Benefits of Benchmarking: The City of Cleveland

MEEA Building Energy Codes Conference 2020
Cleveland Climate Action

The 2013 Cleveland Climate Action Plan established an overarching greenhouse gas reduction goal of 80% below 2010 emissions by 2050, with interim goals of 16% reduction by 2020 and 40% reduction by 2030.
Cleveland Climate Action Plan

Green Building & Energy Efficiency

Goals
- By 2030, reduce residential and commercial energy use by 50% and industrial use by 30% saving Cleveland households and businesses $170 million annually from utility savings.
- All large commercial and industrial buildings are tracking and managing their energy use by 2023.

Objectives
1: Make more homes affordable, comfortable, healthy, and energy efficient
2: Prioritize energy efficiency in small and mid-size businesses
3: Support community hubs to be more efficient and resilient
4: Promote new construction and major renovations that meet high green building standards
Greenhouse gas emissions reduction goal, below 2010 baseline:

- 10% by 2016
- 20% by 2020
- 45% by 2030
SC-MAP
Building-Related Focus Areas

Design, Construction, and Maintenance
- Green building for new construction & major renovations
- Capital improvement project sustainability review
- Preventative maintenance

Energy
- Energy efficiency and conservation in existing buildings
- Building automation systems
- Re-commissioning tune-up
- Division of Water system pumping and treatment optimization
- Streetlight upgrades

2020 interim goal was achieved in 2018 – 23% reduction
Energy Management and Benchmarking
Energy Management and Benchmarking

Metrics Summary

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<thead>
<tr>
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<tbody>
<tr>
<td>ENERGY STAR Score (1-100)</td>
<td>83</td>
<td>93</td>
<td>10.00  (12.00%)</td>
</tr>
<tr>
<td>Source EUI (kBtu/ft²)</td>
<td>106.6</td>
<td>75.6</td>
<td>-31.00 (29.10%)</td>
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<tr>
<td>Site EUI (kBtu/ft²)</td>
<td>61.4</td>
<td>41.7</td>
<td>-19.70 (32.10%)</td>
</tr>
<tr>
<td>Energy Cost ($)</td>
<td>1,170,143.28</td>
<td>866,239.03</td>
<td>-303904.25 (26.00%)</td>
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<tr>
<td>Total GHG Emissions Intensity (kgCO₂e/ft²)</td>
<td>5.9</td>
<td>4.2</td>
<td>-1.70  (28.80%)</td>
</tr>
<tr>
<td>Water Use (All Water Sources) (kcal)</td>
<td>34,354.8</td>
<td>Not Available</td>
<td>N/A</td>
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<tr>
<td>Total Waste (Disposed and Diverted) (Tons)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>N/A</td>
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Energy Management

Utilizing Benchmarked Data

- Ongoing operational improvements
- Capital Improvement Project Input
- Internal & External Reporting
Ongoing Operational Improvements

Utilizing Benchmarked Data
Energy Data and Building Operations

- Notifications for high monthly cost/consumption
- Billing errors
- Equipment malfunctions, leaks, adjustments

<table>
<thead>
<tr>
<th>MLB Usage</th>
<th>121.8 MLB</th>
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<tr>
<td>Proportional Share of Bill Costs</td>
<td></td>
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<tr>
<td>Charge</td>
<td>$</td>
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<td>Meter Subtotal</td>
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