

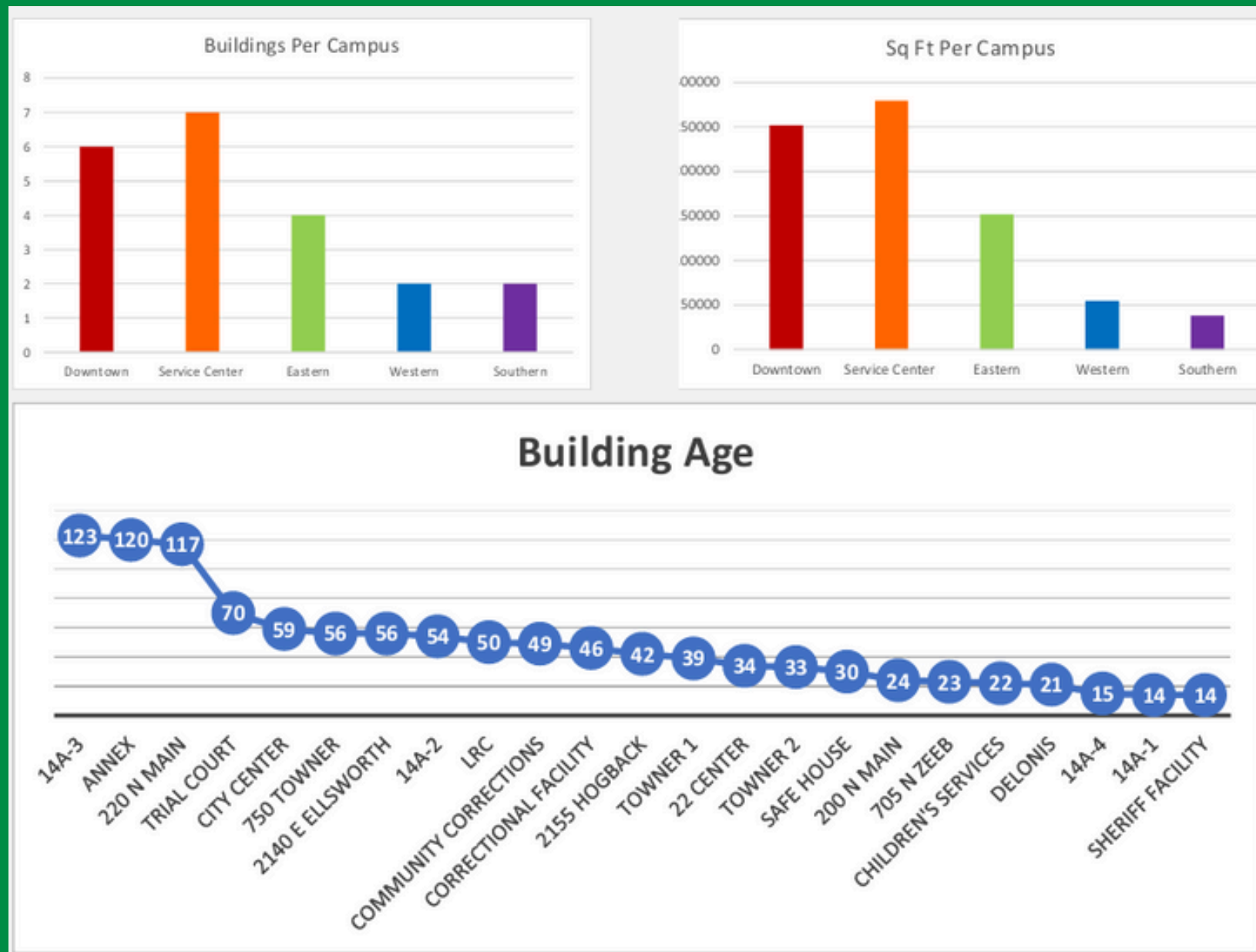


# Washtenaw County Facilities Management

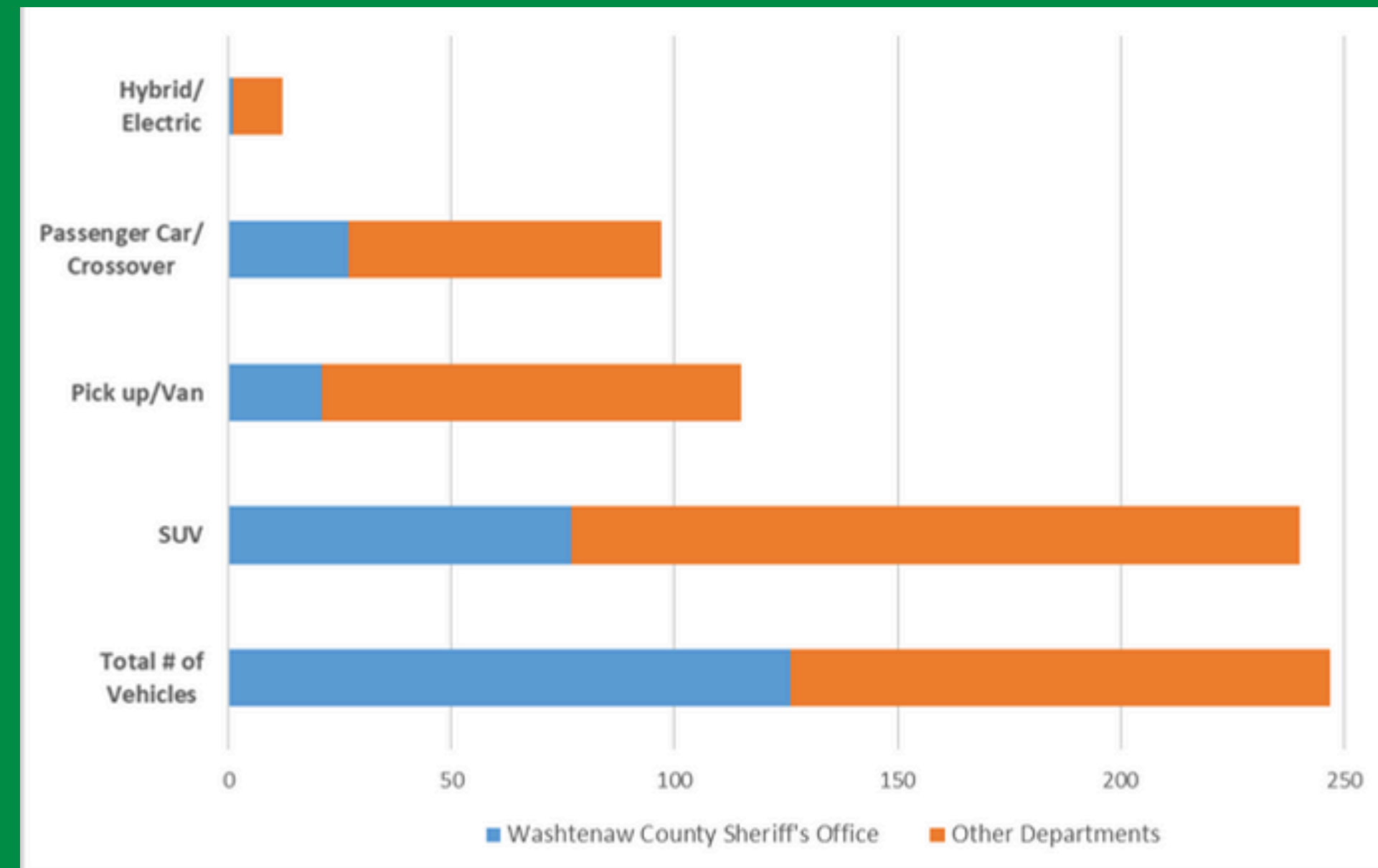


## THE ROAD TO NET-ZERO OPERATIONS

### Facilities Portfolio Overview



### Fleet Portfolio Overview



# FM INITIATIVES BEFORE RW

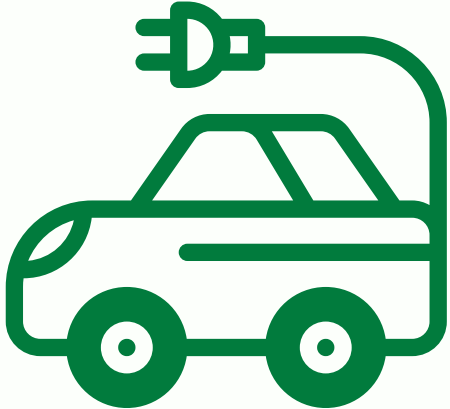
20 + Years of Energy Efficiency & Sustainability



Energy Efficiency



Waste Reduction



EVs & EVSE



Rain Gardens & Natives



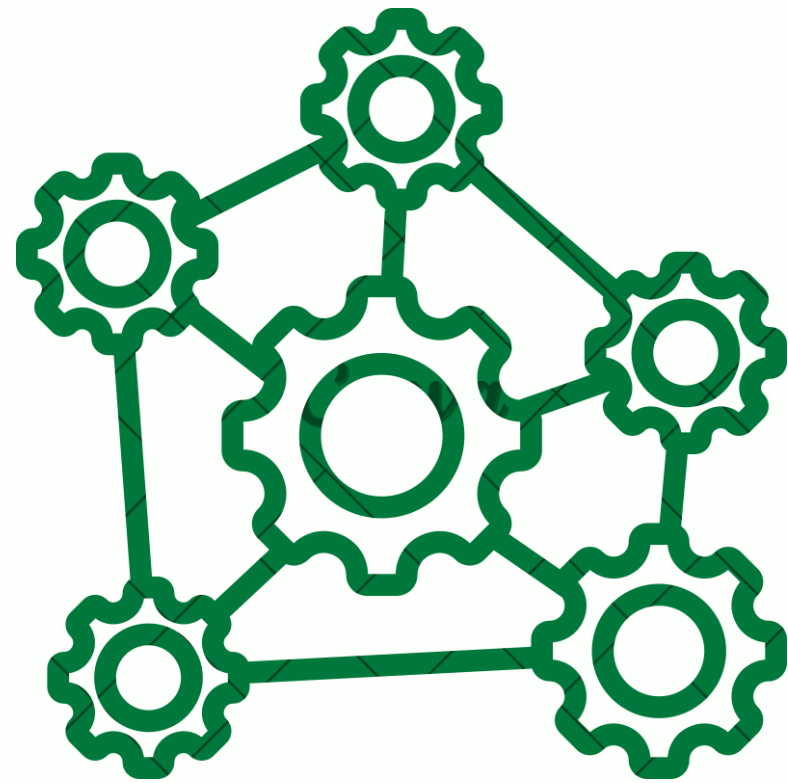
Renewables



Electrification

# LESSON LEARNED:

Things are (almost) always more complicated than they seem



## Building Electrification

...is not easy!



## LRC Electrification

- 4 NG forced air RTUs
- Replaced with VRF system
  - ERV system required
  - Mini Split for IT room
- Removed NG feed
- 10 Years; 2 Polar Vortexes

## Saline Court Electrification

- 6 gas-fired RTUs
- Replaced with electric heat pump RTUs; 6 additional for expansion
- NO ERV system required



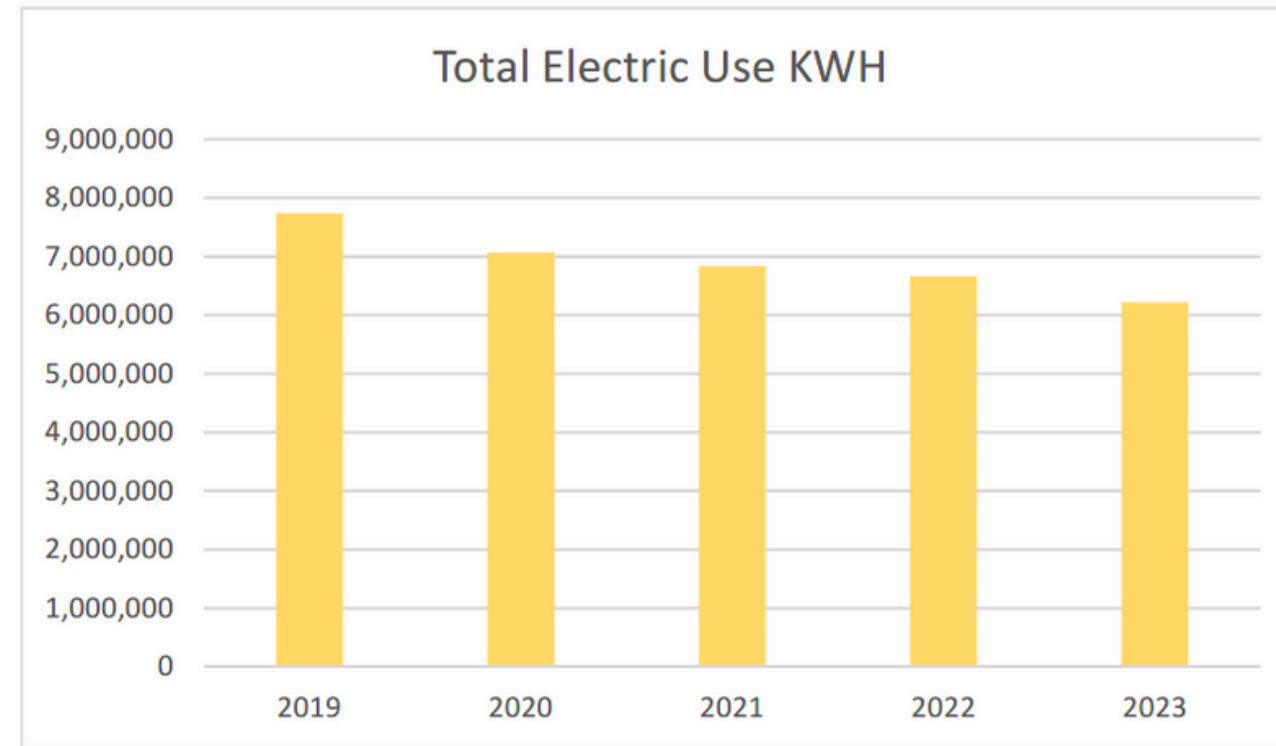
# LESSON LEARNED:

Saving energy does not mean saving money!

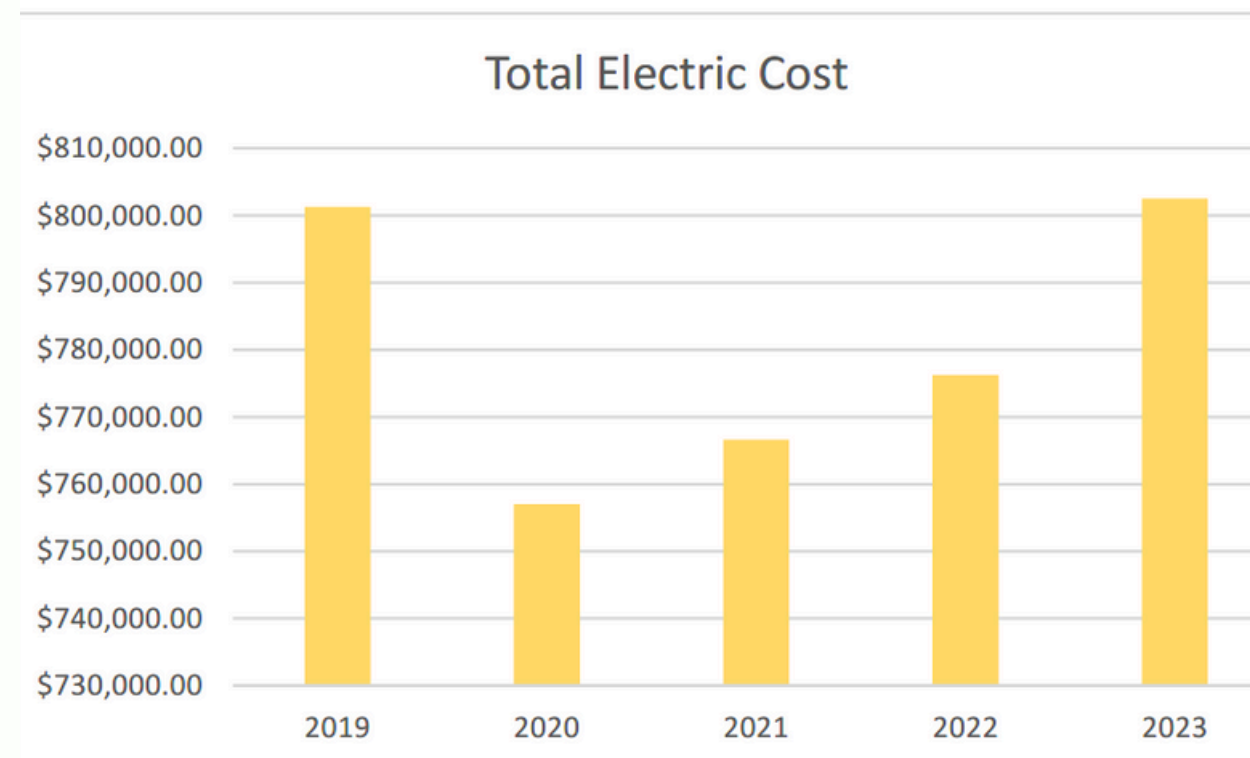


## Balancing the Scales...

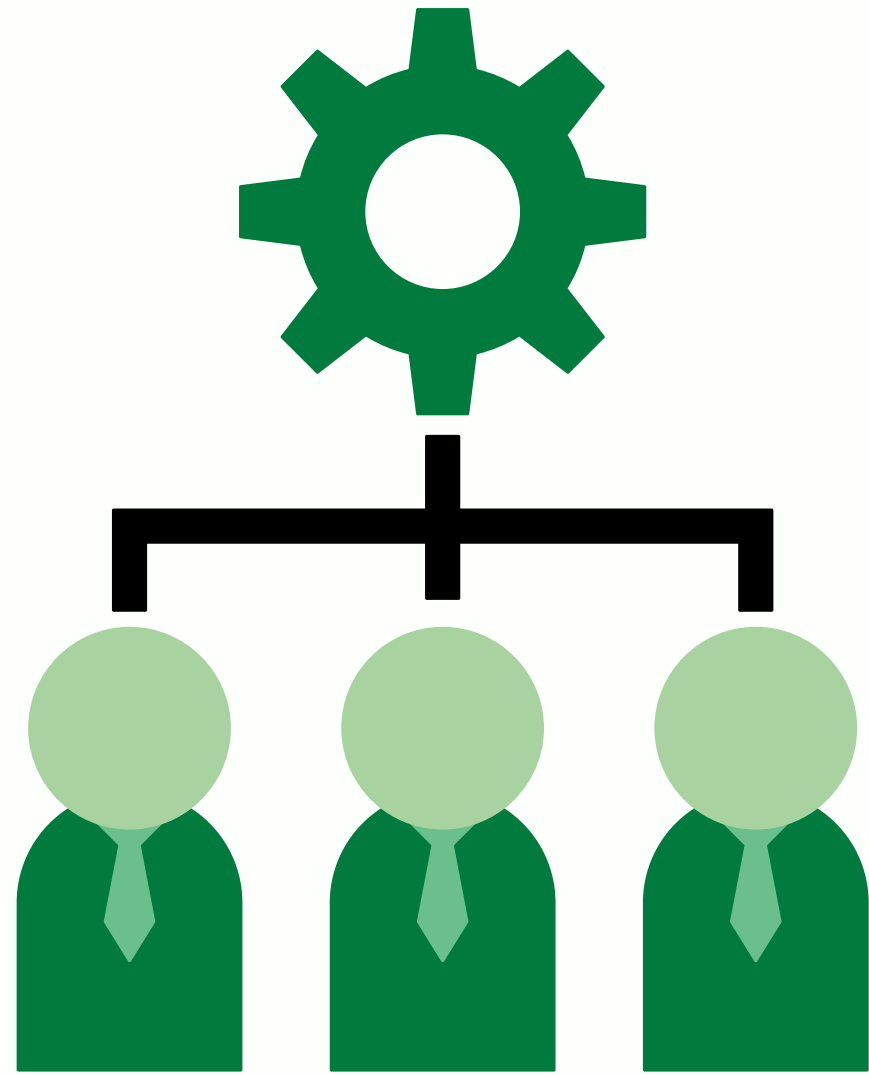
...is not easy!



Portfolio-wide  
Electric Use  
Before & After  
LED Lighting  
Project

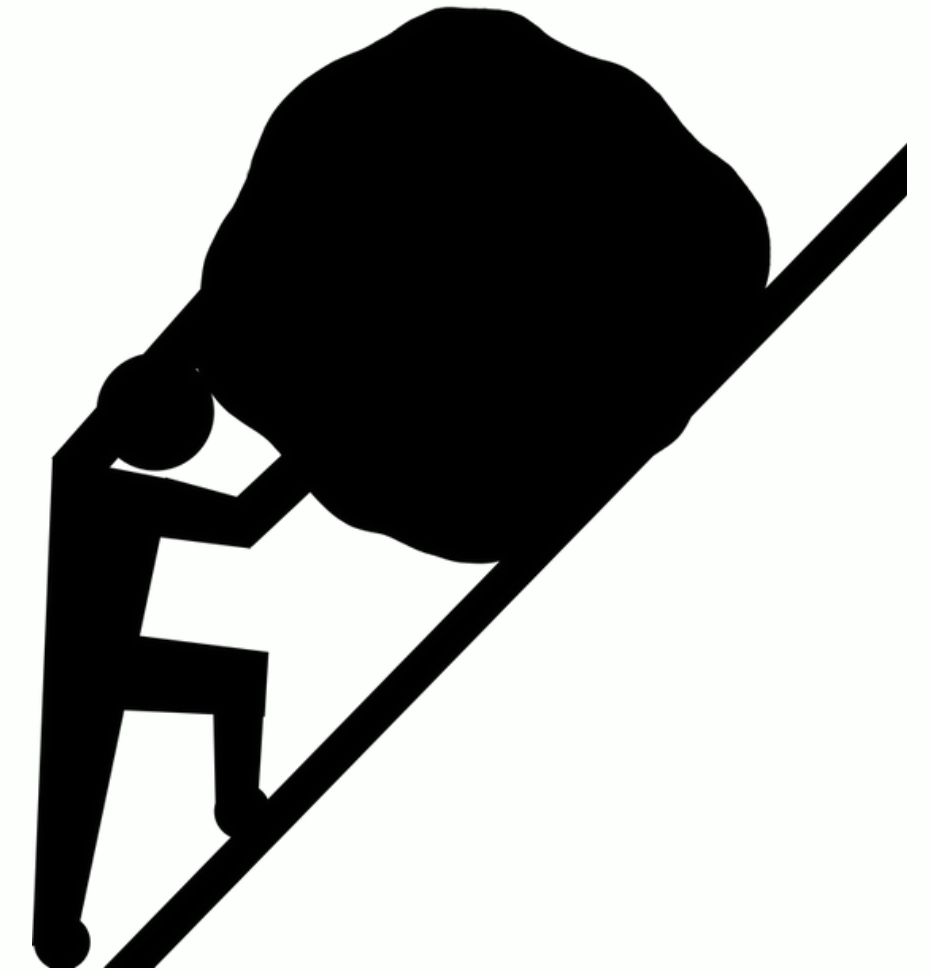


Portfolio-wide  
Electric Cost  
Before & After  
LED Lighting  
Project



**Maintaining aging infrastructure requires time, money & people!**

## **ADDITIONAL LESSONS**



**Operational change without cultural change is often ineffective**

# RESILIENT WASHTENAW

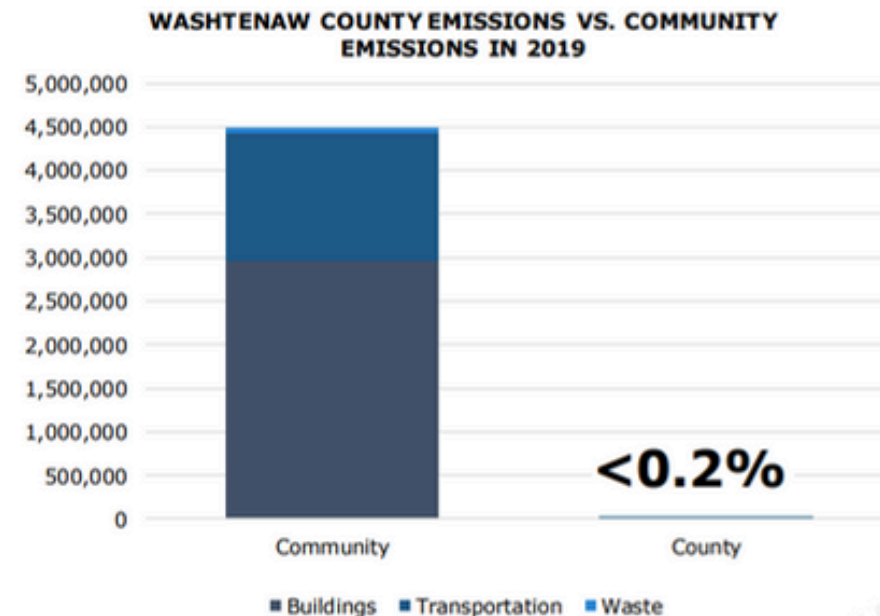
GOAL: Net-Zero County Operations by 2030

## INVENTORY AND CURRENT CONDITIONS

### County Operations vs. Community-Wide Emissions

The vast majority of emissions come from community buildings and transportation. The County's operations account for less than 0.2% of overall emissions in the County.

However, the County has the most control over its own operations and can more easily take action to reduce emissions across its buildings and fleet.



1. 100% Renewable Energy Options for Everyone
2. County-wide Energy Concierge
3. Community Bulk Buy for Solar and Building Electrification
4. Expand Weatherization
5. Update Building Codes
6. Time of Marketing Energy Rating Disclosure
7. 100% Renewable Energy and Energy Efficiency for County Operations



# GOAL: Net-Zero County Operations by 2030

**BUT HOW DO WE GET THERE?**

2.07

PRIORITY: HIGH  
TIMELINE: SHORT TERM

IMPACT: HIGH  
DIFFICULTY: MODERATE

## ENERGY TRANSITION

### 100% Renewable Energy for County Operations

Washtenaw County will build efficiency and renewable energy investments into capital budgets and other facility planning with a goal of 100% of County energy use from renewable sources by 2030. The County will support the County Operation Carbon Neutrality goal by electrifying all new and existing buildings as well as build fleet electrification into the County budget, capital planning, and asset management programs. Facilities staff will identify County locations with grid and panel capacity for new charging and where panel upgrades may be necessary. Co-locating new EV charging with new renewable energy installations will be a priority.

**Implementation/ Lead Dept.**  
**Facilities;** WCDPW

**Community Partners**  
DTE; CVTs


**Funding**  
Federal Sources, State Energy Office, Capital Providers

**Staffing**  
**Facilities** and Consultants


**Approval(s)**  
Board of Commissioners

**Goals and Evaluation Metrics:**


- Electrified buildings will improve indoor air quality for employees and customers
- Washtenaw County will recognize the co-benefits of fleet electrification including resilience, emission and particulate reductions, maintenance savings, and operator comfort.
- 100% of all new construction is all-electric, renewable energy-ready, energy storage-ready, and EV-ready starting with projects planned in 2023
- 100% renewable energy for all County Operations by 2030
- Procure 100% Renewable Energy for all Electric Needs by 2030
- Install EV charging stations at all County facilities and fleet storage areas by 2027
- Switch from internal combustion to electric for all equipment and vehicles by 2030
- Electrify 100% of County light-duty vehicles by 2030
- Convert all existing buildings to all-electric, renewable energy-ready, energy storage-ready, and EV-ready by 2030
- Maximize onsite solar development on County properties
- Evaluate space needs for County Operations and right-size the building portfolio to reduce total square feet of energy-using office space
- Track and explore opportunities to cost-effectively replace heavy-duty vehicles with EVs by 2035
- Negotiate labor contract changes to create positions for servicing electric vehicles by 2026




**\$1,734/  
MTCO2e**




**2023-2035**



**4,260  
MTCO2e**



**COUNTY**



**INTERNAL  
POLICY**

**RELEVANT PRINCIPLES**

Racial Equity & Environmental Justice

Just Transition

Health

Resilient Economy

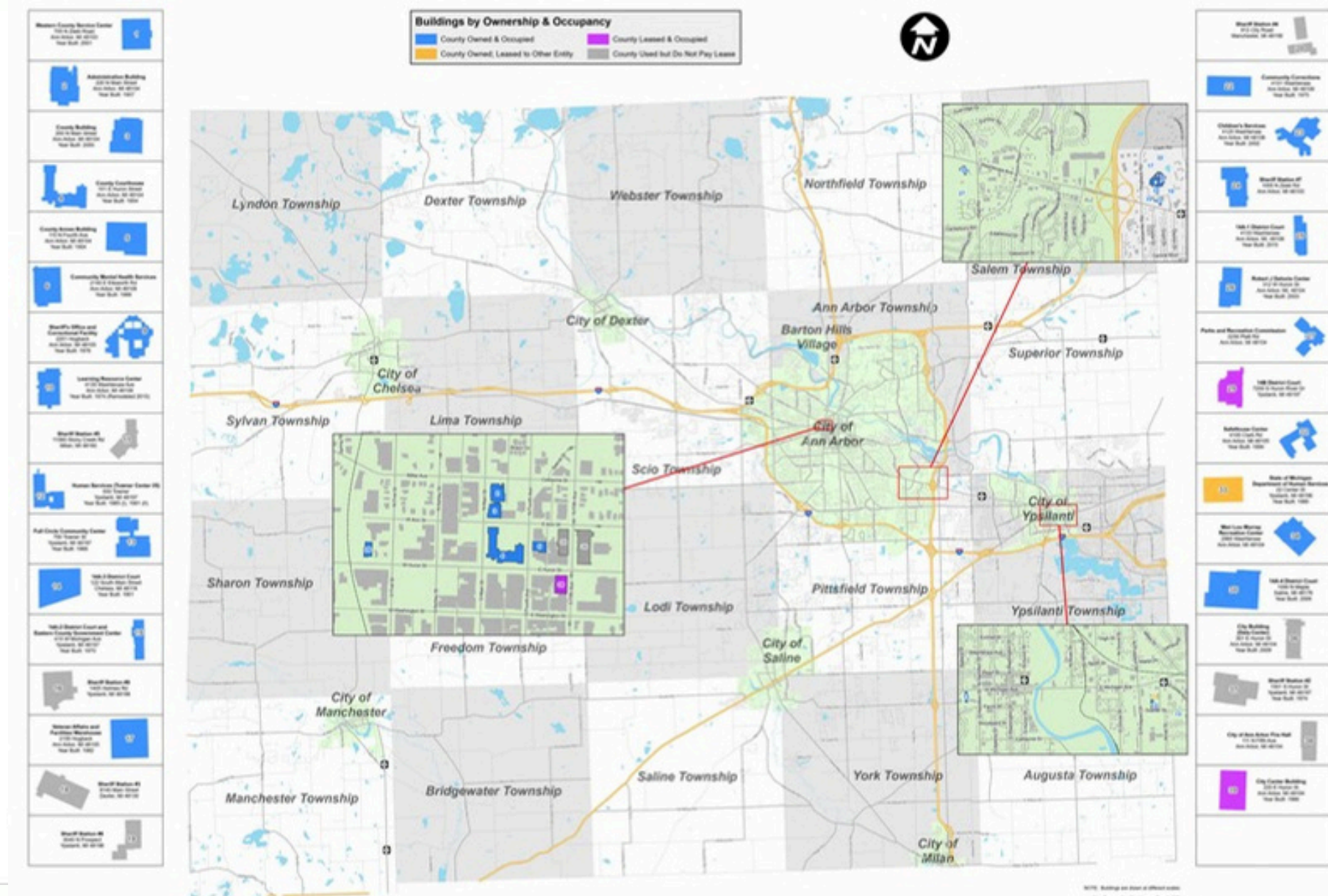
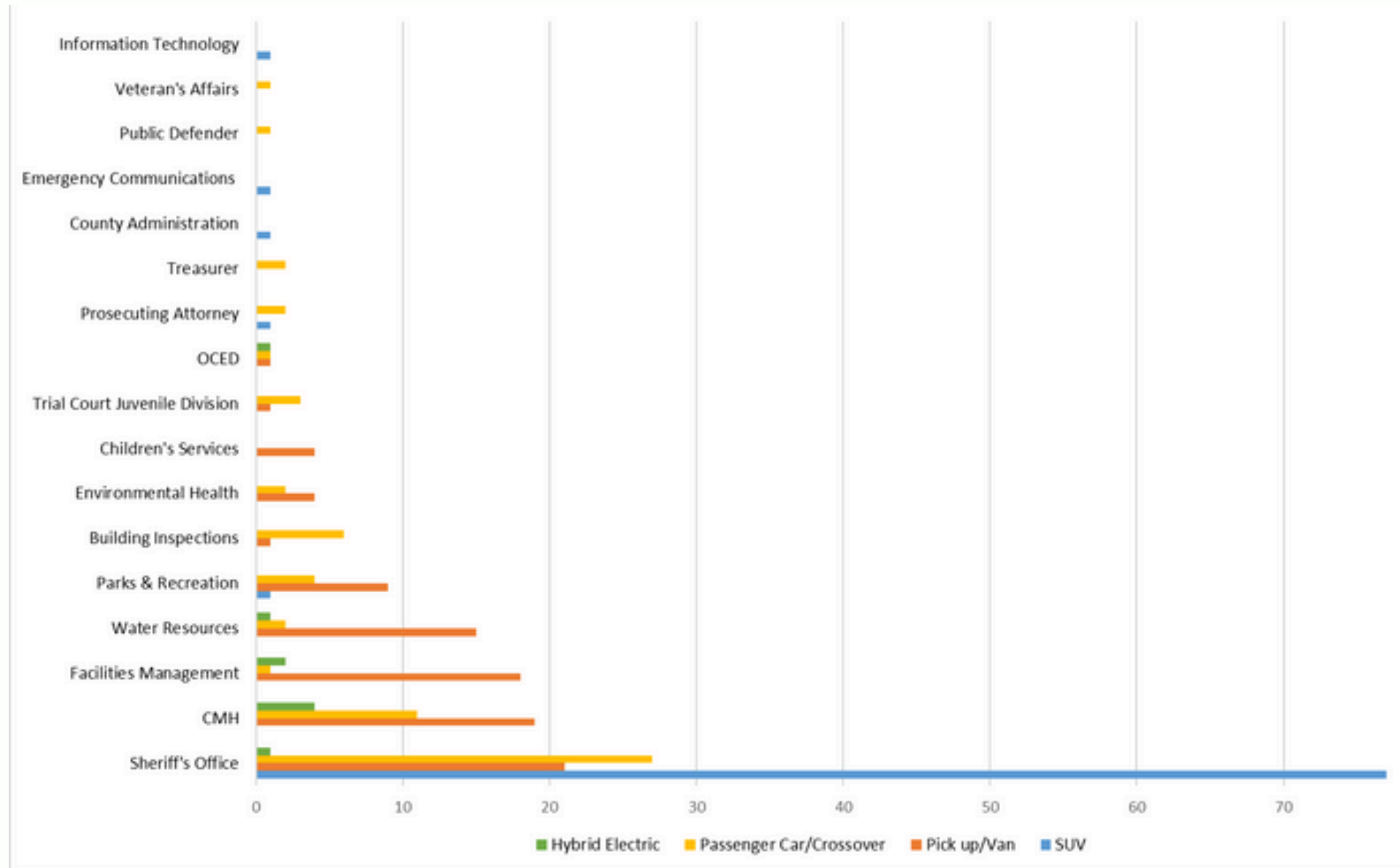
Community Partnership

Sustained Communications

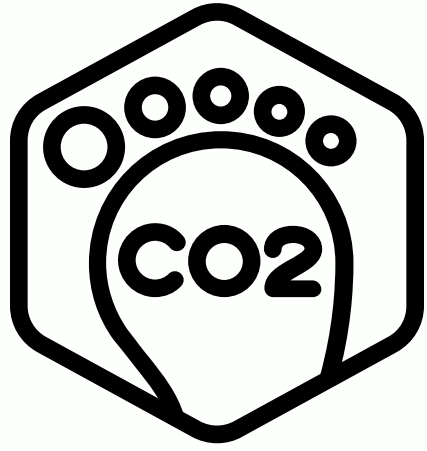
# FLEET AND FACILITIES

250+ Vehicles; 17 Departments

21 buildings; 5 campuses

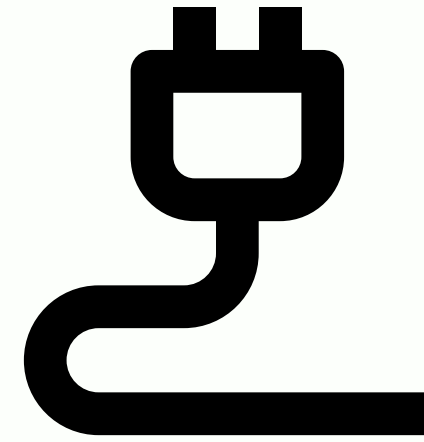






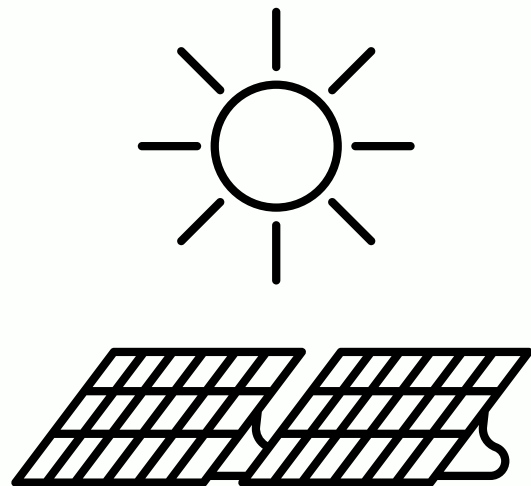
## **DECARB STUDY**

- 17 facilities included
- Scopes 1 & 2 Emissions
- Baselines, modeling, & evaluation



## **EV CHARGERS**

- Fleet parking locations County-wide
  - Fleet first, public availability
- Current: ~ 36 Level II charging ports
- Future: Additional Level II + Level III



## **SOLAR PROJECT**

- Just under 1 MW of solar at 6 locations
- Ground Mount + Carports + Rooftop
- Energy Intensity + Space + Replacements
- Also includes 20 Level 2 EV Charging Ports

## **ADDITIONAL CONSIDERATIONS**

- Current & Future Funding
- Various, often conflicting, priorities
- Cross-Departmental Collaboration/Cooperation
- Policies & Procedures

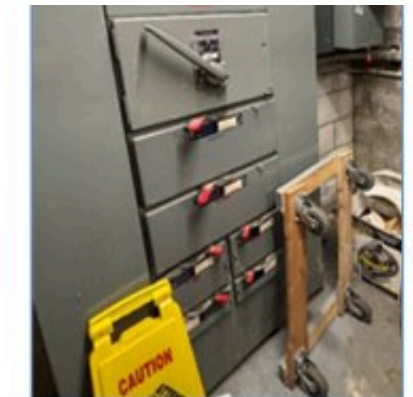
# DECARB STUDY SNAPSHOT

Facility Name	Facility Size (ft <sup>2</sup> )	ELECTRIC		\$/ kWh		FUEL		\$/ kWh		WATER/SEWER			Total			
		kWh	Cost	kWh	ft <sup>2</sup>	MMBtu	Cost	MMBtu	ft <sup>2</sup>	Gal-Water	Gal-Sewer	Cost	\$/ Gal	Annual Cost	kBtu/ft <sup>2</sup>	\$/ft <sup>2</sup>
Western Service Center	42,225	464,609	\$ 68,360	\$ 0.147	37.6	2,607	\$ 11,292	\$ 4.33	61.8	-	-	\$ -	\$ -	\$ 79,651	99.3	\$ 1.89
Veteran's Affairs and Facilities Warehouse	18,635	67,861	\$ 10,938	\$ 0.161	12.4	829	\$ 2,640	\$ 3.19	44.5	542,222.0	22,440.0	\$ 22,440	\$ 0.04	\$ 13,578	56.9	\$ 0.73
County HS and State of MI Dept of Health & HS	109,318	615,749	\$ 93,437	\$ 0.152	19.2	4,534	\$ 19,797	\$ 4.37	41.5	133,892.0	133,892.0	\$ 3,631	\$ 0.03	\$ 113,234	60.7	\$ 1.04
Washtenaw County Vital Records	43,515	184,687	\$ 27,769	\$ 0.150	14.5	1,551	\$ 7,745	\$ 4.99	35.6	133,892.0	133,892.0	\$ 3,914	\$ 0.03	\$ 35,515	50.1	\$ 0.82
Safe House Center	30,308	201,940	\$ 30,353	\$ 0.150	22.7	1,464	\$ 11,846	\$ 8.09	48.3	910.0	-	\$ 10,403	\$ 11.43	\$ 42,199	71.1	\$ 1.39
Eastern County Govt Center	28,486	157,975	\$ 24,149	\$ 0.153	18.9	1,519	\$ 6,836	\$ 4.50	53.3	82,280.0	82,280.0	\$ 2,955	\$ 0.04	\$ 30,984	72.3	\$ 1.09
Downtown Courthouse	118,130	767,408	\$ 113,877	\$ 0.148	22.2	6,713	\$ 26,688	\$ 3.98	56.8	725,560.0	725,560.0	\$ 17,898	\$ 0.02	\$ 140,564	79.0	\$ 1.19
Delonis	22,751	318,586	\$ 47,205	\$ 0.148	47.8	2,086	\$ 16,605	\$ 7.96	91.7	-	-	\$ -	\$ -	\$ 63,810	139.5	\$ 2.80
County Annex	32,852	154,166	\$ 26,574	\$ 0.172	16.0	871	\$ 5,352	\$ 6.14	26.5	302,940.0	302,940.0	\$ 6,353	\$ 0.02	\$ 31,925	42.5	\$ 0.97
Community Mental Health	30,284	213,492	\$ 31,885	\$ 0.149	24.1	914	\$ 4,355	\$ 4.77	30.2	219,912.0	219,912.0	\$ 3,521	\$ 0.02	\$ 36,240	54.2	\$ 1.20
Children's Services	35,313	434,490	\$ 61,882	\$ 0.142	42.0	2,794	\$ 18,599	\$ 6.66	79.1	418,880.0	418,880.0	\$ 6,531	\$ 0.02	\$ 80,481	121.1	\$ 2.28
Administration	26,303	185,875	\$ 27,937	\$ 0.150	24.1	1,088	\$ 6,126	\$ 5.63	41.4	92,004.0	92,004.0	\$ 3,820	\$ 0.04	\$ 34,064	65.5	\$ 1.30
Full Circle Community Center	14,953	82,295	\$ 13,032	\$ 0.158	18.8	299	\$ 3,078	\$ 10.28	20.0	58,344.0	58,344.0	\$ 1,352	\$ 0.02	\$ 16,111	38.8	\$ 1.08
Sheriff Correctional Facility and 14A-1 District Courthouse C	164,012	2,595,236	\$ 271,803	\$ 0.105	54.0	11,998	\$ 49,683	\$ 4.14	73.2	8,872,028.0	8,872,028.0	\$ 133,654	\$ 0.02	\$ 321,487	127.2	\$ 1.96
Community Corrections	16,863	76,427	\$ 12,229	\$ 0.160	15.5	273	\$ 862	\$ 3.16	16.2	316,404.0	316,404.0	\$ 4,855	\$ 0.02	\$ 13,091	31.7	\$ 0.78
<b>Subo Totals</b>	<b>733,948</b>	<b>6,520,796</b>	<b>\$ 861,430</b>	<b>\$ 0.132</b>	<b>30.3</b>	<b>39,540</b>	<b>\$ 191,504</b>	<b>\$ 4.84</b>	<b>53.9</b>	<b>11,899,268.0</b>	<b>11,378,576.0</b>	<b>\$ 221,326.4</b>	<b>\$ 0.02</b>	<b>\$ 1,052,935</b>	<b>84.2</b>	<b>\$ 1.43</b>

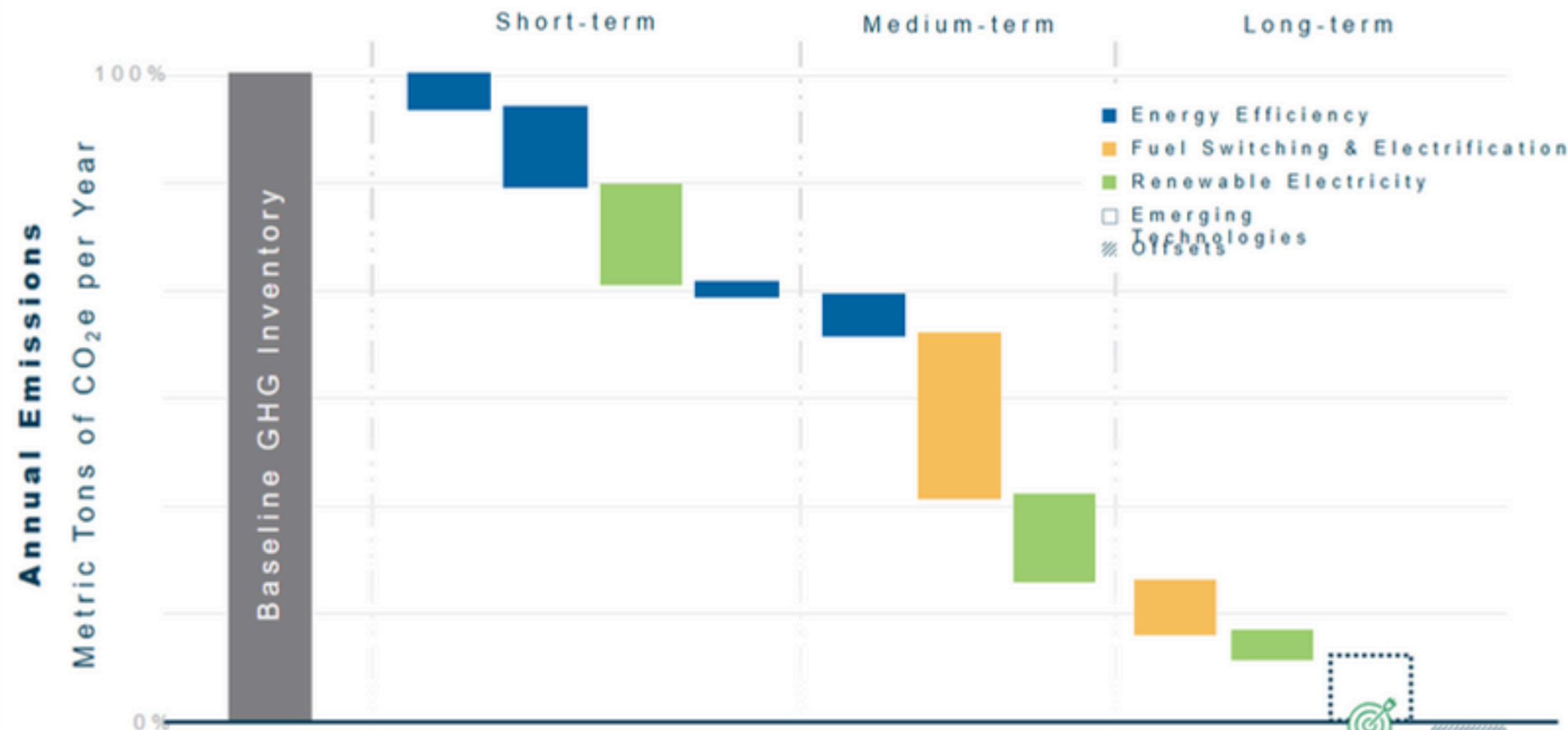
## Baseline Utilities

Electrical Service: 400A 120/208V-3PH, 4W

MDP-1: Main switchboard with 400A disconnect in gear.



## Inventory Mechanicals



DTE Electrical Meter, House Service



Branch Panel-A and Panel-E, labeling appeared accurate, panels are in fair condition with very few if any spares.



## Develop Report

# FACILITY SNAPSHOT: VA/FM WAREHOUSE



18,635  
Square Feet

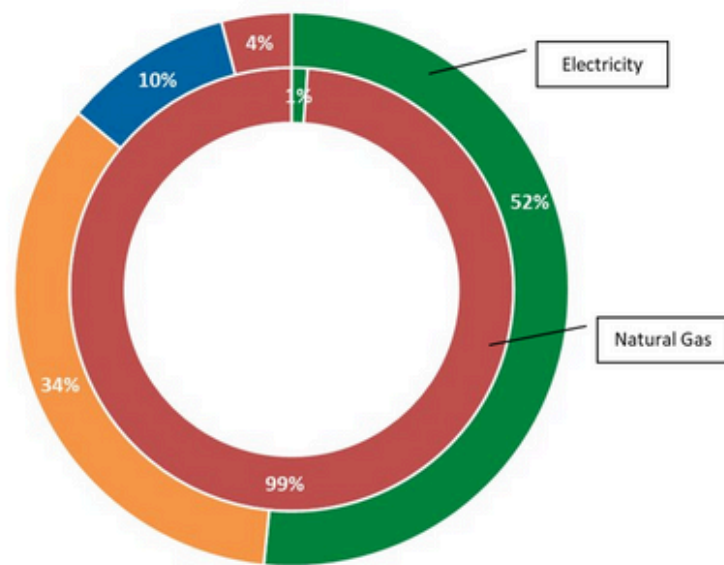
1982  
Age

\$13,578  
Annual Utility Spend

56.9  
EUI (kBtu/Square Foot)

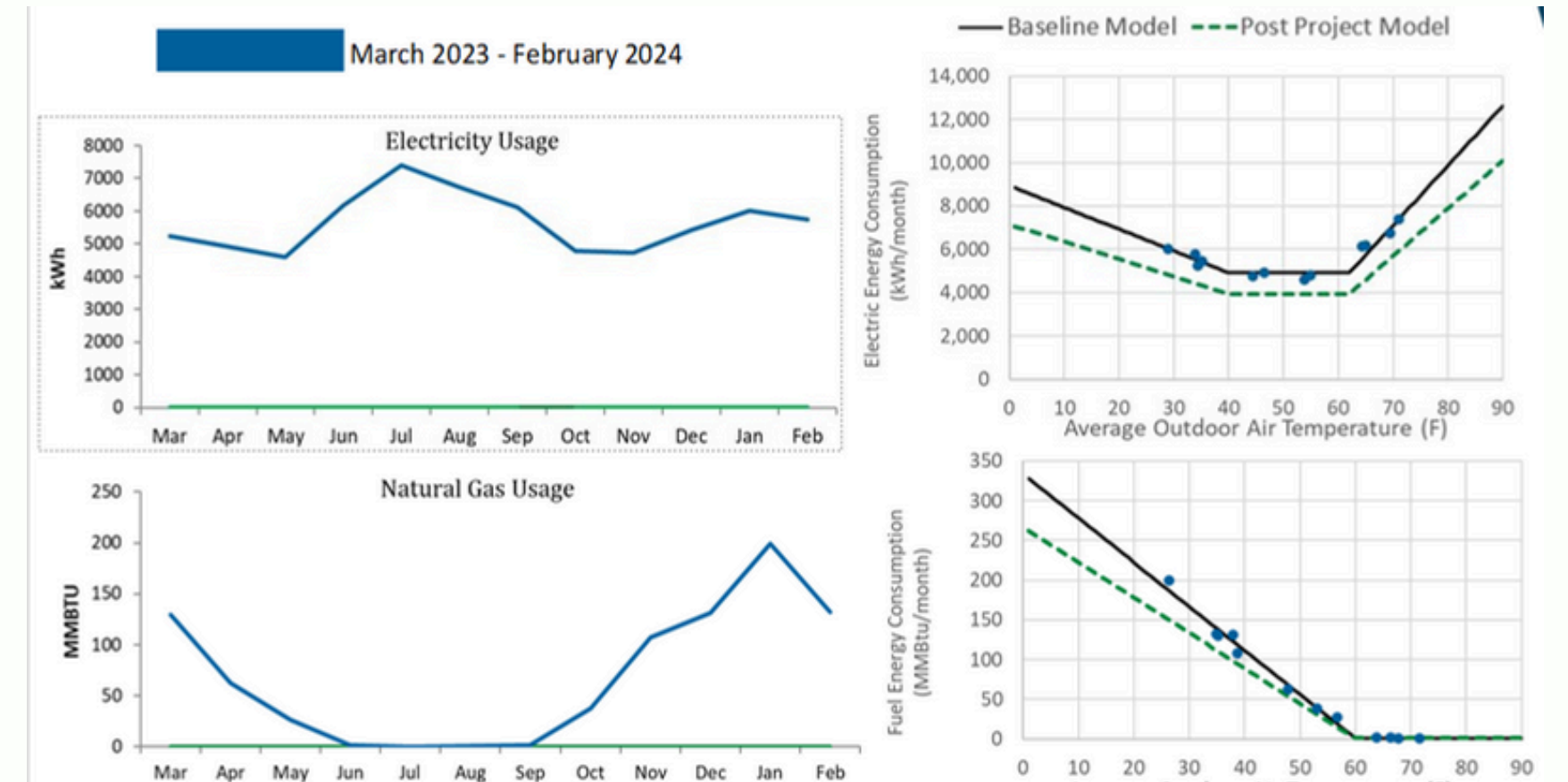
\$.73  
Cost/Square Foot

## End-Use Breakdown – Veterans Affairs



	Annual Electricity Breakdown	
	Predicted kWh	Predicted Cost
Independent	35,017	\$ 5,644
Lighting	23,345	\$ 3,763
Space Cooling	6,731	\$ 1,085
Space Heating	2,767	\$ 446
<b>Total</b>	<b>67,861</b>	<b>\$ 10,938</b>

	Annual Natural Gas Breakdown	
	Predicted MMBTU	Predicted Cost
Independent	10	\$ 33
Space Heating	892	\$ 2,842
<b>Total</b>	<b>903</b>	<b>\$ 2,875</b>



# THANK YOU!



**QUESTIONS**



**Mary Braun**  
[braunm@washtenaw.org](mailto:braunm@washtenaw.org)