

US EPA ARCHIVE DOCUMENT

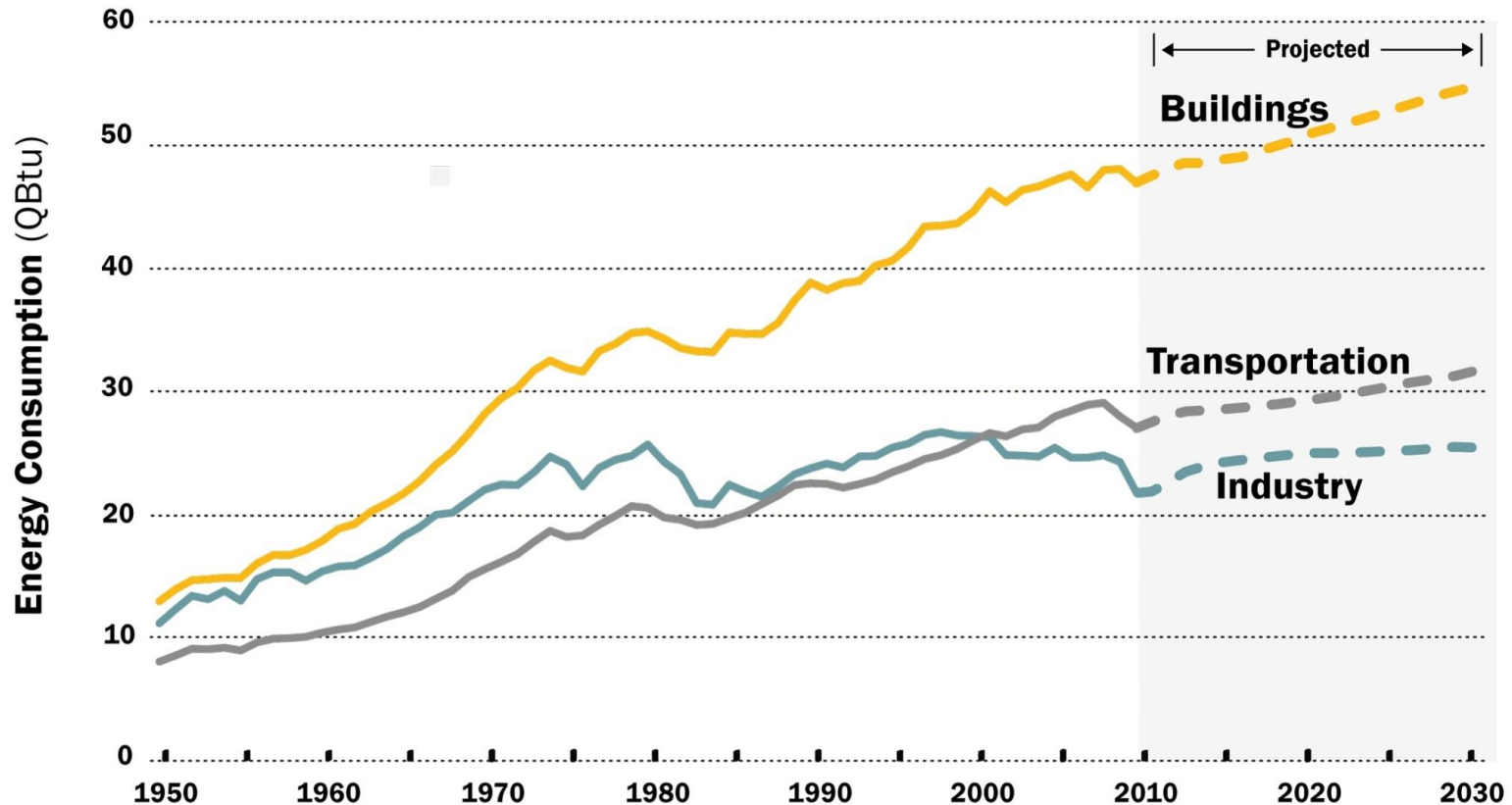
The Seattle 2030 District



The Rise of a District
Matthew Combe
Program Director

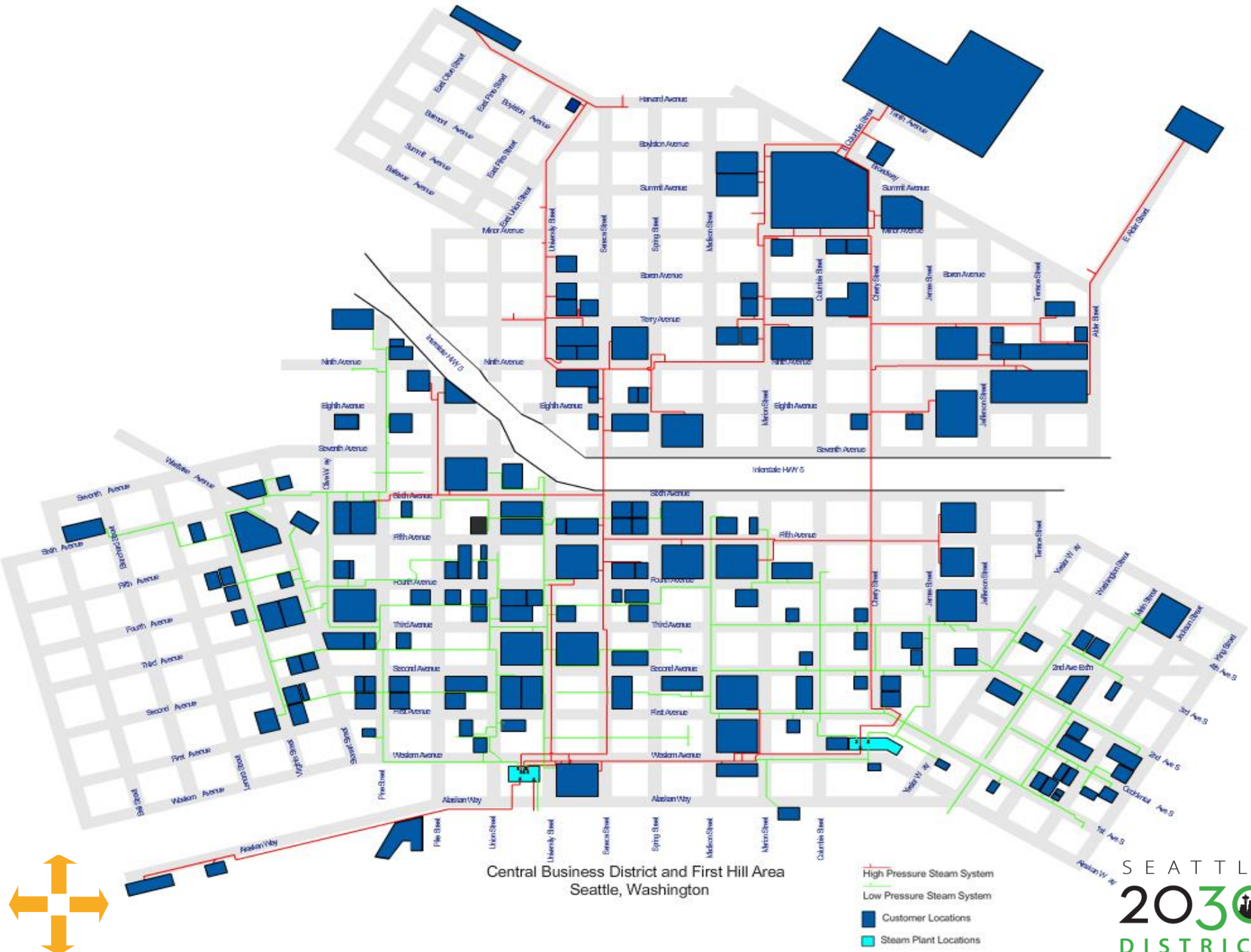
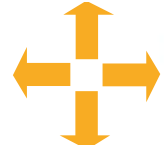


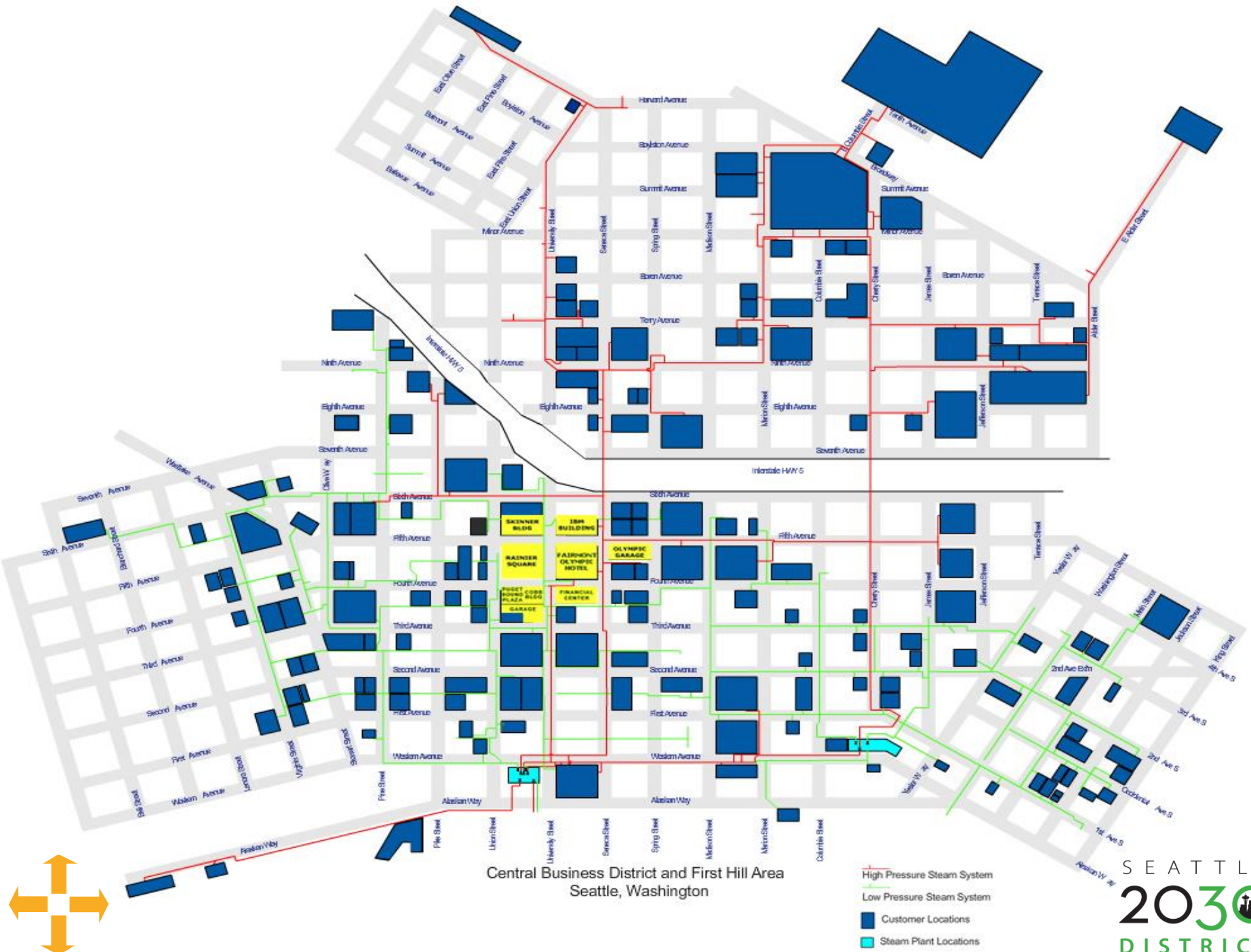
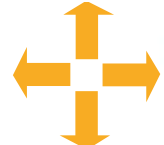
The National Context

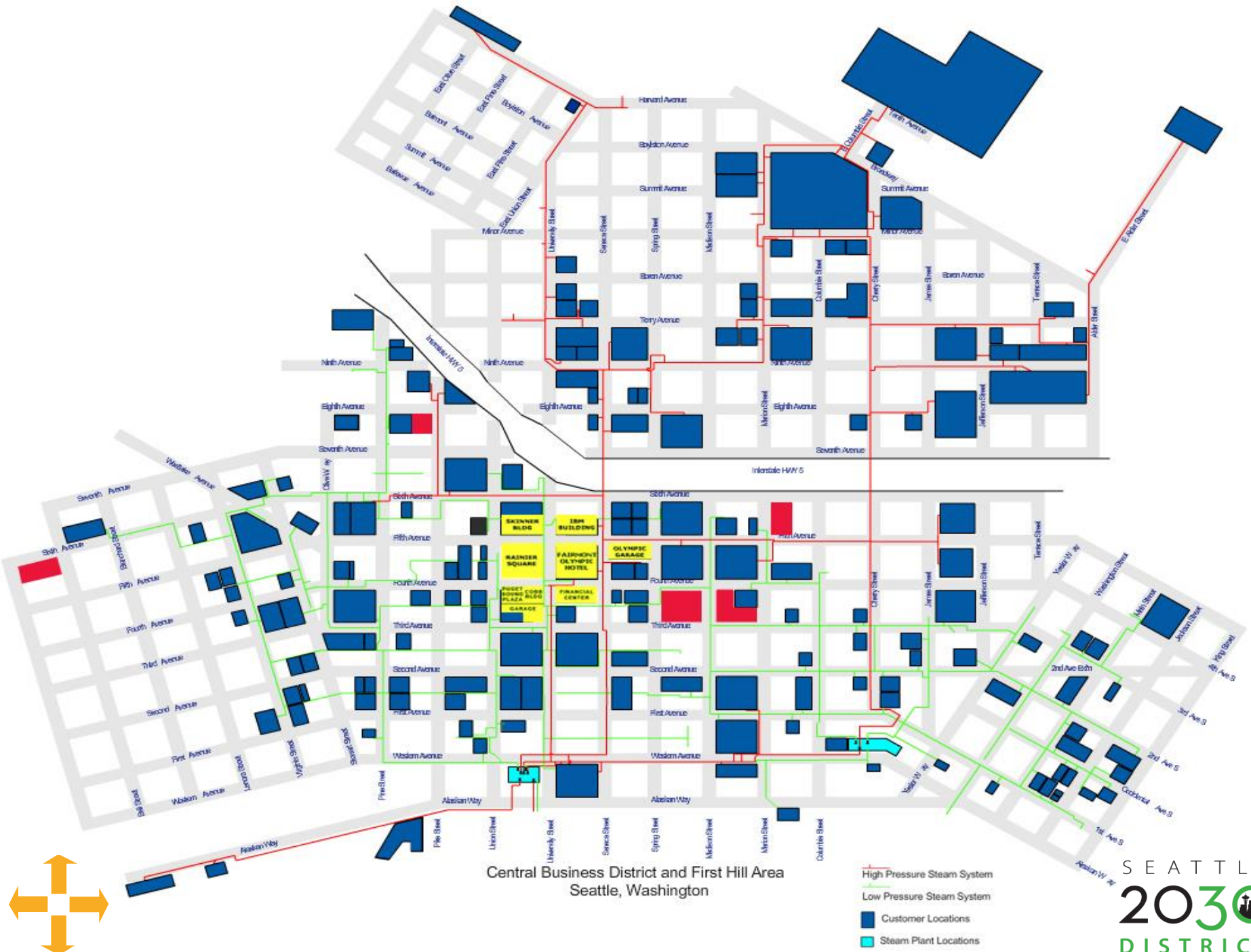
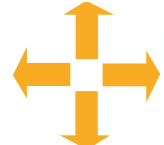


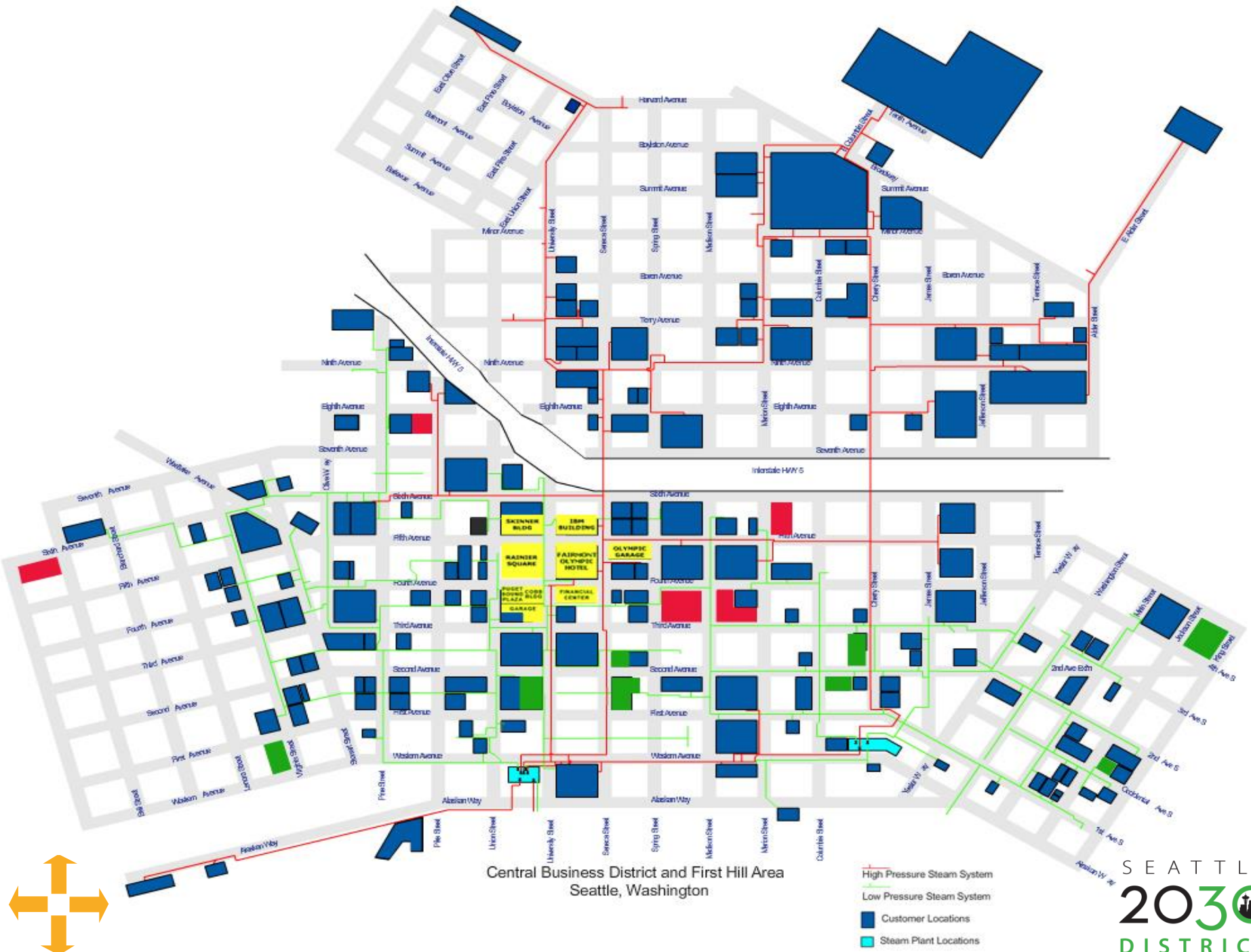
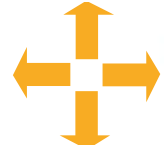
U.S. Energy Consumption by Sector (Historic / Projected)

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Data Source: U.S. Energy Information Administration.



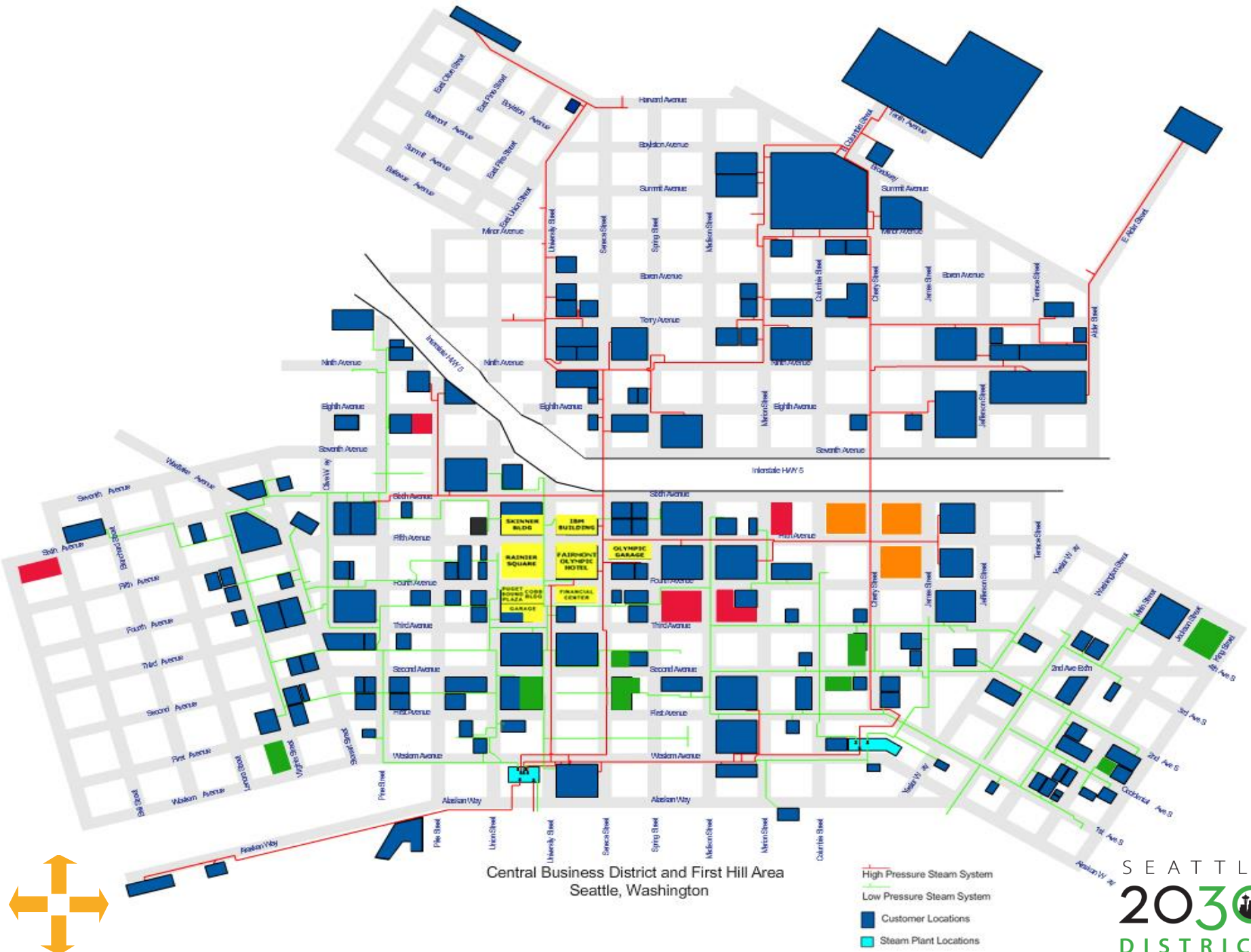
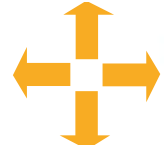






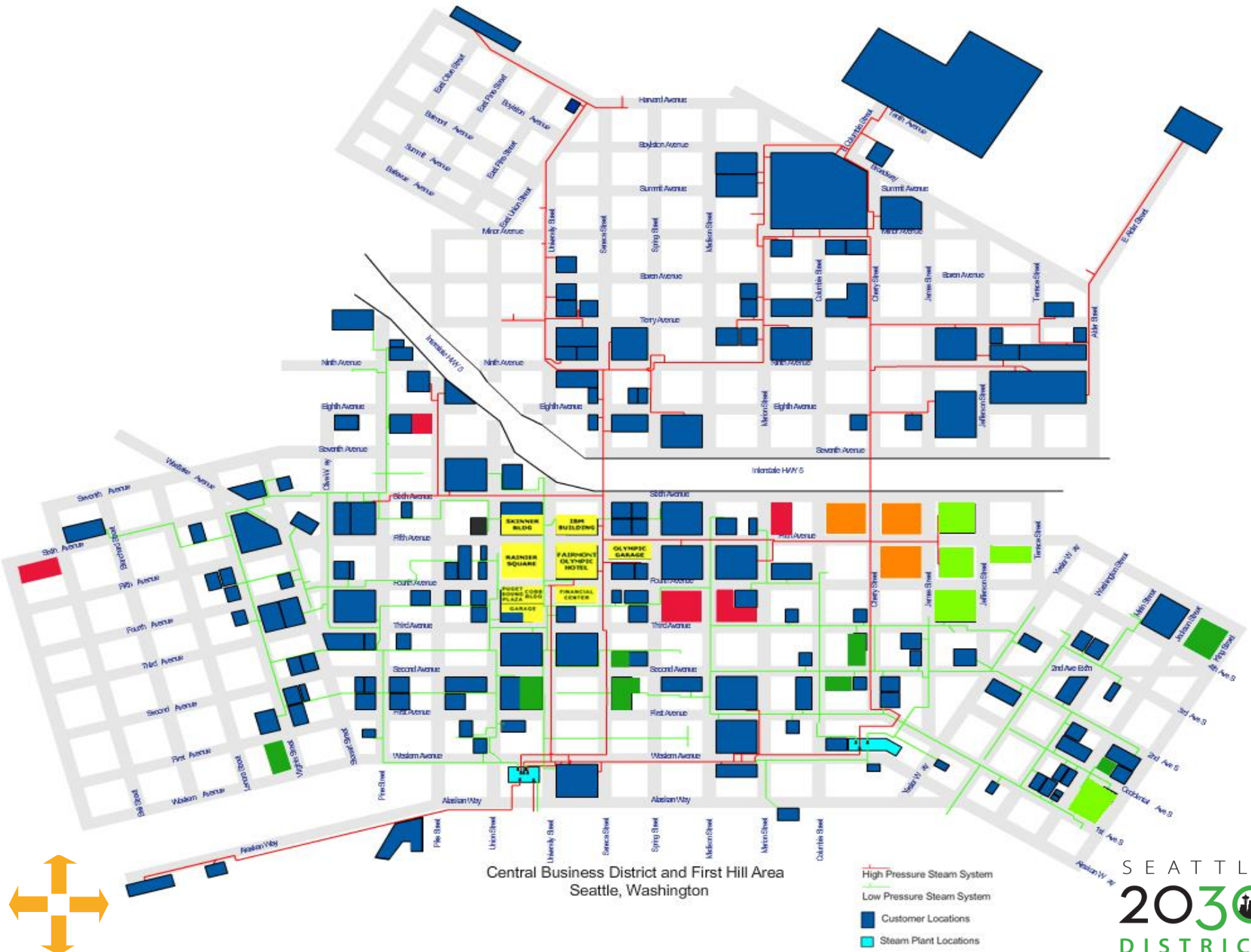
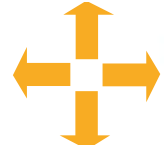
Central Business District and First Hill Area
Seattle, Washington

- High Pressure Steam System
- Low Pressure Steam System
- Customer Locations
- Steam Plant Locations



Central Business District and First Hill Area
Seattle, Washington

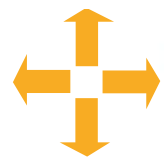
- High Pressure Steam System
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Central Business District and First Hill Area
Seattle, Washington

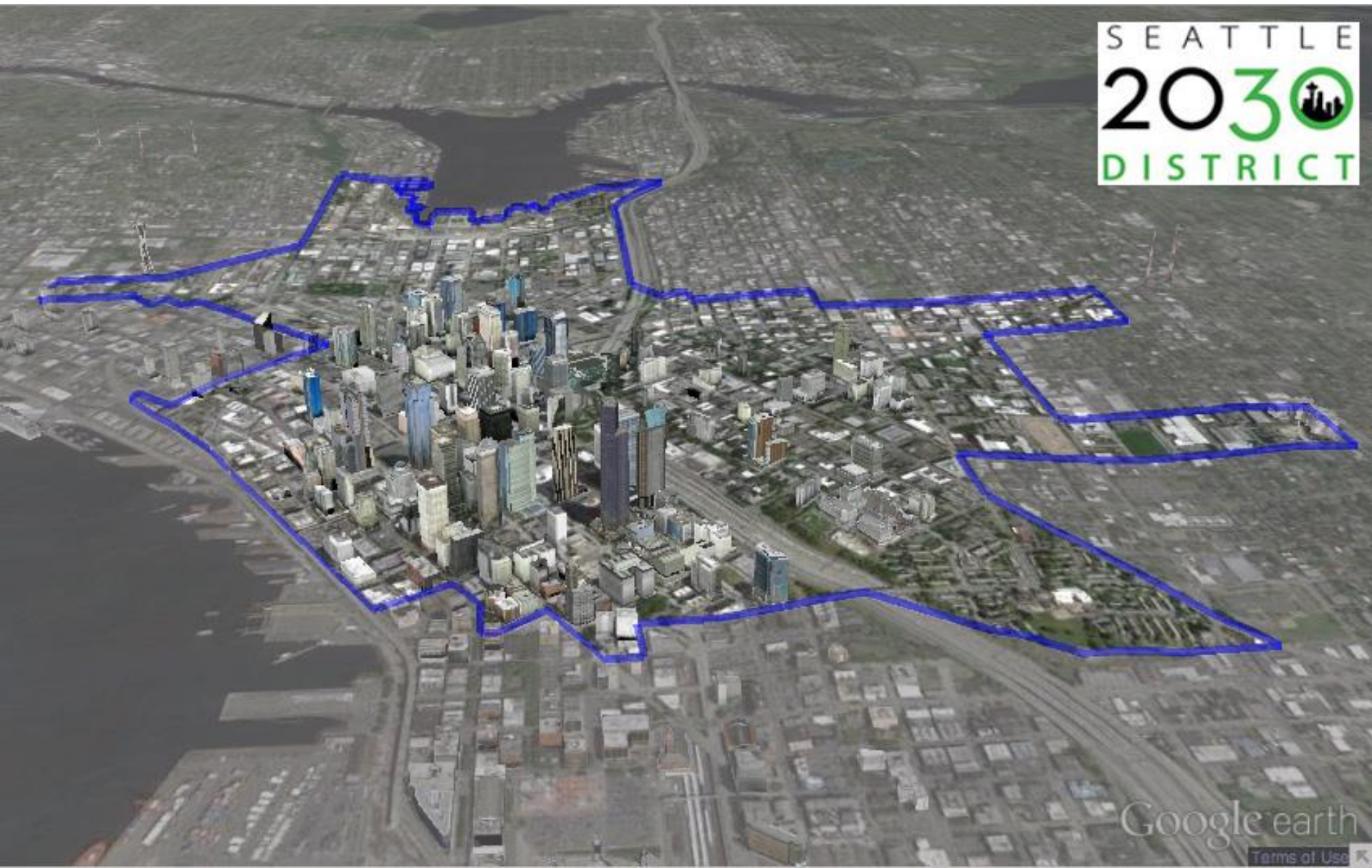
- High Pressure Steam System
- Low Pressure Steam System
- Customer Locations
- Steam Plant Locations

- SEATTLE STEAM CUSTOMERS
- UNICO/UW METRO TRACT
- HINES
- CBRE
- CITY OF SEATTLE
- KING COUNTY
- BEACON CAPITAL
- WRIGHT RUNSTAD
- GVA KIDDER MATHEWS
- CLISE

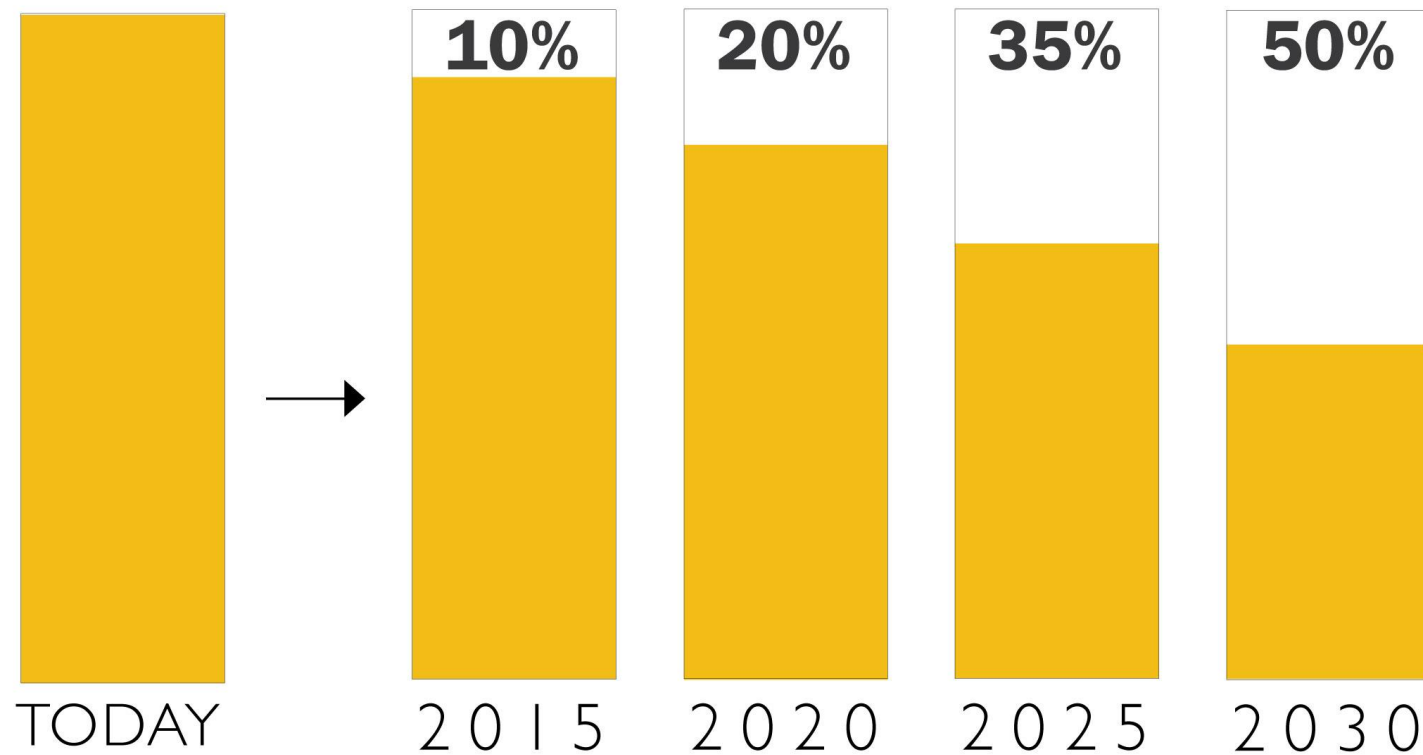


Central Business District and First Hill Area
Seattle, Washington

Current Boundary



Performance Targets – Existing Buildings



- Energy, Water, and CO2 from Transportation Reduction
- Energy, Water, and CO2 from Transportation Consumption

The 2030 Challenge for Planning: Existing Buildings

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Performance Targets



National EUI compared to
actual EUI

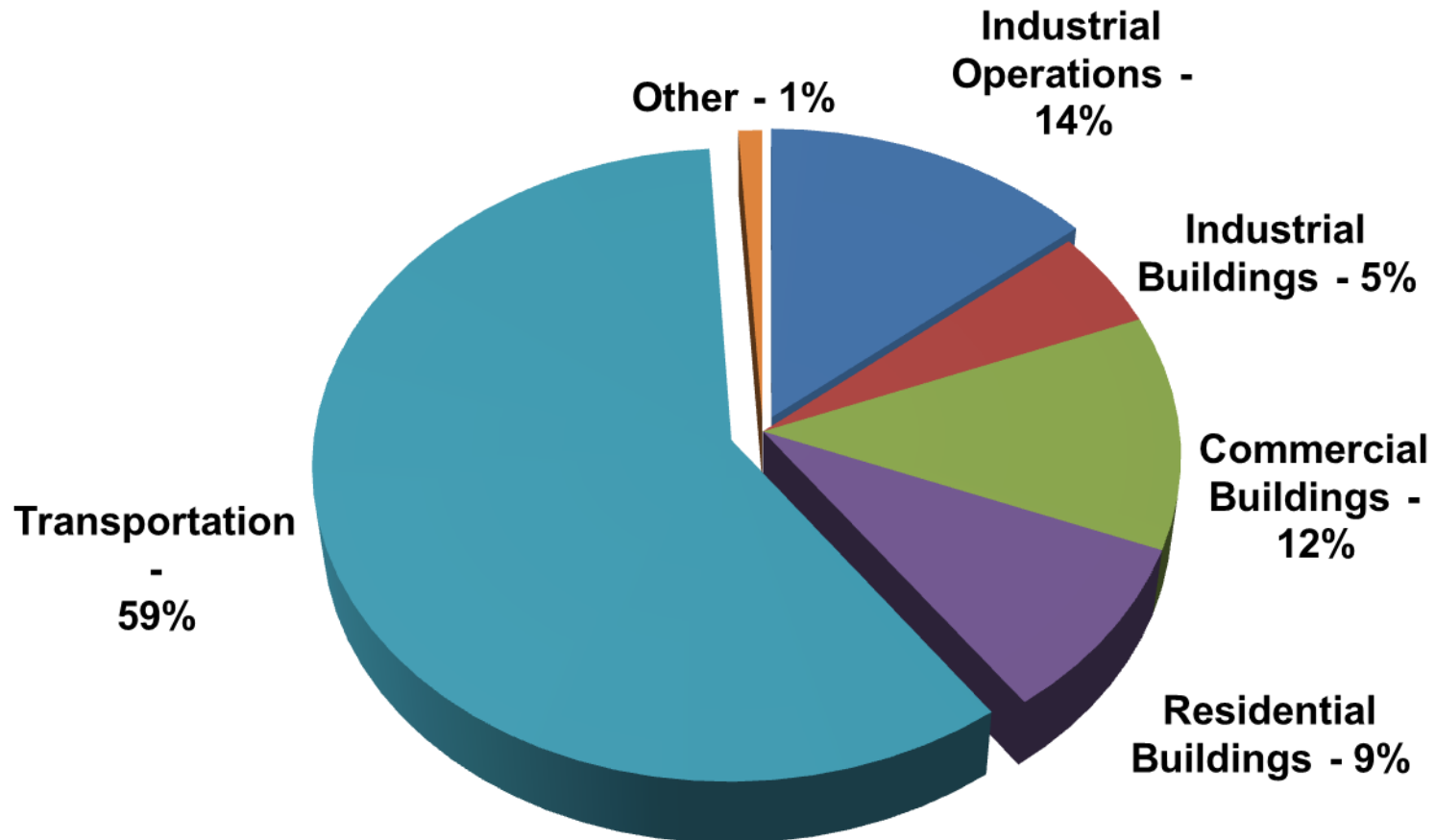


Regional Baseline



Regional Baseline

Seattle's GHG Inventory



New York's GHG Inventory

2010 Citywide CO₂e Emissions by Sector

Total = 54.3 million metric tons

Buildings = 75%

■ Residential

■ Commercial

■ Industrial

■ Institutional

Transportation = 21%

■ On-road transportation

■ Transit

Wastewater, fugitive = 2%

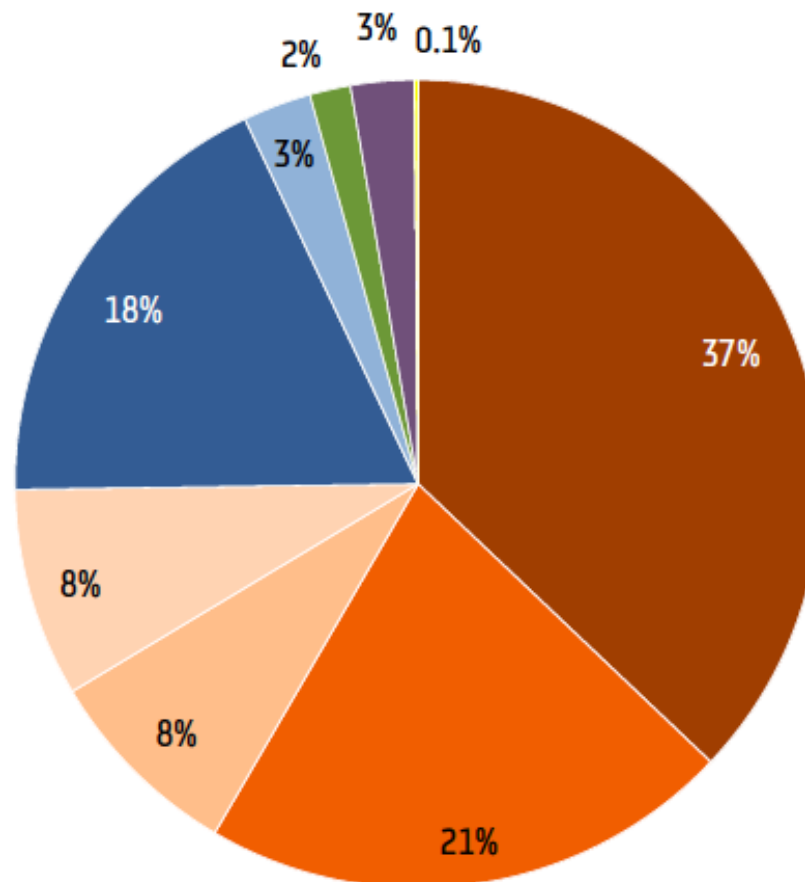
■ Wastewater, fugitive

Solid waste = 3%

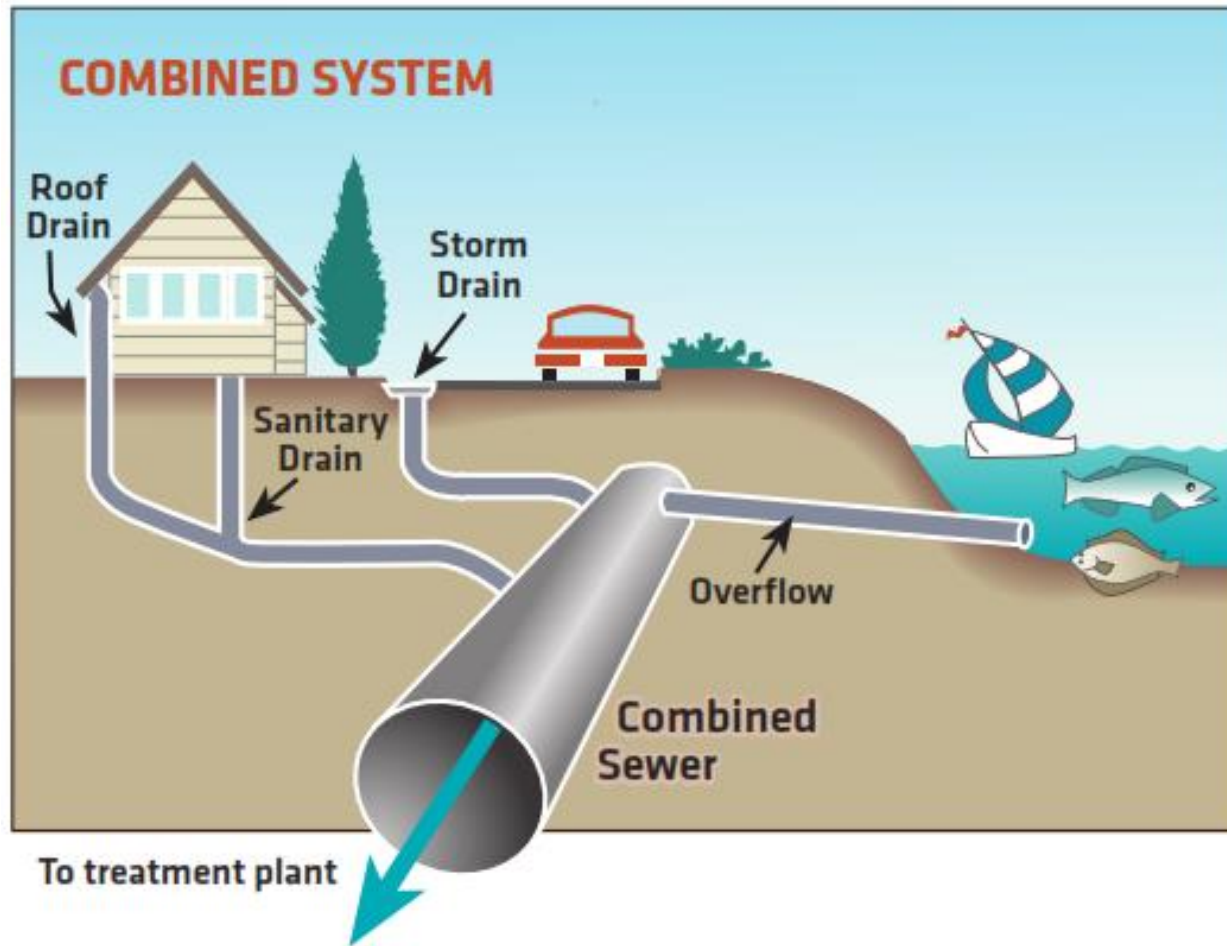
■ Solid waste

Streetlights and traffic signals = 0.1%

■ Streetlights and traffic signals



Water: A Deeper Dive



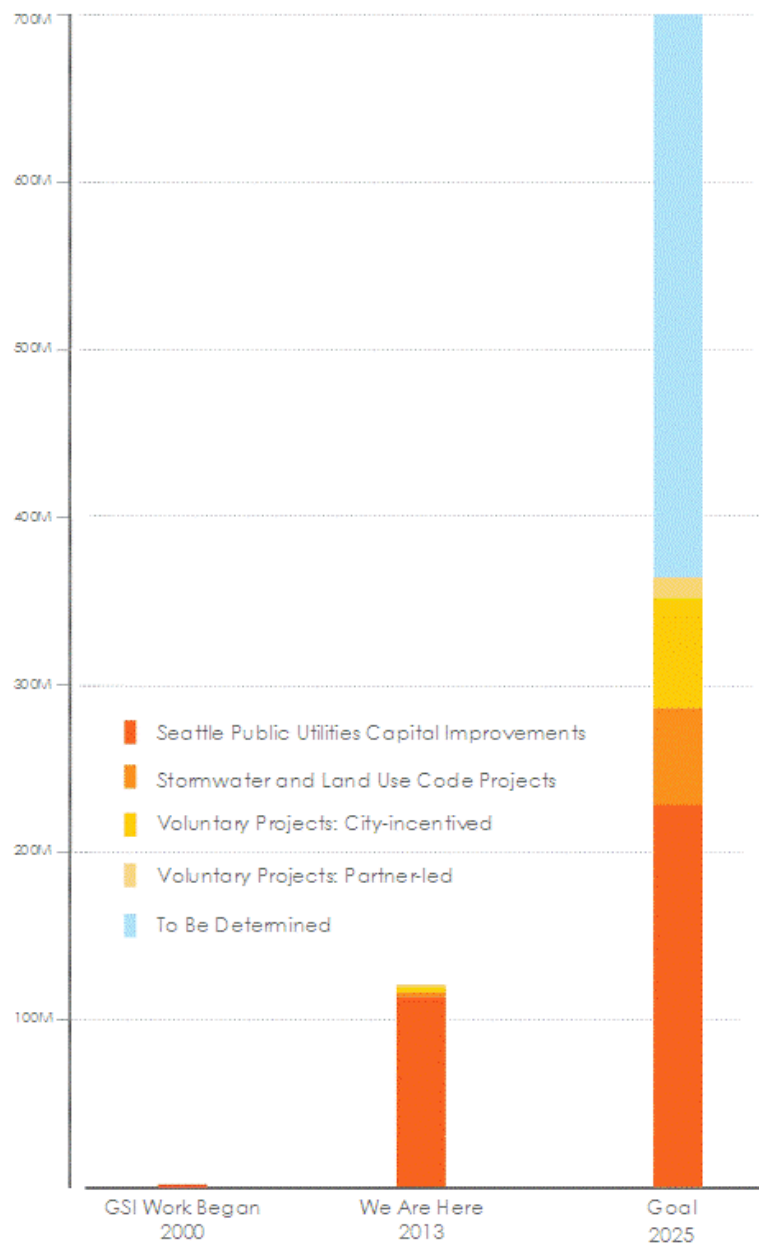
- Seattle, 2012:
 - 355 Events
 - 154 MG of sewage into our waterways

Green Stormwater Infrastructure

2025 Goal: Implementation Breakdown



gallons of stormwater managed annually by GSI



Aggressive GSI Goals

Baseline Stormwater and Potable Water Use

Building & Site Characteristics

Select Building Use & Total Building Floor Area

	SF
	SF
	SF
Enter Lot Area	SF
Enter Building Footprint Area	SF
Enter Current Water Use	0 Gal/Yr

Estimated Annual Baseline

Potable Water (District Average)	0 Gal/Yr
Stormwater	0 Gal/Yr

Strategies for Reducing Stormwater and Water Use

Potable Water Use Reduction Strategies

☐ Potable Water Saving Options

Annual Potable Savings

1

 Gal/Yr

Stormwater Reduction Strategies

☐ Trees

Newly Planted

Deciduous No.

Evergreen No.

Retained

Deciduous No. Canopy Area (SF)

Evergreen No. Canopy Area (SF)

☐ Bioretention

Contributing Area SF

Pollution Generating Surface

4

Facility Bottom Area

N/A

 SF

Ponding Depth inch

Vertical Sidewalls ☐ Yes

Underdrain ☐ Yes

Orifice on Underdrain ☐ Yes

Routed to onsite vault ☐ Yes

☐ Permeable Pavement

Perm. Pavement Area SF

Run-on Area SF

☐ Green Roof

Green Roof Area SF

Runoff routed to vault ☐ Yes

☐ Rainwater Harvesting

Annual Reuse Volume⁶ Gal/Yr

☐ Detention Vault

Contributing Area SF

Green Roof Area SF

Bioretention Cont. Area SF

Vault Volume Gal

High-Rise

Mid-Rise

Low-Rise

Summary of Expected Water Managed⁶

Total Potable Water Managed	Total Stormwater Managed	Total Water Managed
0 Gal/Yr	0 Gal/Yr	0 Gal/Yr
0% Managed ⁷	0% Managed	0% Managed ⁷
Trees Gal/Yr Bioretention Gal/Yr Permeable Pavement Gal/Yr Green Roof Gal/Yr Rainwater Harvesting Gal/Yr Detention Vault Gal/Yr		

The 2030 Water and Storm Water Calculator

SEATTLE

2030

DISTRICT

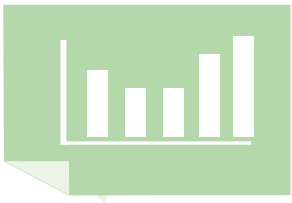
Progress

144 Buildings



Progress

**35% of the
Total Square
Footage**



Aggregated Performance Shared Buildings

23% Reduction in Energy



Aggregated Performance Shared Buildings

7.5%
**Reduction in
Water**



Aggregated Performance Shared Buildings

5.4%
**Reduction in
Transportation
Emissions**



Aggregated Performance Total District

9% Reduction in Energy



Aggregated Performance Total District

2.5%
**Reduction in
Water**



Aggregated Performance Total District

8.6%

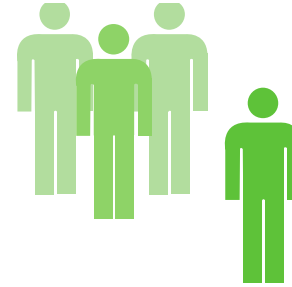
Reduction in
Transportation
Emissions



Benefits For Building Owners, Managers and Developers



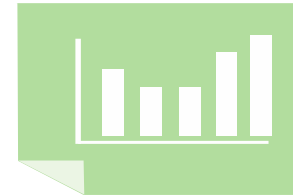
Utilize special
Financing programs



Improve competitive
positioning

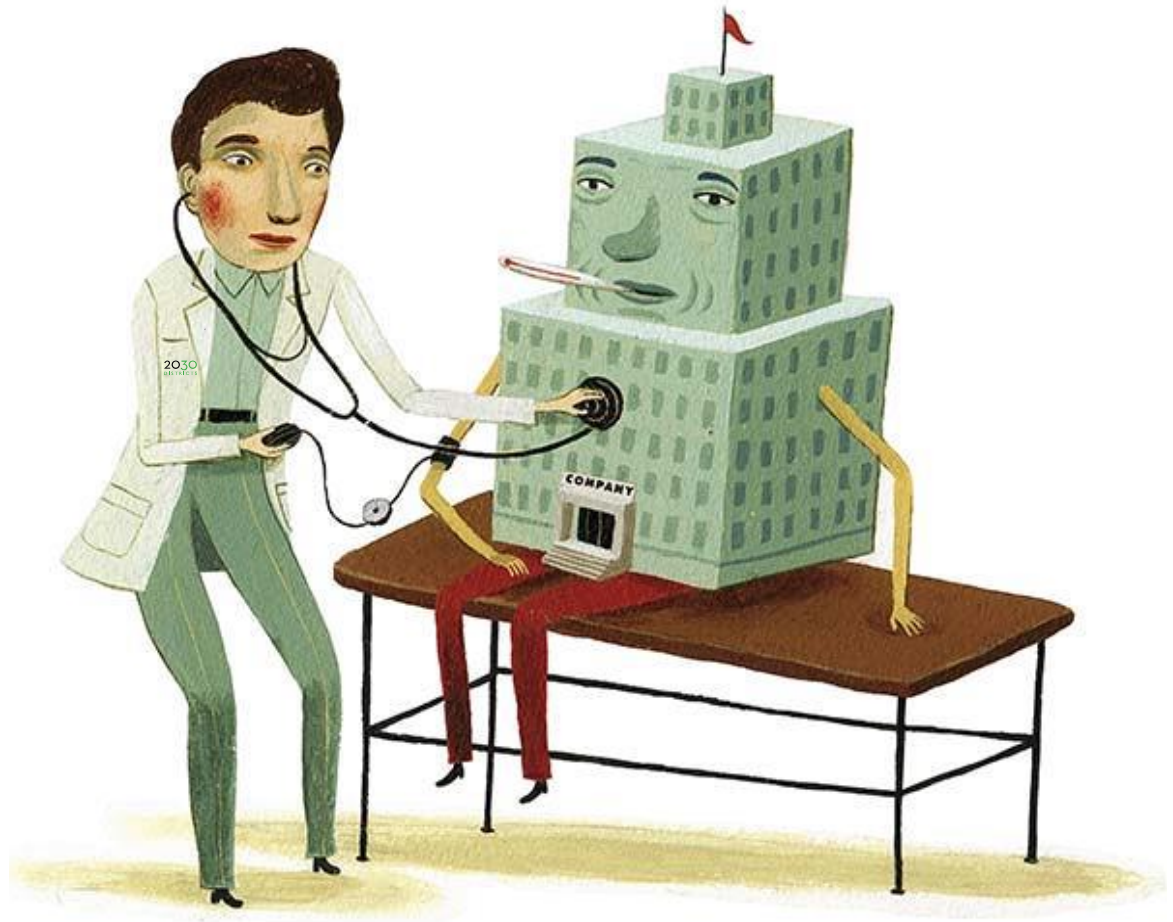


Access exclusive
incentives, discounts
& programs

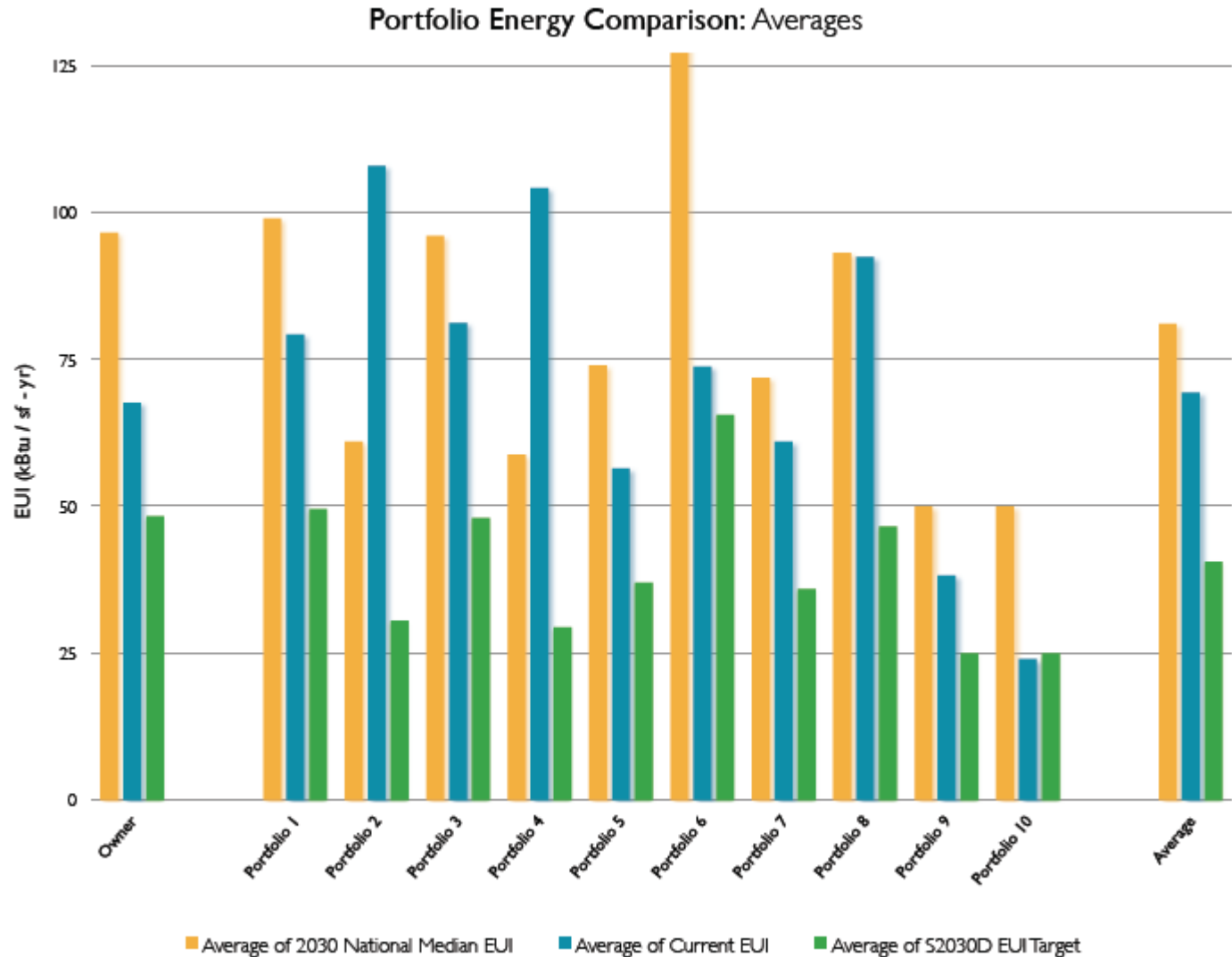


Receive comparative
analysis reports

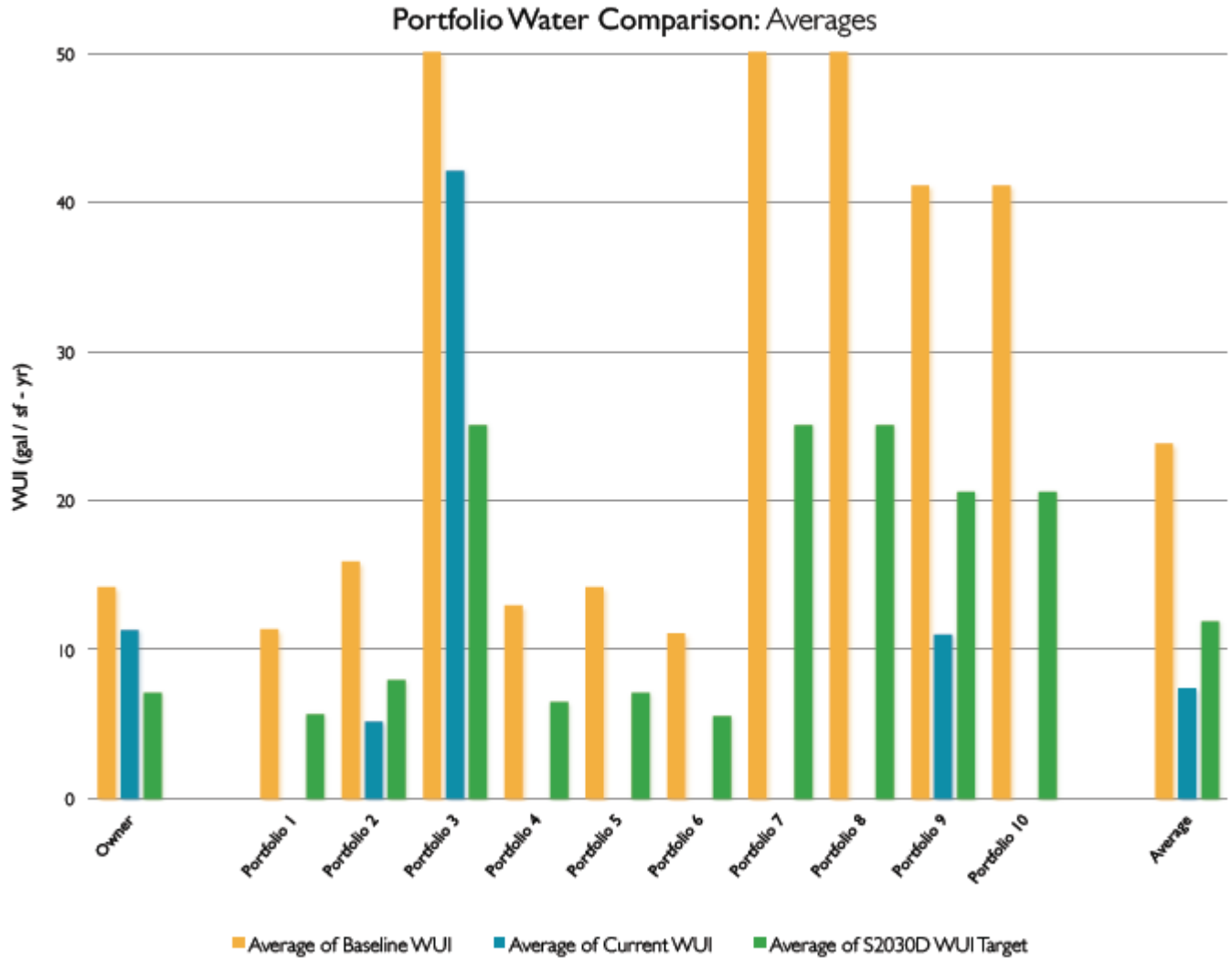
Building Assessment



Portfolio Comparisons



Portfolio Comparisons



Portfolio Progress Report

Portfolio Progress Report

ENERGY

% EUI Reduction
(from Baseline)

30%

% EUI Reduction / Year Necessary to
Reach 2015 Target (10%)

0%

WATER

% WUI Reduction
(from Baseline)

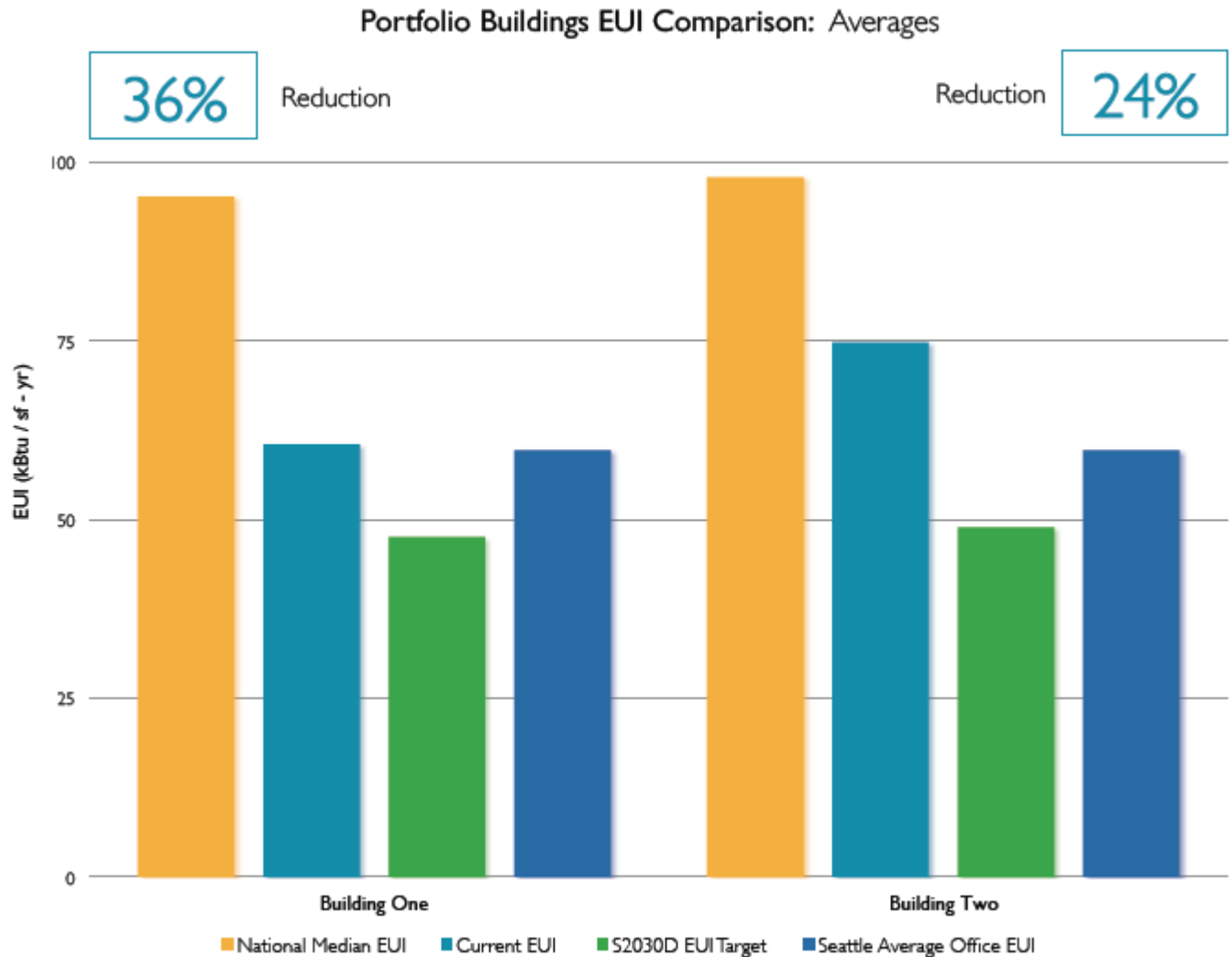
20%

% EUI Reduction / Year Necessary to
Reach 2015 Target (10%)

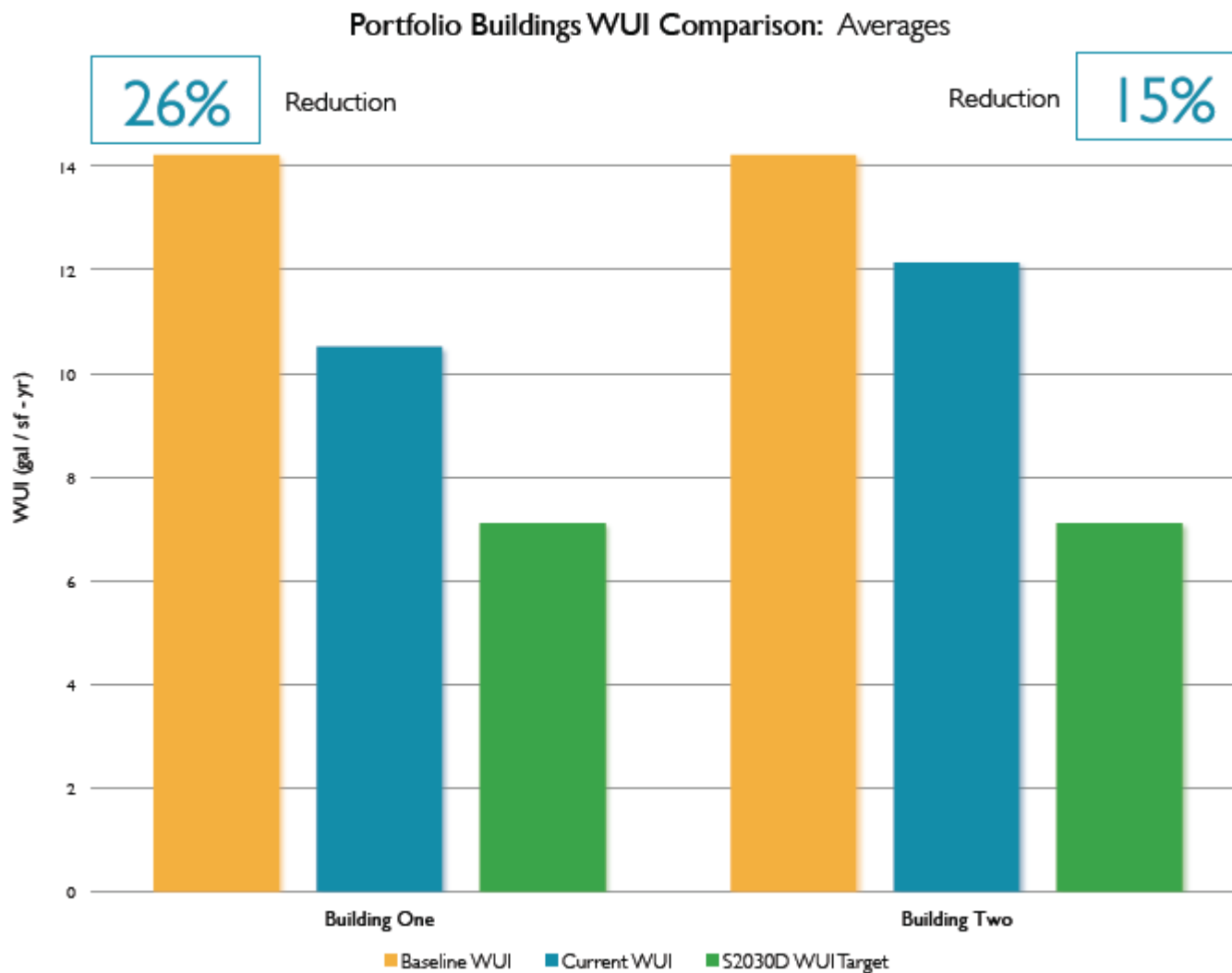
0%



Property Comparisons



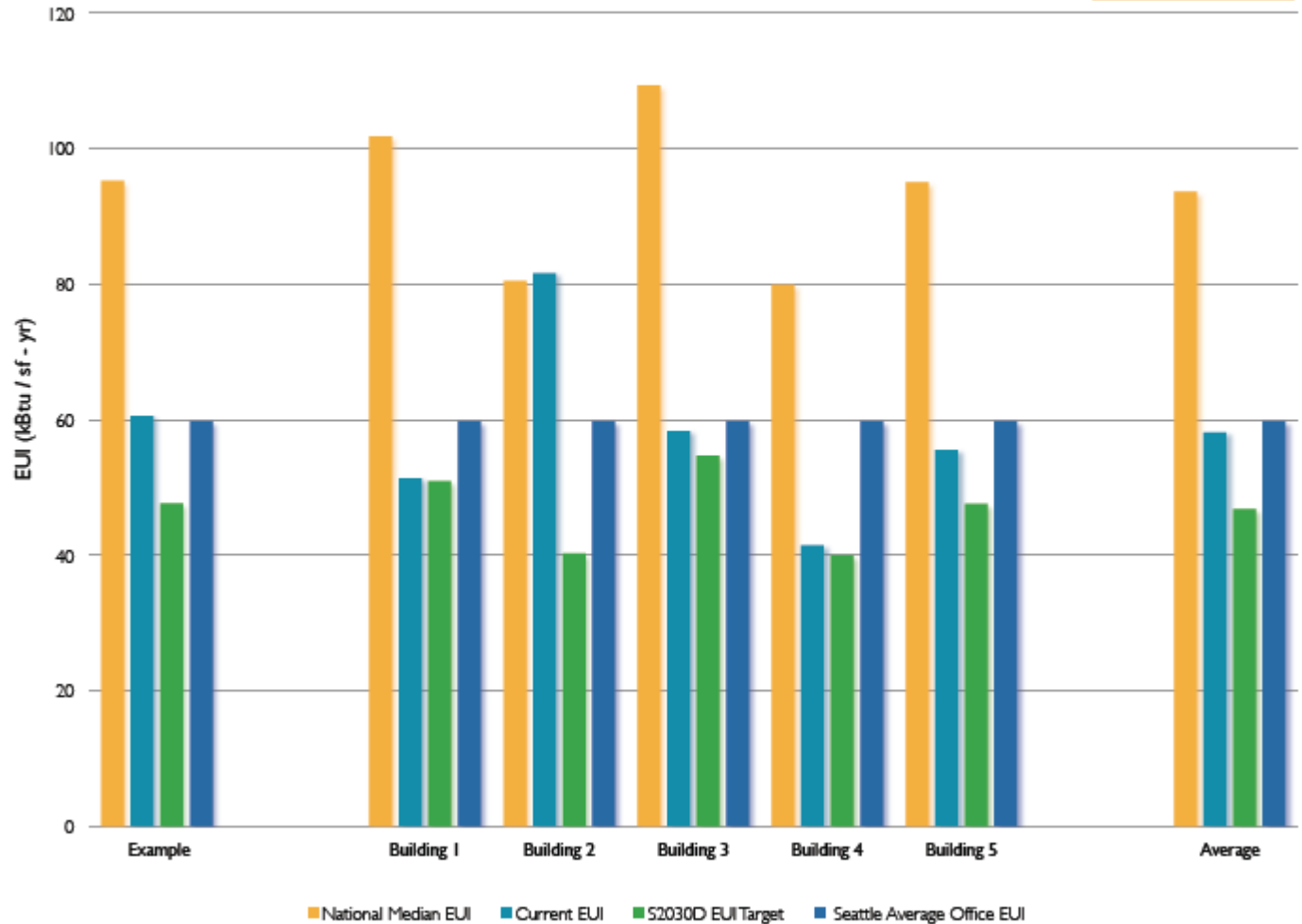
Property Comparisons



Property Comparisons

Building Energy Comparison:
Offices > 900K Square Feet

Energy Data Last Updated: Nov-12

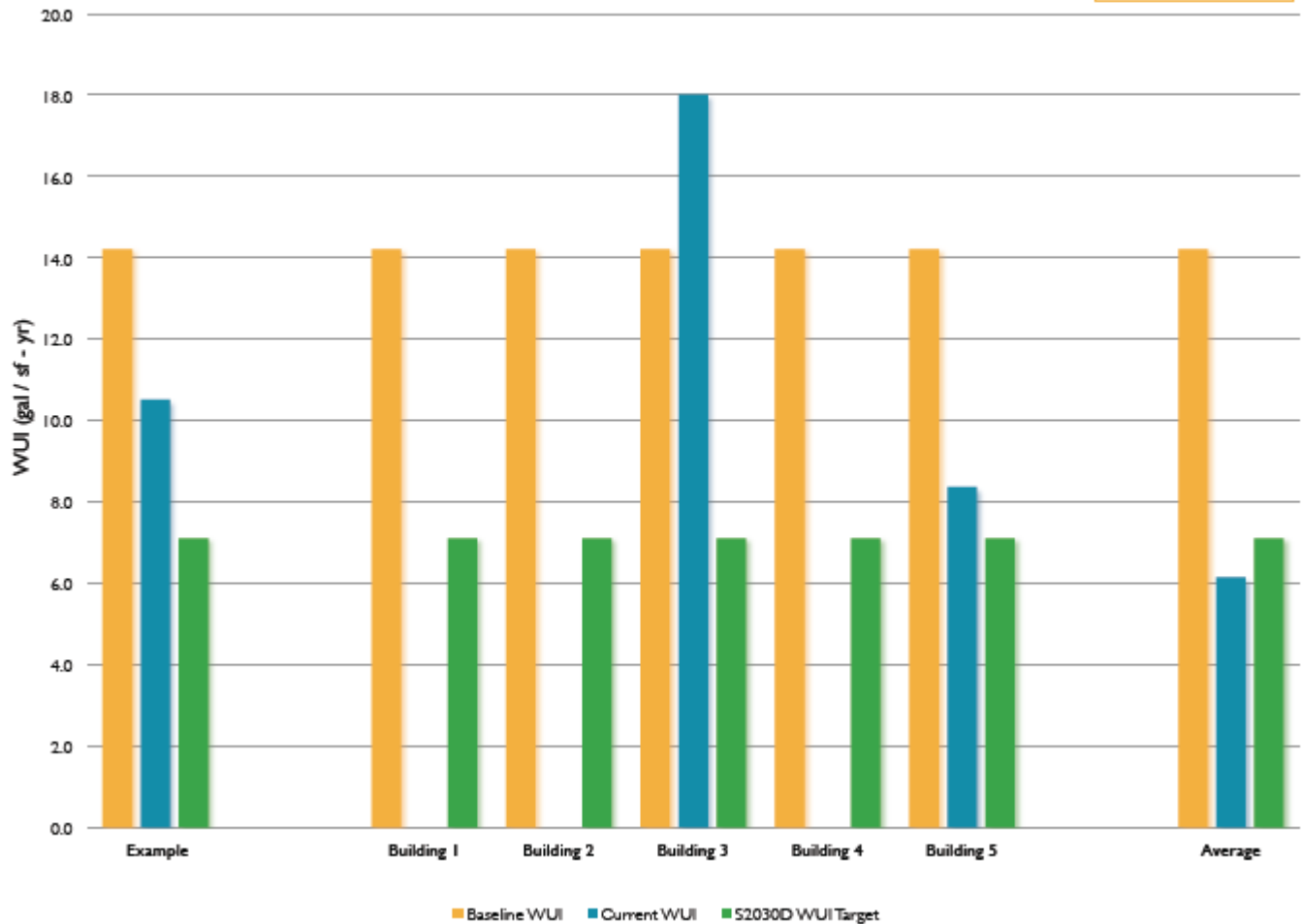


Property Comparisons

Building Water Comparison:
Offices > 900K Square Feet

Water Data Last Updated:

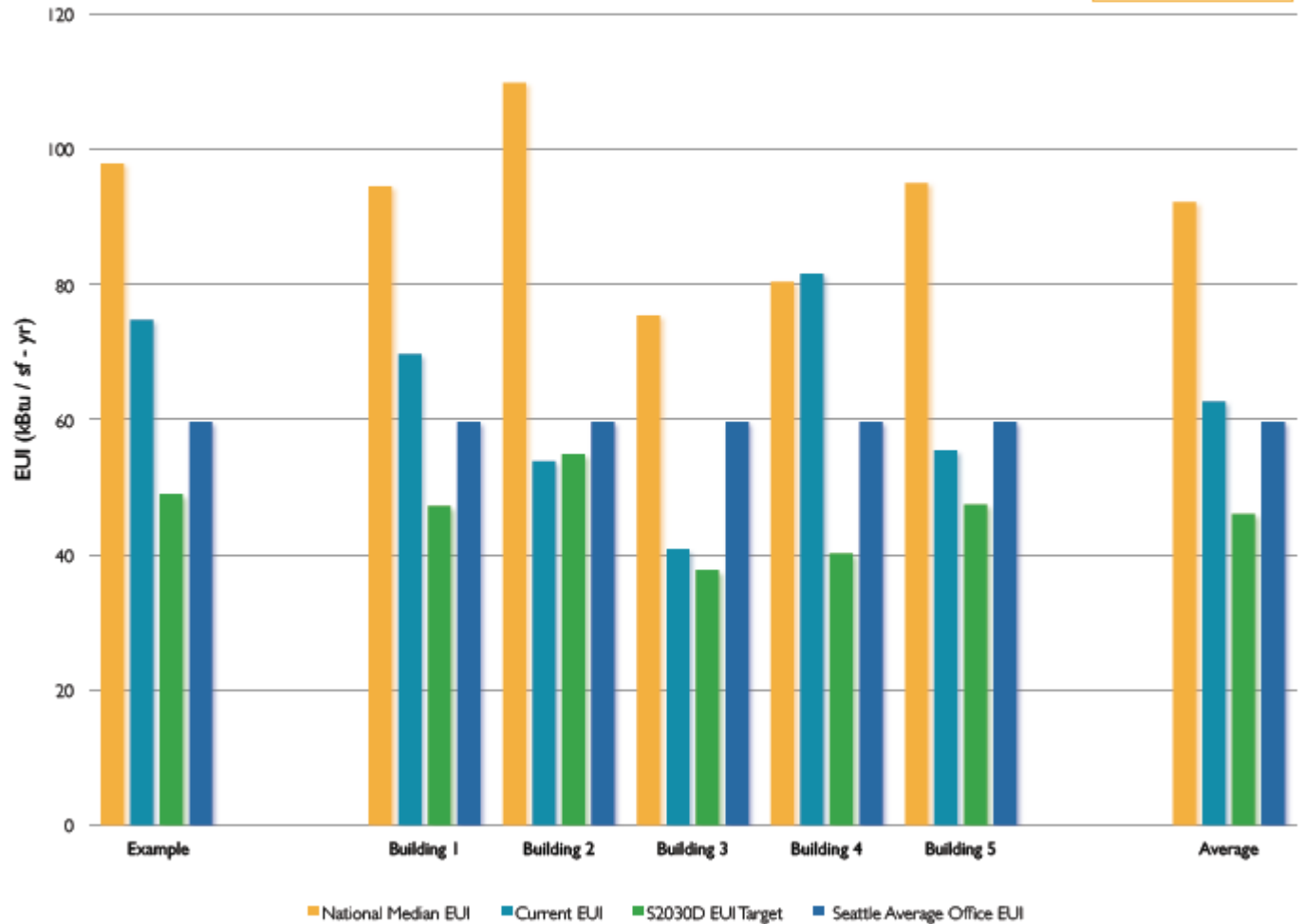
Oct-13



Property Comparisons

Building Energy Comparison:
Offices 500K - 700K Square Feet

Energy Data Last Updated: Nov-12

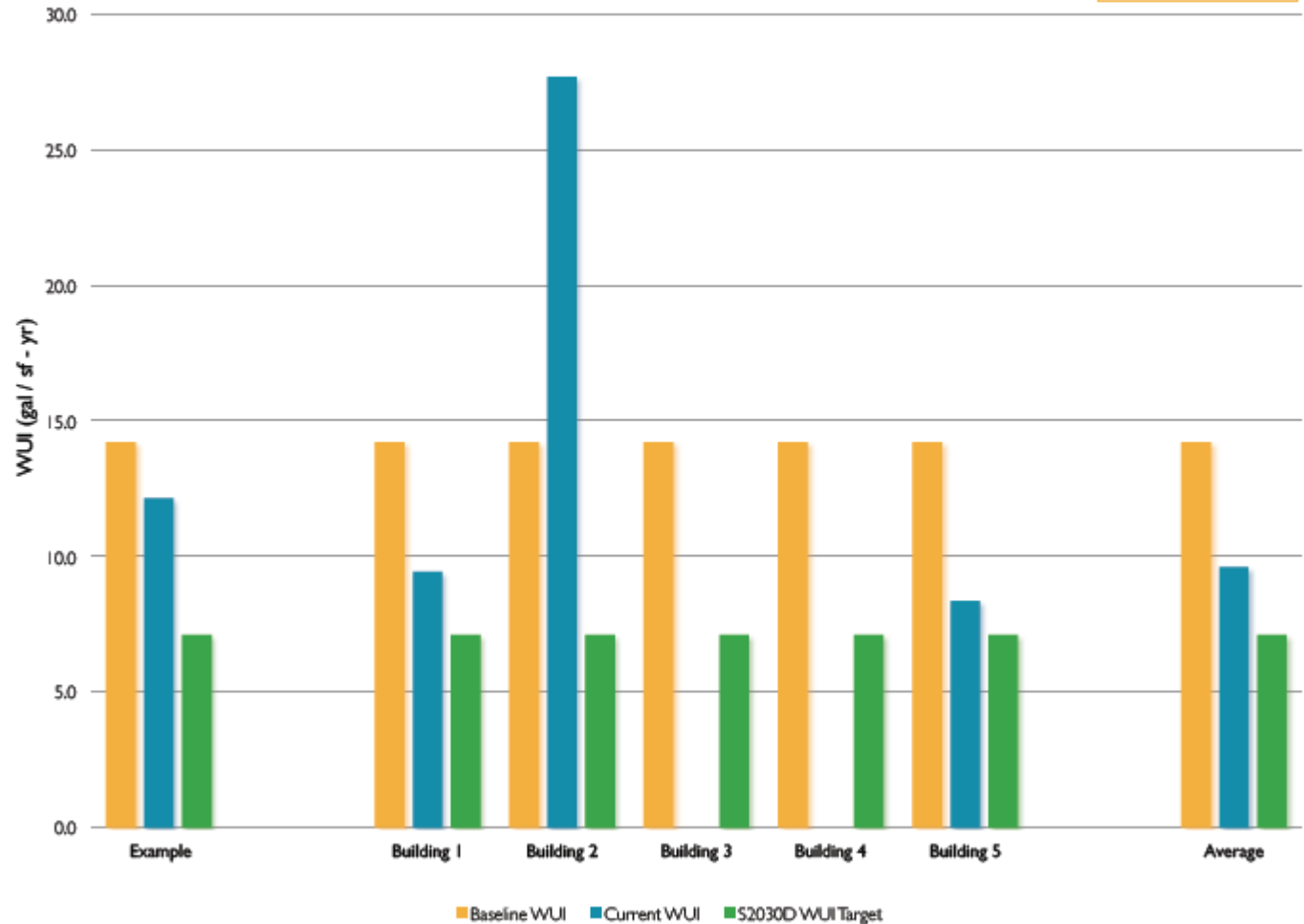


Property Comparisons

Building Water Comparison:
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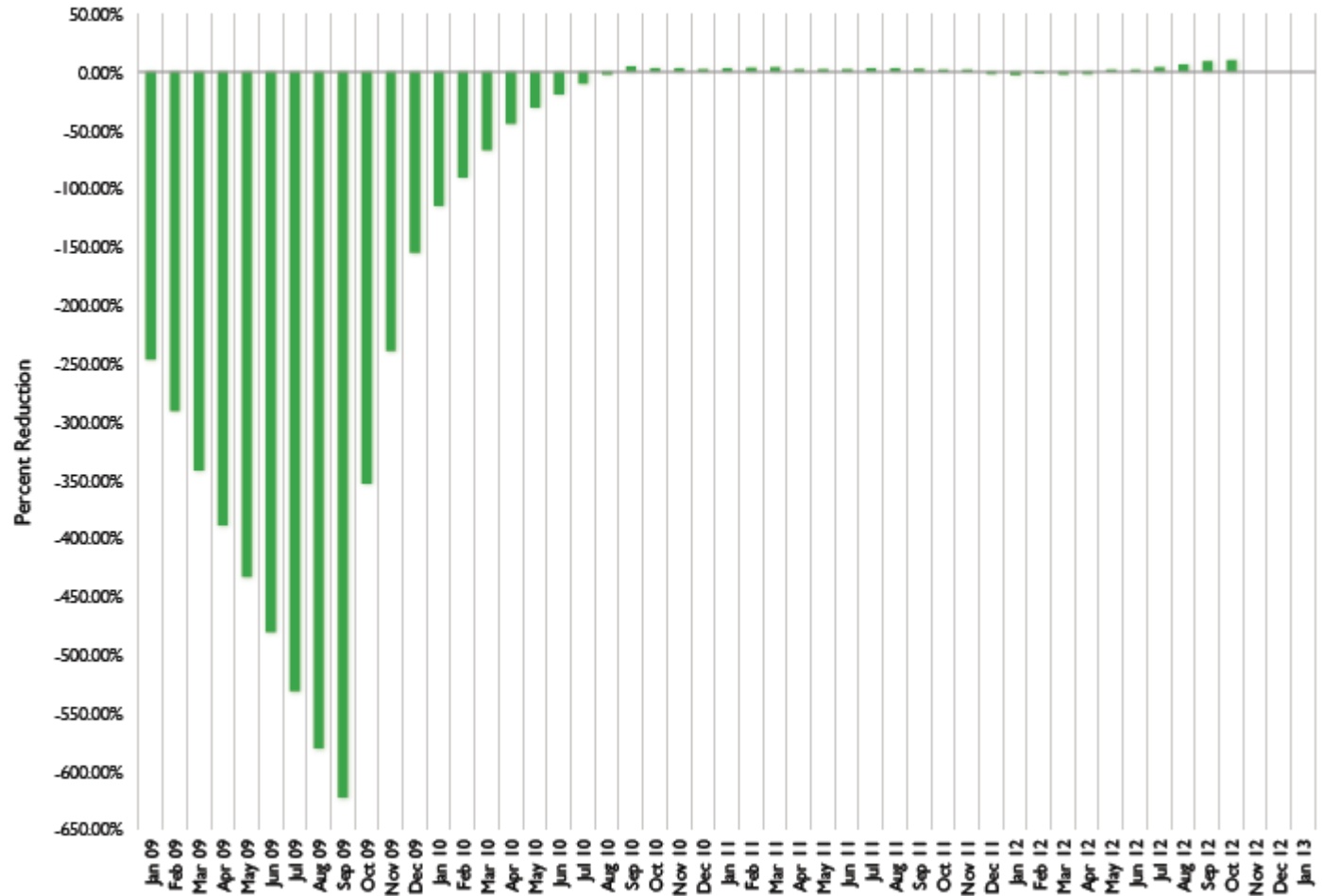
Water Data Last Updated:

Oct-13



Portfolio Analysis

Portfolio Buildings % EUI Reduction from Previous Year: Average

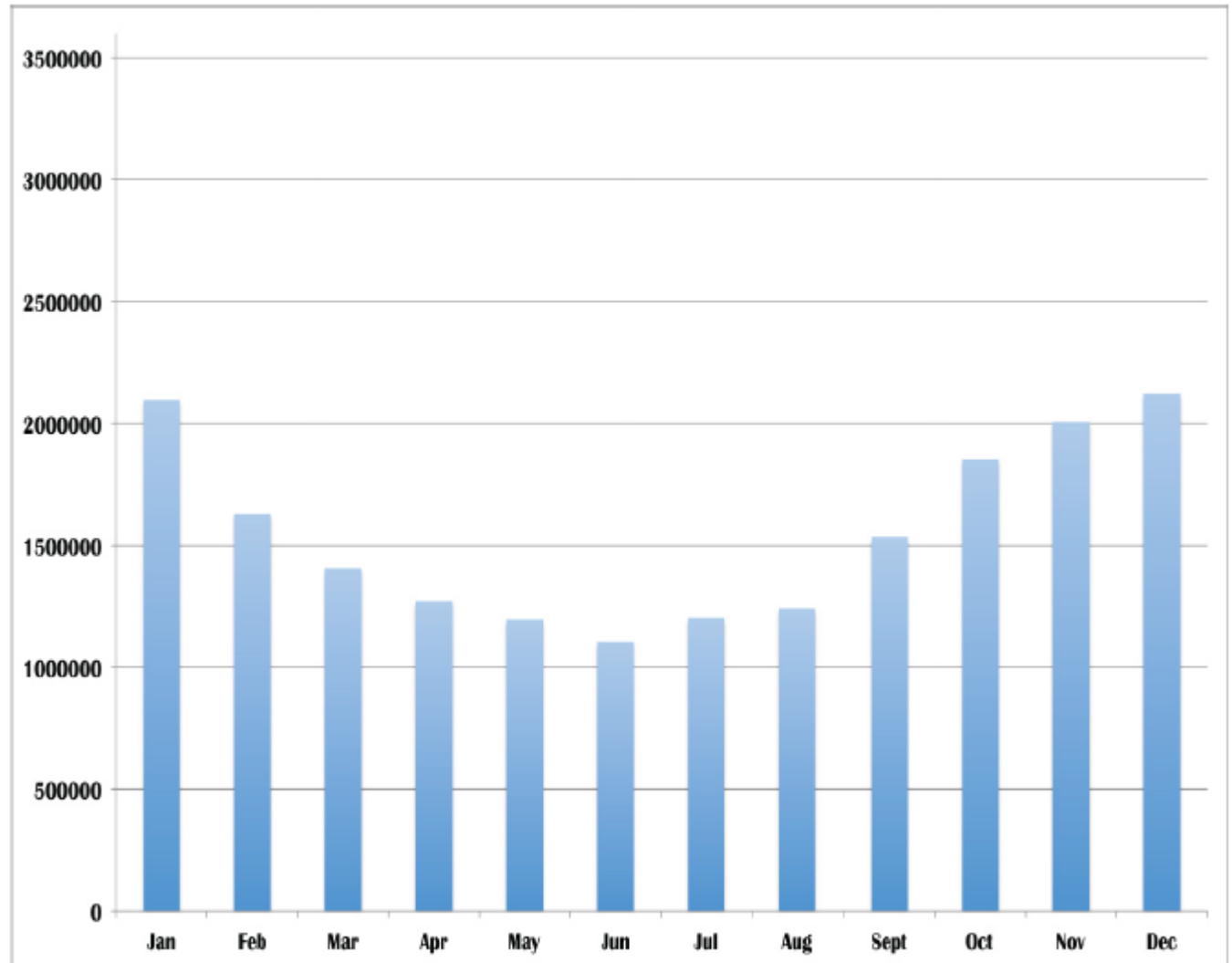


* Only represents performance of buildings with data for the performance period



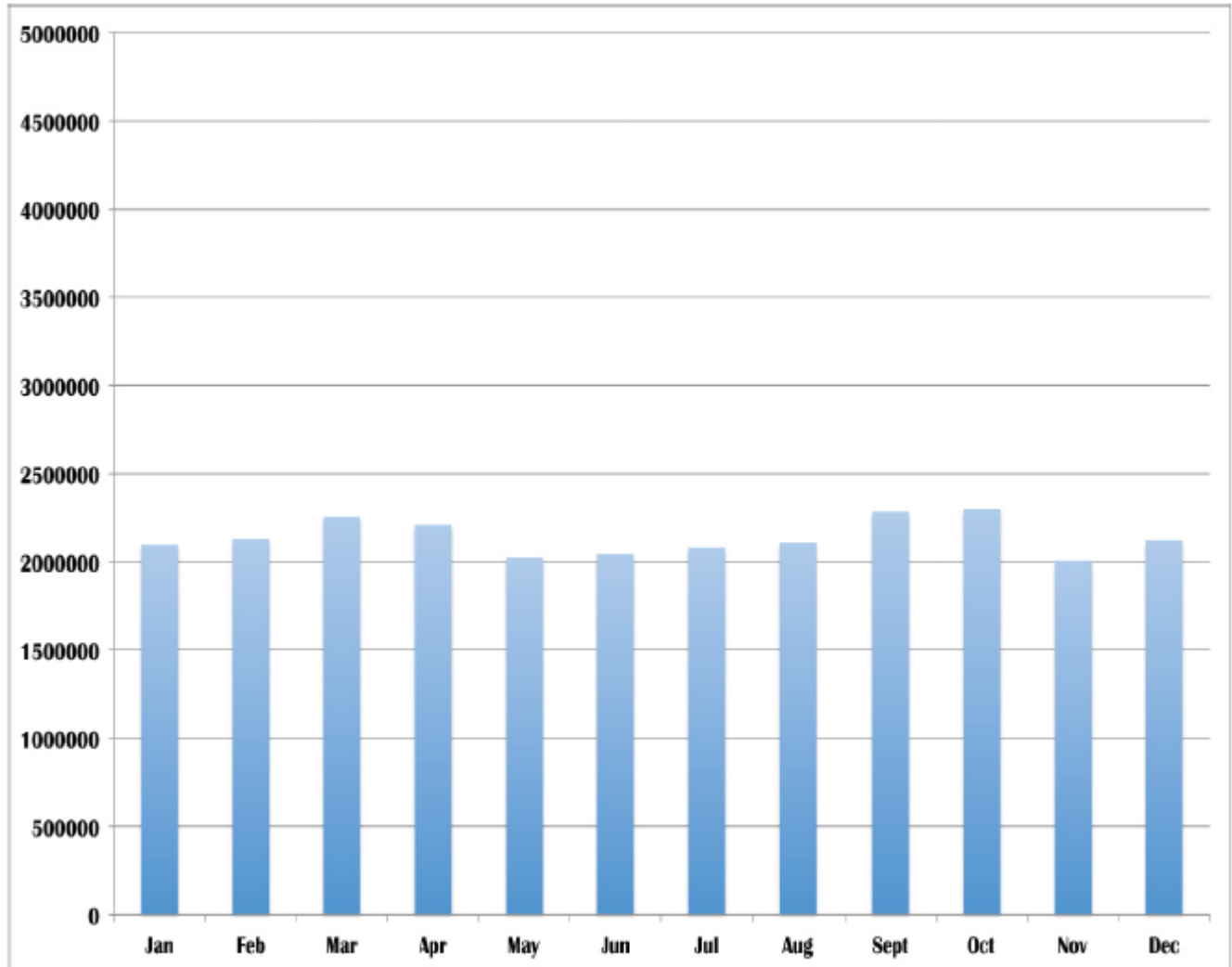
Energy Load Profile Assessment

Seattle 2030 District Office Load Profile



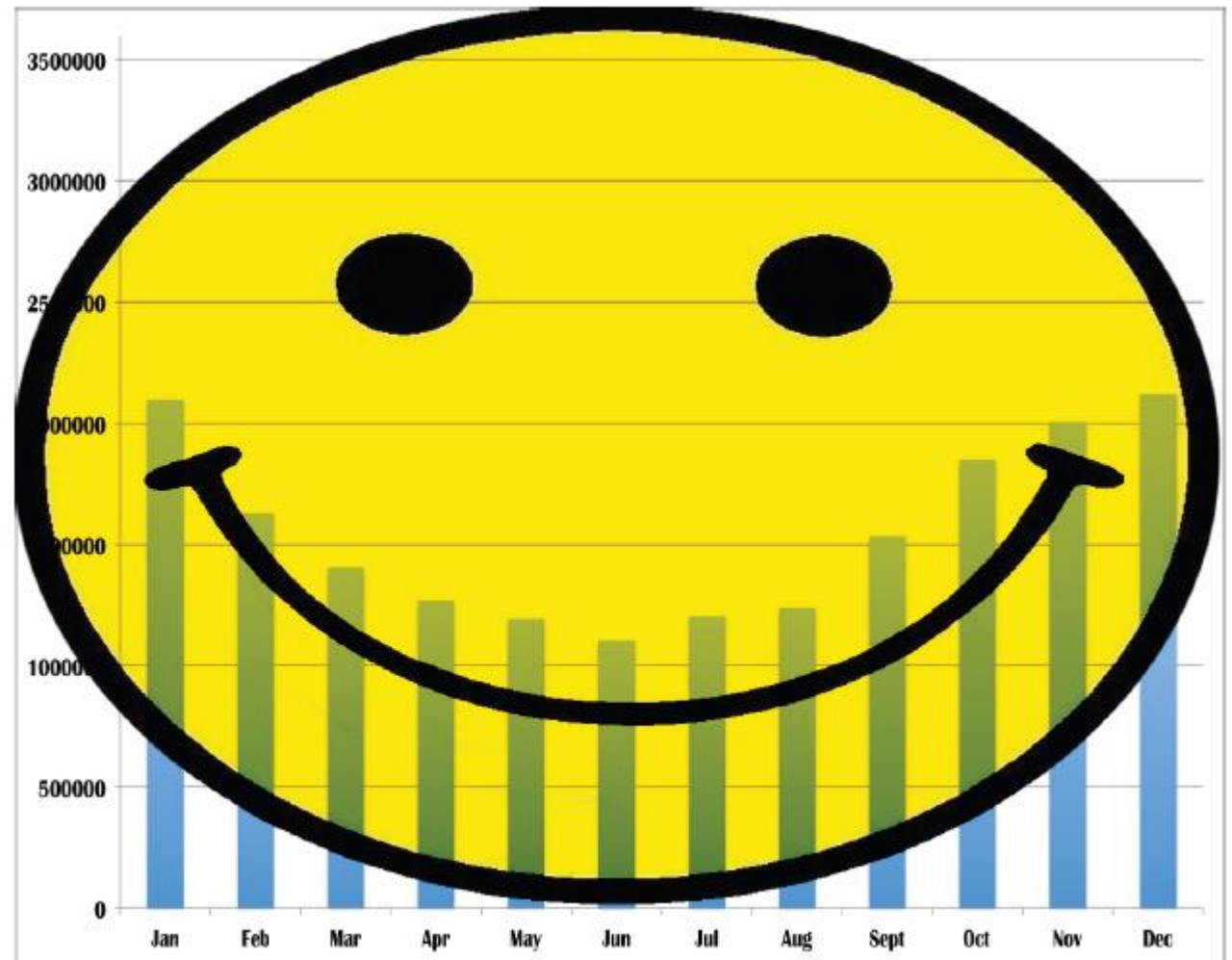
Energy Load Profile Assessment

Seattle 2030 District Office Load Profile



Energy Load Profile Assessment

Seattle 2030 District Office Load Profile

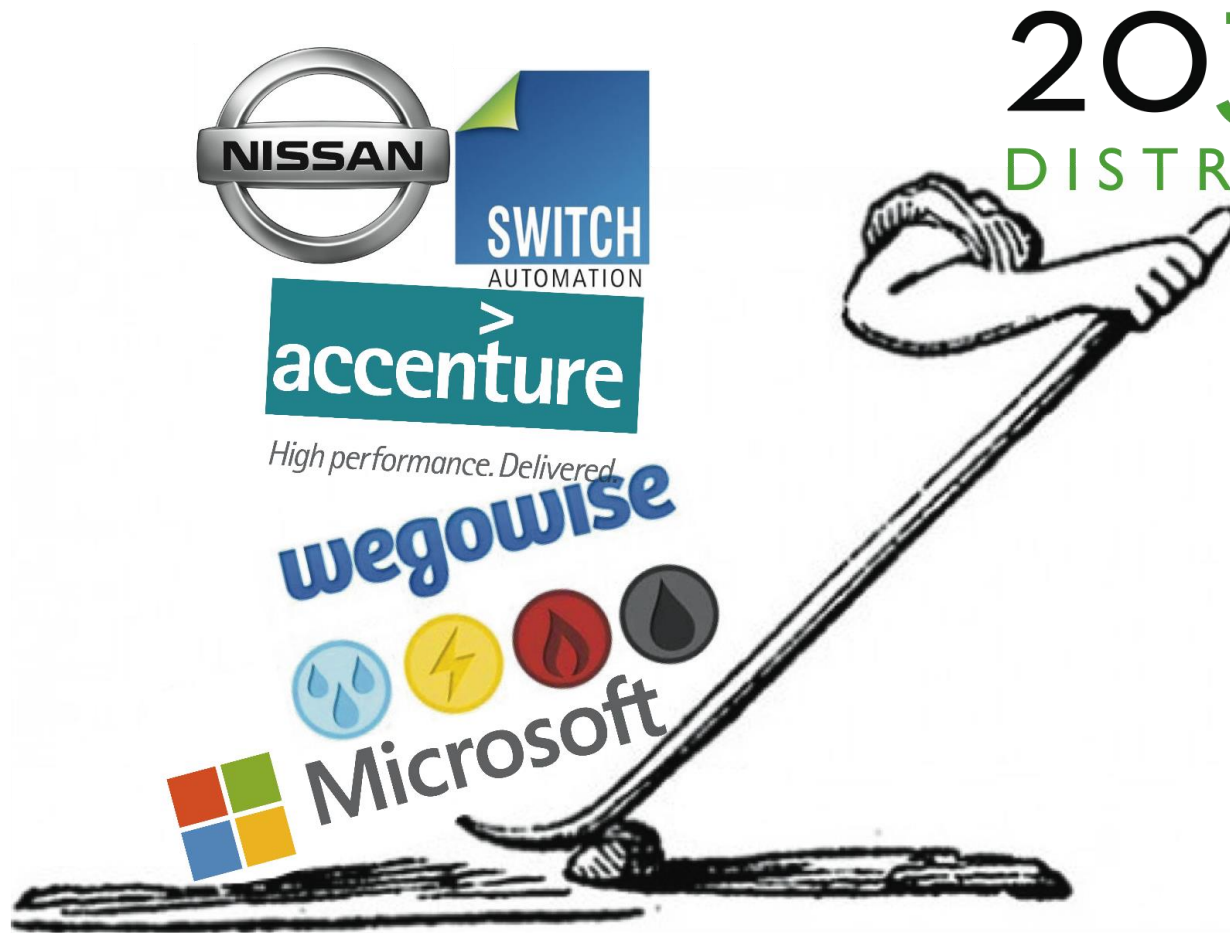


Energy Load Profile Assessment

Seattle 2030 District Office Load Profile

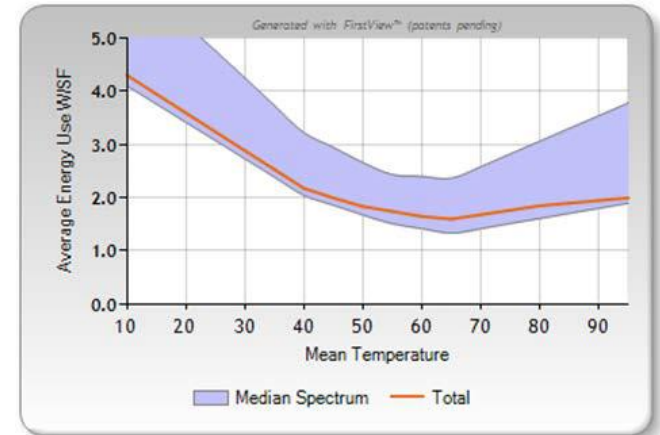
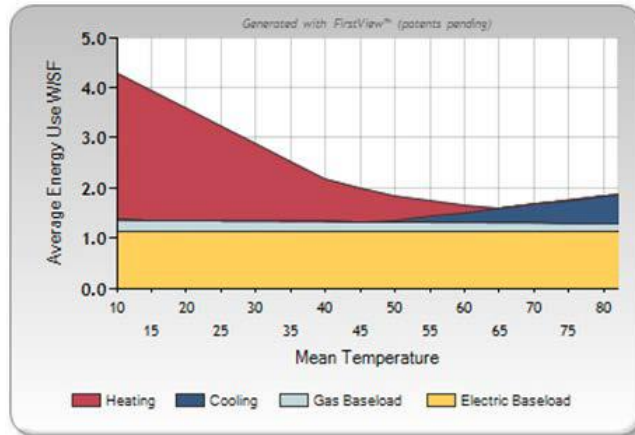


Access Exclusive Incentives, Discounts & Programs



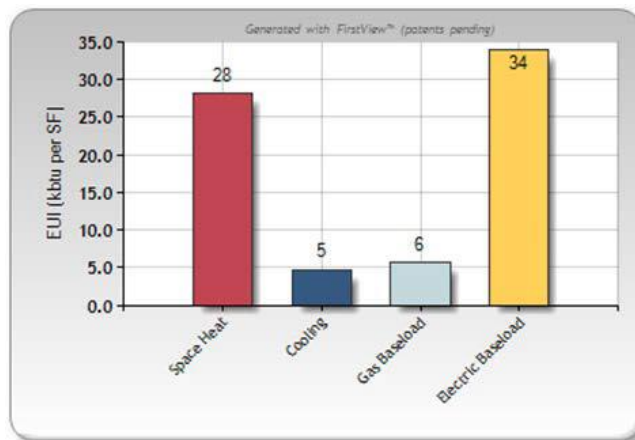
2030
DISTRICTS®

FirstView™ Reports



Energy Consumption By End Use

PEER Building Comparison



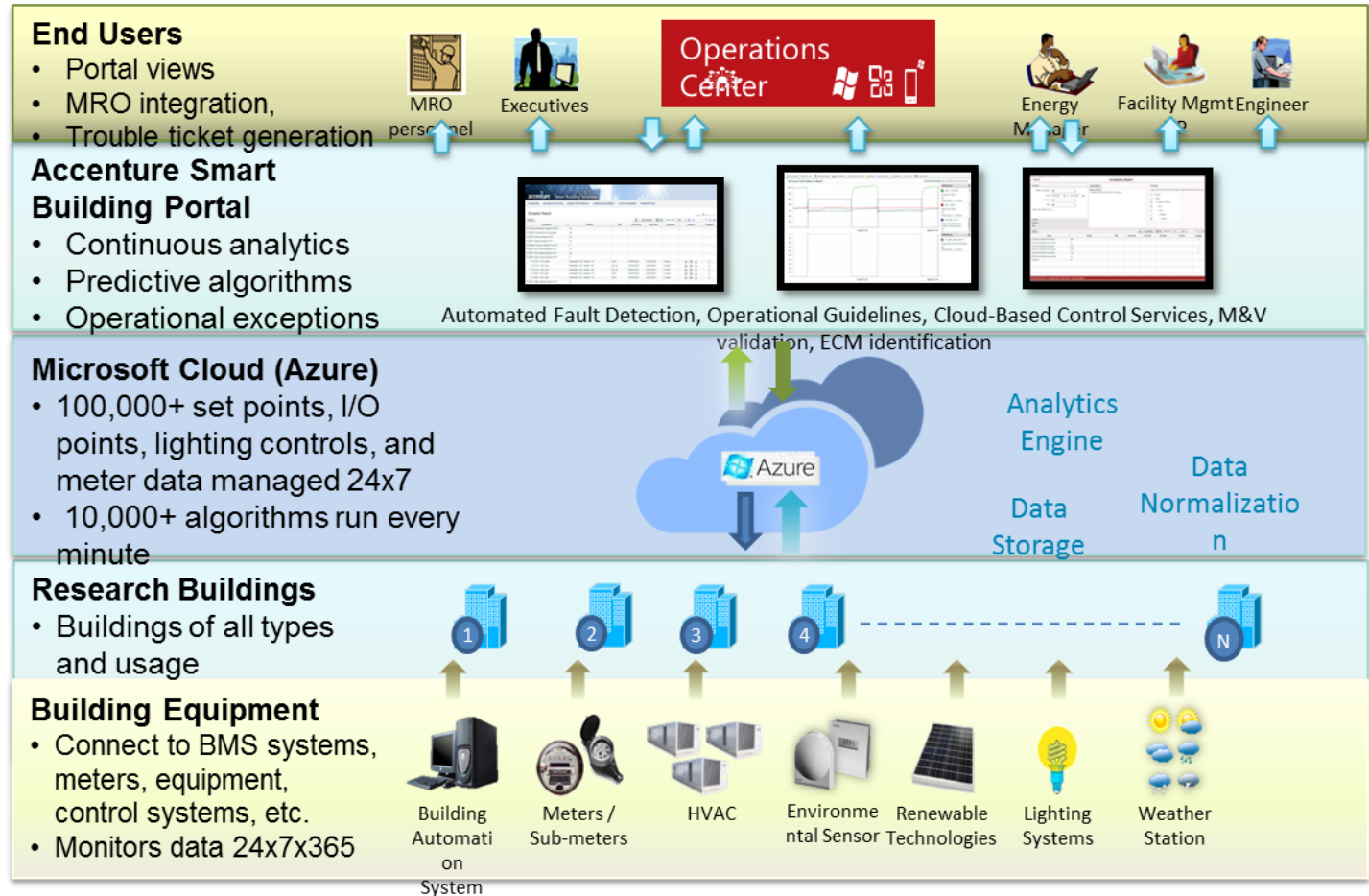
EUI by End Use

FirstView Diagnostics

FirstView Category	Status
Occupant Load:	Typical
Heating and Ventilation	Good
Cooling Efficiency:	Good
Controls:	Moderate Inefficiencies
Reheat:	Unlikely
Gas Baseload:	High
Data Consistency:	Orderly



Smart Building and Energy Solutions



Switch Automation

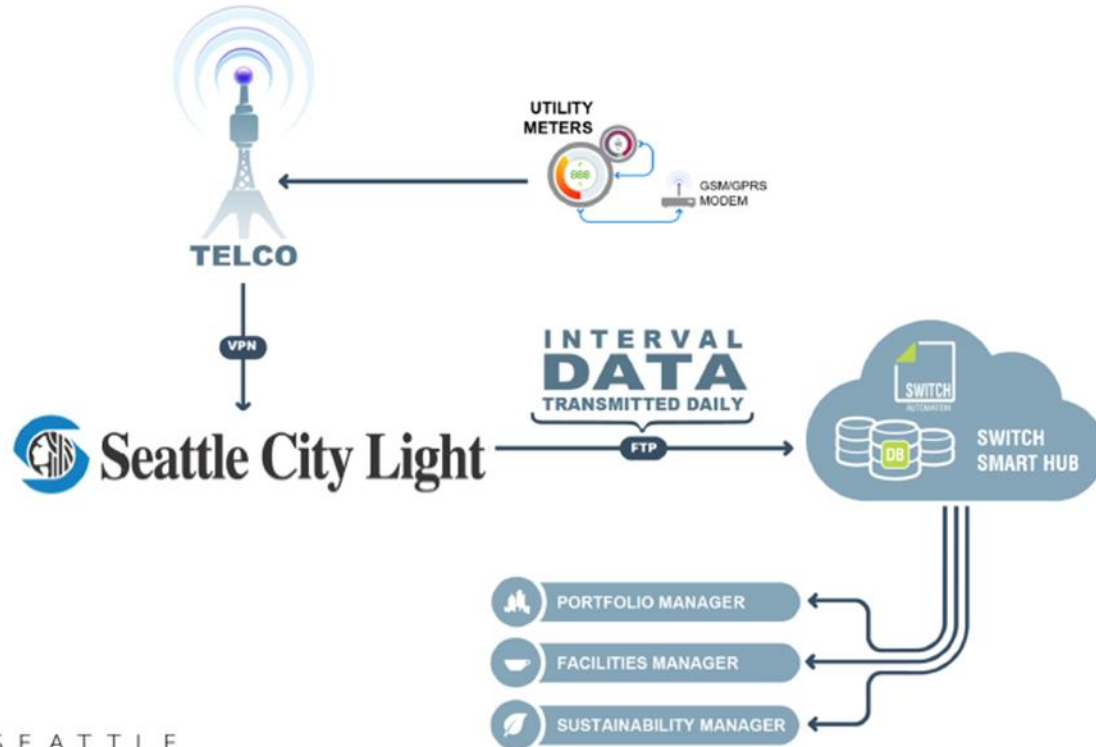


Microsoft®

Seattle City Light

growseattle
office of economic development

PILOT PROJECT STAGE 1 COLLECT ALL UTILITY DATA



Switch Automation



The Switch Solution

An Enterprise Operations Platform

switchautomation.com
@SwitchHQ

Microsoft®

Seattle City Light

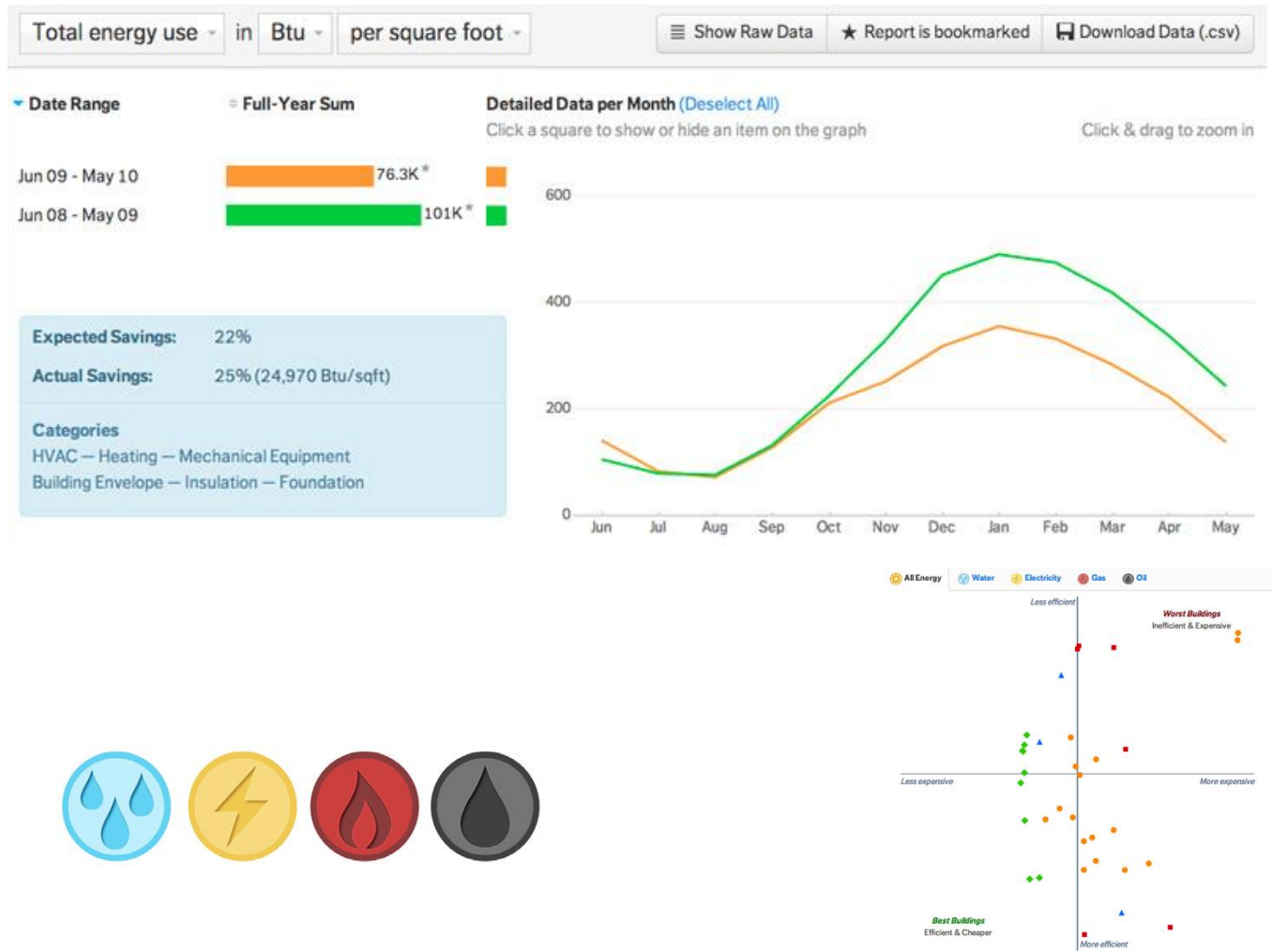
growseattle
office of economic development



- Single data repository, single web console
- Visibility into portfolio wide data and costs
- Spectacular time saving and data aggregation
- Decouples supplier & service providers
- Simple integration with Energy Star Portfolio Manager



Wegowise Pro



*For the first 10% of each District's floor space

Small Commercial Toolkit

● **Web Resource**



● **Tracking Tool: Energy Efficiency Strategies**

Operations

Auditing

Whole Building

Components

**Open Energy
Information
System** ●

**Energy
Management
Package** ●

**Whole Building
Retrofit Tool** ●

- **Lighting: Retrofit Calculator**
- **Plug Loads: Energy Star Equip**
- **HVAC: Rooftop Units**
- **HVAC: Heat Pumps**
- **HVAC: Boilers**
- **HVAC: Air Cooled Elec. Chillers**

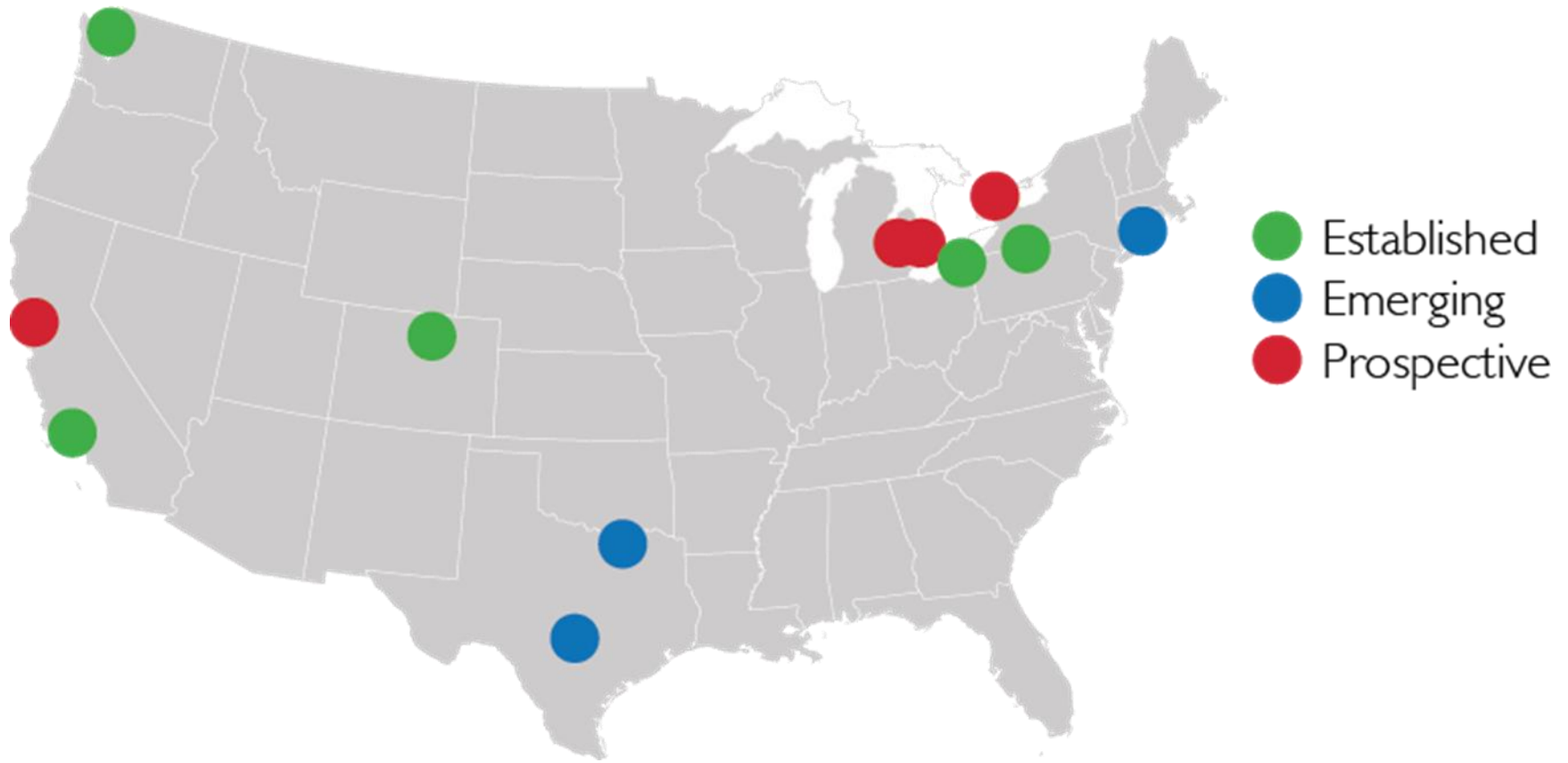
● **Existing Tool.** Transforming to an on-line format
Tool to be/being developed

● **Case Study Library**

Seattle 2030 & Nissan Partnership



2030 Districts Network



2030 Districts Network

SEATTLE
2030
DISTRICT

CLEVELAND
2030
DISTRICT

PITTSBURGH
2030
DISTRICT

LOS ANGELES
2030
DISTRICT



DENVER
2030
DISTRICT

SEATTLE
2030
DISTRICT

100M Square Feet Committed



More information

- For more information please visit our website at:

2030districts.org/Seattle

- Follow us on Twitter @SEA2030
- matthewcombe@seattle2030districts.org

Thank you!

