Green Works Orlando

Green Works Objectives

- Preserve natural resources (energy, water, ecological)
- Promote environmentally-friendly lifestyles and business practices
- Reduce pollution and public health impacts
- Develop new economies to spur investments and job creation

CITY OF ORLANDO

Green Works Orlando

2013 COMMUNITY ACTION PLAN

- ENERGY/GREEN BUILDINGS
- FOOD SYSTEMS
- GREEN ECONOMY
- LIVABILITY
- SOLID WASTE
- TRANSPORTATION
- WATER

Green Works, a brief history

- Launched by Mayor Dyer in 2007
- Created a 15-member Green Works Task Force
- Have partnered with every single City department:
  - **BFS**: green purchasing, tax credits, efficiency and renewables investments, Evs
  - **EDV:** landscape code, GMP updates, Project DTO, green permit tracking, EV/bike policy
  - **FPR:** 11 community gardens, tree plantings, citywide tree initiatives
  - **HR:** commuter benefits
  - **OFD:** 6+ LEED fire stations
  - **OLA**: Tax credits and nearly every project listed!
  - **OPD:** EVs and new LEED police station
  - **PWK**: single cart recycling, residential composters, food waste, Alt. vehicles, KOB partnerships, LEDs
  - **Venues**: LEED Amway Center and Citrus Bowl, greening of events, Leu Gardens partnerships

A Sampling of Success…

- Tracking $1.5M+ in annual utility/maintenance savings
- 56 buildings receiving $17.5M in EE investments – $2.4M savings per year
- 420 KW of solar + 400 KW OUC community solar farm
- Hybrid, all-electric and CNG fueled vehicles
- OUC converting 15,000 street lights to LEDs
- Completed 1,200 residential energy retrofits
- 150+ EV charging stations
- 13 LEED certified municipal buildings
- 11 Community Gardens throughout all districts
- Over 1M pounds of food waste diverted in 1 year
- 3,000+ residential composters delivered
- More than 2,000 trees via Energy-Saving Trees program

City of Orlando – Leading by Example in National efforts

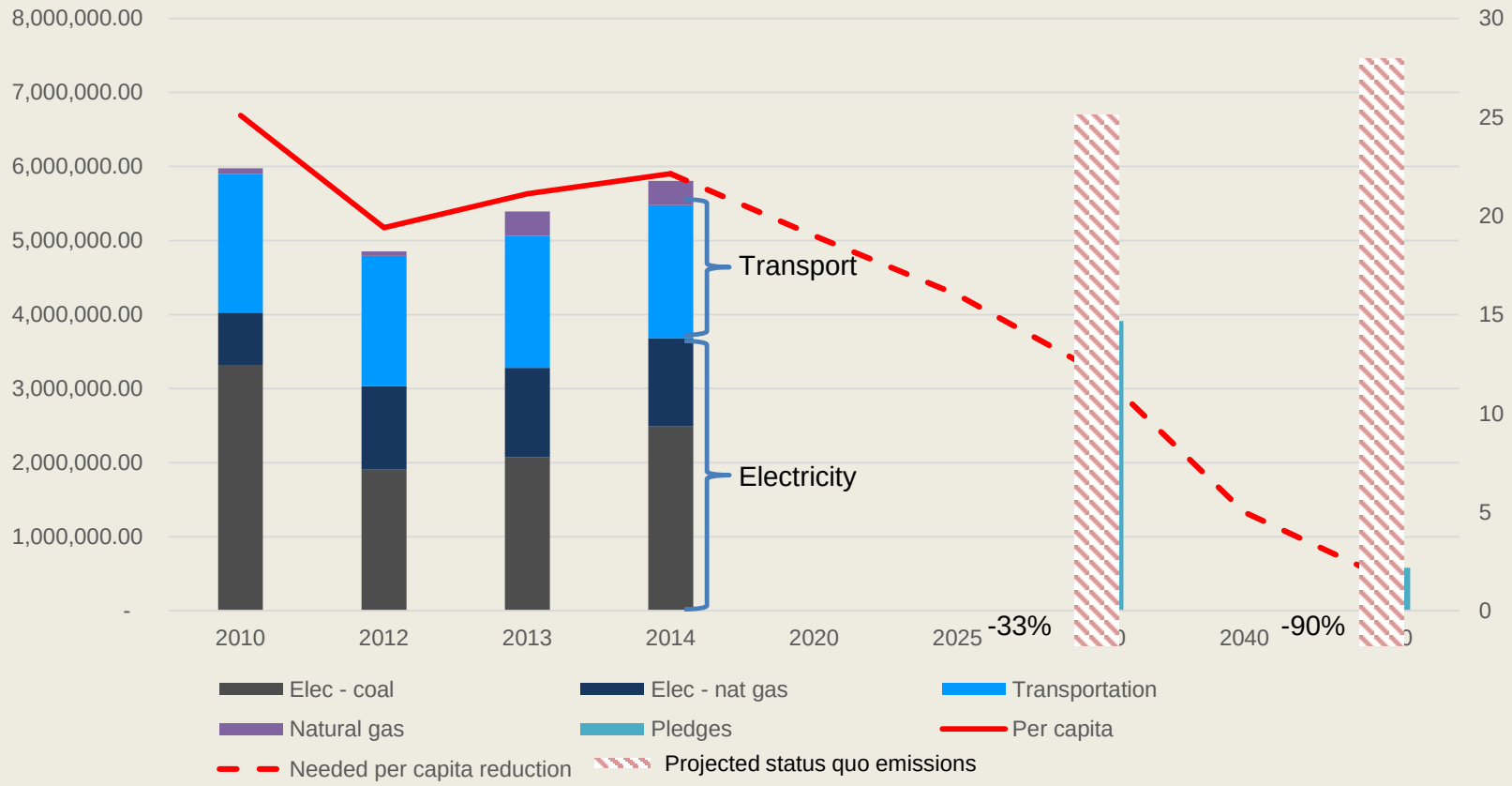
- **DOE Better Buildings Challenge**
  - –Working on Energy Data Accelerator with OUC
  - –6 Million SF + 24,000 LED streetlights
- **City Energy Project**
- **EPA National Building Competition**
  - –5th place out of 5,000+ buildings
- **Connect Cities by Lucid**
- **International Compact of Mayors**
- **Energy Secure Cities Coalition**

FOCUS AREA: ENERGY & GREEN BUILDINGS

2040 Goals	2018 Targets	2012 Baselines
• Reduce air pollution 90% from 2007	• **Reduce air pollution 25% from 2007**	• 5.8M tons of CO2e
• 50% from renewables • Reduce city-wide EUI by 25% from 2010	• **8% from renewables** • **Reduce city-wide EUI by 5% from 2010**	• 1.8% renewable energy • 12,005 kWh per capita
• 100% of new construction is green buildings	• **100% of new construction is green buildings**	• 0.45 green buildings per 1,000 residents

2040 Goals	2018 Targets	2012 Baselines
• Reduce gross potable water consumption per capita by 20%	• **Reduce gross potable water consumption per capita by 3%**	• 166 gallons of water per capita per day.

Air pollution: Greenhouse gas sources and pledges



- **Buildings account for:**
  - 57% of total energy use
  - 72% of air pollution

COMPACT of MAYORS

Orlando ranks 43rd in the U.S. for Green Buildings

RANK	METRO AREA	LEADERSHIP SCORE
1	Washington, DC	100.0
2	San Francisco, CA	85.9
3	Boston, MA	72.1
4	Chicago, IL	65.9
5	Seattle, WA	65.2
6	Portland, OR	62.1
7	Minneapolis, MN	60.1
8	Austin, TX	59.3
9	Denver, CO	57.1
10	San Jose, CA	53.1
11	Atlanta, GA	53.0
12	New York, NY	46.1
13	Kansas City, MO	42.4
14	Philadelphia, PA	41.4
15	Charlotte, NC	40.1
16	Sacramento, CA	39.1
17	Dallas, TX	39.1
18	Baltimore, MD	38.7
19	San Diego, CA	38.6
20	Houston, TX	36.7
21	Los Angeles, CA	36.2
22	San Antonio, TX	30.4
23	Columbus, OH	29.6
24	Salt Lake City, UT	29.5
25	Cleveland, OH	29.1
26	Milwaukee, WI	27.2
27	Pittsburgh, PA	26.3
28	Richmond, VA	25.9
29	Cincinnati, OH	24.4
30	Miami, FL	23.3
31	Riverside, CA	23.0
32	Raleigh, NC	22.2
33	Phoenix, AZ	22.1
34	Nashville, TN	20.2
35	Louisville, KY	18.1
36	Jacksonville, FL	17.9
37	Indianapolis, IN	16.9
38	St. Louis, MO	16.7
39	Virginia Beach, VA	16.5
40	Tampa, FL	15.4
41	Las Vegas, NV	15.1
42	Buffalo, NY	12.7
43	Orlando, FL	11.7
44	Detroit, MI	11.5
45	Providence, RI	10.7
46	Hartford, CT	10.1
47	Memphis, TN	8.1
48	New Orleans, LA	5.6
49	Birmingham, AL	1.9
50	Oklahoma City, OK	0.0

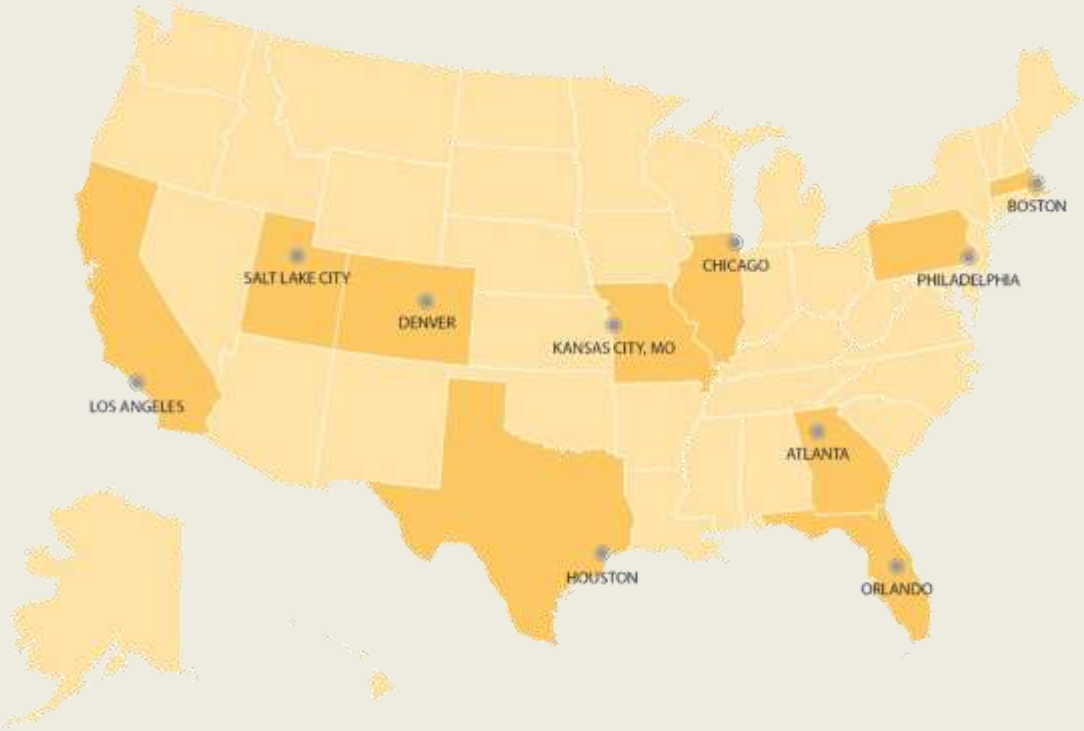
City Energy Project

A groundbreaking national initiative to improve the energy efficiency of existing buildings in 10 major American cities. The partnership between the City Energy Project and the participating cities will support bold solutions that can be replicated by other municipalities nationwide and around the world to advance economic development and reduce pollution.

Orlando's potential:
$208M in savings by 2030

500+ high-wage jobs created

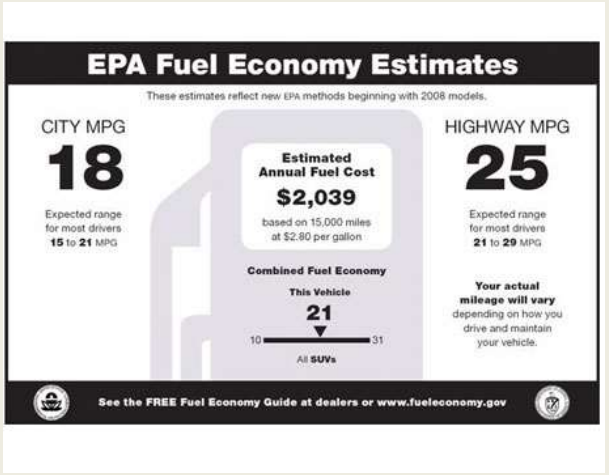
900M gallons of water not utilized for power generation



CITY ENERGY
A JOINT PROJECT of NRDC + IMT

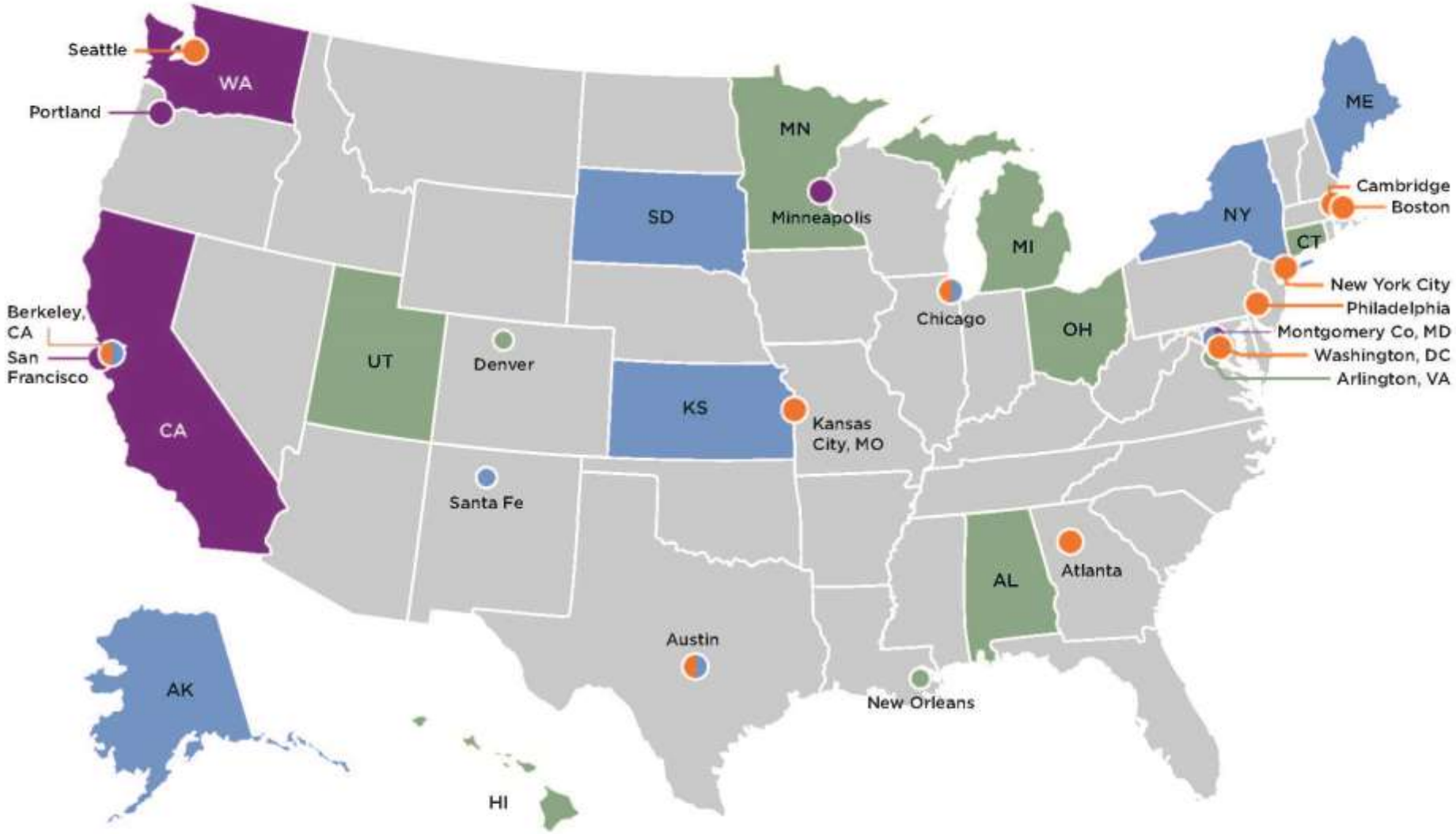
Information transparency = Market competition & Consumer choice

Knowledge is Power



- How can markets work more effectively?
- How can demand for energy efficiency increased?
- How can policy help reduce energy costs for businesses and consumers and create jobs?
- How can greenhouse gas reductions be achieved in existing buildings?

U.S. Building Benchmarking and Transparency Policies



Commercial policy adopted

Commercial & multifamily policy adopted

Public buildings benchmarked

Single-family transparency adopted

Building Rating

IMT INSTITUTE FOR MARKET TRANSFORMATION

Building Energy & Water Efficiency Strategy (BEWES)

Voluntary Pilot in Orange County:

Kilowatt Crackdown

- In 2010-2011, Orange County was interested in pursuing a BEWES policy
- It was decided to host a “pilot” voluntary 3 year challenge (2011-2013) in partnership with City of Orlando, UCF, USGBC, BOMA, ASHRAE and many others
- KWC provided free technical support through “UCF Energy Specialist Training Program”
- 51 businesses/orgs and 1,800 buildings signed up
  - Only 25 buildings achieved goal of reducing 10% of energy and water use
- In 2015, Orange County has added BEWES as strategy in their Sustainability Plan

BEWES Stakeholder Engagement & Education

- **300+ in-person presentations and meetings**
- **2014 Climate & Energy Summit**
  In partnership with OUC
- **2014 BOMA Energy Efficiency workshop**
- **2015 Green Economy Summit**
  In partnership with Orlando, Inc.
- **2015 Multifamily Energy Efficiency workshop**
  In partnership with AAGO, IREM, OUC and Duke Energy
- **2015 ENERGY STAR training program**
  In partnership with Orlando, Inc.
- **2016 – 5 Stakeholder Roundtables**

Orlando's BEWES- Goals & Objectives

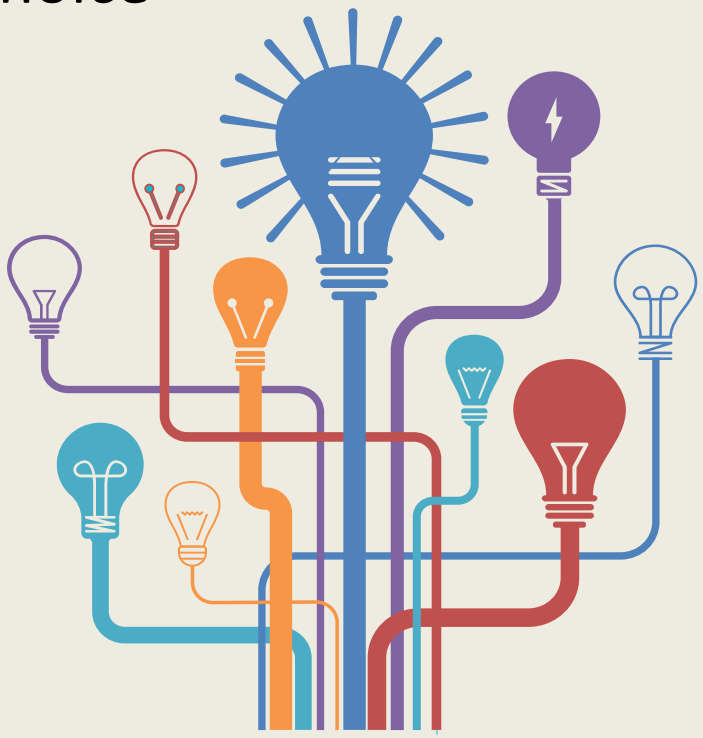
1. Market competition and consumer choice

2. Energy, water, and cost savings

3. Job creation and economic growth

4. Smarter governments and utilities

5. Reduce pollution and enhance quality of life



Orlando's BEWES – Policy Details

1. Energy and water benchmarking

- Annually
- Covered city property: >10,000 sf (~60 buildings)
- Covered non-city property: >50,000 sf (~824 buildings)

2. Reporting + transparency

- Annually
- All covered city and non-city property

3. Energy audit

- 1x every 5 years
- All buildings under ENERGY STAR score below 50
- Other exemptions apply

1. Annual Energy Benchmarking

- **Building energy benchmarking** is the process of tracking an existing building's energy usage over time and comparing the results to similar buildings OR comparing the same building as measured at a different point in time.

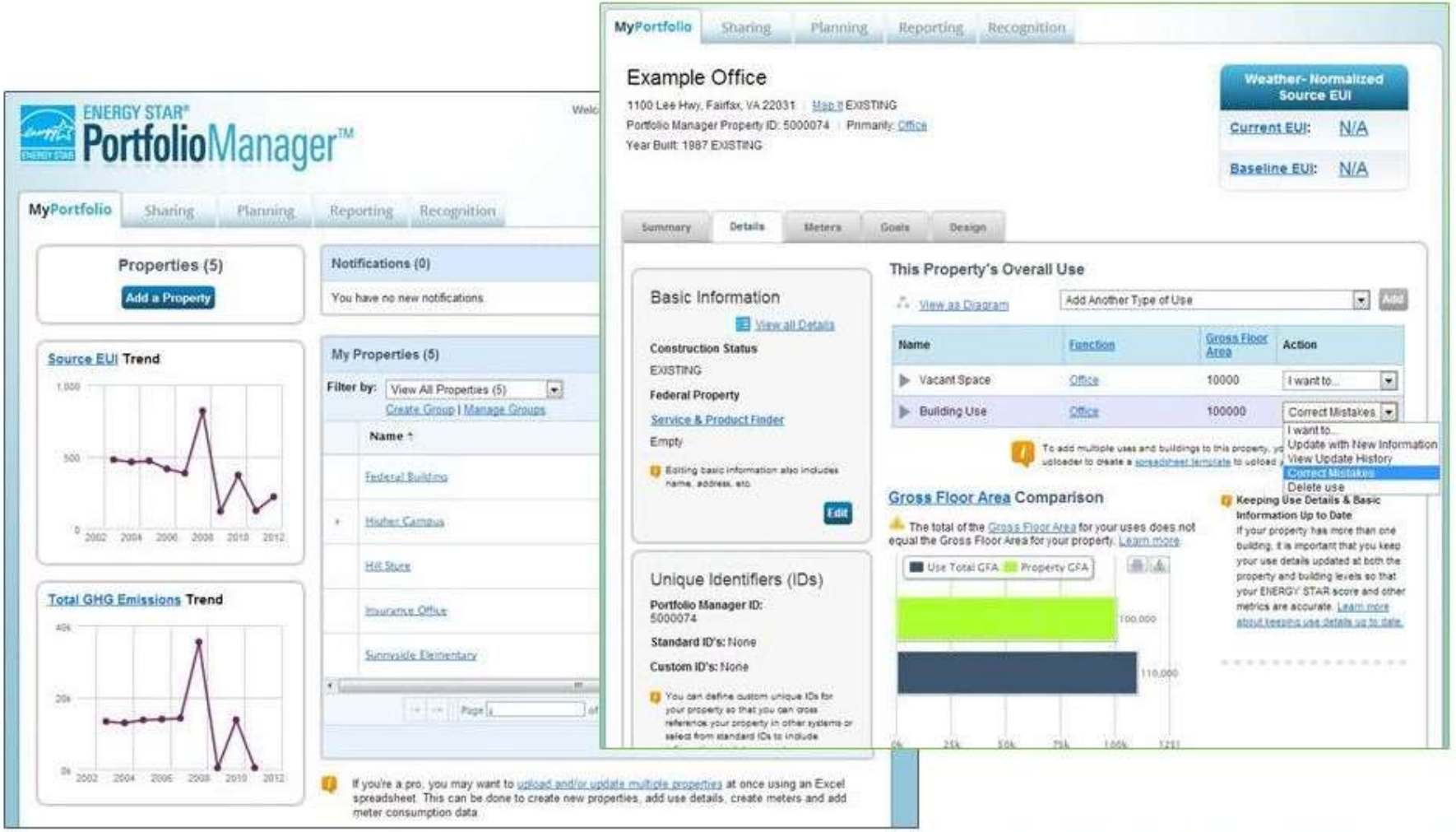
- FREE, web-based portal to perform benchmark using ENERGY STAR Portfolio Manager (ESPM)

ENERGY STAR® Portfolio Manager™

- National study shows average of 4-8 hours of labor per building

Benchmarking w/ ENERGY STAR Portfolio Manager

Tracks building energy and water consumption, and provides a weather normalized EUI and a whole building score, based on actual energy performance.



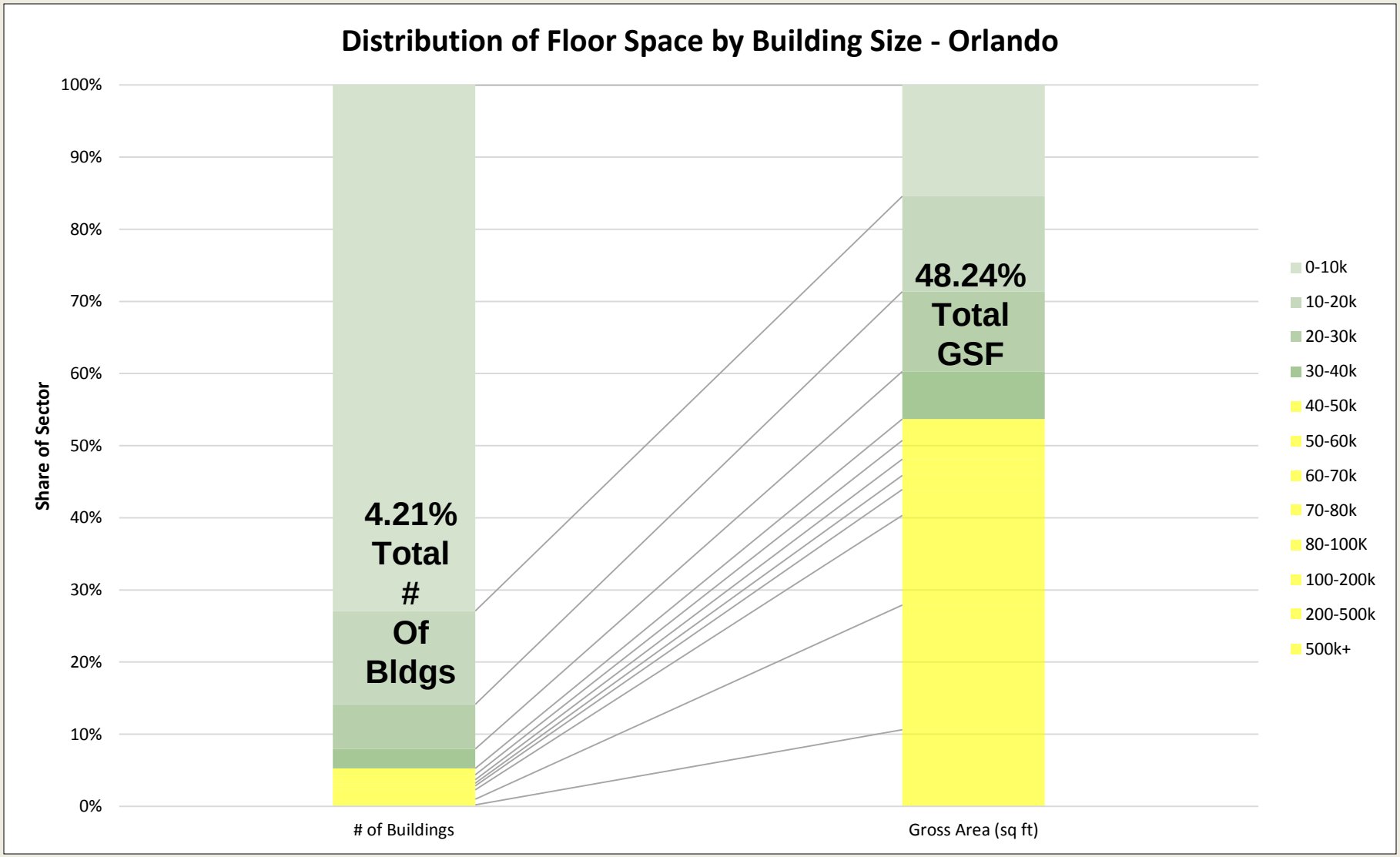
Orlando's 'Whole Building Utility Data' Platform

- Utilities can assist building owners / operators with '<u>whole-building utility data</u>'
- OUC will be launching beta-version <u>Summer 2017</u>
- Provides building owners/managers aggregated, anonymous data with 4+ tenants
  - –kWh
  - –Kgal
  - –Cost / square foot / year

Size threshold for ‘Covered Buildings’

- **City-owned buildings = 10,000 sf**
- **Non-City owned buildings = 50,000 sf**
  - –4.21% of total buildings
  - –48.24% of total gross square footage
- **~ 900 buildings total**
  - –826 commercial, multifamily, industrial, retail, restaurant
  - –60+ municipal and government
- **Account for over half (1/2) of square footage, and energy consumption in bldgs.**
- **Majority of Greenhouse Gas emissions**

Size threshold: 50,000 GSF stand-alone buildings



Qualified Benchmarker = QA / QC

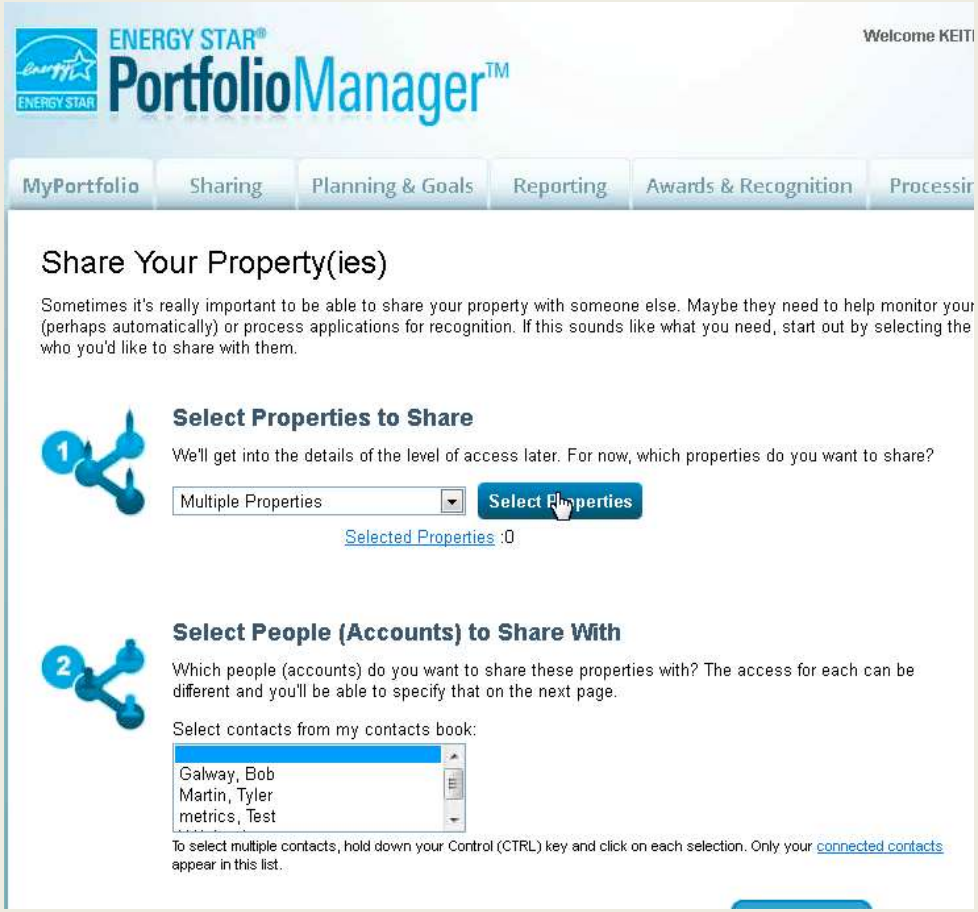
- Assure that qualified person is inputting data into ENERGY STAR to comply with policy

- Current certifications apply:
  - –Certificate of Proficiency of Benchmarking (CPB)
  - –Registered Architects (RA)
  - –Professional Engineer (PE)
  - –Certified Energy Manager (CEM)
  - –Building Energy Audits Professionals (BEAP),
  - –Sustainable Facilities Professional
  - –RPA (Real Property Administrator)
  - –FMA (Facilities Management Administrator),
  - BOMA-HP Certification
  - SMA (System Maintenance Admin)
  - SMT (System Maintenance Tech)

ENERGY STAR® Portfolio Manager™

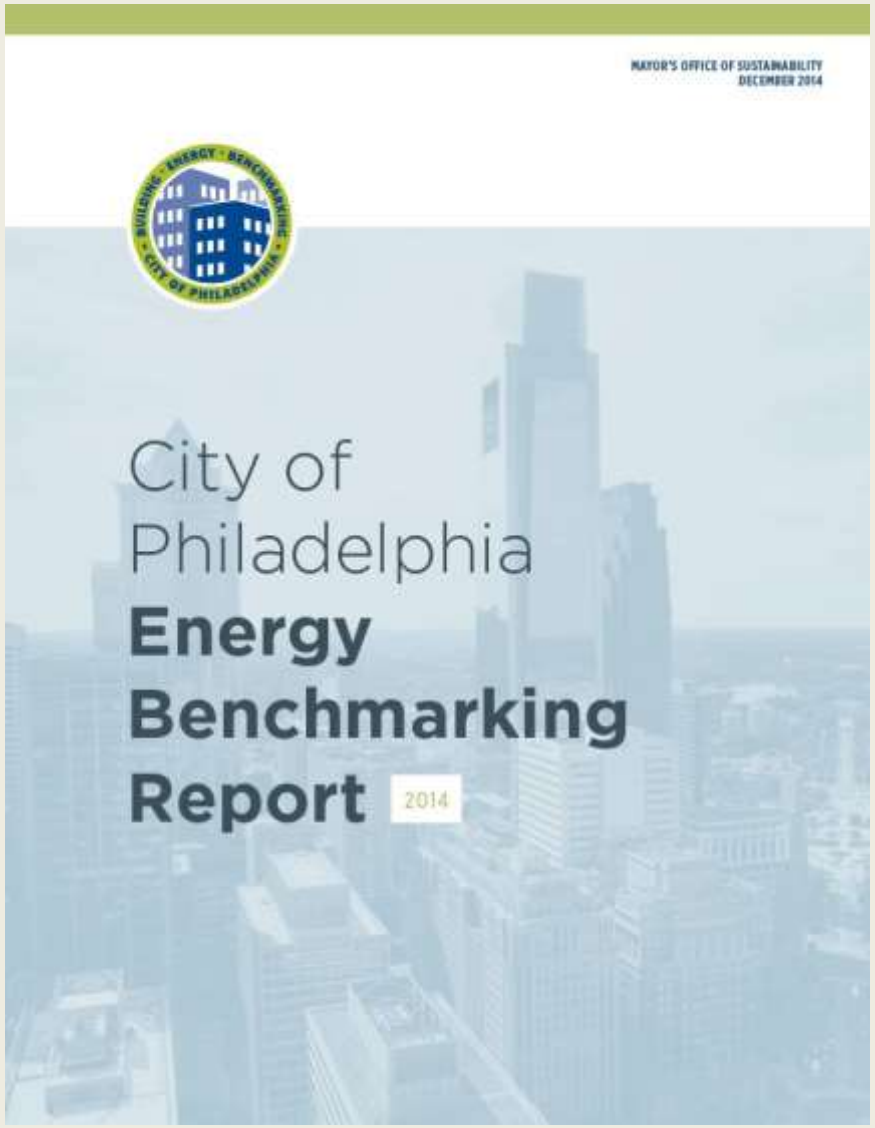
2. Reporting & Transparency

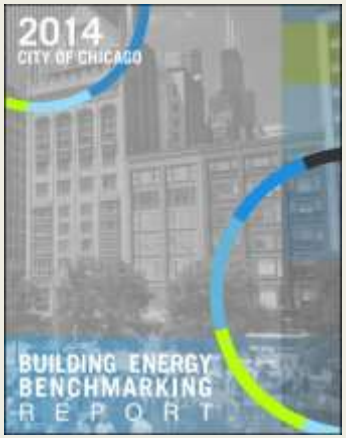
- Annual reporting of ENERGY STAR score / Energy Use Intensity (EUI)
- Reporting is done via the ENERGY STAR Portfolio Manager platform
- Information is analyzed and made public via annual benchmarking report + interactive map



Energy Benchmarking Report

- Annual publication each December
- City report providing general analysis of Orlando building stock
- Case studies and best practices shared





3. Energy Audits

- Notifications begin 2020
- Energy Audits and/or Retro-commissioning service 1x every 5 years for buildings with ESPM score under 50
- ASHRAE Level 2 audit of base building systems or equivalent
  - –FREE Audit provided by OUC
- Summary audit / Rx report provided to City

EXEMPTIONS for Benchmarking and Energy Audits

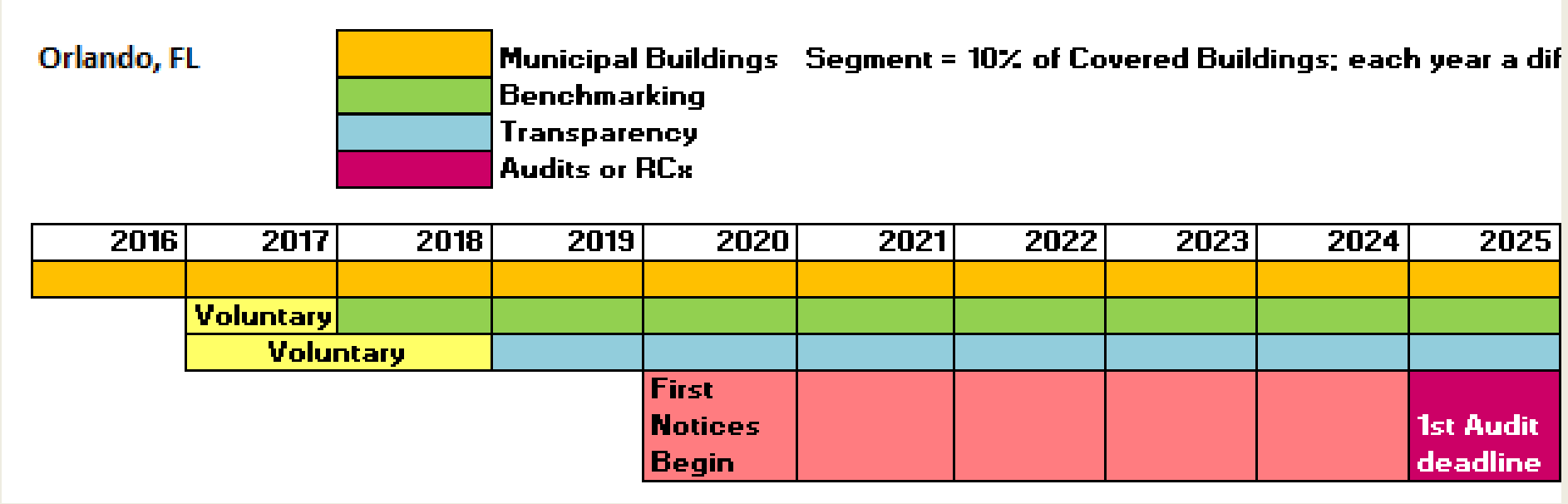
- The facility is considered “industry”, “manufacturing”, or a “theme park ” attraction;
- Substantially all of such non-city property is used for telecommunications infrastructure
- Benchmarking exemption for buildings if they have 3 or more meters, and do not have access to ‘whole-building utility data’
- No energy audit if the property has received an official ENERGY STAR benchmark score above 50
- Evidence of financial hardship or has received a demolition permit within the previous year.
- The covered property has received certification for green building certification (LEED, Green Globe, etc.)

Compliance

- Violation will only occur if building has not provided the benchmark report and/or energy audit report in the time designated.
- Violation will not be tied to performance of building
  - First notification provides 30 days warning for benchmarking & 120 days for energy audit
  - Second notification requests to appeal to the Code Enforcement Board
  - Violation can range up to $2,000 per year maximum

**Violations of this section are punishable as provided in Article I, Chapter 5, of the Orlando City Code.*

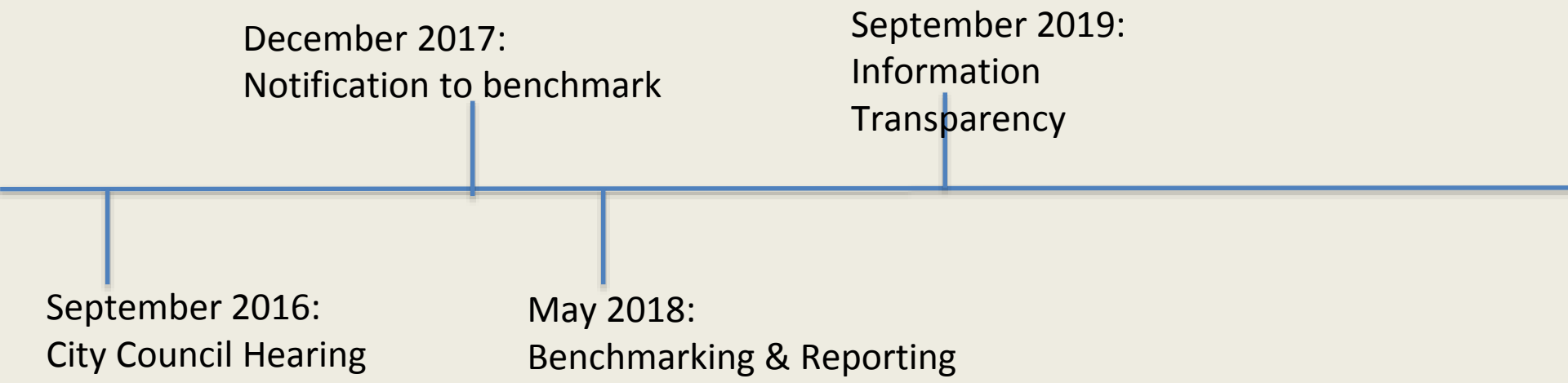
Implementation Timeline – Extended 1 year



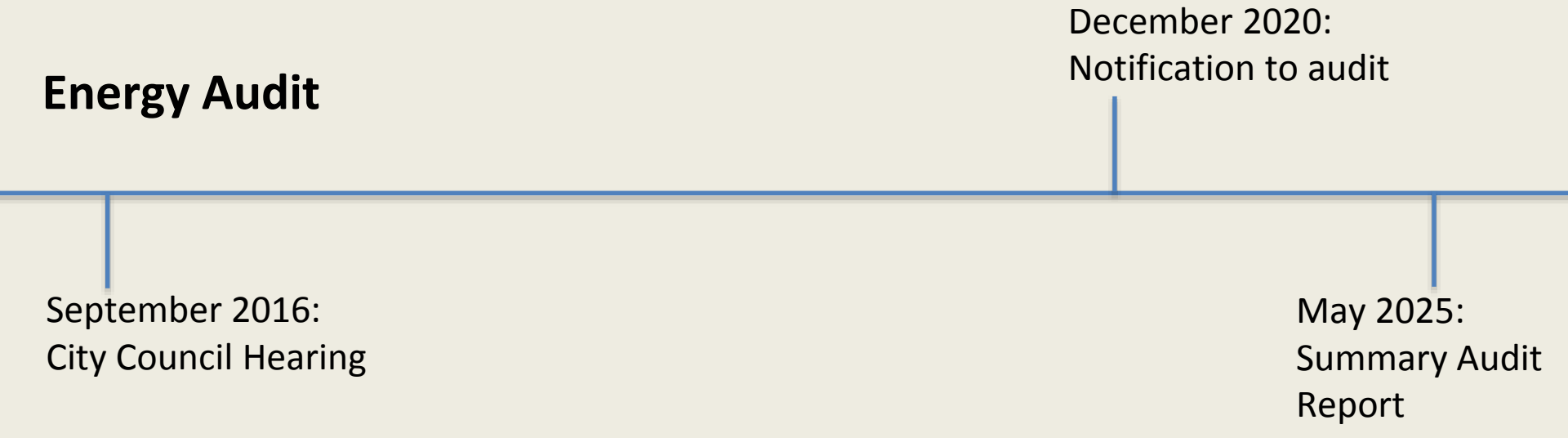
- **May 2018** – All covered properties (city + non-city) benchmarking + reporting
- **September 2019** – Transparency of information (2018 data)
- **December 2020** – Notification for Energy audits
- **May 2025** – Summary energy audit report

Implementation Timeline – Extended 1 year

Benchmarking



Energy Audit



Green Works Advisory Committee

- City of Orlando will establish a subcommittee of the '**Green Works Advisory Committee**' as directed in the Green Works Community Action Plan (Page 7)

- Goal is convene building owners/managers to assist with City staff vetting and approving rulemaking and determinations in the BEWES policy prior to any decision

- Invite at least 2 representatives to serve on the Green Works Advisory Committee, nominated by real estate industry (e.g. BOMA, NAIOP, IFMA, AAGO, etc)

Benefits of BEWES policy

- **Market-Based Mechanism**
  - –Provides actionable information to market actors, creating permanent accountability, resulting in market-driven cycle of building energy improvement.

- **Proven Strategy for Energy Savings and Reducing Air Pollution**
  - –On average, buildings which are consistently benchmarked reduce their energy consumption by approximately 2.4% each year (Source: EPA)

- **Enhanced Real Estate Values**
  - –Research suggests that buildings which undergo the benchmarking process and achieve an energy efficient certification are valued accordingly by the market and obtain higher rents, sale values, occupancy rates, productivity rates, and operational savings.

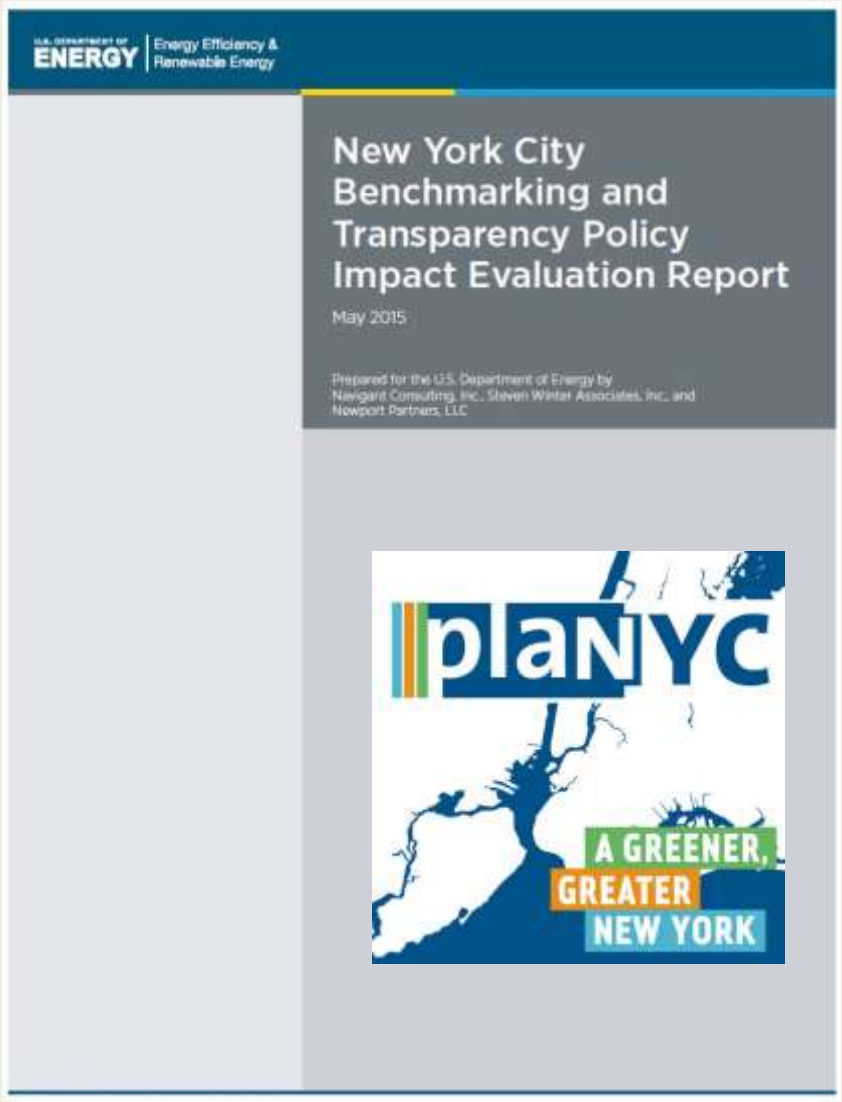
- **Stimulating the Local Economy**
  - –Building energy usage disclosure ordinances have unquestionably spurred the creation of building construction and energy service job in municipalities where these ordinances are already in effect.

Case Study: Portland, OR

CITY of PORTLAND
Your Sustainable City

- **City of Portland held pilot program from 2013-2015**
- The goal was 200 - 300 buildings within the City of Portland, but the actual participation was 54 buildings
  - 25% of “covered building stock”
- In 2015, City of Portland determined the voluntary program did not meet the goals of the program or energy-savings targets
- **Enacted ‘Energy Performance Reporting Policy’ in 2015**

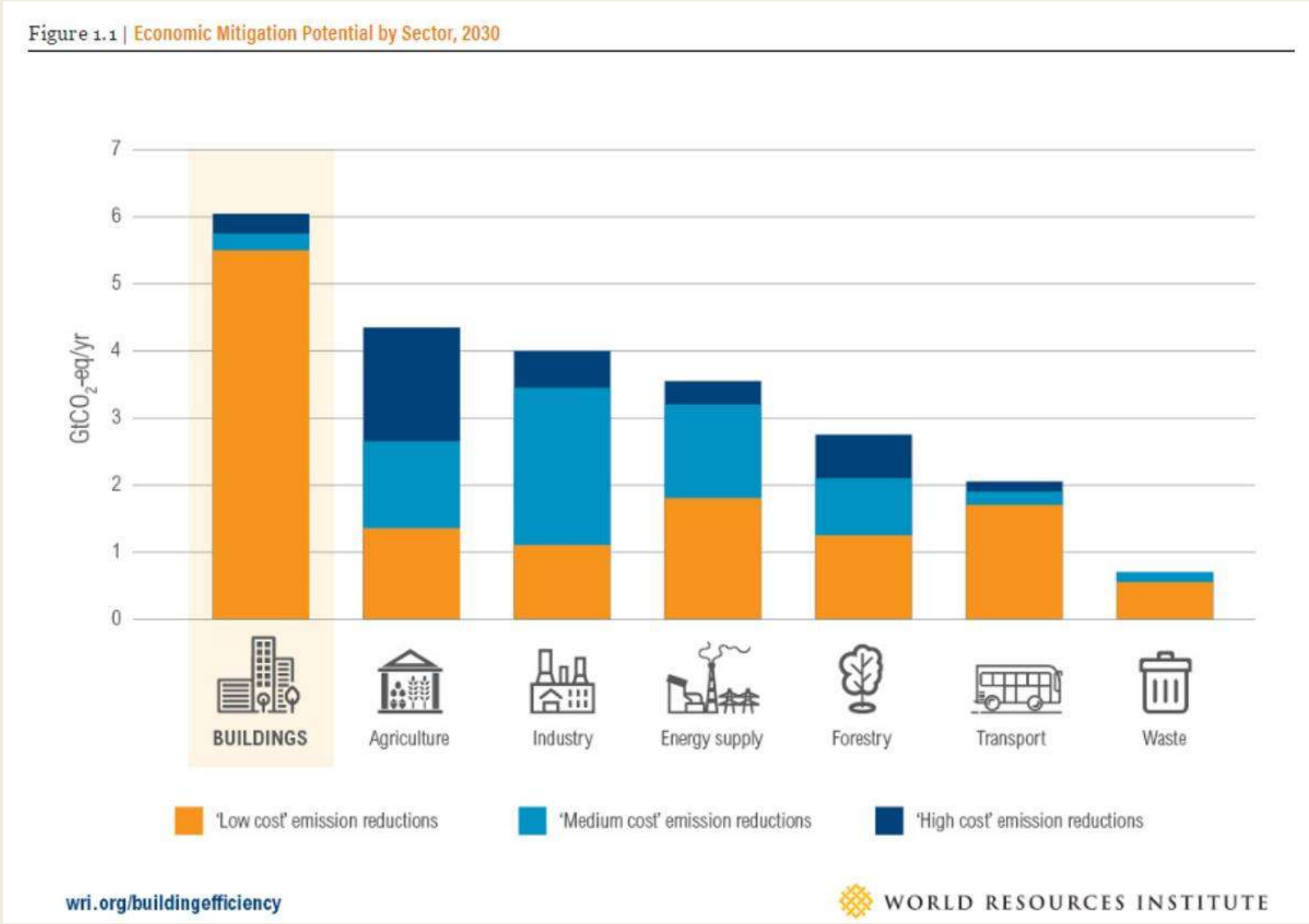
Impact Study: New York City



- **NYC Launched Energy Benchmarking, Audits, and Rx policy in 2010 as part of PlaNYC**

- **2010-2013 numbers:**
  - 16,000 buildings (public & private)
  - 5.7% energy savings
  - $267,492,147 savings
  - 6,500+ new jobs created
  - GDP increased 4.2%
  - Electricity prices decreased 8.4%
  - Greenhouse Gas emission reduced by 9.9%

Buildings energy use impact public health



BUILDING ENERGY AND WATER EFFICIENCY STRATEGY

Through the Green Works Orlando Community Action Plan and City Energy Project, we are improving the energy and water efficiency of our buildings, creating a healthier and more prosperous city.

The community action plan recommended to implement the Building Energy and Water Efficiency Strategy (BEWES), a suite of proven polices and programs focused on providing users with energy and water use data through benchmarking, audits and retro-commissioning.

This data helps to implement strategies that cut energy and water waste, boost the local economy, create high-wage jobs and reduce harmful pollution. We are also focused on enabling Property Assessed Clean Energy (PACE) financing to offset the upfront and ongoing cost to improve a building's performance.

This building energy and water efficiency strategy will harness market forces to save energy and drive investment in Orlando's buildings, putting us on track to make Orlando one of the most sustainable cities in America.

Green Works Orlando
MAYOR DYER'S GREEN INITIATIVE

IMPACT OF THE CITY ENERGY PROJECT BY 2030