEP agencies: Carbon Reduction Investment Budget (CRIB) priorities
- Electrification and feasibility plans/studies for district heating systems

Capital planning for DES requires: Specific references to the CBPS, greenhouse gas reduction goals Energy efficiency details for equipment and operations Identify potential to phase projects over time Identify potential bundling of projects to maximize cost and outcome efficiencies Planned projects related to greenhouse gas reduction: Decarbonization of the district energy system for the Capitol Campus, installation of solar panels on two owned buildings, LED upgrades in two owned buildings, HVAC recommissioning HVAC controls upgrade for Capitol Campus Window replacement for two owned buildings. DES projects may also reference the state energy strategy, sustainability plans from other agencies or jurisdictions, or examples of other campus/master plans.

Agency-Specific Strategies

DES supports telework and compressed work week schedules to reduce vehicle miles traveled. We provide employee parking with EV charging, and have added EV vans and trucks to the mail fleet. We have an internal newsletter and highlight energy saving projects. We have reduced our leased space to downsize our agency footprint.

Challenges & Barriers

Funding Up-front costs are a barrier for decision makers. Capital projects can be expensive and hard to prioritize, even when benefits are clear over time. Grants and incentives can reduce overall costs but may be in the form of reimbursements, rebates, or based on demonstrated savings, and therefore may not reduce up-front costs. Increasing electrification could increase ongoing operating costs. Staffing Hiring and retaining qualified staff and operating at the appropriate staffing level to support: Operations Maintenance Troubleshooting Deferred Maintenance Repairs can become urgent when maintenance has been inadequate. This can result in expensive reactive repairs and like-for-like replacement, postponing planned upgrades which improve efficiency. Backlog needs can make improvements hard to justify. Technology/Infrastructure Not all technology is a direct replacement. For example, changing to LED lights can require new fixtures, changing the scope and costs quickly. In the case of decarbonizing our campus district energy system, the impact of both technology and

infrastructure will be significant considerations. Increasing electrification could be limited by available energy. Legacy systems for building controls and other operations can create compatibility issues with newer equipment and software.

Evergreen State College

Agency Actions

Early development of an asset management system CBPS compliance planning. Planning and funding a 94 kW solar PV project (starting construction in the summer of '24) Seminar 1 building final design, which includes disconnecting from the campus distributed steam and chilled water loops and installing heat pumps for building HVAC.

Short-Term Strategy

- Facilities
- Planning & Budget Development

Replace steam appliances where possible – main campus kitchen, science labs, swimming pool heat, and various building DHW – with electric Convert 19 student residence buildings from steam heat to electric Convert Seminar 1 from steam & chilled water to heat pumps Continue building out the asset management system Add more building electric sub-meters Address energy efficiency opportunistically during major repairs

Long -Term Strategy

- Facilities

Steam system Decarbonization Plan, which will include: Convert distributed steam system to building-specific heat pump systems, Electrify all steam and natural gas appliances – kitchens, labs, swimming pool heating, DHW.

Facilities

- Electrify building space heating, hot water and cooking
- Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Buy efficient IT equipment and appliances

Replace distributed steam and chilled water service in 27 buildings with building-specific heat pump systems, and electrify steam and natural gas appliances spread across 70 total buildings.

Challenges & Barriers

Extremely limited staff time for planning Large deferred maintenance load must take priority Disconnect between planning deadlines and avail funding (we got a small allocation in the '23 Cap Budget, but it isn't sufficient to do everything required, Decarb planning is necessarily proceeding internally) Large time delays in our ability to make definitive plans due to multiple rule-making sessions (HB 1390, in particular. It helped us focus where we need to focus, but we spent our limited staff time engaged with the rule-making processes.) Institutional priorities are focused on academic spaces; building systems are lower priority in a competitive funding environment and get bounced into future budget plans.

Financial Management, Department of

Agency Actions

OFM has reduced agency square footage by consolidating staff from four building locations into two due to many agency staff using telework as their primary work location. OFM has moved out of higher greenhouse gas producing buildings and consolidated into state owned LEED space. OFM was appropriated money as part of the Climate Ready Communities Act (ESHB 1176). Our Serve Washington division has used those funds to set up the Washington Climate Corps Network (WCCN) which is a network of organizations, young adults, veterans, and professionals working together to build a climate resilient Washington. Serve Washington coordinates this network to conduct service projects building climate resilient communities, economies, and ecosystems. Serve Washington prioritizes service to overburdened communities where people face disproportionate environmental harms and risks and are often disproportionately comprised of vulnerable populations. OFM also received $1,500,000 of Climate Commitment Account funding to build a grant writing, tracking, and management database for state acquisition of federal funds and to support the development of state strategies for bringing specific types of federal funding to Washington in the form of a Federal Grant Database Solution.

Short-Term Strategy

- Facilities
- Equity & Environmental Justice

Continue to monitor space usage and reduce our footprint accordingly. Reduce employee use of items that add additional electrical loads to agency facilities through adoption of agency rules, education, and monitoring. Implement the new WSDOT free Vanpool program for state agency staff supported by the OFM Commute Trip Reduction program to include OFM, GOV, and OII. Continue development of the Serve Washington WCCN program which will work towards achieving the following goals: increase participation in addressing climate challenges in overburdened communities. Expand the diversity, awareness, and accessibility of climate service opportunities in Washington. Create a service-learning program for funded network partners and their members. The service-learning program will increase awareness of and access to clean energy and climate-related career opportunities and networks. OFM will continue work on the Federal Grant Database Solution.

Long-Term Strategy

- Transportation
- Facilities

Continue to monitor space usage and optimize our footprint accordingly. Support DES efforts to modernize building system replacements in the Insurance Building that will lower greenhouse gas emissions. Work with DES to identify electric vehicle options for replacement of our fleet vehicles as they come up for replacement. Continue support of the Climate Commitment Act through development and support of the WCCN and database solution.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Limit trips in state vehicles by replacing in-person meetings with remote options

OFM plans to work with DES to identify electric vehicle options for replacement of our small fleet of vehicles as they come up for replacement and continue to support virtual options for meetings.

Facilities

Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.

Track building energy use by metering and benchmarking each building over 10,000 square feet.

Buy efficient IT equipment and appliances

Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption

Leverage new leases and lease renewals to electrify heating and reduce energy use

Change space use allocations to reduce occupied square footage

OFM is located within state owned spaces. We rely on DES and WaTech to make decisions about metering and energy use within these facilities. Recently the Insurance Building received a separate building meter. We are excited to hear the results and use this data to drive changes in behavior.

Challenges & Barriers

FM wants to see our headquarters building systems updated, however, budget requests for renovation of these systems are based on master planning done by DES. The Insurance Building seems to consistently get moved down the priority list. We don't have a clear understanding of when we will see this work occur and how that will affect our emissions reduction results.

Fish & Wildlife, Department of

Agency Actions

In 2022 and 2023, WDFW took the following actions to reduce greenhouse gas Emissions.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

To reach the goals outlined in the WDFW Sustainability Plan, WDFW plans to take the following actions in the next four years. Items in the left column are actions described in the Sustainability Plan and items in the right column are planned efforts to support the Sustainability Plan action.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

The WDFW Sustainability Plan outlines a path to reducing emissions from mandatory sources including fleet and buildings and voluntary sources including employee commuting, business flights, hatchery fish digestion, solid waste, water, purchased materials, and toxic chemicals. The plan is forecasted to reduce emissions in line with 2030 RCW requirements but falls short of meeting the 2040 and 2050 goals because low-emissions technologies are not yet available for some aspects of WDFW operations. We plan to update the plan in 2027 to reflect new technological advancements. In the meantime, we remain focused on implementing the current version of the Sustainability Plan and will continue to focus efforts on reducing our largest emissions sources by building upon the realized and expected momentum built to date and in the coming years. Our long-term strategies are therefore a continuation of our current efforts to (1) reduce fleet emissions by transitioning to electric vehicles, vessels, and equipment, reduce vehicle miles traveled, and develop a leaner fleet; and (2) reduce building emissions by reducing energy use through energy efficiency projects, converting gas systems to electric, transitioning to renewable energy, and improving facilities management.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible

- Limit trips in state vehicles by replacing in-person meetings with remote options
- Utilize biofuels or other alternative strategies to lower emissions where BEVs are not possible

WDFW's fleet is the agency's largest source of emissions. The fleet includes over 1,400 vehicles split approximately in half between owned and leased vehicles. The fleet also includes vessels, transportation equipment (e.g., ATVs and snowmobiles), many pieces of small equipment (e.g., chainsaws), and one small airplane. Trucks account for the majority of the fleet and are often large and specialized; often driving long distances, off-road, and in remote areas; and often towing vessels or equipment. Burning gasoline in vehicles makes up the majority of emissions in this sector, followed by burning diesel in vehicles. The fleet is an essential component of carrying out the agency's work, from managing wildlife areas and water access areas, to operating hatcheries, to enforcing regulations, to conducting surveys and monitoring, to implementing restoration and construction projects. The WDFW fleet is not only the largest emissions source, but it is also the source that requires the most internal action to reduce. As shown in the figure below, internal greenhouse gas calculations indicate that while WDFW's total emissions went down by about 13% in 2022, fleet emissions increased by approximately 9% because the fleet grew and we did not replace many vehicles with EVs. The majority of the reduction in total emissions between 2019 and 2022 stemmed from a 66% reduction in commute emissions due to more remote work. To address this increase, the WDFW Sustainability Plan includes the following strategies and actions to reduce emissions from fleet vehicles, some of which we are in the process of implementing: While the plan includes actions to pursue alternative fuels, our focus to date has been on installing electric vehicle chargers at WDFW facilities where vehicles are parked and can charge overnight to support the transition to electric vehicles. The actions outlined in the WDFW Sustainability plan do not identify a pathway to meet the 2030, 2040, or 2050 fleet emissions reduction goals. The plan identifies a gap that will need to be closed through future planning. Advances in technology and updates to the plan will be needed to transition WDFW's truck-heavy fleet to low-emissions vehicles. As noted, WDFW is committed to updating the Sustainability Plan every five years to close the gap and reach the 2030, 2040, and 2050 goals across inventory sectors.

Facilities

- Electrify building space heating, hot water and cooking
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Track building energy use by metering and benchmarking each building over 10,000 square feet.
- Buy efficient IT equipment and appliances
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption
- Change space use allocations to reduce occupied square footage

- Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Ensure any new leased square footage is all-electric and energy efficient

Buildings are WDFW's second-largest source of emissions. WDFW has nearly 1.4 million square feet of owned facilities and nearly 35,000 square feet of leased facilities. The generation of electricity used in WDFW's buildings makes up the vast majority of emissions in this sector and burning natural gas for heating makes up the small remaining portion. In 2023, WDFW's facilities used nearly 28 million kWh of electricity and 91,000 therms of natural gas. The WDFW Sustainability Plan includes the following strategies and actions to reduce emissions from facilities.

Clean & Renewable Electricity

Onsite renewable energy generation

The WDFW Sustainability Plan outlines a pathway to meeting the 2030, 2040, and 2050 clean and renewable electricity goals. However, reaching the goals depends on Washington's Clean Energy Transformation Act (CETA). The plan's analysis indicates that CETA is expected to reduce building emissions 95% by 2030 and remain constant at 95% reduction through 2050. The WDFW Sustainability Plan includes the following strategies and actions to reduce emissions from electricity in addition to the expected reductions from CETA.

Equity & Environmental Justice

Reducing greenhouse gas emissions produced by fleet vehicles will reduce pollution impacts on overburdened communities from WDFW internal combustion engines. We are collecting information on routes frequently traveled to better understand how our driving habits as an agency impact communities across Washington State. We are using this information to shape our fleet transition plan, prioritize which vehicles to transition first, and identify priority locations to install EV chargers. WDFW is also completing an equity impacts review for the Commute Trip Reduction Incentive. This review will help us understand barriers to program participation and how employee commute emissions impact different communities across Washington.

Planning & Budget Development

- Sustainability action plans
- Funding greenhouse gas emissions reduction priorities
- Electrification and feasibility plans/studies for district heating systems

WDFW adopted a Sustainability Plan in 2022. The plan forecasts future emissions and different pathways for reducing emissions. From there, it outlines a roadmap for reducing emissions while also advancing sustainability across 14 sectors. Each sector has individual strategies that are supported by a series of actions (outlined above), with a total of 93 actions in the plan. The plan outlines a pathway for reaching the 2030 goal and nearly reaching the 2040 goal. However, to reach 2050 goal we will need to refine our strategies as technology advances. We plan to

update the strategies and actions in the plan every 5 years. WDFW has developed a decision package and capital project proposal for the 25-27 biennium to fund implementation of the Sustainability Plan. These are discussed in the planned actions section.

Agency-Specific Strategies

The WDFW Sustainability Plan outlines additional actions to reduce emissions.

Challenges & Barriers

Challenges accommodating the higher cost of leasing electric vehicles. The current DES vehicle lease rate structure does not allow for agencies to eventually benefit from shifts in the EV market. For instance, the current cost of leasing a small EV SUV is $313.00 more expensive than leasing a small ICE SUV. While EVs have a lower per mile cost, it is virtually impossible for our drivers to travel enough miles for the lower rate to outweigh the higher monthly lease rates. We recommend that DES consider updating their leasing price structure to more accurately reflect the rapidly evolving EV market. Options include calculating EV lease rates more frequently (e.g., quarterly instead of annually) and offsetting inflated EV purchase costs by charging a consistent rate for both EVs and ICE vehicles in the same vehicle class (i.e., subsidizing inflated EV costs with ICE vehicle leases). Challenges accessing EV chargers within the three approved networks for vehicles leased from DES. EV drivers often have to travel long distances and dedicate significant time to reach a Chargepoint, EVgo, or Shell Recharge networked charger. We are installing EV chargers at WDFW facilities to help address this challenge but would benefit from access to additional charger networks and partnerships with state agencies to share chargers. Meeting leased vehicle mileage requirements. Due to the seasonal nature of WDFW's work, many vehicles travel few miles in the winter but significantly more miles in the summer and spring months. The leased vehicle mileage requirements inadvertently encourage drivers to drive additional miles during the colder months to keep the vehicle year-round. The seasonal trends also make sharing vehicles more difficult. Challenges installing EV chargers efficiently in part due to a limited number of vendors included under the DES EVSE Master Contract to purchase and install chargers. We would benefit significantly from more options. We expect many other agencies are facing similar challenges and look forward to future collaboration to find solutions. We would also benefit from top-down guidance from DES/WSDOT/Governor's office regarding a more comprehensive statewide strategy to figure out where the state is planning on investing in EV charger installs so we can plan accordingly.

Health, Department of

Agency Actions

Public Health Lab (PHL) in Shoreline: Ongoing installation of a geothermal heat pump to replace outdated steam system. Expected operational by Fall 2024. Ongoing installation of a 12-kW solar array. Expected operational by Fall 2024 , Installation of 6 additional L2 charging ports (12 total L2 ports on site by Fall 2024) Town Center East #1, #2, and Garage (TC 1, TC 2, TC garage) in Tumwater: HVAC scheduling and controls optimization, Scheduling completed in October 2023, Setpoint optimization completed in May 2024, Thermal-reducing window shades installed

by July 2024 ,LEDs, Currently installed in stairwells and bathrooms; project approved to finalize 100% LED installation w/ occupancy sensors and daylight harvesting capabilities -EVSE, 15xL2 40amp charging units to be installed by end of 2024 Spokane Office: Reduced DOH's facility footprint in Spokane by 40%, LEDs w/ occupancy sensors (completed by the end of 2024), EVSE L2 ports (x3).

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development

Agencywide replacement of ICE vehicles for BEV alternative, as they reach EOL. Installation of charging stations at TC (15xL2), PHL (12xL2), Spokane (2xL2), and MLC (5xL1). Continued support for telework options for employees Facilities: Transition remaining fluorescent fixtures to LEDs at the following sites: TC campus , MLC, Boat shed, EPR/Facilities Warehouse, Spokane Office, Richland Office: Weatherization of building envelopes (where applicable and fiscally sound), Occupy new, right-sized, modernized space (Spokane Office), Transition of all appliances (microwaves, printers, refrigerators, etc.) to EnergyStar rated equipment as they reach end of life, Deep Freezers at PHL: temperature increase from neg.80deg.F to neg.70deg.F , Routine checks on HVAC operational thresholds (i.e., occupancy schedules, setpoints, etc.) and equipment health for all DOH sites, upgrading units to more energy-efficient alternatives where applicable/feasible/reasonable. Clean & Renewable: Commissioning of geothermal heat pump at PHL -12-kW solar array currently being installed, DOH will pursue funding to increase array size beyond it's what was currently funded by legislature (i.e. minimum size to meet building code), Continuation of Green Power Purchasing Contracts at: TC campus, EPR/Facilities Warehouse, Boat Shed , Assess feasibility of Green Power Purchasing Contract at: MLC, Spokane Office, Richland Office Planning and Budget Development: Pursue grant funding where applicable (i.e., building decarbonization and weatherization, renewable energy generation, EVSE, etc.), Funding requests (i.e., increased lease costs for EVs, building improvements, EVSE, etc.).

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development

DOH's long-term strategy to meet the emissions limits in RCW 70A.45.050 (i.e. by 2050, reduce greenhouse gass by 95% below 2005 levels) are centered around the decarbonization of our fleet and facilities through electrification of existing gas-powered equipment (i.e. transition of

ICE vehicles, gas appliances/boilers/water heaters, etc. to a zero-emission alternative). As equipment and facilities electrify, DOH will continue to utilize Green Power Purchasing Agreements through electric utility services and, wherever possible, pursue generation of on-site renewable energy (i.e., solar, geothermal, etc.). Additionally, DOH will continue to educate employees of proper practice as it relates to environmentally preferred purchasing, optimal waste diversion/disposal, and increasing operational efficiency at the agency workplace.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible
- Limit trips in state vehicles by replacing in-person meetings with remote options

Replace ICE vehicles with BEV option as they reach EOL, Seek SEEP exemption for necessary vehicles as a “last resort” alternative, If necessary, operate biofuels in larger vehicles that cannot be electrified Projects to pursue funding for: At-home electric vehicle charging program, Increased cost of EV lease, compared to ICE counterparts, Continue to pursue funding for additional EVSE installations at DOH field sites.

Facilities

Electrify building space heating, hot water and cooking

Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.

Track building energy use by metering and benchmarking each building over 10,000 square feet.

Operational or organizational changes: Hire a resource conservation manager (RCM)

Buy efficient IT equipment and appliances

Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption

Leverage new leases and lease renewals to electrify heating and reduce energy use

Change space use allocations to reduce occupied square footage

Transition away from all gas-powered equipment (i.e., HVAC, appliances, etc.) to a viable, electric alternative. This includes, but is not limited to, the installation of: Geothermal heat pump(s), Solar arrays, Electric boilers/water heaters, Electric appliances, Alternatives for gas-powered generators (i.e., solar generator, power pack, etc.), LEDs w/ occupancy sensors (to decrease lighting electrical load in facilities). Participate in Green Power Purchasing Agreements for all DOH sites. Transition our facilities to zero-energy or relinquish lease space in facilities not willing to fully decarbonize.

Clean & Renewable Electricity

Onsite renewable energy generation

Power purchase agreements (PPAs) for renewable energy purchases (examples include PSE Green Direct and Avista Solar Select)

Installation of on-site renewable energy generation, such as: Geothermal heat pump at PHL site (exp. completion fall 2024), 12-kW solar array installation at PHL site (exp. completion fall 2024), Continued prioritization of Green Power Purchasing Agreements through local electric utility providers.

Equity & Environmental Justice

Our facility located in Shoreline (rated as a 9 on the WA State Environmental Health Disparities Map) currently operates using the Fircrest steam plant. However, the site is currently transitioning to utilization of a ground-source heat pump which will greatly reduce on-site greenhouse gas emissions. Additionally, there is a 12-kW solar array being installed, which will decrease the power demand on Seattle City Light grid (which in turn helps free up electrical resource for others in the region, including vulnerable communities, particularly in times of peak demand) Our field office in Spokane (rated as 10 on the WA State Environmental Health Disparities Map) has relinquished oversized lease space, moving into a facility that is 40% smaller. This decreases agency demand on the local electric grid, which has proven critical for many citizens of Spokane in the past (i.e., rolling blackouts in June 2021 impacted more than 20,000 residents).

Planning & Budget Development

- Deferred maintenance and equipment replacement schedules
- Funding greenhouse gas emissions reduction priorities
- For SEEP agencies: Carbon Reduction Investment Budget (CRIB) priorities
- Electrification and feasibility plans/studies for district heating systems

Intended budget/grant request priorities by 2030 for: At-home EV charging program, increase in vehicle base lease cost (EV up to 2x more than ICE), Building improvements (LEDs, electrification of HVAC equipment, envelope upgrades, etc.), Additional on-site renewable energy generation at PHL (our only owned facility).

Challenges & Barriers

Facilities: Currently lease all facilities but one. We see the following in leased facilities: Restrictions on building improvements/HVAC management – barrier, restrictions on funding request/grant request eligibility – barrier, some efficiency or building improvement projects not financially viable due to possibility of vacating lease – barrier challenges associated with on-site renewable energy generation Transportation: Cost of EV leases vs. ICE leases – challenge. Charging of take-home vehicles (i.e. funding for the program) – challenge. Public charging infrastructure – barrier and challenge.

Labor & Industries, Department of

Agency Actions

HQ Building Investments: During 2022 & 2023, Labor and Industries has continued partnership with the DES Energy Program and Energy Services Contractor and invest in HQ building infrastructure to replace mechanical and electrical equipment with efficient new technology and has completed phase 2 of multi-phase project with a goal of net zero. These initiatives have a guaranteed energy savings of 126,000 kWh/yr and contribute to Labor and Industries overall reduction in Greenhouse Gas Emissions and meeting target goals. The following were completed in 2022-2023: Purchased 100% of our energy for the Tumwater HQ building the PSE Green-e Energy Certified Voluntary Market Sale - Utility Green Pricing Program. This change resulted from a reduction of approximately 1,300 MT CO_2e, Retrofitted two main Air Handlers with efficient fan wall system. Replaced 12 building exhaust fans with Variable frequency drives that modulate speed. Replaced building cooling tower, Removed building fluid cooler Data and UPS units replaced with temp controlled heat pumps, Configured data racks to allow for hot and cold rows Installed curtain wall containing the data racks--reduced the cooling footprint Safety and Health Lab and Training Center The Department of Labor and Industries and Department of Agriculture completed construction of a new Safety and Health Lab and Training Center. Building Energy System Features: Zero Net Energy Capable with a predicted energy usage of 85 EUI [kBtu/SF/yr.], achieving over 50% savings as compared to the 2015 WSEC and designed with the ability to achieve Zero Net Energy with onsite renewables. Project is designed to be Zero Net Energy Capable and meet Governor's Order 20-01 for State Agencies, with roof space and site infrastructure to accommodate photovoltaic panels to offset all annual energy usage. All-electric heat pump-based HVAC system with geo-exchange serves the entire building with no fossil fuel consumption. Ground-source and air-source heat pumps use heat recovery to maximize energy efficiency and water conservation. Enhanced commissioning included design and construction review of mechanical, electrical and plumbing systems and envelope, with monitoring-based system for optimal energy use. All significant energy uses are sub-metered. Domestic and irrigation water is sub-metered. Building is designed for demand response, to reduce energy usage by 10% during peak. All-LED interior lighting minimizing downlight. Several skylights provide an abundance of natural light into the corridors and break areas. Ambient light sensors adjust light levels based on natural light. Office and training program areas include natural and mixed mode ventilation systems providing a healthy and efficient environment. Ceiling fans and radiant heating and cooling improve occupant comfort while saving energy. Additional Note: The current LEED rating for the building is Silver. We are two points away from achieving Gold and our final target is Gold. Solar panels were installed on the roof in 2024. With the incorporation of Solar panels on the roof and parking lots, which is out next project, we will achieve Gold and bringing the building closer to net-zero. Fleet: During 2022 & 2023 and continuing to 2024, Labor and Industries continued to replace as many internal combustible vehicles with BEV with added capacity as they have become available. Currently Labor and Industries has 40 BEV's in its fleet. They consist of: 5 Chevy Bolts about 240 mile range , 33 Ford Mach E's about 300 mile range, 2 Volkswagen ID.4's about 290 mile range. To further allow for increased drivability, Labor and Industries installed 15 outlets in employee's homes that allow for a level 2 charge. A total of 18 fleet vehicle chargers and 6 employee vehicle chargers are

available at HQ. We recently installed 4 level 2 chargers in Bellevue and 2 at the Tacoma field office. Additional electric vehicle charging station.

Short-Term Strategy

- Facilities
- Clean & Renewable Electricity
- Planning & Budget Development

Labor and Industries will continue to invest in the Tumwater HQ as well as Lab and training Center infrastructure and equipment. Planning is underway to retrofit 4,200 fluorescent fixtures in HQ to LED with integrated occupancy sensors. This project will be fully funded through Department of Commerce grant and PSE Energy incentives. The project has an estimated savings of $44,400/ yr. and guaranteed energy savings of $21,700/yr. respectively. Labor and Industries will evaluate possibility of purchasing energy from renewable sources as well as installing Secondary Commercial Window units in the headquarters building to further increase efficiency and r value of existing windows.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Planning & Budget Development

The Department of Labor and Industries has plans to install solar panels on the HQ roof and Safety and Health Lab and Training Center and parking lots; HQ building controls, VAV boxes and associated other equipment not replaced during other projects will be replaced as budget allows with a goal of net-zero for each building as funding allows.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible
- Limit trips in state vehicles by replacing in-person meetings with remote options

Additional electric vehicles will be added to the agency fleet as the supporting infrastructure is installed at agency locations and technology advances to allow for greater range. Grounds equipment will be replaced with battery powered where feasible. The agency uses Teams meetings to allow for remote training and meetings as much as possible to eliminate the need to travel.

Facilities

Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.

Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods

Track building energy use by metering and benchmarking each building over 10,000 square feet.

Operational or organizational changes: Hire a resource conservation manager (RCM)

Buy efficient IT equipment and appliances

Change space use allocations to reduce occupied square footage

Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

Labor and Industries is working on capital budget projections and continue to work with DES Energy Services and ESCO contractor to upgrade and replace mechanical and electrical equipment with modern and more efficient technology. The agency will seek grant opportunities through Department of Commerce and Puget Sound Energy when available.

Clean & Renewable Electricity

Onsite renewable energy generation

Power purchase agreements (PPAs) for renewable energy purchases (examples include PSE Green Direct and Avista Solar Select)

There are long-term plans to install PV panels systems as funding allows. Labor and Industries is evaluating Power Purchasing agreements with respective power companies throughout the state.

Planning & Budget Development

- Deferred maintenance and equipment replacement schedules
- Sustainability action plans
- Funding greenhouse gas emissions reduction priorities

The agency has conducted a Facilities Condition Assessment which evaluated all of the equipment in the headquarters building. The final report included planned maintenance tasks to prolong service life as well as estimate on industry-standard recommended service life and budget projection to replace. The report extended out to 30 years. The agency will use these findings to refine 10-year capital plan.

Challenges & Barriers

The main challenge is always funding. Capital budget requests aren't always fully funded, or projects have incurred cost escalation between budget submission and project start. The agency is always looking for energy incentives and grant opportunities like commerce grant to

retrofit all of the fluorescent lighting in the headquarters to LED. The project was submitted as a Capital Budget request, but only 50% funded. Fortunately, agency received all of the project funding through Commerce grant and PSE Energy Incentives.

Liquor & Cannabis Board

Agency Actions

Budget and Finance The agency has exceeded investment targets under the CRIB since 2020. WSLCB expects to continue that trend. A major contribution to CRIB is the 10-year investment in our headquarters lease. The lease was negotiated to include upgrades in the amount of $1,158,127.00 to the building to reduce energy consumption and increase efficiency of building systems. This investment runs through 2029. Additionally, there have been significant contributions for EVSE at agency facilities in the amount of $527,162.52 Environmental Purchasing, Toxic and Waste Reduction The agency has established standards for office products and equipment to adhere to EPP guidelines. Operational Support website is updated monthly “Efficiency & Environmental Performance Guidance” for purchases to avoid/reduce with acceptable alternatives and has links to additional resources. The standards are reviewed quarterly and revised in collaboration with IT. The Agency has implemented purchasing audits to monitor EPP compliance. 9% of supply orders audited had a compliance issue. The agency took a pause from audits in October 2023 to customize Purchasing Training for users within the agency. Mandated DES Purchasing training is at 100% compliance. Users are required to complete training within 90 days of approved delegation or training refresh date. Compliance went from 32% to 100% from 2022-2023. SEEP communications were distributed to the Operational Support team members to review and act upon. New vendors and state contracts required the agency to adjust current processes to allow for increased use of Diverse vendors along with green purchasing options. System policies applied in Amazon for Diversity show that 53% of spend in 2023 Jan-Oct was with a registered supplier with diverse certifications. Applied new policy for EPP to see if it drives users to climate pledge friendly products. Safety Data Sheets (SDS) are located on the agency intranet containing all office products supplied by the agency. Products are reviewed quarterly to ensure the items are less toxic or non-toxic then the prior item. During review items are compared to the DES environmental calculator to ensure substantial compliance. Facilities EVSE equipment purchased for four (4) facilities. Three (3) facilities completed construction in 2023. Two facilities share EVSE equipment with other agencies through an IAA negotiated in 2023. Created a position and hired a Building Operations Supervisor. Transportation 16% of agency fleet transitioned to BEV by end of 2023. Outreach was conducted to staff eligible for ORCA card program. As a result, participation grew from 26% to 28% of authorized users.

Short-Term Strategy

- Transportation
- Facilities
- Equity & Environmental Justice
- Planning & Budget Development

- Agency-specific or other strategies

Environmental Purchasing, Toxic and Waste Reduction As DES environmental and purchasing policies are updated, the Agency will mandate training for affected staff, alter processes, and update forms & templates to ensure compliance. The agency will ensure all employees with delegated purchase authority take mandated training within 90 days of authorization. Agency specific training will also continue as needs arise to reduce non-compliance. The agency will continue to review agency standards quarterly to adjust to updated specification guidelines as contracts, technology, and products evolve. Remove standards that are obsolete and update Safety Data sheets (SDS) as necessary. The agency will be standing up a new website internal and external. During the design phase Operational Support will make efforts to integrate SEEP topics throughout the platform to promote education, direction, and support to our employees. The agency is committing significant resources and effort to environmental purchasing. The agency will be conducting a study of current process and provide recommendations for improvement to streamline administration and increase compliance with policy. The agency will continue to conduct audits to ensure significant compliance as outlined under the DES Risk Assessment policy. Data from 2023 internal audits show that 9% of equipment and supply orders were non-compliant. Develop a plan to extend replacement cycles on assets where possible (i.e., computers, cell phones, etc.) Facilities The agency will provide staff options to work in field locations closest to their home to reduce commute length. As leases in our field offices come due, the agency is reviewing the options with DES Real Estate Services to reduce the environmental impacts whenever feasible. Some examples of things already implemented, green cleaning contract at headquarters, heating and lighting at headquarters, EVSE at several facilities. Three (3) leases are due to end 2024-2026. Two (2) leases fall within a high-risk health disparity area. Other Strategies Employees required to be in the office one day per week, and encouraged to use TEAM's meetings to reduce commuting and driving agency vehicles. The agency will continue to serve on the SEEP Guidance Team, Governing Council, and workgroups. WSLCB will continue to lead efforts to increase compliance across the SEEP suite of projects, and initiatives. Transportation The Agency Transportation Officer (ATO) will assemble a Fleet Decarbonization Plan by end of CY 2024. Continue with fleet transition to BEV. By end of calendar year 2024 fleet should meet or exceed RCW target of 40% for 2025.The Agency will replace a minimum of 22 vehicles between 2025-2027. Agency evidence van will utilize WSDOT fuel stations, when possible, to increase use of R99 biofuel. The agency has signed an IAA with WSDOT to promote vanpool use by providing subsidies to users.

Long-Term Strategy

- Transportation
- Facilities
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

Environmental Purchasing, Toxic and Waste Reduction The agency will explore use of lead-free ammo and electric hand dryers. Facilities As leases in our field offices come due, the agency is

reviewing the options with DES Real Estate Services to reduce the environmental impacts whenever feasible. Some examples of things already implemented, green cleaning contract at headquarters, heating, and lighting at headquarters, EVSE at several facilities. Eight (8) leases are due to end 2027-2029. Five (5) leases fall within a high-risk health disparity area. The agency will be working with landowners to ensure compliance with clean building laws. Some other areas being explored are energy benchmarking, maximize space utilization, enterprise-wide tenant policies, tenant training, green cleaning, energy star appliances, and the agency will endeavor to stand up a recycling program at all facilities to cover agency needs and reduce landfill waste. Transportation The agency Transportation office (ATO) will continue to update the Fleet Decarbonization Plan. The Agency will replace a minimum of 7 vehicles between 2027-2029.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Limit trips in state vehicles by replacing in-person meetings with remote options
- Utilize biofuels or other alternative strategies to lower emissions where BEVs are not possible

The agency Transportation office (ATO) will continue to update the Fleet Decarbonization Plan. The Agency will replace a minimum of 7 vehicles between 2027-2029.

Facilities

Electrify building space heating, hot water and cooking

Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods

Track building energy use by metering and benchmarking each building over 10,000 square feet.

Buy efficient IT equipment and appliances

Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption

Leverage new leases and lease renewals to electrify heating and reduce energy use

Change space use allocations to reduce occupied square footage

Ensure any new leased square footage is all-electric and energy efficient

As leases in our field offices come due, the agency is reviewing the options with DES Real Estate Services to reduce the environmental impacts whenever feasible. Some examples of things already implemented, green cleaning contract at headquarters, heating, and lighting at headquarters, EVSE at several facilities. Eight (8) leases are due to end 2027-2029. Five (5) leases fall within a high-risk health disparity area. The agency will be working with landowners to ensure compliance with clean building laws. Some other areas being explored are energy benchmarking, maximize space utilization, enterprise-wide tenant policies, tenant training,

green cleaning, energy star appliances, and the agency will endeavor to stand up a recycling program at all facilities to cover agency needs and reduce landfill waste.

Equity & Environmental Justice

Environmental Purchasing, Toxic and Waste Reduction The Operational Support Team will continue to assess purchases on a quarterly basis to improve overall reduction of toxic product purchasing. Success will be measured by Agency Risk assessment results as well as DES EPP Annual Report. Facilities The agency has installed EVSE equipment at 3 facilities. Two (2) locations fall within a high-risk health disparity area. Transportation By moving our fleet to BEV, we will be reducing emissions across the state. By end of CY 2024 fleet will be 40%+ BEV. A minimum of 24 vehicles will be replaced between 2025-2029. Our Tumwater location supports one vehicle and is not a candidate for EVSE or BEV during the 2024-2029 timeframe.

Planning & Budget Development

- Deferred maintenance and equipment replacement schedules
- For SEEP agencies: Carbon Reduction Investment Budget (CRIB) priorities

Federal Way EVSE (2025), Mountlake Terrace office move and EVSE equipment (2025-2026), Wenatchee EVSE (2026), Home charging reimbursements (2025-2029), Home charging equipment and installation (2026-2029), Two (2) Program Specialist 4 Risk & Safety Officer and Procurement Administrator (2025-2029), Recycling program (2028-2029)

Agency-Specific Strategies

Employees required to be in the office one day per week, and encouraged to use TEAM's meetings to reduce commuting and driving agency vehicles. The agency will continue to serve on the SEEP Guidance Team, Governing Council, and workgroups. WSLCB will continue to lead efforts to increase compliance across the SEEP suite of projects, and initiatives.

Challenges & Barriers

Environmental Purchasing, Toxic and Waste Reduction The agency has 81 purchasing staff (20%+ of the agency) of varying experience levels. Facilities Management continues to add more days open to public, requiring staff to be onsite. This also increases use of electricity, water, supplies, refuse, vehicles traveling to facilities, and reduces participation in telework and compressed workweek schedules. Telework participation dropped from 96% in 2022 to 91% in 2023. The HQ building opened one day a week through end of 2023. Compressed workweek participation also dropped from 50% in 2022 to 45% in 2023. The agency does not have adequate resources to support a robust recycling program. Since LCB facilities are leased all clean building requirements appear to fall to the building owners, LCB is uncertain what actions to take to support the new law. Other Operational Support Strategic Plan is filled with competing priorities, and all are very important. Decision making timeframes and authority to complete work. Transportation BEV upfits are 3x the cost of an ICE vehicle. Upfits require a stand-alone battery currently. BEV vehicles have had several mechanical issues that have required the agency to park the vehicle for several weeks or months due to availability of parts.

This may be an issue with all vehicle types but creates significant disruption when a vehicle is taken out of service, because loaners are not sufficient long-term for us because we require upfits in our fleet for employee safety. BEV vehicles no longer get fuel at pump reducing access to car washes. Drivers must be issued a coupon, account card, or pay out of pocket for car washes once transferred to a BEV. Driver training for new vehicles. There are tons of features in new vehicles and the agency has several models. Not having a statewide policy, home charging reimbursement rates, installing EVSE in employees' home Not having access to vehicle charge data specific to each vehicle to assess downtime and overcharging. Vehicle miles traveled increased from 1,706,737 in 2022 to 1,818,701 in 2023. Even with 16% EV our emissions exceeded 2022 amounts. Based on projections of current mileage we will increase our driving another 750-800 miles per vehicle. It is not clear at this time if the amount of EV in the fleet will offset the emissions to be less than last year. There is insufficient modeling or year over year comparisons to allow for real life scenarios so adjustments can be made in real-time. Vehicle upfitting delays; products on backorder, vendor can only take on so much work. WSLCB has a higher-than-normal underutilization due to vehicle transition. Because vehicles are specially equipped the upfitting must be done prior to driver swapping out the replacement. This requires WSLCB to pay for two leases at the same time and adds significant delays in deploying and turning in vehicles due to logistics WSLCB created an issue tracker in relation to EV drivers. This tracker is supposed to help us learn about issues drivers are facing in real-time. Drivers have been reluctant to report unless encouraged to do so, essentially it is viewed as extra work. The agency does not have adequate resources to support transition to BEV.

Natural Resources, Department of

Agency Actions

DNR's "Net Zero" decision package was reviewed by the legislature and funded in the 23–25 Biennium. In response to the climate commitment act (CCA), the agency created a program dedicated to reducing the greenhouse gas emissions attributed to its fleet and facilities operations: the Sustainable Operations program. The new program went "live" in December 2023, perhaps the first time a program within Washington state government has been wholly dedicated to emissions reductions instead of book-ending this work onto other programmatic responsibilities. The Sustainable Operations program has already begun engaging in agency-wide coordination of greenhouse gas mitigations, measures, and planning efforts. The Sustainable Operations program is currently using an Energy Savings Performance Contracting (ESPC) contract via Department of Enterprise Services (DES) and working with MacDonald Miller Facilities Solutions to complete a technical assessment of the electrical infrastructure at key agency-owned locations throughout the state. The data from the assessment will help gauge the cost and feasibility of installing Electric Vehicle Supply Equipment (EVSE), also known as EV chargers, that would be required to support large-scale fleet electrification. Current planning efforts are focused on electrification of the agency's light fleet, which is made up of passenger vehicles, including all sedans, SUVs, and pickup trucks up to a ½ ton capacity. The approximately 950 vehicles in this category are stationed at locations across the state. The agency is also using its funding to create a formal battery-electric vehicle (BEV) 4x4 truck pilot. The pilot is

gathering real-world working knowledge and user experience operating 15 fully electric trucks on a daily basis in standard DNR work environments across the state. To facilitate use in DNR work environments, all 15 BEV trucks have been up-fitted with standard DNR off-road-capable tires and state radio systems. DNR has continued planning and implementing improvements across agency facilities. These improvements include ESPC contracts for the agency's Tumwater compound and SE region Ellensburg Facility. DNR continues to facilitate virtual or online communication tools for staff engagement in lieu of in-person required meetings. DNR continues in our commitment to procure the most efficient Internal Combustion Engine or ICE-powered vehicles and equipment for all aspects of the agency's fleet. Along with alternative-fuel vehicles for administrative staff not needing to go off-road.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development

In the next two biennia, the Department of Natural Resources (DNR) will make major strides in the electrification of its fleet, based on planning initiated in 2023. Transportation is by far the agency's most significant source of greenhouse gas emissions. As noted, the agency created a new program last year, the Sustainable Operations Program, which is focused on meeting the legislative goals. The Sustainable Operations Program plans to significantly reduce the agency's emissions by: Transitioning to electric-powered light fleet vehicles and installing required infrastructure to the furthest extent possible, contingent on future funding, utility provider upgrade ability, and the availability of required products (i.e., electrical transformers, charging stations, and vehicles). Transitioning to electric equipment used for maintenance; that is, replacing the "small motored" lawn and grounds type equipment, that is traditionally powered by gasoline or diesel. Using change management principles to foster adoption and consistent usage by staff. Continuing to improve the efficiency of the agency's many facilities throughout the state.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

The agency will continue to support its new Sustainable Operations Program, created in 2023. Allowing the program to focus on agency emissions reductions efforts and other programmatic responsibilities. This program will lead implementation of DNR's primary long-term strategy for

meeting the emissions limits: electrifying its fleet of equipment and vehicles, as continuing improvements in technology and available funding make this operationally possible. Full electrification of the DNR fleet will transform how many field staff perform their work, and thus systematic encouragement will be important to foster adoption. The Sustainable Operations Program will also manage the implementation of other vital strategies for greenhouse gas reduction, especially improving the efficiency of the agency's many facilities. The program will ensure that applicable facilities meet the standards of the Clean Buildings Act as well as Energy Star reporting requirements. Working to prioritize facility upgrades, ensure facility energy efficiency, and reduce current grid reliance, will continue to apply of the agency's facilities across the state.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible
- Limit trips in state vehicles by replacing in-person meetings with remote options
- Utilize biofuels or other alternative strategies to lower emissions where BEVs are not possible

SUPPORTING THE NEW SUSTAINABLE OPERATONS PROGRAM The new program is taking shape, with new staff, contract management, and the development of working relationships, processes, and procedures. ELECTRIFICATION OF VEHICLES AND EQUIPMENT DNR has a large fleet of vehicles and equipment used by staff to accomplish their work. Electrification of the fleet and equipment will be accomplished in two major phases: 1) Fully electrifying the agency's light fleet. The agency's light fleet is made up of passenger vehicles, including all sedans, SUVs, and pickup trucks up to a ½ ton capacity. Approximately 950 vehicles fall into this category, and they are stationed at various locations across the state. Stages of electrification: COMPLETE CURRENT FEASIBILITY STUDY The 2023 legislature set aside $1M from the state's transportation budget to enable DNR to purchase electric-powered full-size 4x4 trucks and use them to conduct a true usage feasibility study for battery-electric vehicles (BEV). The BEV truck pilot will gather real-world working knowledge and experience operating fully electric trucks on a daily basis in standard DNR work environments across the state. PLANNING. The agency is currently working with a consultant to create the plan for strengthening the agency's internal EV-charging network (non-public-facing) so that it is robust enough to support an all-electric fleet of light vehicles. This plan will include: Analysis of the needs for electrical infrastructure and charging equipment at agency-owned facilities. A comprehensive implementation plan detailing efforts required for each site. The agency will submit legislative budget request based on this work. IMPLEMENTATION. The pace of electrification of DNR's light fleet will depend on legislative funding and availability of resources from local utility providers across the state. However long it takes, if funded, the electrification of DNR's light fleet will roughly follow this pattern: Making required utility upgrades. Installation of infrastructure. Development of maintenance support. Delivery and onboarding of vehicles. Fostering effective and consistent use and reporting. Tracking and adjusting. 2) Begin electrification of DNR's heavy fleet, if feasible. Future electrification of DNR's heavy fleet of equipment, and vessels, will depend on

many factors, including success of adoption of light fleet BEVs, development of new technology, and availability of on-going dedicated funding. CONTINUE TRANSITION TO ELECTRIC EQUIPMENT USED FOR MAINTENANCE OF LAND AND FACILITIES. The significant emissions impact of maintenance equipment is often overlooked. However, this transition can offer substantial benefits in greenhouse gas reduction, while also presenting fewer challenges to implementation. In every space where the public interacts with DNR staff, electric powered equipment brings immediate benefits in terms of reducing air and noise pollution while protecting health. This applies to both the public and to agency staff.

Facilities

Electrify building space heating, hot water and cooking

Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods

Track building energy use by metering and benchmarking each building over 10,000 square feet.

Buy efficient IT equipment and appliances

Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption

Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

CONTINUE IMPROVING ENERGY EFFECTIVENESS OF FACILITIES Based on assessments currently underway, DNR will improve building control systems, lighting, and HVAC systems in all existing agency buildings when possible, which will benefit the health of staff while reducing greenhouse gas emissions. This work requires detailed assessment and planning as well as budget requests, extensive contracting, and project supervision. Currently, both the agency's Tumwater Compound and SE region Ellensburg Facilities are involved in ESPC contracts (via DES) to reduce building emissions and to best prioritize upgrades such as building controls, HVAC and lighting systems, to ensure clean and sustainable operations.

Clean & Renewable Electricity

On-site renewable energy generation

DNR is currently pursuing designs for solar array installations at the Tumwater Compound and Ellensburg locations. To help fund the work, the agency is preparing applications for clean energy grants through the Department of Commerce. Moving forward, the Sustainable Operations program intends to incorporate solar energy (and potentially geothermal) into other agency facility site locations to help offset grid reliance and use.

Equity & Environmental Justice

DNR is actively working to reduce operational greenhouse gas emissions across the agency. By continuing to explore and reduce all sources of agency emissions, DNR can reduce the adverse impacts to human health as it relates to increasing greenhouse gas and pollutions impacts from ICE engines and equipment. As many of the agency's fleet vehicles operate in rural communities, these communities will receive tangible benefits as the agency moves to electrifying its fleet via reductions in carbon emissions and noise pollution. Having electric powered vehicles operating in these areas will not create or accelerate undue burden. While the agency see's the largest immediate opportunity to reduce emissions via fleet electrification, the agency will continue to look internally for other sources of emissions across DNR's Division and Programs which may include aviation and maritime sources. Beyond greenhouse gas emissions reduction DNR will continue the critical work of supporting carbon offsets (indirectly) though the continued and expanding programs supporting reforestation goals across the state. DNR's Forest Resilience Urban and Community Forestry (UCF) Program for example is prioritizing tree equity across WA State. Over $8 million dollars in funding are available through this program for projects that emphasize improving tree equity.

Planning & Budget Development

- Facility or campus master plans
- Deferred maintenance and equipment replacement schedules
- Sustainability action plans
- Funding greenhouse gas emissions reduction priorities

DNR will continue to support its new Sustainable Operations Program. Created in 2023, this may be the first centralized program in Washington state government to be dedicated to greenhouse gas emissions reduction, rather than book-ending these efforts on other programmatic responsibilities. This program is leading the electrification of DNR's equipment and vehicles and will systematically prepare and submit budget requests at each stage of implementation. The Sustainable Operations Program will also manage the planning, including budgeting, of projects that will improve the efficiency of the agency's facilities around the state.

Agency-Specific Strategies

DNR has a significant effort underway planning for Wildfire emissions reduction efforts. All efforts to control and put out wildfires prior to them becoming major events, helps reduce carbon emissions for all WA state citizens. DNR is also currently working with partners on developing new bio-mass products, with the intent to create trade agreements for business to use residual post-harvest forest debris to create sustainable landscape products and engage on other bio-mass utilization strategies. DNR is currently looking to reduce emissions beyond the built environment and increased tree planting across the state helps (via carbon offsets) these efforts as well.

Challenges & Barriers

The electrification of DNR's fleet of vehicles and equipment will represent a sea-change in current operations and the way staff organize performing their daily duties. As with any

significant change to the way work is performed within any organization, thoughtful communication will be needed to introduce changes and encourage widespread adoption. Staff will need training on new equipment and any revised operational processes and best practices. To help mitigate these challenges and assist with the transition, DNR plans to use data and user experiences from the current BEV truck pilot to fine tune implementation efforts. Funding blockage – repeal of current funding mechanisms would be harmful to the agency's efforts to reduce greenhouse gas emissions from its operations. To date, CCA funding is the first dedicated funding source made available to make large scale greenhouse gas emission reduction efforts truly actionable. On-going dedicated funding for this work is paramount to ensuring it succeeds. Lack of current feasibility for electrification of "heavy fleet" such as large trucks, wildfire response vehicles, marine vessels, aviation assets and large equipment.

Parks & Recreation Commission

Agency Actions

Following is a summary of reported actions taken by the Washington State Parks and Recreation Commission (WSPRC) in the last two calendar years to reduce greenhouse gas emissions, organized by activity. These results are informed by a statewide survey of greenhouse gas emission reduction improvements to agency facilities and fleet. The level of survey participation includes 11 of 26 Management Areas (42%). Thus, additional greenhouse gas emission reduction investments were made yet data is not available at this time for reporting. Heating and Cooling System Improvements Several parks received significant upgrades to heating and cooling systems, enhancing comfort for visitors and staff while minimizing our carbon footprint. The installation of energy-efficient heating, ventilation, and air conditioning (HVAC) systems and heat pumps at key locations was prioritized, ensuring these systems meet or exceed current energy codes and efficiency standards. Upgrades included replacing old furnaces with high-efficiency models that significantly reduce energy use and greenhouse gas emissions. Statewide Facility Improvement Survey Results: Six heat pump systems were installed. One air conditioning system was replaced. Three furnace systems were replaced. Three ductless mini split units were installed. Facility Improvements The WSPRC undertook renovations and improvements in a range of building infrastructure. Efforts focused on enhancing thermal efficiency of buildings through upgraded insulation, roofing materials, and weather-sealed doors and windows. These investments contribute directly to reducing energy needed for heating and cooling, thereby decreasing overall greenhouse gas emissions. Statewide Facility Improvement Survey Results: Building insulation was upgraded in three parks. Weather sealing of windows and doors was completed in 10 parks. Air gap sealing was performed in one park, targeting multiple historic log buildings to improve energy efficiency. Roof systems were replaced in three buildings to increase energy efficiency. Investment in Energy Efficient Equipment and Appliances The agency phased out numerous outdated and inefficient appliances and systems across the park system, replacing them with energy-efficient alternatives. Investments were made in updating water heating systems to more efficient on-demand units, which conserve both water and energy. Statewide Facility Improvement Survey Results: Fifteen parks replaced hot water tanks (some parks with multiple tanks). Two parks

replaced gas-powered appliances with Energy Star appliances, and four others upgraded to Energy Star-rated electrical appliances. Fifteen parks transitioned from internal combustion engine (ICE) equipment to electric handheld tools. Five parks upgraded to electric utility terrain vehicles (UTVs). Five parks acquired e-bikes to replace vehicle or UTV in-park travel. Lighting Improvements Throughout the park system outdated lighting systems were replaced with high-efficiency alternatives. Statewide Facility Improvement Survey Results: LED lighting systems were installed in 12 parks. One park installed a solar-powered lighting system. Agency Fleet The agency has actively pursued modernization of its fleet by investing in more sustainable transportation options, focusing on electric and hybrid vehicles where feasible. During the 2022-2023 reporting period the agency acquired 21 battery electric vehicles (BEVs) and 15 hybrid vehicles. Additionally, the agency has installed 30 non-networked, level two EV charging units for internal fleet use. This strategic shift to electric vehicles not only contributes to reduction in greenhouse gas emissions but also sets a foundation for long-term sustainable transportation within agency operations. To further enhance efficiency and monitoring, the WSPRC has implemented the AssetWorks fleet management system, which improves the tracking of fuel usage and other critical performance metrics.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

To position the WSPRC to achieve the greenhouse gas emission reduction target of 4,842 MT CO_2 established for 2030, significant investment in the 2025-27 and 2027-29 biennial timeframes will be required. The following are key areas of investment need. Resource Use Tracking Assessment The agency is launching an assessment of its Resource Use Tracking Program which aims to document internal scope 1 emissions. This assessment will identify gaps and barriers in greenhouse gas emission tracking systems, enhance efficiency and provide for better understanding of the agency's overall carbon footprint. Additional capacity is needed within the 2025-2029 budget timeframe to advance this program at the statewide scale of over 120 developed parks. Key assessment outcomes include identifying feasible solutions to existing data reporting and tracking barriers and the resources and staff capacity needed for successful implementation. Statewide Assessment of Facility Energy Use - The WSPRC has initiated a Facility Energy Use Audit Program to address its inventory of over 2,000 buildings. The first phase includes the energy audit of approximately 30 historic buildings identified and funded in the 2024 Supplemental Budget request. This initial phase represents a small sample of the facilities in need of energy use audits. Phase 1 energy use audits results will be used to develop 2025-27 and 2027-29 capital budget requests and grant proposals to address high priority energy use reduction opportunities. Within the 2025-2029 budget timeframe the agency plans to request Phase 2 (2025-27) and Phase 3 (2027-29) facility energy use audits

within its operating budget to focus on the following key actions: Establish staff capacity while reducing reliance on consultants to conduct facility energy use analysis to identify and evaluate facilities with the most feasible potential for greenhouse gas emission reduction. Identify parks and facilities without adequate energy metering systems and request funding for the installation of necessary equipment to monitor and manage energy use more effectively. Facility Energy Use Reduction Investments The tracking of facility energy use as outlined above will occur in conjunction with implementation of energy use reduction strategies. Ensure development of 2025-27 and 2027-29 operating and capital budget requests are informed by facility energy use audit priorities with identified cost estimates for energy efficiency investments that support achievement of greenhouse gas emissions reduction limits. Develop design criteria to integrate renewable energy generation into existing and new facility projects. Upgrade facility maintenance project management systems to better track the need, scoping and implementation of energy conservation project elements. Electric Vehicle (EVSE) Infrastructure Investments The first phase of the agency's transition was funded in the 2023-25 operating budget. This involves assessment of electrical systems at approximately 100 administrative sites identified for internal EV charging stations. Subsequent phases of work will involve design and implementation of internal EV charging stations. The agency will require a considerable increase in programmatic funding to make substantial progress towards implementation of a statewide network of EV charging stations within the next six years to reach 2030 greenhouse gas emission limits. Renewable Energy Assessment In conjunction with the assessment of internal EV charging stations the agency is working with the DES Energy Program to evaluate the feasibility of renewable energy generation on state parks properties. Currently, the agency is evaluating the feasibility of solar power generation at approximately 100 sites. This assessment will identify rough order of magnitude cost estimates to request funding to design and construct renewable energy infrastructure at feasible sites within the 2025-29 budget timeframe.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-specific or other strategies

The WSPRC is a natural resource agency that possesses an inventory of over 2,000 facilities, including one of the largest inventories of historic buildings in the state. Additionally, the agency operates a fleet of 700+ vehicles to service over 150+ state park properties. The majority being trucks and vocational vehicles. These public assets and service responsibilities bring distinct challenges to the need for rapid greenhouse gas emission reduction. Recognizing the urgency to act, the agency is working to request and prioritize resources to make systematic progress towards the goal of achieving a 95% reduction in greenhouse gas emissions by 2050. Key to our long-term approach is the integration of a Clean Energy Transition Strategy that

aligns with emerging technological advancements and evolving operational practices. This strategy includes: Electrification of the agency's fleet, including prioritizing investment in EV charging infrastructure, the ongoing purchase of BEVs and adopting alternative fuels or hybrid options where BEVs are not viable. Developing and maintaining a Facility Energy Performance Team focused on systematic assessment, monitoring and enhancement of agency facility energy use and methods to increase operational cost savings. This statewide team will incorporate emerging best practices into facility maintenance and operation training and provide technical consultation in the design and replacement of facility energy systems using best available technologies. Prioritizing incorporation of greenhouse gas emission reduction measures into facility project planning and budgeting decision making, ensuring climate mitigation and adaptation is central to agency operations. Investing in sustainable development and operation of renewable energy infrastructure to reduce dependency on purchased energy, with a focus on reducing reliance on fossil fuels (propane, etc.). Evaluating use of state park lands for sustainable carbon sequestration opportunities to enhance natural carbon storage that is consistent with the agency's mission and values. Adopting green procurement policies that favor low-carbon materials and construction services.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible
- Limit trips in state vehicles by replacing in-person meetings with remote options
- Utilize biofuels or other alternative strategies to lower emissions where BEVs are not possible

Transportation remains a focus for the WSPRC, accounting for a 38.7% (2,987 MT CO_2e) of agency greenhouse gas emissions. To meet our 2050 greenhouse gas emission reduction targets the implementation and expansion of our Fleet Electrification Initiative remains critical. This comprehensive approach encompasses several key strategies aimed at transforming our transportation infrastructure and fleet to be more sustainable and efficient. Increased EV Charging Infrastructure: The agency is currently conducting an electrical systems assessment of approximately 100 parks to determine their capacity for internal EV charging stations. This assessment will identify and prioritize sites for fleet EV charging station installation. The most feasible sites will be identified in the agency's 2025-27 and subsequent capital budget requests. It is anticipated that it will take a decade or more to establish a statewide network of internal fleet EV charging stations. Accelerated BEV Transition: The agency has an ongoing commitment to replacing ICE vehicles with BEVs. The agency's fleet is undergoing a significant transition. In the past two calendar years (2022-2023) the number of BEVs has grown from four to 25 (currently 37 at the time of this report). Additionally, the agency has 35 eCarts and 11 U-turn eMowers with an additional four eCarts currently on order. The purchase of BEV light duty trucks remains a chokepoint in the agency's transition strategy as they make up the majority of the fleet and are difficult to source in adequate quantities. Hybrid Vehicle Adoption: Acknowledging the current market's limitations in providing BEV alternatives for all vehicle types, especially vocational trucks, the agency plans to continue the purchase of hybrid vehicles

as part of the long-term transition strategy. This interim approach has led to the acquisition of 50 hybrid vehicles (15 in calendar years 2022-2023), and now includes 22 Ford Maverick hybrid trucks, which serve as a step towards full electrification. This transition strategy accommodates the unique challenges posed by the remote locations of many state parks and an anticipated reduced need for backup power options as EV charging infrastructure expands. Exploring Alternatives for Heavy Equipment: Given the lack of viable BEV options for large tractors, dump trucks, snow groomers, and other specialized equipment, the agency is exploring alternative solutions. The pursuit of biofuels and other innovative fuel efficiency improvements may be an opportunity to reduce emissions within this challenging sector of fleet and equipment. Marine Vessel Electrification: With 18+ marine parks requiring staff access via vessels, the potential for reducing greenhouse gas emissions through vessel electrification is significant. The agency is exploring the feasibility of converting existing diesel-powered vessels to battery electric models. Current market options are limited. E-Bike Investments: The use of e-bicycles by staff within parks, particularly within long-distance trails and campground areas, is being piloted as a practical and safe means to lower our carbon footprint. Telework and Travel Reduction Initiatives: The COVID-19 pandemic forced the agency to realize the potential for reducing work-related travel emissions through telework and advanced teleconferencing technologies. Building on this experience, the agency has developed guidelines for telework agreements. Further guidance around carpooling and delegating program staff attendance needs further development with the goal of reducing the necessity for physical travel for meetings and other business needs. Collectively, these strategies represent a holistic approach to addressing transportation related greenhouse gas emissions. As the agency makes progress, the focus remains steadfast on innovative solutions, strategic investments, and policy development to ensure the WSPRC meets future greenhouse gas emission reduction targets for 2050 and beyond.

Facilities

Electrify building space heating, hot water and cooking

Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.

Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods

Track building energy use by metering and benchmarking each building over 10,000 square feet.

Operational or organizational changes: Hire a resource conservation manager (RCM)

Buy efficient IT equipment and appliances

Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption

Leverage new leases and lease renewals to electrify heating and reduce energy use

Change space use allocations to reduce occupied square footage

Currently, the agency does not have a reliable method to track which facilities are electrified or utilize specific heating or cooling systems. In 2023, these facilities were responsible for 61.3% of our reported greenhouse gas emissions, amounting to approximately 4,731.6 MT CO_2e, underscoring the critical role of building energy use in the agency's carbon footprint. The legacy of post-World War II federal surplus programs continues to influence the agency's portfolio, incorporating structures intended for military use, now repurposed, and often recognized as historic sites. These buildings, acquired primarily from 1950 to 1980, present challenges in upgrading energy efficiency due to their historic status and energy standards used during original construction. Key strategies for reducing greenhouse gas emissions from agency facilities. To advance the agency's greenhouse gas emission reduction goals, our Facility Energy Performance Initiative is intensifying efforts to enhance energy efficiency. Key strategies include: Historic Building Energy Use Assessments: The agency has partnered with the DES Energy Program to initiate a historic building energy audit process to prioritize and identify energy efficiency updates needed at several historic buildings across the state. In the 2024 Supplemental Budget the agency requested and received $300,000 to focus on energy audits of priority historic buildings. Statewide Energy Use Assessments: Long-term the agency needs additional resources to initiate energy use analyses to pinpoint where energy savings can be most effectively realized—with a focus on facilities with high energy consumption. Strategic Energy Efficiency Investments: Building on its commitment to electrification, the agency is making progress towards adopting strategic capital and maintenance investments by targeting areas identified through energy assessments. Clean Buildings Law: Only one building in the state park system meets the Tier One criteria for the Clean Building Performance Standards identified in WAC 194-50 (covered commercial building with 50,000+ ft^2). The agency is currently evaluating its facility inventory to identify any buildings subject to recent Tier Two (covered commercial building with 20,000+ ft^2) reporting standards. Benchmarking and Metering Needs: The agency aims to establish comprehensive metering and benchmarking to effectively monitor and reduce greenhouse gas emissions across its facilities. Securing necessary funding is a critical step toward implementing these systems. Complementary strategies for incrementally reducing greenhouse gas emissions from facilities. As it works towards the goal of sustainable facility management, the agency is considering additional approaches to reducing greenhouse gas emissions: Evaluating Renovation over New Construction: Reducing the construction of new buildings and related infrastructure is key to reducing our carbon footprint over time. This approach provides a focus on maintaining embodied energy found in the material acquisition and construction of existing structures. This will be a challenge as the agency faces growth in the demand for facilities over time. Strategic Facility Removal: The removal of existing buildings, and not replacing them, is a permanent method of reducing greenhouse gas emissions. The agency has an inventory of 2,000+ buildings that have undergone some form of facility condition assessment. Over time as the agency's building inventory ages this review process can play an important role in reducing our carbon footprint, especially in older buildings with low energy efficiency.

Clean & Renewable Electricity

Onsite renewable energy generation

Power purchase agreements (PPAs) for renewable energy purchases (examples include PSE Green Direct and Avista Solar Select)

The WSPRC recognizes the unique renewable energy potential of each park within its diverse system. As part of its Clean Energy Transition Strategy, the agency is evaluating changes in electricity procurement and infrastructure investments to embrace renewable energy generation: Renewable Energy Agreements Exploration: This initiative involves engaging with renewable energy providers to explore Power Purchase Agreements (PPAs), especially in urban park areas. Initial efforts have identified potential partnerships with Puget Sound Energy, suggesting opportunities for further exploration and negotiation. Renewable Energy Feasibility Assessments: The agency is currently conducting a feasibility assessment of 100 parks to identify locations with high to moderate feasibility for renewable energy generation. This investment will inform future budget requests and grant proposals for solar and wind generation projects by identifying site design and implementation considerations, including rough order of magnitude cost estimations and coordination with local electricity providers. Demonstration of On-Site Renewable Energy: This initiative involves leveraging the public visibility of the park system to showcase renewable energy generation, with a focus on solar-power generation. One goal is to develop partnerships with local electrical providers that can serve as models for expanding renewable energy capabilities. The agency plans to request funding in the 25-29 budget cycles and seek grant funding opportunities to advance this concept. Through these exploratory and strategic efforts, the WSPRC aims to integrate renewable energy solutions, enhancing our environmental stewardship and moving towards long-term greenhouse gas emission reduction goals.

Equity & Environmental Justice

The WSPRC is deeply committed to the values of serving everyone equitably and without bias. The agency recognizes that discrimination and oppression of minority and overburdened communities impacts access to public lands and has a long history within this state and nation. As the agency develops its approach to a clean energy transition over the next 30+ years it is critical to remain focused on permanent reduction of greenhouse gas emissions. While there may be opportunities for carbon offsets and future cap and trade scenarios to reach emission targets—it's through elimination of the pollution source that environmental justice can be served to those communities who have born the impacts of energy generation pollution for decades. More specific to this work to reduce greenhouse gas emissions, it is important to incorporate surrounding community environmental and health conditions into the criteria for prioritization of greenhouse gas emission reduction projects. Many of the agency's largest "park campuses" are adjacent to or in rural, lower income communities that are based in natural resource extraction or manufacturing economies. Efforts to reduce and eliminate greenhouse gas emissions will have a direct impact on the health of the surrounding environment. Additionally, as the agency advances the development of EV charging stations for public use, it

will be increasing BEV access to public lands and opportunities for underserved communities to access nature sustainably.

Planning & Budget Development

- Facility or campus master plans
- Deferred maintenance and equipment replacement schedules
- Sustainability action plans
- Funding greenhouse gas emissions reduction priorities
- Electrification and feasibility plans/studies for district heating systems

Agency-Specific Strategies

The WSPRC is actively developing initiatives tailored to the diverse range of park services it provides, from day use areas to extended-stay facilities, focusing on reducing greenhouse gas emissions. Clean and Green Operations Initiative: The agency's Clean and Green Operations Initiative aims to model sustainability practices such as lowering greenhouse gas emissions by prioritizing use of clean energy and minimizing energy usage across park operations. Examples include investment in the use of alternatives to driving gas-powered vehicles such as eCarts, eBikes and carpooling. Investment in Electrical Equipment: Shifting towards more clean and green operations includes a statewide strategy to replace gas-powered equipment with electric alternatives. This transition spans a wide array of tools and equipment, from weed trimmers and mowers to tractors of varying sizes. Conducting a thorough inventory of our gas-powered equipment will guide the agency in identifying electrification opportunities and exploring alternative fuels, marking a critical step in the agency's commitment to reducing greenhouse gas emissions. Modeling Zero Energy Emissions: To achieve more sustainable operations, the agency is evaluating the feasibility of transitioning towards zero energy or zero energy capable greenhouse gas emissions operation within select park areas, such as isolated buildings or overnight facilities. This initiative aims to understand the barriers of converting park operations entirely to zero energy greenhouse gas emissions while identifying feasible opportunities for transformation. Insights gained from potential pilot projects will guide future efforts to replicate zero energy/zero energy-capable emissions practices across more parks. Carbon Sequestration Potential: The agency is responsible for the management of a diverse spectrum of ecosystems, including forests, wetlands and grasslands. While the agency has not initiated any formal carbon sequestration efforts to date, there is potential for future collaboration with other natural resource agencies as the State of Washington explores opportunities within the emerging carbon offset market. As the agency considers its future in this realm it is important that its unique mission and values be given full consideration, including the opportunity cost of sequestration commitments. Utilizing Historic Buildings: The agency has a commitment to managing its historic building inventory to meet the Secretary of Interior's Standards for Historic Preservation. This has led to the prioritization of historic building energy audits to identify the most feasible opportunities to decrease energy use while preserving historic integrity. Historic buildings are used for a variety of uses such as staff housing, interpretive centers and vacation rentals. Managing historic buildings for modern use allows maximizing the

use of embodied carbon and reduces the need for new construction. As the agency faces future demand for facilities the repurposing of existing structures should be given consideration to offset increases in greenhouse gas emissions associated with construction and operation of new buildings.

Challenges & Barriers

Reducing greenhouse gas emissions to meet targets codified in RCW 70A.45.050 presents significant, long-term challenges to the WSPRC. The agency lacks the resources and staff capacity to make substantial near-term progress in reducing greenhouse gas emissions. The scope of need documented within the agency's deferred maintenance and capital programs illustrates this reality. Much of the agency's recent efforts have been focused on identifying its scope of the greenhouse gas emissions and related energy use in the form of assessments, audits and data collection reform. Below is an outline of some key challenges and barriers. Impact of Staffing and Fleet Expansion on Emissions: During the 2022-2023 reporting period, there was a nearly 19% increase in full-time equivalent (FTE) staffing. The agency's vehicle fleet expanded by approximately 30%. This increase predominantly involved internal combustion engine (ICE) vehicles, with 65% of the new additions being light duty ICE and 13% heavy-duty ICE. This composition was influenced by several factors, including limited availability and higher costs of battery electric vehicle (BEV) alternatives, particularly for heavy-duty applications. We anticipate as the agency continues to grow and evolve that increasing staffing will likely result in higher emissions. greenhouse gas Emission Profiles: A barrier to the development and implementation of strategies to permanently reduce the agency's carbon footprint is the need to better understand its greenhouse gas emission profile. Data collection across 125+ developed parks is not consistent and occurs at different scales. Investment is needed to develop a consistent, user friendly greenhouse gas emission reporting system that provides real-time data sources that can better serve decision making. Technological Adoption Challenges: Integrating new technologies and software for energy conservation is essential for advancing clean energy goals. However, the thorough standards in place by the State of Washington to ensure system security and compatibility can extend the timeline for adopting new tools, such as applications to manage EV charging or automation tools to track greenhouse gas emission data. Financial and Staffing Constraints: Securing both short-term and long-term financial support for maintaining and upgrading new systems remains a significant challenge. Current funding from grants, state, and federal sources falls short of what is needed to achieve the agency's goals of reducing greenhouse gas emissions by 45% by 2030 and 95% by 2050. Additionally, the agency faces difficulties not only in maintaining adequate staffing levels but also in ensuring staff possess the necessary skills and knowledge to effectively transition to and manage EV charging and renewable energy systems. Comprehensive Review Processes: As a land-owning agency, it is essential to conduct thorough environmental and cultural analyses in compliance with local, state, and federal laws. The installation of emerging energy infrastructure, such as EV charging stations, necessitates intricate permit reviews to safeguard ecosystems and preserve cultural and historical sites. These reviews can demand extensive environmental assessments, archaeological surveys, and adherence to rigorous local building and zoning ordinances. This complexity not only makes the process time-consuming but also

requires significant coordination across various governmental agencies. Historic Buildings: WSPRC is committed to upholding the Secretary of the Interior's Standards for the Treatment of Historic Properties, which outlines preservation, rehabilitation, restoration, and reconstruction guidelines for historic structures. Retrofitting these historic structures to meet modern energy efficiency standards presents financial, logistical, and technological challenges. The process involves comprehensive assessments to balance historical preservation with the need for functional upgrades, often necessitating specialized expertise and potentially higher costs.

Puget Sound Partnership

Agency Actions

Transitioned one hybrid-electric vehicle to BEV. Agency implemented a 1 day a week in person requirement for staff at one of our three Puget Sound office locations. We also have seen an uptick in in person partner meeting attendance travel. These two together would have a negative greenhouse gas impact. Being that we were 100% remote and not attending meetings there would be no where to implement greenhouse gas decreases. In 2020 we downsized our facility footprint by 60% while growing the agency by 20%, so there is not much room there for further decreases in greenhouse gas facility wise.

Short-Term Strategy

- Transportation

Transition the last agency hybrid vehicle to BEV.

Long-Term Strategy

- Transportation

We are a small agency, what we have done is about as much as we can realistically contribute to decreasing greenhouse gas emissions.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)

Transition the last agency hybrid vehicle to BEV.

Challenges & Barriers

Our total facility footprint is 3600 sqft for a staff of 72, there was not a lot of room to move the needle when the legislation came out for us.

Seattle Community College

Agency Actions

Seattle Colleges has undertaken a comprehensive building-focused energy savings performance program led by McKinstry. Further we are actively investing in renewable energy on all new buildings and installed rooftop solar at each campus funded by a Commerce Clean Energy Grant and Seattle City Light Green Up Grant. While the renewable energy credit of this array is sold to Seattle City light, it represents the college's commitment to developing clean energy resources in collaboration with local and state partners. Each of the Seattle Colleges campuses are unique and thus require different approaches for energy efficiency improvements. A quick summary of the projects implemented is below. North: In partnership with McKinstry, North Seattle College installed a 100-kW array on the OCEE building. This project was funded through a Department of Commerce grant, the sales of a certificate of participation, and through Seattle City Light Green Up funding. Grant funding totals are below: Seattle City Light: $150,600 Department of Commerce Solar: $117,961 This array has produced 86 MWh of clean electricity since coming online in July of 2023 through the time of writing (May 2024). Alongside clean energy development, the college has made significant investments in energy efficiency and water savings financed through a COP as an Energy Savings Performance Contract. The total project cost was XXX and included upgrades to the HVAC system, LED lighting upgrades, building envelope sealing, and water efficient appliances upgrades. Most of this work was completed by 2023 and is expected to reduce campus emissions by an estimated 102 MT CO_2e per year. Reductions in campus energy use in 2023 are in part a result of this work. Although, North Seattle College had to use a backup generator in 2023 for 10 months, leading to a spike in energy consumption. 2024 is expected to be a better reflection of campus energy consumption and the impact of energy efficiency upgrades. Central: In partnership with McKinstry, North Seattle College installed a 96 kW AC array on the Broadway Edison building. This project was funded through a Department of Commerce grant, the sales of a certificate of participation, and through Seattle City Light Green Up funding. Grant funding totals are below: Seattle City Light: $150,600 Department of Commerce Solar: $119,905 This array has produced 51 MWh of clean electricity since coming online November of 2023 through the time of writing (May 2024). Alongside clean energy development, the college has made significant investments in energy efficiency and water savings financed through a COP as an Energy Savings Performance Contract. The total project cost was XXX and included installing an electrified air to water heat pump in the Broadway Edison building, upgrading an electrical panel in Broadway Edison, and lighting upgrades to LEDs in the Science and Math building. This work was completed by 2023 and is expected to reduce campus emissions by an estimated 267 MT CO_2e per year. South: In partnership with McKinstry, North Seattle College installed an 86 kW AC array on the Cascade Hall building. This project was funded through a Department of Commerce grant, the sales of a certificate of participation, and through Seattle City Light Green Up funding. Grant funding totals are below: Seattle City Light: $123,960 Department of Commerce Solar: $119,905 This array has produced 96 MWh of clean electricity since coming online July of 2023 through the time of writing (May 2024). Alongside clean energy development, the college has made significant investments in energy efficiency and water savings financed through a COP and commerce grants as an Energy Savings Performance Contract. The total project cost was XXX and included upgrades to the HVAC system, LED lighting upgrades, building envelope sealing, and water efficient appliances upgrades. Most of this work was complete.

Short-Term Strategy

- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development

Compliance with the Clean Building Performance Standard is a unique opportunity to advance emissions reductions in the coming biennia. As a part of Seattle Colleges compliance strategy, each campus will be developing and implementing operation and maintenance programs and energy management plans. The Operations and Maintenance programs will standardize and document procedures for preventative maintenance of energy consuming equipment to ensure efficient operations. The Energy Management Plans will include outreach and engagement to promote energy efficient practices for building occupants and consolidate and prioritize energy efficiency opportunities on campus. Funding has been allocated by the State Board of Community and Technical Colleges to advance submetering across the Seattle Colleges district to support better energy monitoring and reporting. This will enable building by building energy benchmarking. Alongside this, the district is investigating opportunities to implement an Energy Management Information software on campus to advance proactive energy management Alongside this, Seattle Central College and North Seattle College will be developing decarbonization plans as required by HB 1390. These plans will map up the campus strategies for deep decarbonization of heating and cooling systems and the pathway to compliance in the 15-year implementation timeframe. North Seattle College will be completing a facilities condition assessment to evaluate the useful life and replacement of campus equipment, which will support the identification of equipment nearing the end of useful life that can be replaced with electrified or higher efficiency equipment. Seattle Central College is in a multiyear effort to replace its fossil-fueled steam with an all-electric, heat pump based, low carbon impact heating and cooling system to serve a network of campus buildings. Decarbonizing district heating and cooling systems is identified as a key action in the State Energy Strategy, with publicly owned buildings presenting a key opportunity to lead by example. The project, called the Eco District, is finalizing the capital stack to begin construction and the purchase of equipment. The intention is to leverage HB 1777 energy as a service financing model. Seattle Central College has invested significant time and capital to evaluate the feasibility of the project, working with consulting partners who have completed the permit design drawings. All elements of the conversion have been bid out through a competitive process run by the state and supported through an interagency agreement. The initial implementation is sized to serve over 500,000 square feet of buildings and for future expansion to four additional districts on campus. Seattle Colleges will also continue to take advantage of opportunities to develop clean energy resources on campus through grant funding opportunities, with a focus on solar energy development.

Long-Term Strategy

- Transportation
- Facilities

- Clean & Renewable Electricity
- Equity & Environmental Justice
- Agency-specific or other strategies

Seattle Colleges is committed to meeting state and local regulations for greenhouse gas emissions. By 2030, Seattle Colleges need to reduce emissions by 45% from our 2005 baseline. By 2040, Seattle Colleges will need to reduce emissions by 70%. Seattle Colleges is subject to the City of Seattle Building Emissions Performance Standard, which requires the campus to hit emissions intensity targets for our larger buildings beginning in 2031. Across Seattle Colleges, we plan to aggressively pursue energy efficiency and resource conservation strategies. A key part of this work is the development of an updated sustainability plan for the district to facilitate the identification and prioritization of greenhouse gas emissions reducing measures. Alongside this effort, the Seattle Colleges district sustainability committee will be reconvened as a governance body for sustainability initiatives and to bring together campus stakeholders to advance emissions reduction and sustainability measures. The core focus for greenhouse gas reduction will be on colleges' facilities as the largest source of campus emissions, representing 99% of all emissions from Seattle Colleges. The district sustainability plan will set out targets for energy efficiency, clean energy development, and electrification of transportation that will provide a data driven strategy to come into compliance with the State Agency Greenhouse Gas Leadership Act and the Seattle Building Emissions Performance Standard.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible

Seattle colleges will investigate moving to EVs as funding permits. At this time college-owned fleet vehicles are not a major greenhouse gas emitter (especially when compared to facilities).

Facilities

- Electrify building space heating, hot water and cooking
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Track building energy use by metering and benchmarking each building over 10,000 square feet.
- Operational or organizational changes: Hire a resource conservation manager (RCM)
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption

Facilities represent the largest part of the Seattle Colleges greenhouse gas emissions footprint and the largest opportunities for decarbonization. Energy efficiency projects represent the most attainable emissions reduction project type because of the cost savings and payback period for investments. However, Seattle Colleges recognize that energy efficiency alone will not meet the emissions reductions targets for 2030 and beyond. Decarbonization plans at Seattle Central

College and North Seattle College will provide a roadmap for deep campus decarbonization and require their implementation by 2040. These plans focus on the decarbonization of campus heating and cooling systems. Alongside this, the plans will document the energy efficiency opportunities which can be prioritized for funding through grants and capital allocations. Energy as a Service legislation and grant opportunities can be leveraged for funding after feasible decarbonization pathways are identified through this planning effort. However, additional funding will be needed to fully implement the decarbonization plans because they will require significant capital investment. South Seattle College will be evaluating opportunities for decarbonization and electrification on campus to be implemented in the long-term, alongside existing efforts for energy efficiency. The campus does not have an existing district energy system and will be determining if electrification of individual buildings or the installation of a new district system would be the most cost-effective, feasible and sustainable strategy. Energy Management Plans and Operations and Maintenance program developed as a part of the Clean Building Performance Standard will be continually updated to advance Seattle Colleges stewardship of our built environment to maximize efficient operations, tenant engagement, and proactive energy management.

Clean & Renewable Electricity

On-site renewable energy generation

The colleges continue to invest in on-site rooftop solar, alongside storage to advance energy resilience.

Equity & Environmental Justice

Environmental justice is at the core of Seattle Colleges mission. Every decision is centered around a transition to becoming anti-racist and serving traditionally underrepresented communities that the Colleges serve. The core focus of environmental justice work includes partnerships with community organizations and using college assets for education and expansion of student support. Seattle Colleges is seeking opportunities to connect the campus community to the justice considerations inherent in climate adaptation planning through facilitated activities.

Agency-Specific Strategies

Seattle Colleges use investment in clean energy to partner with academic programs including the Sustainable Building Science Technology Program and other STEM programs to create “living laboratories” where students can gain hands-on experience and understanding of clean energy through interacting with systems and data generated through energy efficiency and clean energy projects. This partnership continues to expand due to the committed effort of a group of leaders, facility professionals, faculty, and staff.

Challenges & Barriers

Budget limits, increasing construction material and labor costs, and staff capacity limit the Colleges’ ability to deliver against greenhouse gas reduction goals. For example, despite historic

inflation rates, capital allocations for minor and major projects are not increasing. These projects are scoped as like-type replacement (for example for air handling units that are natural gas fueled). Only limited capital is being provided to cover inflation let alone to re-engineer, install, and commission systems that fuel switch from gas to electric. Furthermore, utility rebates that are typically available for increasing system efficiency are not provided when fuel switching from gas to electric occurs, meaning that new equipment will use natural gas for its existing lifespan (10 – 20 years) Despite numerous funding opportunities being available for energy efficiency and clean energy development, staff capacity is limited in pursuing these grant opportunities. The sustainability manager position supports these efforts, but additional staff would allow the colleges to pursue funding opportunities more effectively.

Social and Health Services, Department of

Agency Actions

Fleet Electrification and EVSE Planning and Installation DSHS utilizes two separate fleets, DES leased (located at a majority of the leased facilities) and DSHS owned vehicles (located at the agency owned facilities). There are currently 518 leased vehicles and 600 owned vehicles. During 2022 and 2023 DSHS replaced a total of 63 vehicles with Electric Vehicles (EV), as well as increased the EV infrastructure to support the increased EV fleet. Below is a breakdown of the EV fleet since 2021. 2021 – Leased 22 Owned 1 = 23 EVs 2022 – Leased 24 Owned 21 = 45 EVs (22 added to fleet in 2022) 2023 – Leased 58 Owned 28 = 86 EVs (41 added to fleet in 2023) Current – Leased 66 + Owned 28 = 94 EVs (8 added to fleet YTD) Installed EVSE at Leased and Owned Facilities 2022 - 4 ports 2023 - 4 ports Created an EVSE Implementation plan and opened EVSE design projects with DES Real Estate Services (RES) for 28 leased facilities, many of which are collocations with DCYF. Requested funding to install electrical infrastructure to support the planned increased use of battery electric vehicles (BEVs) for both DSHS fleet and staff-owned vehicles. Endorsed the use of electric vehicles through the agency. Leased Facilities Right sized square footage in the leased facilities portfolio. 2022– 2,221,797 square feet 2023– 2,117,463 square feet Owned Facilities. Requested funding to install electrical infrastructure to support the planned increased use of battery electric vehicles (BEVs) for both DSHS fleet and staff-owned vehicles. Endorsed the use of electric vehicles on all our campuses. Western State Hospital. Constructed a state of the art 350 bed forensic hospital and 120 bed nursing facility. Both facilities are planned to be Zero Energy. Demolished several older buildings on the Western State Hospital campus to make room for the new 350 bed forensic hospital. Eastern State Hospital. Installed additional photovoltaic systems on campus to support energy independence. Requested and received funding through the Department of Commerce to install electric vehicle charging stations. Fircrest School. Removed the Fircrest School campus from a distributed steam heating to decentralized heating sources. The Legislature has approved funding to continue to the installation heating and cooling systems for the living cottages. Requested funding to install decentralized heating systems at multiple buildings at the Fircrest School Campus. Completing design efforts to construct a Net Zero Energy Capable nursing facility. Design calculates production of nearly 40% of the energy consumed. Rainier

School. Evaluated the thermal load for the campus related to the existing centralized steam plant. Increased the efficiency of HVAC units on the campus by installing modernized systems.

Short-Term Strategy

- Transportation
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development

Fleet Electrification Install EVSE at all DSHS owned facilities and leased facilities to support fleet electrification as funding allows. Replace ICE vehicles with BEV vehicles when vehicle type is available. Leased Facilities Continue to right size DSHS leased facilities and move from privately owned properties to State owned properties when the locations support our business needs. Owned Facilities. Request funding to install electrical infrastructure to support the planned increased use of battery electric vehicles (BEVs) for both DSHS fleet and staff-owned vehicles. Endorse the use of electric vehicles on all our campuses. Western State Hospital. Begin construction efforts on a state of the art 350 bed forensic hospital and 120 bed nursing facility. Both facilities are planned to be Zero Energy. Eastern State Hospital. Replace existing roofing systems at several buildings while adding additional insulation and reflective roofing systems to reduce heat island effect. Olympic Heritage Behavioral Health. Replace existing roofing system while adding additional insulation and reflective roofing systems to reduce heat island effect.

Improve existing heating, ventilation, and air conditions systems and controls building wide. Total Confinement Center – McNeil Island. Replace existing heating, ventilation, and air conditions systems and controls at several buildings on campus. Fircrest School Residential Habilitation Center. Remove the Fircrest School campus from a distributed steam heating to decentralized heating sources. The Legislature has approved funding to continue to the installation heating and cooling systems for the living cottages.

Request funding to install decentralized heating systems at multiple buildings at the Fircrest School Campus. Construct a Net Zero Energy Capable nursing facility. Design calculates production of nearly 40% of the energy consumed. Lakeland Village Residential Habilitation Center. Replace leaking steam lines campuswide to be more efficient. Yakima Valley School Residential Habilitation Center. Replace exterior failed windows on the main administrative building.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Agency-specific or other strategies

The DSHS long-term strategy to reduce greenhouse gas emissions falls in three categories: 1) Leased Facilities We will continue to right-size our leased facilities to meet our business needs and promote telework for our employees whenever practical and effective. We will utilize remote meeting technology to reduce commuting requirements and improve equity. We will seek out energy efficient buildings that are close and convenient for our clients through the DES RES RFP process. 2) Owned Facilities and Campuses We will continue to assess our buildings and request funding and execute capital improvement projects to improve the energy efficiency of our buildings. We will design new buildings to be zero net-energy capable with low-embodied carbon construction. We will request funding and execute projects to electrify our campus operations. We will analyze our maintenance operations and create operating energy management systems. 3) Fleet and Transportation We will continue to electrify our owned and leased vehicle fleets following vehicle replacement schedules. We will analyze our owned fleets and campuses and update our fleet electrification and EVSE implementation plan to include both owned and leased facilities and fleets. When BEV replacement vehicles are not available, we will seek out other lower-carbon fuel vehicles.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Limit trips in state vehicles by replacing in-person meetings with remote options
- Utilize biofuels or other alternative strategies to lower emissions where BEVs are not possible

Fleet and Transportation We will continue to electrify our owned and leased vehicle fleets following vehicle replacement schedules. When BEV replacement vehicles are not available (heavy equipment, etc.), we will seek out other lower-carbon fuel vehicles. We will analyze our owned fleets and campuses and update our fleet electrification and EVSE implementation plan to include both owned and leased facilities and fleets. We have hired an Energy Efficiency Management for fleet electrification and EVSE project development, change management, and ongoing electric fleet management and are seeking funding to make this a permanent position. Our Leased Facilities Space Standards and HRD Policies promote telework for employees whenever feasible and effective for business needs.

Facilities

- Electrify building space heating, hot water and cooking
- Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Track building energy use by metering and benchmarking each building over 10,000 square feet.

- Operational or organizational changes: Hire a resource conservation manager (RCM)
- Buy efficient IT equipment and appliances
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption
- Leverage new leases and lease renewals to electrify heating and reduce energy use
- Change space use allocations to reduce occupied square footage
- Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Ensure any new leased square footage is all-electric and energy efficient

We will continue to right-size our leased facilities to meet our business needs and promote telework for our employees whenever practical and effective. Leased Facilities Standards requires that employees that work less than four days per week use shared workspaces or hotel workstations and size our facilities to this standard. Our 27-31 Leased Facilities Six Year Plan projects a reduction of 148,708 square feet and moving 126,359 square feet from privately leased facilities to state owned facilities. We will utilize remote meeting technology to reduce commuting requirements and improve equity. We will seek out energy efficient, all-electric buildings that are close and convenient for our clients through the DES RES RFP process. 2) Owned Facilities and Campuses We will continue to assess our buildings and request funding and execute capital improvement projects to improve the energy efficiency of our buildings. We will design new buildings to be zero net-energy capable with low-embodied carbon construction. We will request funding and execute projects to electrify our campus operations. We will analyze our maintenance operations and create operating energy management systems. Western State Hospital. Begin construction efforts on a state of the art 350 bed forensic hospital and 120 bed nursing facility. Both facilities are planned to be Zero Energy. Eastern State Hospital. Replace existing roofing systems at several buildings while adding additional insulation and reflective roofing systems to reduce heat island effect. Olympic Heritage Behavioral Health. Replace existing roofing system while adding additional insulation and reflective roofing systems to reduce heat island effect. Improve existing heating, ventilation, and air conditions systems and controls building wide. Total Confinement Center – McNeil Island, Replace existing heating, ventilation, and air conditions systems and controls at several buildings on campus. Fircrest School Residential Habilitation Center.

Remove the Fircrest School campus from a distributed steam heating to decentralized heating sources. The Legislature has approved funding to continue to the installation heating and cooling systems for the living cottages. Request funding to install decentralized heating systems at multiple buildings at the Fircrest School Campus. Construct a Net Zero Energy Capable nursing facility. Design calculates production of early 40% of the energy consumed. Lakeland Village Residential Habilitation Center. Replace leaking steam lines campuswide to be more efficient. Yakima Valley School Residential Habilitation Center Replace exterior failed windows on the main administrative building.

Clean & Renewable Electricity

- On-site renewable energy generation

All new capital projects are designed to include on-site renewable energy generation including the new Western State Hospital, new Wester Nursing Facility, new Fircrest Nursing Facility, and Brockmann RTF campus (multiple buildings).

Equity & Environmental Justice

We are updating and integrating our outward facing service delivery applications for clients to improve efficiency and accessibility for services across the whole DSHS enterprise. We are utilizing mobile DSHS Community Service Offices to provide services in underserved and overburdened communities. This is a more efficient, flexible, and nimble approach than creating more leased office space statewide. Through our Leased Facilities Six Year Strategic Planning process, we analyze facility locations for accessibility for vulnerable client populations and place new facilities in close proximity to the overburdened communities that they serve.

Planning & Budget Development

- Facility or campus master plans
- Funding greenhouse gas emissions reduction priorities
- For SEEP agencies: Carbon Reduction Investment Budget (CRIB) priorities
- Electrification and feasibility plans/studies for district heating systems

The Office of Capital Programs (OCP) prioritizes energy efficient projects in its 10-year Capital Plan and budget requests. The Leased Facilities and Maintenance Operations (LFMO) team prioritizes energy efficiency and all-electric buildings when analyzing proposals for new building through the RFP process. OCP and LFMO take every opportunity to apply for available funding and grants (DES, Commerce, Federal, etc.) for energy efficiency improvements, EVSE, etc.

Agency-Specific Strategies

We are updating and integrating our outward facing service delivery applications for clients to improve efficiency and accessibility for services across the whole DSHS enterprise. This will allow clients to access DSHS Human Services more effectively remotely and cut down on duplicate applications, etc.

Challenges & Barriers

Funding for energy efficiency improvements on owned buildings is often in competition for other deferred maintenance and preventative maintenance projects. Lack of funding for energy management systems and staff. Lack of funding for RCM staff. The DSHS owned facility portfolio is quite old with antiquated systems. Fleet Electrification Lack of funding to install EVSE Lack of funding for staff to manage and maintain BEV fleet & EVSE Lack of adequate electrical service availability at facilities Increased upfront cost of electric vehicles Ongoing EVSE network costs Competing needs and priorities of campus electrification and clean building requirements versus EVSE installation BEV availability Perception of limited lifetime of BEVs (10-15yrs) vs gas vehicles (25-30yrs).

Transportation, Department of

Agency Actions

During the 2022 and 2023 calendar years, the Washington State Department of Transportation (WSDOT) completed the following actions to reduce our Scope 1 and 2 greenhouse gas emissions per SEEP category:

Facilities Emissions Reduction Actions:

- On-site solar generation installed at ORMAF Administration and Shops buildings.
- Boiler replacement at SWR HQ to move buildings towards all electric heating.
- Preliminary Energy Savings Performance Contracting (ESPC) program audit completed for Northwest Region Headquarters.
- Preliminary ESPC program audit completed for Southwest Region Headquarters (SWR HQ).
- ESCO Hood Canal Bridge project through DES completed for bridge lighting, heating, and cooling in control towers.
- UPS battery replacement at the Dayton Avenue TMC.
- HVAC replacement at the Vancouver Regional Headquarters Building 1.
- Canopy roof replacement at Corson Avenue Regional Headquarters Building 1.
- Power purchasing agreements with PSE Green Direct and Avista Solar Select.
- HVAC replacement at the Forest Learning Center safety rest area.
- Dayton Regional Headquarters Building Renovation.
- Toutle NB/SB Roof Replacements.

Transportation – Fleet Vehicle Emissions Reduction Actions:

- Replaced 20% of total diesel fuel consumption with biodiesel and renewable diesel (R99).
- Replaced 20% of total gasoline fuel consumption with renewable gasoline.
- Continuing replacement of fleet vehicles with EVs, some highlights include:
- All-electric van received.
- VW ID4 received.
- Three Teslas received.
- Two Ford lightnings received.
- Two Chevy Silverados received.
- Installed solar power EV charging station (DES) in Bellevue.
- Installed DC fast charger in Pasco.

Transportation – Aviation Emissions Reduction Actions:

- Implemented efficient taxi, takeoff, and landing practices to reduce jet fuel consumption.

- Installation of pilot-controlled airport lighting that only turns on when an aircraft is using the facility.

Transportation – Washington State Ferries Emissions Reduction Actions:

- Washington State Ferries agreement with Puget Sound Energy for PSE Green Direct to purchase renewable electricity.
- Washington State Ferries agreements with utility providers outside of Puget Sound Energy's jurisdiction (SnoPUD, SCL, and Tacoma Power) for enrollment in green tariff programs to cover% of grid electricity that is non-renewable.
- Solar panel installations at the Mukilteo Ferry Terminal and Bainbridge Island Ferry Terminal.
- Continual use of biodiesel fuel to supplement 10% of diesel use in vessels.
- Began design of new 160 Car Class Hybrid Electric Vessels.
- Awarded shipbuilding contract to Vigor for Jumbo Mark II Hybrid Electric Conversions.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice

WSDOT is taking progressive action to reduce our Scope 1 and 2 greenhouse gas emissions over the next two biennia. These actions align with our long-term strategy discussed in the following section and showcase our intentions towards taking meaningful climate action to reduce emissions in line with the statutory requirements for state agencies. Below are the actions WSDOT plans to take per SEEP category over the next two biennia (2025-27 and 2027 -29):

Facilities Reduction Actions:

- Energy efficiency improvements through roof replacements scheduled at 60 WSDOT facilities.
- Energy efficiency improvements through HVAC replacements scheduled at 43 WSDOT facilities.
- Energy efficiency improvements through HVAC control updates scheduled at 7 WSDOT facilities.
- Energy efficiency efforts through HVAC improvements scheduled at 2 WSDOT facilities.
- Energy efficiency efforts through lighting replacements scheduled at 2 WSDOT facilities.
- Implementing clean energy compliance at the Southwest Regional Headquarters Administrative building.
- Hire a Resource Conservation Manager (RCM) Position and a Supporting RCM Staff Position to help manage energy efficiency and electrification efforts.

Transportation – Fleet Vehicle Emissions Reduction Actions:

- Continue replacing vehicles with electric vehicles as EVs become available on the market.
- Increase renewable diesel (R99) usage in vehicles after trial on east side is completed.
- Continue B20 usage for diesel vehicles. Start phasing out B20 to move towards R99 use.
- Pilot units for proof of concept with hydrogen fuel cells technologies for heavy duty vehicles.
- Installation of hydrogen cell fuel site(s), pending success of pilot units.
- Hydrogen fuel cell vehicles to replace heavy-duty diesel vehicles, pending success of pilot units.
- Scoping studies to be completed across WSDOT sites to identify EVSE infrastructure opportunities.
- Continue EVSE install at facilities once scoping is completed.

Transportation – Aviation Emissions Reduction Actions:

- Replace piston airplane with electric vertical take-off and landing (eVTOL) airplane.

Transportation – Washington State Ferries Emissions Reduction Actions:

- Awarded contract for JMII Conversion #1- Wenatchee - completion expected 2025.
- Awarded contract for JMII conversion #2 – Tacoma – completion expected 2026.
- Awarded contract JMII conversion with option for vessel #3 – Puyallup – completion expected 2027 (option not yet awarded).
- Begin Design for Shoreside Charging – Seattle - completion expected 2025.
- Begin Design for Shoreside Charging - Bainbridge -completion expected 2025.
- Begin Design for Shoreside Charging - Bremerton -completion expected 2025.
- Design for Shoreside Charging – Clinton - completion expected 2025.
- Issued an Invitation for Bid for 5 Hybrid Electric 160 Car Class Vessels - completion expected October 2024
- Award Construction Contract for Clinton Shoreside Charging – 2026.
- Begin Design Shoreside charging – Kingston – completion expected 2026.
- Award Construction Contract for Bainbridge Shoreside Charging – 2026.
- Award Construction Contract for Bremerton Shoreside Charging – 2026.
- 160 Car Class Hybrid – completion expected 2028.
- 160 Car Class Hybrid – completion expected 2028.
- 160 Car Class Hybrid – completion expected 2029.
- 160 Car Class Hybrid – completion expected 2029.
- 160 Car Class Hybrid – completion expected 2030.
- Shoreside charging – Seattle (Slip #3 for Bainbridge) – completion expected 2028.
- Shoreside charging – Seattle (Slip #1 for Bremerton) – completion expected 2028.
- Shoreside charging – Kingston – completion expected 2028.
- Shoreside charging – Bremerton – completion expected 2028.
- Shoreside charging – Southworth – completion expected TBD.

- Shoreside charging – Vashon – completion expected TBD.
- Washington State Ferries agreement with Puget Sound Energy for PSE Green Direct to purchase renewable electricity.
- Washington State Ferries agreements with utility pro

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Agency-specific or other strategies

WSDOT has developed and maintains a greenhouse gas reduction plan that identified the actions we plan to take to reduce agency emissions to meet statutory greenhouse gas limits. This plan identifies our long-term strategy to improve agency energy efficiency and switch to low- or zero-carbon energy sources. This transition will take time, but investments and meaningful climate actions are underway. Currently, the agency already has electric vehicles, upgraded building heating and lighting to improve efficiency, and is working on the first hybrid ferry vessels. Over the coming decades, the agency will continue these efforts and focus on expanding electric vehicle use and infrastructure, improving building efficiency to meet Clean Building Act requirements, and implementing the Washington State Ferries' System Electrification Plan. This work takes time, investments, and planning. Our strategy considers current and expected technologies and includes meeting related requirements. Not all the technologies we need are available today. Fully meeting long-term greenhouse gas limits will depend on the availability of renewable fuels and new technologies. This makes progress tracking and monitoring a critical feedback loop into our strategy. We will continue monitoring our annual greenhouse gas emissions inventory and tracking progress towards our 2030, 2040, and 2050 goals. If progress indicates we are not making reductions as expected, we will re-evaluate and identify alternative pathways to mitigate residual emissions. WSDOT is committed to evaluating this long-term strategy every two years in line with state expectations and will ensure assumption and actions are updated accordingly.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible
- Limit trips in state vehicles by replacing in-person meetings with remote options
- Utilize biofuels or other alternative strategies to lower emissions where BEVs are not possible

Employee Travel: Key strategies and planned actions that we are pursuing to reduce employee travel include:

- Development of an agency-wide Teleworking Manuel.

- Implementing the Teleworking Manuel by providing flexible working schedules and telework options for employees.
- Continual encouragement of vehicle mile travel reductions for employees where feasible.

Fleet Vehicles: WSDOT has been an early adopter of electric passenger vehicles and electrification is a critical part of our long-term strategy. These efforts have been managed by our Transportation Equipment Fund (TEF) division that oversees fleet vehicles in addition to WSDOT fueling stations. As more vehicle types become available, we will expand the use of electric vehicles to other types, such as vans, SUVs, and pickups. Where EV use is not feasible for WSDOT operational needs, we plan to utilize alternative fuels and strategies to reduce these emissions. To support increased EV and alternative fuel implementation, the agency will increase our capacity to charge fleet vehicles and obtain and store alternative fuels (e.g., R99 and hydrogen fuel cell). Key strategies and planned actions the Transportation Equipment Fund is taking to reduce greenhouse gas emissions include:

- Continue fleet EV replacement as vehicles become available on the market until fleet is fully electrified where feasible.
- Continue installing EV charging infrastructure across WSDOT fueling stations and facilities.
- Increase use of R99 to replace biodiesel and B20 use.
- Pilot units for hydrogen fuel cell technology use in heavy-duty vehicles and implement hydrogen fuel cell use once pilot is complete.
- Install hydrogen fuel cell fueling infrastructure at applicable fueling stations.
- Aviation: Key strategies and planned actions the WSDOT Aviation division is taking to reduce greenhouse gas emissions includes:

WSDOT plans to pursue funding for the replacement of our only owned aircraft, a piston airplane, with an electric vertical take-off and landing airplane. This effort is expected to significantly reduce our greenhouse gas emissions from aviation mobile combustion, while simultaneously decreasing noise pollution to surrounding communities.

Washington State Ferries: Washington State Ferries (WSF) has completed extensive sustainability and decarbonization planning for current and future operations to meet statutory greenhouse gas goals and continues to transparently report these efforts to the public. Noteworthy planning documents include the 2040 Long Range Plan, System Electrification Plan, Decarbonization Plan, and the current biennium's Sustainability Action Plan. Links to these documents are provided in the References section of this plan. Key strategies and planned actions the Washington State Ferries is taking to reduce greenhouse gas emissions includes:

Retrofit, new-build, and retirement of conventional vessels until the fleet consists of 22 hybrid-electric vessels and 4 diesel powered vessels.

Terminal electrification capital improvements to support hybrid-electric ferry vessels and provide shoreside charging at 16 terminals.

- Switch diesel fuel use from conventional diesel to renewable diesel.

- If site selected by City of Bainbridge Island: Solar panel installation at the Eagle Harbor Maintenance Facility or Bainbridge Terminal Overhead Loading Structure.
- Feasibility study and planning for solar panel installations at additional ferry terminals (Seattle Colman Dock, Bremerton Ferry Terminal, and Bainbridge Terminal Overhead Loading Structure).
- WSF agreements with Puget Sound Energy for PSE Green Direct to purchase renewable electricity.

WSF agreements with utility providers outside of Puget Sound Energy's jurisdiction (SnoPUD, SCL, and Tacoma Power) for enrollment in green tariff programs to cover% of grid electricity that is non-renewable.

Facilities

Our long-term Facilities strategy focuses on a variety of greenhouse gas reduction actions to reach out 2030, 2040, and 2050 goals. We will take actions to meet the Clean Building Act requirements, EUI requirements, and develop and implement operation and maintenance requirements. This work includes developing energy management and operation and maintenance plans, meeting Clean Building Action and EUI requirements, implementing state of good repair practices, preservation activities, transitioning buildings from natural gas to electric heating systems, implementing zero energy capable in renovations/construction, incorporating lower embodied carbon alternatives, and replacing equipment and fixtures that are more efficient to reduce energy consumption. Key strategies and planned actions that we are pursuing to reduce facilities' emissions include:

Electrification of natural gas heating systems is being phased in across WSDOT facilities where practical. These efforts are evaluated on cost considerations, feasibility of building's electrical load, and equipment life span.

Zero energy design is incorporated into scoring criteria for programmatic design and projects and implemented if practical and feasible.

Developing Energy Management and Operation and Maintenance plans.

Utilize the ESPC Program to implement state of good repair Operation, Maintenance, and Preservation activities at WSDOT facilities to comply with Clean Building Performance Standards.

WSDOT benchmarks energy use for all buildings with more than 10,000 square feet of conditioned space, or groups of buildings totaling over 10,000 square feet on a campus in EPA's Energy Star Portfolio Manager as required in RCW 19.27A.190.

Increase resources available by hiring a Resource Conservation Manager (RCM) Position and a Supporting RCM Staff Position to help manage energy efficiency and electrification efforts.

WSDOT requires all appliances purchased with program funds to be energy star certified if the appliance is eligible for a rating.

Since the majority of WSDOT's portfolio is owned, and directly supports highway operations, it's not practical or possible to use less space and achieve energy savings. WSDOT does support

operational efficiencies and will have a tenant educational element associated with Clean Buildings Performance Standard compliance.

WDOT is required to implement either ZE or ZEC in new construction. The agency also looks for ways to incorporate lower embodied emissions outside of requirements and will perform these activities if appropriate for the budget and scope.

Install solar panels where feasible at facilities.

WSDOT agreements with Puget Sound Energy's PSE Green Direct for facilities.

WSDOT agreements with Avista Solar Select for renewable energy procurement.

Clean & Renewable Electricity

Onsite renewable energy generation

Power purchase agreements (PPAs) for renewable energy purchases (examples include PSE Green Direct and Avista Solar Select)

WSDOT recognizes the important of renewable electricity in combination with our electrification efforts. While we anticipate the grid to be net zero by 2040 in alignment with CETA, we understand that taking progressive action to acquire and generate renewable electricity is needed to mitigate climate change in the medium and long-term. WSDOT reduces electricity emissions through two key strategies: On-site renewable energy generation. WSDOT, through the efforts of our Facilities and Washington State Ferries divisions, plan to implement solar panel installations at strategic locations across our organization. We understand the need to reduce demands on the electric grid system and will continue to pursue opportunities for on-site renewable energy generation. Power purchase agreements for renewable energy purchases. WSDOT currently participates in Puget Sound Energy's PSE Green Direct program and Avista Solar Select, among other green tariff programs where available through the local utility provider. We plan to continue these programs into the foreseeable future and will continue to look for future opportunities to purchase renewable energy.

Equity & Environmental Justice

Implementing the environmental justice requirements of the HEAL Act and Climate Commitment Act are works in progress that will require ongoing coordination with the State Environmental Justice Council, long-term change management, and continuous improvement over time. WSDOT's environmental justice efforts within climate mitigation programs include ensuring statutory apportionment of Climate Commitment Act funding towards overburdened communities and vulnerable populations (35%) and tribes (10%); conducting environmental justice assessments for applicable significant agency actions; implementing a community outreach, education, and technical assistance program for overburdened communities to develop community-centered carbon reduction strategies; and continuing to meet our commitments specified in the agency's plans on Community Engagement, Environmental Justice Implementation, and Diversity, Equity, and Inclusion. Given its prominent role within WSDOT's greenhouse gas reduction strategy, it is notable that WSF is uniquely challenged with environmental justice considerations due to the unique nature of its operations. Ferry

operations and project areas impact more than just surrounding communities within a specified radius (e.g., a half-mile radius that is typical for public transit analysis). Disruptions to operations can cause undue burden and prevent valuable resources from reaching communities with limited accessibility. This brings awareness to the sensitivity of ferry-served communities and the importance of effective community engagement to ensure all aspects of impacts are accounted for, including goods and services transportation, medical access, resource access, emergency response, among many other critical community considerations. WSF will be performing environmental justice assessments of proposed shoreline charging projects as part of its electrification program, among other HEAL Act applicable projects. WSF is also completing community engagement plans for each ferry terminal electrification project to guide community outreach for the electrification program. The foundation of the community engagement plans will use data from a previously completed demographic study and provide a programmatic approach towards community engagement.

Planning & Budget Development

- Deferred maintenance and equipment replacement schedules
- Sustainability action plans

WSDOT's long-term greenhouse gas reduction strategy utilizes two planning and development strategies to reach our 2030, 2040, and 2050 limits, which include: Deferred maintenance and equipment replacement schedules. TEF developed a fleet electrification implementation plan for WSDOT vehicles, and the Facilities division performs equipment replacement and upgrade plans based on equipment lifecycles. These plans guide our long-term strategy for replacing vehicles and equipment as they become due for replacement and provide a planning roadmap to follow in future biennia.

Sustainability action plans: WSF develops a Sustainability Action Plan to identify action-oriented focus areas and communicate specific actions over the 2023-25 biennium to reach their ambition sustainability goals. Reducing agency greenhouse gas emissions is an important focus area of this plan and provides a tracking mechanism for WSF to report on progress towards reaching established goals.

Agency-Specific Strategies

WSDOT operates thousands of lights along our highways. This emission source is unique to WSDOT operations from other state agencies and our long-term strategy is by increasing energy efficiency and reduce electricity consumption. The agency has started and will continue to replace highway lighting with LED lights. LEDs are being phased in over several biennia so that when the time comes to replace the fixtures that work is also staggered. Due to challenges obtaining fundings, WSDOT has put a hold on the replacement of the high-pressure sodium highway lights outside of replacements when existing lightbulbs burn out. Refer to the Barriers and Challenges section for more information. A proviso in the 2024 Transportation Budget directed WSDOT to explore alternative uses of the state's highway rights of way to accommodate clean energy transmission and solar generation facilities. WSDOT is required to report to the legislature by January 15, 2025, with information on highway rights of way that

are suitable for potential clean energy facility siting as well as opportunities for policy updates that will better enable such accommodation.

Challenges & Barriers

The Legislature has been slow to understand that if they pass requirements for all building owners (public and private), agencies need funds to meet these requirements. This is particularly challenging for the Clean Buildings Act because there are penalties for not meeting the requirements. SEEP continues to work on communicating this need. WSDOT ability to meet requirements of Clean Building Act due to lack of funding and budget needed to take actions. Challenge: Not all WSDOT facilities fall under the purview of the Facilities team. This can cause issues for the Facilities to have little to no control over facility upgrades, changes, or energy use. Barrier: Most WSDOT facilities are old and underfunded. This creates challenging conditions where EV charging is a structural strain and may cause energy outages at the facility. Underfunded buildings that lack electrical capacity prevent installation of EV charging infrastructure, making EV replacement and implementation not possible. Challenge: Lack of resources prevents Facilities team from being able to perform evaluation of each energy efficiency or electrification action taken. The team needs a full time Resource Conservation Manager to assist with these actions. Challenge: Due to lack of funding, WSDOT is unable to fund stand-alone building energy performance projects, preventing the program from being implemented on all projects. Because of the cost premium for the ESPC Program and limited funding, WSDOT is unable to utilize the program for all projects and must only implement the program in response to new requirements or equipment failure. Transportation – Fleet Vehicles Barrier: Continued supply chain issues and production backlogs affecting vehicle availability for EV replacement. Challenge: Continued education of staff on how to plan charging stops in long trips. Challenge: Operating activities and projects receive full funding; however, capital activities and projects are not fully funded. Capital activities and projects do not receive full funding, leading to implementation challenges. As a result, current backlog of capital equipment replacements needed is at $150M.

Challenge: Fuel sites are old and outdated to current requirements. Legislature wants electrification and is resistant to supporting efforts to update fuel sites without understanding complete implications of not upgrading. Proviso to provide Legislature fuel site replacement priority list begins December 1, 2024, and every year after. Challenge: Heavy-duty vehicles (e.g., dump truck) do not have uniform route structures and operated on double shifts. Heavy-duty vehicles (e.g., dump truck) are currently unable to be electrified due to load capacity for snow fighting, charging time, and range required for WSDOT operations. Transportation – Washington State Ferries: Challenge: Vessel upgrades and electrification may disrupt ferry operations and existing schedule. Implementing electrification efforts may cause delays in operating schedule. Challenge: Supply Chain issues with key electrical and system components. Minimum lead time for major electrical equipment is two years from time of order, requiring early specification and procurement. Risk: Shipbuilding - Qualified Vendors and getting competitive bids. Risk: Permitting the terminal improvement projects will need to meet various local and regulatory permitting requirements. Challenge: The ferry system does not currently have enough vessels or crew for the baseline demand. Current resources do not allow WSF to

meet current demand. Risk: Price volatility within the renewable diesel market. Risk: Uncertainty around availability of renewable diesel and reliability of supply. See attached greenhouse gas Emissions Strategy Worksheet for a full description of WSDOT's Barriers, Challenges, and Risk.

University of Washington

Agency Actions

2023: Completed a new, comprehensive greenhouse gas Inventory that includes embodied emissions in purchased goods and services as well as sources we have traditionally inventoried. (See attached document). 2023: Hired a project manager to establish and oversee the CARP (Campus Asset Renewal Program) which consists of two sub-programs: the ERP (Energy Renewal Program) to decarbonize our district energy system and the BRP (Building Renewal Program) to address deferred maintenance, which will result in higher-performing buildings that generate fewer emissions. 2023: Hired a consultant engineering firm (AEI) who is bringing in subconsultants Shannon & Wilson for geologic and permitting expertise and financing firm Ernst & Young, construction estimator firm Whiting-Turner. AEI is analyzing our district energy system and defining projects and estimating costs for decarbonizing the Seattle campus (the projects include recovering heat from chillers, from sewer lines and from Lake Washington, using thermal storage to create efficiencies, converting from using steam to distribute heat to using hot water, and upgrading electrical capacity to enable these electrification strategies). The project also involves exploring financing options: we are pursuing funds from the Inflation Reduction Act and the Climate Commitment Act. Ongoing work by CEUO (Campus Energy, Utilities and Operations) to expand our utility and building control metering and monitoring capacity to increase our ability to identify and correct poor performance or system failures. Ongoing work by CEUO (Campus Energy, Utilities and Operations) to identify and implement conservation opportunities. In 2024 we updated our ESCO contract to enable us to bring in outside firms for projects we have insufficient internal capacity to complete. In 2023 we increased our funding of the conservation program from $1M/year to $3M/year. Hired a Planning and Policy Specialist (in the UW Sustainability office) to help update the UW Sustainability Action Plan (which includes decarbonization along with many other sustainability efforts). 2022-present: Developed a proposal for an air travel emission reduction program and gave presentations to the campus community and to other sustainability professionals in Washington and Oregon describing this work. 2022-present: Updating the UW Green Building Standard to provide guidelines and requirements for construction projects. In addition to energy, this standard addresses water consumption, embodied carbon, health & well-being, ecology and equity. In 2022 completed a steam plant resiliency project upgrading the existing natural-gas-burning infrastructure. This resulted in a reduction of 10,000 mt CO_2 in 2023. Submitted for $292 in CCA dollars to fund the Clean Energy Transformation. These are projects that UW is seeking approval for from the State as part of the FY 2025 Capital Budget In 2022, the University of Washington-Fleet Services established a 10-year vehicle replacement plan focusing on electrification. Replacement times are based on depreciation end dates and vehicle class of a fleet inventory of over 700 vehicles. Three vehicle charging station construction

projects were launched in the fall of 2022 and are at various phases of construction from design, project bidding to mobilization and construction. Projects: N-26 parking lot: Install (38) (level 2) EV charging stations. E-02 parking lot: Install (74) (level 2) EV charging stations and provide infrastructure for future installation of (4) (level 3, fast) EV charging stations. E18 Solar Canopy Project. Installation of a 84 kW AC (100 kW DC) solar array with infrastructure for additional EV charging stations for UW visitors, students, and employees Projects are funded by Transportation Services with grant funding by Seattle City Light (E18 Solar Canopy project $126,000) and Department of Commerce grant for implementation of charging infrastructure and charging stations all three sites ($355,500

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-Specific or Other Strategies

We will use the results of the greenhouse gas inventory published in early 2024 to inform the Sustainability Action Plan which we expect to complete in 2025. The planning process will solicit input from individuals across campus importantly including historically underrepresented perspectives. The plan will address many aspects of the university's operations that result in greenhouse gas emissions: energy, fleet, commuting, waste management, refrigerant management, anesthesia management, purchasing and air travel. The plan will also address environmental injustice. The engineering consultant group led by AEI will complete their initial report by the end of 2024. In 2025-2027 we will hire design and construction firms to implement the projects. By 2027-29 we anticipate that these projects will be in construction. As referenced above, UW has already made capital budget requests for clean energy and energy efficiency projects, plus supplemental budget requests for CCA dollars to decarbonize our campus infrastructure. By the end of 2027 we expect to have completed replacing our remaining pneumatically controlled buildings with digital controls and by 2030 will have added all major buildings to our OSI Pi database and analytics platform. By 2025 we expect to be spending $3M/year on conservation work and will maintain that level of funding indefinitely. UW has a draft proposal to start a new university-wide air travel emission reduction program. We anticipate that this program will include education/awareness, guidelines and support for developing and implementing policies and working with other institutions across the academy to develop initiatives and guidelines to reduce incentives to travel and to develop alternatives that support the mission of the university while reducing the need to fly. The targeted start date for phase I of this new program is July 2025. UW's new Green Building standard will be published in summer of 2024. Key elements of the plan include targets for energy use intensity, embodied carbon, water use intensity, life cycle cost assessments, and other holistic elements of sustainable buildings. The fleet electrification program will continue to be implemented. We anticipate that 50% of the fleet will be all-electric by 2027 and over 90% by 2032.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development

At a very high level, the long-term strategy for decarbonizing the district energy system on the Seattle campus is our 5-part strategy which consists of 1. Energy efficiency, 2. Converting from steam distribution to hot water distribution, 3. Centralizing cooling to enable heat recovery, 4. Electrifying heating with heat recovery/heat pump technologies plus thermal storage, and 5. Addressing process steam requirements when new, cost-effective technologies emerge. Building Renewal Plan & Green Building Standard: a #-year strategy to renovate or demolish poor-performing buildings. Renovation will follow the Green Building Standard which calls for high-performing buildings that exceed energy codes and prohibit new fossil fuel uses. Fleet electrification: Continue the 10-year plan to fully electrify the fleet. Implement a Green Revolving Fund to finance and incentive efficiency projects.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Limit trips in state vehicles by replacing in-person meetings with remote options
- Utilize biofuels or other alternative strategies to lower emissions where BEVs are not possible

In 2022, the University of Washington-Fleet Services established a 10-year vehicle replacement plan focusing on electrification. Replacement times are based on depreciation end dates and vehicle class of a fleet inventory of over 700 vehicles. Three vehicle charging station construction projects were launched in the fall of 2022 and are at various phases of construction from design, project bidding to mobilization and construction. Projects: N-26 parking lot: Install (38) (level 2) EV charging stations.
E-02 parking lot: Install (74) (level 2) EV charging stations and provide infrastructure for future installation of (4) (level 3, fast) EV charging stations. 3.E18 Solar Canopy Project. Installation of a 84 kW AC (100 kW DC) solar array with infrastructure for additional EV charging stations for UW visitors, students, and employees Projects are funded by Transportation Services with grant funding by Seattle City Light (E18 Solar Canopy project $126,000) and Department of Commerce grant for implementation of charging infrastructure and charging stations at all three sites ($355,500). Our newly-created Green Building Standard calls for no new fossil fuels and embodied carbon of <500kg CO_2e/m2 in primary materials. The GBS also requires connecting buildings to the District Energy System where applicable (the DES will be electrified per our energy renewal program).

Facilities

- Electrify building space heating, hot water and cooking
- Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Track building energy use by metering and benchmarking each building over 10,000 square feet.
- Operational or organizational changes: Hire a resource conservation manager (RCM)
- Buy efficient IT equipment and appliances
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption
- Leverage new leases and lease renewals to electrify heating and reduce energy use
- Change space use allocations to reduce occupied square footage
- Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Ensure any new leased square footage is all-electric and energy efficient

Electrify building space heating, hot water and cooking: Our Energy Renewal Program will transition the campus off of gas, by electrifying space heating, domestic water heating and cooking. Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions: Our newly-created Green Building Standard calls for no new fossil fuels and embodied carbon of <500kg CO_2e /m2 in primary materials. The GBS also requires connecting buildings to the District Energy System where applicable (the DES will be electrified per our energy renewal program). Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space: The Preliminary Annual Capital Budget for fiscal 2025 identifies “Limiting Growth” as one of 5 key strategies. “To support this effort, program growth that can be effectively housed in an existing facility renovated to suit the new use and address deferred maintenance should be considered the first option.” A key element of our new Green Building Standard is a required analysis of existing building stock for use as the first alternative before construction of a new facility. Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods: We have our own on-call ESCO firms for this purpose and frequently use ESCO services for energy efficiency improvement projects. Track building energy use by metering and benchmarking each building over 10,000 square feet: CEUO (Campus Energy, Utilities and Operations) will continue to expand utility and building control metering and monitoring better identify and correct poor performance or system failures. For tracking and benchmarking, UW has a new contract in place with software provider EnergyCAP which will help streamline and automate tracking and benchmarking buildings. Operational or organizational changes: Hire a resource conservation manager (RCM): We have a FT RCM in CEUO (Campus Energy, Utilities and Operations). Buy

efficient IT equipment and appliances: We have a procurement policy for buying Energy Star Equipment: https://finance.uw.edu/ps/resources/sustainable-green-purchasing Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption: We do some of this already and plan to address this with more deliberate strategies in the new SAP (Sustainability Action Plan). Leverage new leases and lease renewals to electrify heating and reduce energy use: Leases and leased facilities are included in UW's new Green Building Standard. Change space use allocations to reduce occupied square footage: This is a core principle of UW's new Campus Asset Renewal Program (CARP). A focus of CARP is no new net square footage and to renew and restore existing building stock. Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions: Yes, our new Green Building Standard has an aggressive requirement for a low EUI and very low embodied carbon emissions. Ensure any new leased square footage is all-electric and energy efficient: Yes, our new Green Building Standard addresses these elements for any new leased square footage.

Clean & Renewable Electricity

On-site renewable energy generation

Because we receive our electricity from a carbon-neutral utility (Seattle City Light), we've focused our decarbonization efforts elsewhere. We have a faculty-led student group that looks at opportunities for new solar installations on campus and have included them alongside efficiency projects to prioritize funding. Generally, the efficiency projects have out-competed the solar projects so we have relatively little activity in this area, but we anticipate looking at this in our new SAP and will prioritize a campus solar plan as a key renewables strategy.

Equity & Environmental Justice

This is a guiding principle of our existing SAP (Sustainability Action Plan) and will continue to be a core element and guiding principle of our new SAP.

Planning & Budget Development

- Facility or campus master plans
- Deferred maintenance and equipment replacement schedules
- Sustainability action plans
- Funding greenhouse gas emissions reduction priorities
- Electrification and feasibility plans/studies for district heating systems

Facility or campus master plans: The two major initiatives (described previously): ERP (Energy Renewal Program) and BRP (Building Renewal Program), known collectively as the CARP (Campus Asset Renewal Program) are featured in the Fiscal Year 2025 Preliminary Capital Budget. They were established in the summer of 2023 to address deferred maintenance issues and the objectives of the Clean Energy Strategy. The subprograms are strategically coordinated to realize implementation efficiencies, significant financial economies of scale, and long-term reductions in annual operating costs. Deferred maintenance and equipment replacement

schedules: The Building Renewal Program (BRP) will provide information to support prioritization at a facility level and is envisioned to provide a variety of "tools" that will allow a finite evaluation of the assets and systems within a facility for potential targeted investments. A recent Facility Condition Assessments performed by Intelligent Systems & Engineering Services provide the foundation for this work. Sustainability action plans: As mentioned above, the Sustainability Action Plan includes goals and actions related to reducing building EUI and carbon emissions from our fleet, energy infrastructure, air travel and commuting. Funding greenhouse gas emissions reduction priorities: Transportation Services has used grants (e.g. from Seattle City Light) as well as their own revenue to fund the replacement of ICE with electric vehicles and corresponding charging infrastructure. The CARP effort has received CCA funding and is receiving support from Ernst & Young to explore the potential to receive IRA funding. Electrification and feasibility plans/studies for district heating systems: The University of Washington commissioned an electrification study for its district energy system in 2013. The results of that study were two reports: Hot Water Conversion Study and Hot Water Conversion Study: Phase II.

Challenges & Barriers

With respect to decarbonizing our district energy system, our primary challenges are electrical capacity constraints, aging infrastructure, large campus building portfolio and funding. Maintaining sufficient resilience to protect sensitive loads (some electricity-dependent research and the campus medical center) without using fossil fuels.

Veterans Affairs, Department of

Agency Actions

To meet greenhouse gas emissions limits, the focus of WDVA's long-term greenhouse gas reduction strategy is based on the need to get sub-meters in place at our Port Orchard and Orting Facilities. This will provide WDVA with the proper data to understand and truly prioritize areas of need. Without the information WDVA's highest priority is to remove the overall reliance on steam heat at these facilities. This is currently being started at our largest building with the removal of steam heat and additional of electric HVAC systems for the 160,000 SF skilled nursing facility. Our current plan to add EV infrastructure to our owned facilities and start replacing vehicles to EV's as they become available will help to support the reduction of emissions. WDVA looks forward to adding planning and growth as we continue to reduce emissions and understand our biggest emission uses. Since WDVA's largest source of emissions are the two steam plants at the Washington Soldiers Home in Orting and the Washington Veterans Home in Port Orchard, our agency will be working to remove the need for the steam plant of over coming years. These two facilities have more than three quarters of our agency's owned footprint and the steam plants are operated on gas. Our first step in the process will be removing most of the 160,000 SF skilled nursing building in Port Orchard from steam heat. This will start in 2023 and continue through 2024. - DVA is working to replace the skilled nursing building in Orting, and this will be a zero-net-ready structure, replacing another high use building from the steam plant. DVA is also working to replace the skilled nursing building in

Spokane, and this will be a zero-net-ready structure. The Washington Department of Veterans Affairs (WDVA) has completed installation of three new EV chargers at our Washington Veterans Home, Port Orchard facility in 2023 and 2024. In 2021, WDVA's Central Office installed its first EV Charger for the agency.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity

WDVA is continuing to move away from our steam heat at our Washington Soldiers Home in Orting and Washington Veterans Home in Port Orchard. As part of that we will be moving forward with the removal of steam heat and installing new heating and cooling system at the Washington Veterans Home in Port Orchard. This will reduce the reliance on the inefficient steam system as we move over to an all-electric system for the heating and cooling of the building. The design was completed in early 2024 and will enter construction in Mid-2024. WDVA will be working to transition vehicles to EVs in the next few years. This will include expanding the build-out of infrastructure at our owned state facilities.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity

To meet greenhouse gas emissions limits, the focus of WDVA's long-term greenhouse gas reduction strategy is based on the need to get sub-meters in place at our Port Orchard and Orting Facilities. This will provide WDVA with the proper data to understand and truly prioritize areas of need. Without the information WDVA's highest priority is to remove the overall reliance on steam heat at these facilities. This is currently being started at our largest building with the removal of steam heat and additional of electric HVAC systems for the 160,000 SF skilled nursing facility. Our current plan to add EV infrastructure to our owned facilities and start replacing vehicles to EV's as they become available will help to support the reduction of emissions. WDVA looks forward to adding planning and growth as we continue to reduce emissions and understand our biggest emission uses. Since WDVA's largest source of emissions are the two steam plants at the Washington Soldiers Home in Orting and the Washington Veterans Home in Port Orchard, our agency will be working to remove the need for the steam plant of over coming years. These two facilities have more than three quarters of our agency's owned footprint and the steam plants are operated on gas. Our first step in the process will be removing most of the 160,000 SF skilled nursing building in Port Orchard from steam heat. This will start in 2023 and continue through 2024. DVA is working to replace the skilled nursing building in Orting, and this will be a zero-net-ready structure, replacing another high use building from the steam plant. DVA is also working to replace the skilled nursing building in Spokane, and this will be a zero-net-ready structure.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible
- Limit trips in state vehicles by replacing in-person meetings with remote options

Current BEV percentage of overall fleet = 23% - Implementing fleet and trip reduction strategy based on utilization rates. Currently applying for charging station installation grants for our Veterans Homes in Spokane and Orting. Organizational Change Management - Implementing drivers training for operation, route planning, and charging station locations to encourage utilization of BEVs.

Facilities

Electrify building space heating, hot water and cooking

Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods

Track building energy use by metering and benchmarking each building over 10,000 square feet.

Buy efficient IT equipment and appliances

Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption

Change space use allocations to reduce occupied square footage

Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

In addition to the short-term and long-term projects outlines above, WDVA is actively conducting an extensive Energy Audit at the central plant and associated buildings at two of its largest facilities in Orting and Port Orchard. This audit aims to thoroughly investigate the campus district energy systems to identify significant opportunities for decarbonization and energy efficiency enhancements. The comprehensive audit will encompass the following key activities: Building-Level Inventory Scoring Database: Developing a detailed inventory scoring database for major equipment within each building. This database will be instrumental in capital planning, allowing for more precise budgeting and forecasting of future equipment needs. Conducting thorough assessments of existing equipment to determine their current efficiency levels and potential for upgrades. Facility Improvement Measures (FIMs): Identifying and evaluating Facility Improvement Measures (FIMs) across the campus. These measures will be prioritized based on their impact on energy efficiency and decarbonization goals. Establishing a ranked prioritization system for FIMs to ensure the most critical improvements are addressed first. Creating a detailed schedule for the implementation of FIMs, with the objective of meeting campus target weather-normalized Energy Use Intensity (EUI) and completing district energy system decarbonization by 2040.

Benchmarking and Target EUI Calculations: Developing benchmarking metrics and target EUI calculations for the central plant and all buildings connected to it. These benchmarks will serve as a baseline to measure progress and identify areas for improvement. Engaging with local utility companies to coordinate efforts and integrate plans for decarbonization, ensuring alignment with broader regional energy goals. Fossil Fuel Replacement Mechanisms: Identifying and developing mechanisms to replace fossil fuels within the energy system. This includes exploring alternative energy sources and technologies that can reduce reliance on fossil fuels. Establishing a clear implementation schedule for transitioning to renewable energy sources, ensuring a systematic and phased approach to decarbonization. Grid Integration and Innovation Plans: Developing comprehensive Grid Integration and Innovation Plans conducting evaluations and providing recommendations for the implementation of renewable energy sources as non-wire alternatives to accommodate future energy demand increases. Assessing the potential for onsite energy storage solutions to enhance the resilience of both the campus and the surrounding community and creating a roadmap for their implementation. Evaluating, recommending, and determining the appropriate equipment for integrating demand response mechanisms with decarbonization efforts, enabling the campus to adapt to fluctuating energy demands efficiently. Drafting specifications for renewable energy projects, including operational and maintenance guidelines to ensure the consistency, reliability, and longevity of these systems throughout the agency. Energy Management and Operations Plans: creating detailed Energy Management Plans (EMPs) and Operations and Maintenance (O&M) Plans for all buildings on campus connected to the central plant. These plans will outline procedures and best practices for maintaining energy efficiency and system reliability. Implementing ongoing training programs for staff to ensure they are equipped with the knowledge and skills necessary to operate and maintain energy systems effectively. By undertaking this comprehensive Energy Audit, the WDVA aims to significantly enhance energy efficiency, reduce greenhouse gas emissions, and pave the way for a more sustainable and resilient energy future for its facilities. This initiative aligns with the agency's long-term commitment to environmental stewardship and operational excellence.

Clean & Renewable Electricity

On-site renewable energy generation

On top of the WDVA's short-term and long-term projects outlined above, the agency is currently conducting an Energy Audit, at the central plant and buildings connected to the central plant at two of the agency's largest facilities in Orting and Port Orchard. This is aimed at investigating the campus district energy system(s) to outline opportunities for decarbonization and energy efficiency. The audit will include: developing building level inventory scoring database of major equipment for use in capital planning. Identifying facility Improvement Measures (FIMs), ranked prioritization, and scheduled implementation of efforts to meet campus target weather normalized EUI and district energy system decarbonization completion by 2040. Developing benchmarking and target EUI Calculations for the central plant and all buildings connected to the central plant. Engage with Local Utilities to coordinate with plans for decarbonization. Developing mechanisms to replace fossil fuels and schedule of implementation. Developing Grid Integration and Innovation Plans including: Evaluation,

recommendation, and road map for renewable energy implementation for non-wire alternatives for future demand increases. Evaluation, recommendation, and road map for onsite energy storage implementation for campus and community resiliency. Evaluate, recommend, and determine equipment for demand response integration in conjunction with decarbonization mechanisms. Specifications for renewable energy projects, operations, and maintenance to ensure consistency and reliability throughout agency. Creation of Energy Management Plans (EMPs) and Operations and Maintenance (O&M) Plans for buildings on campus connected to the central plant.

Challenges & Barriers

The investment required for implementing greenhouse gas reduction technologies and infrastructure can be substantial, posing a significant financial barrier. Limited budgets and competing priorities can make it difficult to allocate sufficient funds for greenhouse gas reduction projects.

Washington State Patrol

Agency Actions

In thee 2023-2025 biennium budget request, the Washington State Patrol (WSP) was approved for the following projects: HVAC system upgrades to increase energy efficiency and performance at the Tacoma District Office (HVAC pre-design), Fleet Operations (HVAC major system upgrade) and Shelton Training Academy (HVAC major system upgrade). Also roof replacement projects were approved utilizing energy efficient materials that reflect heat and lower the amount of cooling. The agency purchased 11 additional battery operated vehicles (BEVs); three 2023 Chevrolet Bolts, a Rivian R1S SUV and seven 2023 Tesla Model Ys. We purchased a Mustang Mach E in 2022. The WSP continues to purchase and operate pursuit rated hybrid vehicles (HEVs) in appropriate assignments. In non-pursuit assignments we will continue to explore if a BEV is appropriate. In 2024 we ordered the first pursuit rated BEV a Chevrolet Blazer for testing.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity

In the 2025-27 biennium the WSP plans to submit a Capital Budget Request for energy efficient improvement projects that include HVAC system upgrades at the Tacoma District Office (HVAC system upgrade) and the Spokane District Office (HVAC system upgrade and pre-design). We are also going to request for EV charging infrastructure for each of our District headquarters. The agency will continue to transition our non-pursuit rated vehicles from internal combustion engine (ICE) vehicles to BEVs. We are working with our local utility to plan for EV infrastructure at our Fleet location. In the 2027-29 biennium, the agency will assess the needs of energy efficiency improvements through lighting upgrades, air compressors, and freezers. WSP will

also work to improve energy efficiencies through products used for projects such as roof replacements, exterior preservation, etc. As technology advances we are hoping for more EV options and range extension to enhance our fleet.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity

WSP will continue to include Capital Budget funding request for energy efficient projects and/or systems through HVAC system upgrades as well as utilizing energy efficient products in all facility upgrade projects. We will continue to monitor energy consumption in all facilities for outstanding anomalies. Our agency will continue to explore ways to lower our carbon footprint through more efforts in our fleet management, facilities management and supply purchasing practices.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Utilize biofuels or other alternative strategies to lower emissions where BEVs are not possible

Our agency will continue to transition non-pursuit rated vehicles from ICE vehicles to BEVs where appropriate. We will continue to explore ways to lower our carbon footprint in our fleet management.

Facilities

Track building energy use by metering and benchmarking each building over 10,000 square feet.

Buy efficient IT equipment and appliances

Leverage new leases and lease renewals to electrify heating and reduce energy use

Change space use allocations to reduce occupied square footage

WSP will continue to include Capital Budget funding request for energy efficient projects and/or systems through HVAC system upgrades as well as utilizing energy efficient products in all facility upgrade projects. We will continue to monitor energy consumption in all facilities for outstanding anomalies.

Clean & Renewable Electricity

Power purchase agreements (PPAs) for renewable energy purchases (examples include PSE Green Direct and Avista Solar Select)

WSP will continue to include Capital Budget funding request for energy efficient projects and/or systems through HVAC system upgrades as well as utilizing energy efficient products in all

facility upgrade projects. We will continue to monitor energy consumption in all facilities for outstanding anomalies.

Challenges & Barriers

One challenge we continue to face is collecting energy data for confidential sites as well as our weigh stations. While we are getting a pursuit rated BEV to test sometime in the future, infrastructure availability and range concerns continue to hinder the transition to a BEV model for pursuit rated vehicles. Any replacement pursuit rated vehicle we rest for consideration must meet the necessary collision testing, pursuit range travel, and other criteria so we are not sacrificing public safety or officer safety. Power availability during times of weather and infrastructure failures are also a concern.

Washington State University

Agency Actions

Hired a consultant to begin developing a plan for transitioning steam plants to low temperature hot water. Started design on the first nodal heat pump plant on the Pullman campus with the goal to eventually transition nearby buildings off of steam and on to low temperature hot water. investigated energy savings impact of increasing dead band temperature range in buildings on the Pullman campus. Continued a Revolving Energy Fund (REF) program focused on identifying and executing energy savings projects on the Pullman campus. Continued focus on improving metering infrastructure (installation, replacement, calibration, automation, data acquisition, etc.). Energy reduction through LED lighting upgrades in multiple facilities system-wide. Implemented a tenant engagement program in partnership with the Integrated Design and Construction Lab (ID+CL) on the Pullman campus to improve energy saving behavior amongst building occupants.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity

$5M request in 2023-25 State Capital Budget to initiate compliance with the Clean Building Standard and House Bill 1390. Include similar, reoccurring asks in 2025-27 and 2027-29 to continue towards compliance. $40M request in 2023-25 State Capital Budget for Minor Capital Renewal (MCR) projects focused on addressing deferred maintenance (in buildings and infrastructure) and optimizing space. Include similar, reoccurring asks 2025-27 and 2027-29. $13M request in the 2024 State Capital Supplemental Budget to be expensed if the CCA is NOT repealed in the upcoming November 2024 vote. Pursue all federal/state funding opportunities (including grants, IRA/ITC credits, CCA, etc.) in an attempt to find significant funding ($500M+) for the system-wide decarbonization effort. Continue identifying and executing energy savings project using the university's internal REF program. Continue investing in the metering program. Continue LED lighting improvements. Continue ID+CL tenant engagement program.

Long-Term Strategy

- Transportation
- Facilities

In addition to enhancing the reoccurring funding requests and programs noted above, WSU plans to emphasize the following high-level strategies: Investigate emerging technology and alternatives for building heating and cooling. Explore affordable electrification opportunities. Establish an official sustainability management team to represent the entire WSU system.

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Limit trips in state vehicles by replacing in-person meetings with remote options

Electrifying WSU's fleet when feasible along with transitioning certain vehicles to hydrogen fuel.

Facilities

- Electrify building space heating, hot water and cooking
- Improve building energy performance and energy efficiency using DES Energy Savings Performance Contracting or other proven building efficiency delivery methods
- Track building energy use by metering and benchmarking each building over 10,000 square feet.
- Buy efficient IT equipment and appliances
- Change space use allocations to reduce occupied square footage

$5M request in 2023-25 State Capital Budget to initiate compliance with the Clean Building Standard and House Bill 1390. Include similar, reoccurring asks in 2025-27 and 2027-29 to continue towards compliance. $40M request in 2023-25 State Capital Budget for Minor Capital Renewal (MCR) projects focused on addressing deferred maintenance (in buildings and infrastructure) and optimizing space. Include similar, reoccurring asks 2025-27 and 2027-29. $13M request in the 2024 State Capital Supplemental Budget to be expensed if the CCA is NOT repealed in the upcoming November 2024 vote. Pursue all federal/state funding opportunities (including grants, IRA/ITC credits, CCA, etc.) in an attempt to find significant funding ($500M+) for the system-wide decarbonization effort. Continue identifying and executing energy savings project using the university’s internal REF program. Continue investing in the metering program. Continue LED lighting improvements. Continue ID+CL tenant engagement program.

Challenges & Barriers

Funding to support transition of steam plan to low temperature water (especially if the Climate Commitment Act gets repealed). Avista’s electricity capacity cannot support WSU transition from on site combustion to purchased electricity. Increased use of heat pumps requires increased use of water in an area where water resources are a concern.

Western Washington University

Agency Actions

Buildings - A feasibility study was completed for transitioning WWU's district heating system to a low carbon source. The vast majority (94%) of Western Washington University (WWU's) scope 1 and scope 2 emissions emanate from our district heating system. With steam distribution, a significant portion of the heat generated is lost in tunnels and utilidors. Moreover, the plant and associated infrastructure are aging. In 2022, WWU commissioned the Heating System Conversion Feasibility Study. The Study evaluated four different technology options comparing lifecycle costs, carbon emissions, technical feasibility and resiliency. The Preferred Alternative that emerged from the study was shifting to multiple nodal plants instead of one central plant, moving off steam to a 4-pipe hot and chilled water distribution system, incorporating air source heat pumps for heating, having heat recovery chillers for cooling, and geoexchange to maximize efficiency and heat pump performance on cold days. Construction began on Kaiser Borsari Hall, seeking Zero Carbon certification. Kaiser Borsari Hall is a new 52,000 sq ft building on WWU's campus that will house WWU's electrical and computer engineering, energy science, and computer science departments. The building was designed to achieve the Zero Carbon certification, which requires both a 20% reduction in embodied carbon from building materials along with offsets for remaining embodied carbon, and 100% of the operational energy use of the project be met with renewable energy. The building will feature high performance networked LED lighting and VRF mechanical systems and an 80 kW rooftop solar PV array. When complete, the facility will be the first publicly funded zero-energy academic building on a university campus in Washington State. The building is scheduled to open in fall 2024. Exterior lighting retrofits were completed across the campus perimeter

In 2022 and 2023, 480 exterior lighting fixtures across WWU's campus were upgraded to LED. This includes campus perimeter pathway and streetlights, parking lot lights, and wallpacks in residential communities. New fixtures are dark-sky compliant to reduce light pollution. These lights use on average 50% less energy, reduce maintenance and material waste and improve safety. HVAC and Controls upgrades were completed in many buildings on campus o WWU installed CO_2 and VOC sensors in many classrooms and lab buildings across campus. These sensors combined with new programming in our building automation system will allow us to better monitor ventilation levels and supply the right amount of outdoor air to occupied rooms while minimizing waste from over-ventilating unoccupied spaces. Significant mechanical upgrades included a new soft starter for a large chiller on campus to reduce unnecessary chiller operation and cycling and new exhaust fume fans and heat recovery coils for a lab building. WWU purchased 95% of its electricity usage through PSE's Green Direct renewable PPA. WWU's main campus and Shannon point participate in a power purchase agreement (PPA) with Puget Sound Energy (PSE). The program provides us with an option to purchase renewable energy from a dedicated, local source. The program has funded two projects thus far – the 137 MW Skookumchuck Wind Facility which went into operation November 2020, and the 194 MW Lund Hill Solar project which went into operation in December 2022. Lund Hill Solar is the largest solar project in Washington to date.

Short-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-Specific or Other Strategies

Accelerate the District Heating Conversion - WWU has hired an owner's representative team for the district heating conversion tasked with determining the project delivery method, assist with identifying designers and contractors, and providing construction project management services. The team will develop an Implementation Plan that will address design, construction, scheduling and sequencing, building retrofits, operational impacts, future adaptability and funding plans. Draft phasing shows completing the design phase in the 2025-27 biennium and construction taking place during the 2027-28 biennium. This draft phasing will be subject to funding availability, permitting timeline, and minimizing construction disruption on a busy campus. Complete Clean Buildings Compliance as a District. WWU will be using the decarbonization plan pathway as prescribed in HB1390 and recent Department of Commerce rulemaking for state-owned district energy systems. The decarbonization plan will be submitted by June 2025 and we will be developing the operations and maintenance plan and energy management plan for buildings over 90,000 sq ft by June 2027. Develop On-Site Solar. Kaiser Bosari hall will be WWU's first commercial-scale solar system when it is installed in summer 2025. WWU has submitted a grant request to help fund an additional 100 kW solar system. We will be submitting a grant request in summer 2024 to draft a solar and battery storage plan for additional buildings. Retro-commission existing buildings. WWU is currently drafting a work scope to perform comprehensive retro-commissioning of three of our existing buildings. This will involves systematically reviewing, optimizing, and adjusting the HVAC and associated controls systems within a building to ensure they operate as efficiently as possible. We will also continue to fine tune HVAC controls across campus. Install Heat Recovery on Lab Exhaust Systems. WWU has submitted a grant request to install heat recovery systems at two main lab buildings and install CO_2 sensors and demand controlled ventilation in an additional six other buildings. Perform deep energy retrofits at the time of building renewal. WWU is currently developing a Capital Development and Strategic Vision Plan that will guide ongoing decision making around capital planning and development. The plan, due in Fall 2024, is expected to identify building renewal and renovation as a key strategy for modernizing our campus. As part of building renovations, deep energy retrofits could be integrated that will fortify the building's thermal enclosure, integrate lower temperature hot water and chilled water distribution, and upgrade lighting and electrical infrastructure. Our Environmental Studies building is currently in predesign and will likely be our first renovation that will include a deep energy retrofit. Ensure new buildings are low or zero carbon. WWU will have two new buildings in the upcoming biennia that will be designed to meet green building certifications. Construction began in Spring 2024 on the 4,200 sq ft House of Healing. The building design reflects the architecture of a Coast Salish style longhouse. It will serve as a gathering and ceremonial space for native

students as well as Coast Salish tribal nations. The House of Healing will be all-electric and target LEED Gold certification. In addition, the 40,985 sq ft Student Success Center, currently in design, will begin construction in 2025.The building will co-locate student advising, admissions and financial aid representatives, counseling, and career development, and serve as a welcoming beacon to recruit and support students. The Student Success center will target Zero Energy certification for operating and embodied carbon.

Long-Term Strategy

- Transportation
- Facilities
- Clean & Renewable Electricity
- Equity & Environmental Justice
- Planning & Budget Development
- Agency-Specific or Other Strategies

WWU has a goal of achieving carbon neutrality by 2035, ahead of the timeline prescribed by RCW 70A.45.050. Our largest source of scope 1 and 2 emissions (94%) continues to be from our district heating system. The approach we have identified is multifaceted and will require multiple biennia to complete. To reduce these emissions, our targeted approach is to: Switch from natural gas boilers to a heat pump system combined with geoexchange. Switch from steam distribution to hot water utilizing the lowest temperature hot water that our buildings will allow for. Provide district-level cooling with heat recovery chillers that can capture and redistribute waste heat. Complete building upgrades including new heat exchangers, replacing direct steam and high temperature hot water piping and coils, with low temperature hot water, and adding chilled water piping and coils. Improve building efficiency generally to reduce overall thermal loads. Acquire additional renewable electricity to offset increased electric usage with a combination of on-site solar and power purchase agreements (PPAs).

Transportation

- Replace internal combustion engine (ICE) vehicles with battery electric vehicles (BEV)
- Electrify vessels and equipment where possible
- Limit trips in state vehicles by replacing in-person meetings with remote options

WWU will continue to source electric vehicles for fleet and shared support vehicles as funding allows. We will be installing additional charging stations to support fleet vehicle charging in 2024. We are in the planning phase of expanding charging stations for students, faculty and staff.

Facilities

- Electrify building space heating, hot water and cooking
- Ensure major renovations are all-electric, zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions

- Avoid new construction in favor of lower embodied emissions alternatives such as renovating existing space and using less building space.
- Track building energy use by metering and benchmarking each building over 10,000 square feet.
- Operational or organizational changes: Hire a resource conservation manager (RCM)
- Buy efficient IT equipment and appliances
- Consider organizational or service delivery changes that use less building space or energy, and encourage occupant behavior that reduces energy consumption
- Leverage new leases and lease renewals to electrify heating and reduce energy use
- Change space use allocations to reduce occupied square footage
- Ensure any new building is zero energy (ZE) or zero energy capable (ZEC), and very low embodied carbon emissions
- Ensure any new leased square footage is all-electric and energy efficient

In addition to the projects identified elsewhere in the report, in order to meet our 2035 carbon neutrality targets, additional identified needs include: Electrifying smaller natural gas appliances including independent building heating systems, Bunsen burners, and cooking equipment. Continuing to retrofitting lighting so that all lighting on our campus is 100% LED. Complete minor works projects that may have associated energy savings such as mechanical equipment replacements, roofing + insulation upgrades, and deferred maintenance.

Clean & Renewable Electricity

- Onsite renewable energy generation
- Power purchase agreements (PPAs) for renewable energy purchases (examples include PSE Green Direct and Avista Solar Select)

WWU signed a 20-year PPA with PSE that will continue to provide renewable electricity until 2038 under PSE's Green Direct program. This covers 95% of WWU's total electricity usage. WWU is analyzing an additional PPA that would cover the remaining 5% of current usage and ensure that there is an adequate supply of renewable electricity as electric usage rises from heating and transportation electrification. In addition, WWU will be seeking to install solar PV on campus. We have several buildings that would be ideal candidates for solar once roofs are replaced. Leveraging IRA incentives and state grants would allow us to deploy on-site solar at an accelerated pace.

Equity & Environmental Justice

WWU will be drafting a community engagement plan that will analyze impacts of the proposed heating conversion project with an equity and environmental justice lens.

Planning & Budget Development

- Facility or campus master plans
- Deferred maintenance and equipment replacement schedules

- Sustainability action plans
- Funding greenhouse gas emissions reduction priorities
- Electrification and feasibility plans/studies for district heating systems

The districting heating conversion will be our most impactful capital development plan in terms of greenhouse gas reductions. We will be seeking funding to install new plants, distribution piping, and heat exchangers that would allow for this project to be completed by the goal date of 2030. Building upgrades will still be required to take advantage of lower temperature hot water and cooling. We will be analyzing opportunities that have opened up with Climate Commitment Act and Inflation Reduction Act funding. The upcoming Capital Development and Strategic Vision Plan will guide our decision making on building renovations.

Challenges & Barriers

The largest challenges will be related to our district heating conversion. The challenges include minimizing construction disturbance on a occupied campus, technical challenges such as leveraging emerging technologies and fitting hot water and chilled water pipes into existing tunnels, and financial challenges of raising capital support the district infrastructure and required building upgrades?

Appendix C – Agency Supplemental Documentation

The following agencies submitted supplemental information along with the greenhouse gas emissions calculator and strategy data. Publicly available information is hyperlinked below for more details please refer to the agency contact listed.

Central Washington University

- Climate Action Plan
- Decarbonization Plan
- Additional Details of Greenhouse Gas Reduction Strategy Letter

Agency contacts: Jeremiah Eilers, Agency Submitter/Delano Palmer, Agency Approver.

Children, Youth, and Family Services, Department of

- EV Implementation Plan
- Greenhouse Gas
- CRIB Data

Agency contacts: Brandon Teffeteller, Agency Submitter/Rene Newkirk, Agency Approver.

Eastern Washington University

- Campus Hydro-Geological (GSHP) Study – Final Report doc.
- Climate Resiliency Landscape Masterplan
- 2022-2025 Climate Action Plan
- Greenhouse Gas Emissions Strategy Worksheet

Agency contacts: Erik Budsberg, Agency Submitter/Mary Voves, Agency Approver.

Fish and Wildlife, Department of

- Sustainability Plan
- Emissions Trends 2019-2022
- Clean & Renewable electricity strategies & actions doc
- Planned Actions
- Fleet Strategies & Actions
- Clean Energy Law Meets Goals
- Buildings Strategies & Actions
- Strategy Overview
- Fleet Strategies fall short of goals
- Additional strategies & actions

Agency contacts: Jennifer Bass, Agency Submitter/Addie Bash, Agency Approver

Liquor & Cannabis Board

- Fleet decarbonization plan
- Operations strategic plan goals
- Purchasing Compliance 2024
- Results Tracker CY 2024
- Six Year Plan 2025-2031

Agency contacts: Tia Livingood, Agency Submitter/Rachel Swanner, Agency Approver.

Parks and Recreation Commission

- 2009 Sustainability Plan
- Final SOW DES- McKinstry 2024 – IGAP
- 2008 Sustainability Plan
- 2015 Climate Planning Resolution

Agency contacts: Ryan Karlson, Agency Submitter/Mike Sternback, Agency Approver.

Transportation, Department of

- Greenhouse Gas Emissions strategy worksheet

Agency contacts: Stephanie Ignell, Agency Submitter/Kerri Woehler, Agency Approver.

University of Washington

- Air Travel Proposal
- Sustainability action plan FY 2021
- Greenhouse Gas Inventory 2024
- Energy Strategy

Agency contacts: Marilyn Ostergren, Agency Submitter/Lou Cariello, Agency Approver.

Veterans Affairs, Department of

- IGA Proposal
- Utilities Tracking
- Greenhouse Gas Inventory

Agency contacts: Carlos Chaidez, Agency Submitter/Yacob Zekarias, Agency Approver.

Washington State Patrol

- Decarbonization Plan

Agency contacts: Tawni Andrews, Agency Submitter/Chris Old, Agency Approver.

Western Washington University

- SAP Progress Report
- Executive Summary Energy Audit
- Sazan – Final Heating Feasibility Study Report
- 2024 Greenhouse Gas Strategy Emission Strategy Worksheet

Agency contacts: Jeff Aslan, Agency Submitter/Joyce Lopes, Agency Approver.