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State Facility Electric Lawn Equipment Pilots

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Electric Lawn Equipment as an Air Quality Best Practice



SMALL GAS ENGINES CAUSE A LOT OF AIR POLLUTION

1 HOUR

using a leaf blower

Driving from Ogden to Disneyland



ChargeYourYard.utah.gov

* See our methodology online



Lawn and garden equipment contribute a significant amount of pollution to our air.*

VOC EMISSIONS

TONS PER DAY

for the N. WASATCH FRONT



Lawn & garden

8 tons per day



Cars

13 tons per day



Industry

6 tons per day

* See our methodology online.



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2020 - 2021 Electric Lawn Equipment Pilot



Pilot Overview

Spring 2020

\$46,764 in grant funding acquired through DEQ CARROT program

Summer 2020

Phase 1 of Pilot conducted:

- State of Utah Redwood Campus
- Capitol Hill
- South County

Fall 2021

Phase 2 of Pilot conducted:

- Provo
- Southern Utah campus
- Ogden campus



Equipment

- ▷ Singular brand selected for interchangeability of batteries
- ▷ Each Site was Equipped with the following electric equipment & accessories:
 - ▷ 2 x Handheld Blowers
 - ▷ 2 x Trimmers
 - ▷ 4 x Battery Backpacks
 - ▷ 4 x Battery Chargers
 - ▷ 8 x Equipment Batteries



Expectations & Feasibility

- ▶ Expectations of the project included:
 - Reduced emissions by replacing gas-powered equipment with electric equivalent
 - Noise reduction
 - Odor reduction
- ▶ Feasibility requirements of the electric lawn equipment focus included:
 - For any considered equipment 4 hours of run time is desired.
 - This would allow DFCM staff to accomplish a full 8-hour day would require 4 batteries
 - Blowers = with backpack, 115 - 300 minutes (variable speeds)
 - Trimmers = with backpack, estimated 150 minutes (variable speed)



Results

- ▶ Handheld Blowers
 - Run-time for pilot = 1,086 hours
 - Estimated gallons of fuel saved = 466.98
 - \$1,228.16 in fuel cost savings
 - Results in 4 metric tons of CO2 emissions reduced annually

- ▶ Trimmers
 - Run-time for pilot = 453 hours
 - Estimated gallons fuel saved = 113.25
 - \$297.85 in fuel cost savings
 - Results in 1 metric ton of CO2 emissions reduced annually



Summary

- ▶ **Successful Pilot**
 - Expectations and feasibility measures were met
- ▶ Overall **positive sentiments from maintenance staff** on electric lawn equipment
- ▶ **No negative feedback on trimmers** was received, blowers also scored positively
- ▶ Parts Replacement
 - Several battery packs had to be replaced, but were covered under warranty
 - **Overall less maintenance** required when compared to previous fuel equipment used.
- ▶ **Newer models are substantially more powerful**



Current Status



100%

Of the electric lawn equipment procured in this pilot is still in use across many of our largest State Facility Campuses:

- ▷ Redwood Campus
- ▷ Capitol Hill
- ▷ South County
- ▷ Provo
- ▷ Southern Utah
- ▷ Ogden
- ▷ Taylorsville State Office Building Campus





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Thank You

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