

Sustainability Performance Plan

FY 2023

*This report was written in compliance with
section 5 of Executive Order 1.*



Sustainability Performance Plan

Executive Order 1 (EO 1) calls on Executive Branch agencies to advance environmental leadership and cost savings for taxpayers by reducing greenhouse gas emissions and other sustainability objectives in energy use in buildings and vehicles, water use, and waste disposal.

The goals of EO 1 include:

- 45% reduction in GHG emissions below 2001 levels,
- 10% reduction in water consumption from a FY20 baseline, and
- 25% reduction in waste disposal from a FY20 baseline.

Sustainability Performance Plans are plans drafted each year by Senior Sustainability Officers to detail agency progress and necessary goals, actions, and responsible parties to achieve the targets set in EO 1.

This report includes details on sustainability initiatives and participation in the GreenerGovCT initiative in FY23.

Agency Details

Agency: Department of Correction

Senior Sustainability Officer: Chris Iwanik

Date Submitted: 11/27/2023

GreenerGov CT Participation Overview

1. How has your agency worked towards the sustainability goals of EO 1 in FY23?

DOC has continued to work towards achieving the goals set out by Governors EO1. Over the last few years we have completed projects and are currently working on projects as well as in the planning stages for new projects and opportunities. These projects range from energy savings by reducing electrical and fuel consumption, water conservation and food waste. Being the agency with the largest energy usage we continue to strive to look for opportunities to do our part in achieving the goals set out and ensure we are reducing our carbon footprint.

2. List key agency staff involved in EO 1 in FY23.

Chris Iwanik, Tom Levesque, Rich Pease, Joe Suchecki and Gary Gerstenlauer

Sustainability Projects

3. **How many projects has your agency implemented that had a positive impact on sustainability in FY23? Include projects relating to infrastructure improvements as well as behavioral change that took place in owned, leased, or occupied space and were either in progress or completed in FY23.**

15

4. **Provide a summary of the sustainability projects completed in FY23 at your agency. For each project include:**
- a. **Project summary**
 - b. **Project location**
 - c. **Project status**
 - d. **Project benefits**
 - e. **Projected savings (in dollars and the appropriate unit of measurement if known)**

Carl Robinson Bathroom Renovation

- a. Complete demolition of 12 dormitory style bathrooms and installation of low flow fixtures for the new bathrooms as well as an electronic water management system.
- b. Carl Robinson Correctional – Enfield CT
- c. Completed
- d. Reduce water usage and control of water devices to prevent overflowing and excessive water use, 312 low flow plumbing fixtures are being installed
- e. Reduction of water use will be approximately 50% less water used for these bathrooms

MacDougall/Walker EMS system upgrade

- a. Complete upgrade of the existing pneumatic energy management system that was inoperable to a new DDC energy management system.
- b. MacDougall/Walker Correctional – Suffield CT
- c. Completed
- d. Reduce fossil fuel usage by being able to properly control temperatures and set back of temperatures in unoccupied areas. Electrical energy savings by installing Variable frequency drives on pumps and motors.
- e. Expected annual energy savings: Electric – 46,078,104 kWh and Gas – 277,120 CCF

Osborn EMS system upgrade

- a. Complete upgrade of the existing energy management system that was inoperable to a new DDC energy management system.
- b. Osborn Correctional – Somers CT
- c. Ongoing completion planned for spring of 2024
- d. Reduce fossil fuel usage by being able to properly control temperatures and set back of temperatures in unoccupied areas. Electrical energy savings by installing Variable frequency drives on pumps and motors.
- e. Expected annual gas energy savings to be 51,368 CCF

Statewide Solar Arrays

- a. Install solar arrays at various facilities statewide
- b. Cheshire, Enfield, & Somers
- c. Ongoing arrays are being installed at this time anticipated completion Spring 2024
- d. Reduce cost savings of electrical costs
- e. Energy savings approximately 6,950 KW AC

York CI Chilled Water Loop

- a. Replacement of existing heating and chill/hot water loop; Replacement of boilers and chillers; Upgrade to energy management system.
- b. York Correctional Institution – Niantic CT
- c. Completed
- d. Higher efficient boilers and chillers, control of HVAC equipment reducing runtimes of equipment, VFD motor controls providing lower energy costs.
- e. Calendar year 20/21 saw an energy reduction of 1,000,000 kWh, Calendar year 21/22 has seen a continued reduction of 1,000,000 kWh, as from the year before.

York CI Lighting Upgrade

- a. Replacement of existing metal halide exterior lighting and interior fluorescent lighting with in-house staff
- b. York Correctional Institution – Niantic CT
- c. On-going
- d. Installation of new LED lighting, reduction of electrical use and better light coverage of area
- e. Replaced 28 – 1500 watt to 500 watts, 500-32 watt to 14 watts and 10-400 watt to 100-watt light fixtures. Savings are plus or minus 9, 100 watts overall. Savings contributed to the 1,000,000 kWh electrical reduction.

Garner LED upgrade

- a. Upgrading of interior light fixtures. Fixtures are being retrofitted to LED.
- b. Garner Correctional – Newtown CT
- c. Project has just started in 2023
- d. Reduce cost savings of electrical as well as provide longer life of the fixtures
- e. Expected energy cost savings approximately 314,216 kWh \$62,849.00

Food Waste Collection Pilot Program

- a. DOC engaged with food service staff, DEEP, the Center for Eco Technology and waste disposal contractors to help assist with a food waste program for this facility, with future expansion to other DOC locations. We partnering up with CT Innovations and Bright Feed to start the pilot program.
- b. Cybulski CI – Enfield CT
- c. In Progress
- d. Food waste reduction and associated cost savings in order to help meet DOC's 25% waste reduction goal. Our efforts will also include the reduction of food service foam trays and using re-usable plastic trays.
- e. DOC's next step will be to go through the annual waste disposal invoices and calculate cost savings based on weight percentages of food waste vs. total trash.

Robinson Energy Audit upgrades BI-T-619O

- a. Add empathy controls, change out exhaust fans for more efficient ones and changing out aerators on sinks and shower heads.
- b. Carl Robinson Correctional – Enfield CT
- c. Design
- d. This project would reduce energy cost and reduce the amount of water consumed in the facility.
- e. Estimated savings – \$76,739 electric cost and reduction of 244 metric tons of CO₂e emissions

Brooklyn – Retro- Commissioning Project BI-T-619M

- a. Retro Commission selected items – AHU (VFD installation), Recommission heating 3-way valve and add BMS points for optimum operation
- b. Brooklyn Correctional – Brooklyn CT
- c. Design
- d. Provide optimum savings utilizing current Building Management System
- e. Estimated savings based on previous year of usage – kWh 5.1% (78,868 kWh), Heating oil 8.4% (3,210 gallons)

Corrigan – Energy Audit Upgrades BI-T-619I

- a. Installation of toilet flush valve controls, installation of new domestic hot water boiler and BMS integration
- b. Corrigan Correctional – Montville CT
- c. Construction Design
- d. Control of number of times the toilets can be flushed, reduction of main heating boilers runtime during off peak season and high efficiency boilers for domestic hot water
- e. Estimated savings from Audit report– 11,525,423 gallons of water, \$173,127 electric cost and reduction of 273 metric tons of CO₂e emissions

Hartford CC – Energy Audit Implementation BI-T-619E

- a. Installation of toilet flush valve controls, installation of new domestic hot water boiler
- b. Hartford Correctional Center – Hartford CT
- c. Construction Design
- d. Control of number of times the toilets can be flushed, reduction of main heating boilers runtime during off peak season and high efficiency boilers for domestic hot water
- e. Estimated savings from Audit report– 10,373,045 gallons of water, \$140,219 electric cost and reduction of 279 metric tons of CO₂e emissions

Bridgeport CC - Energy Audit Implementation BI-T-619H

- a. Complete interior lighting upgrade, water usage reduction, HVAC efficiency upgrades
- b. Bridgeport Correctional Center - Bridgeport CT
- c. Construction Document Development Phase, estimated out to bid January 2024.
- d. Comprehensive energy savings in water, electricity and natural gas by replacing fixtures, appliances and installing energy control devices.
- e. Projected savings \$168,889, 685,351kWh, 52,203Therms, 7.4 million gallons

Manson Youth Institution- LED Upgrade BI-T-619B

- a. Interior lighting upgrade
- b. Manson Youth Institution - Cheshire, CT
- c. Project bid phase completed.
- d. Project benefits Electrical savings and longer life lighting fixtures.
- e. Projected savings 393,120kWh, \$74,693

Webster – LED Upgrade BI-T-619C

- a. Interior lighting upgrade
- b. Webster CI - Cheshire, CT
- c. Project in bid phase.
- d. Electrical savings and longer life lighting fixtures.
- e. Projected savings 70,002kWh, \$13,300

Future Plans

5. **What planned sustainability initiatives beyond FY23 does your agency have relating to GHG reduction, water use reduction, and waste reduction?**
 1. Fuel Cell – York CI – Installation of a new fuel cell will provide hot water via fuel cell bi-pass water and a fixed cost for kWh.
 2. Water Conservation - MacDougall/Walker CI – Retrofit plumbing fixtures to reduce water usage, and in some cases, replace fixtures to achieve water reduction, as well as, installation of an electronic water management system.
 3. Cheshire Loop project – Updating of the HVAC systems for Cheshire and Webster to be more efficient and produce less carbon gas.
 4. Looking at additional locations to install more solar arrays Statewide