



Benchmarking Performance of Public Facilities: Making Smart Decisions about Energy and Use

**Philadelphia City Planning Commission
Office of Innovation and Technology
Mayors Office of Sustainability**

PA Chapter of the American Planning Association
October 13, 2014

Presenters

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Program

1 Context and Issues

Alan Urek

2 Initiatives: Facilities Planning

Mark Wheeler

3 Benchmarking and Disclosure

Alex Dews

4 Questions and Discussion

1 Context and Issues

Core Issues

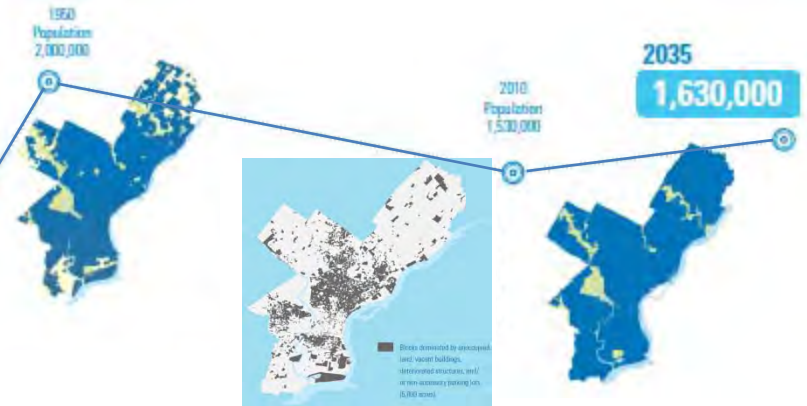
- Two-pronged: **Assets and Data**
- Facilities themselves
 - Supply and demand
 - Changes in use
 - Declining condition
 - Lack of resources
- Roadblocks to proper management and planning
 - Overarching strategy needed
 - Data gaps
 - Political considerations
 - Resources



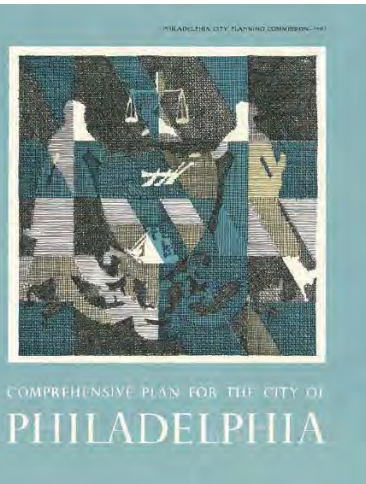
1 Context and Issues

How We Got Here

- Population growth to 1950s (2.0 M)
 - 1960 comp plan envisioned a bigger city (2.5 M)
 - Built public facilities to support the bigger city
 - Access to vast resources



- “Unexpected” population loss over 40 years (1.5 M)
 - Resources diminished
 - Planning lagged
 - Lost track of our assets, their use, etc.
 - Political influences



1 Context and Issues

City Portfolio

- >1,000 City-owned buildings and structures (excludes PHL)
- ~13.8 million square feet
 - Average size: 27,000 SF
 - Range from 40 to 1.2 M SF
- Average age: 69 years
- Range from 282 years (c.1730) to present



1 Context and Issues

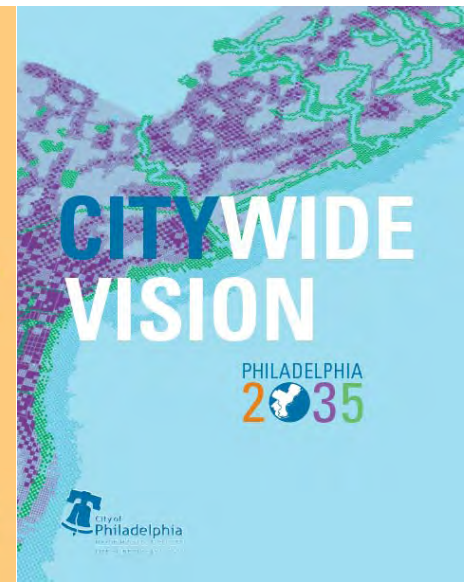
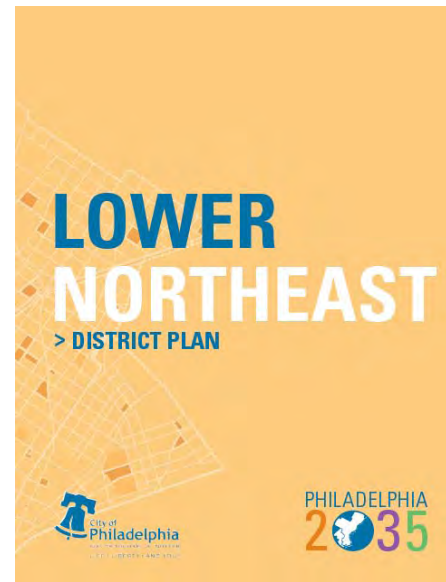
Public-Facilities Planning and Management

- Department of Public Property, Mayor's Office of Sustainability
- Operating departments
- Mayor's Task Force
- Comprehensive Plan: *Philadelphia2035*
- Annual Capital Budget; Six-year Capital Program

The FY2015-2020 Capital Program

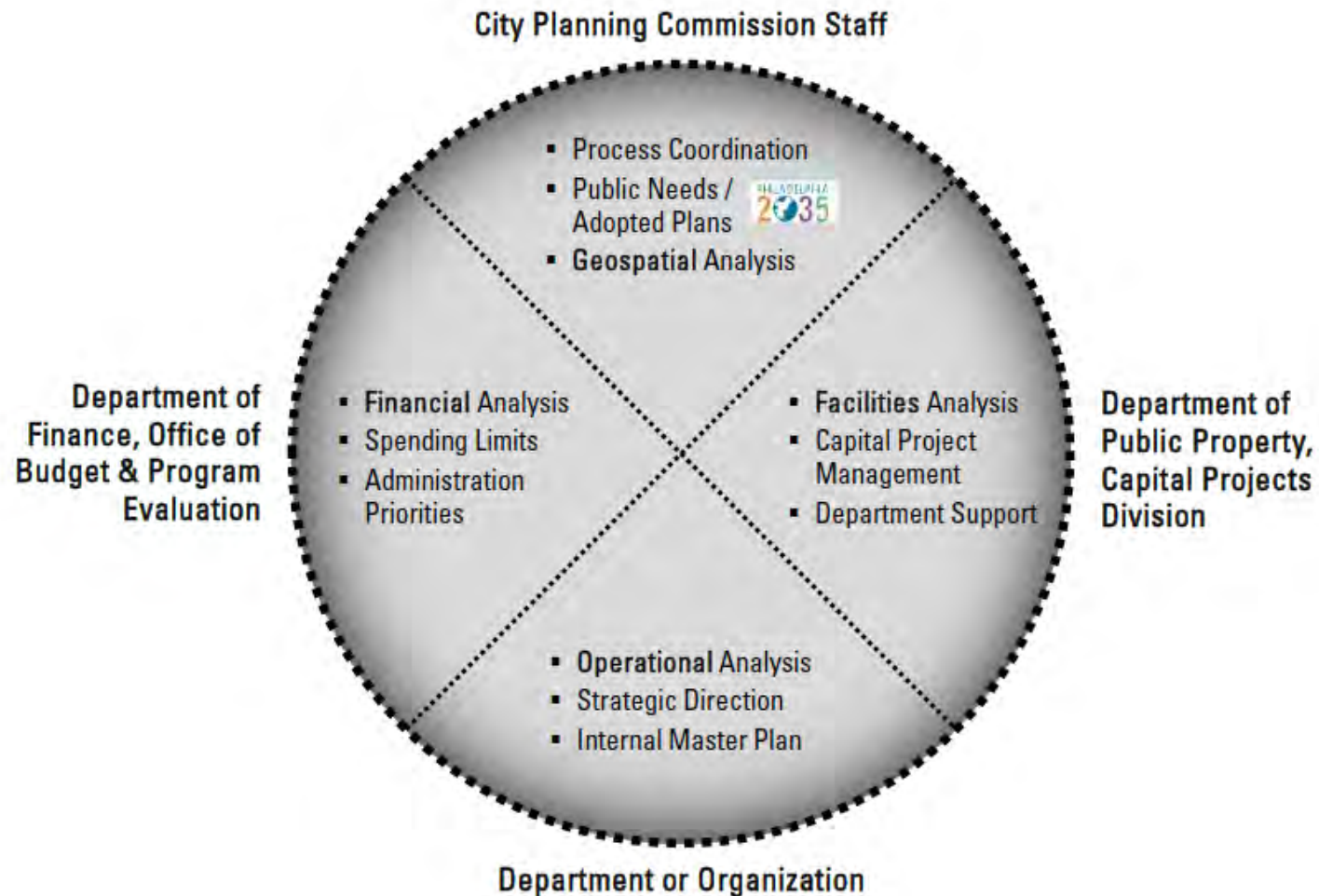
City of Philadelphia

Philadelphia becomes one of the safest cities in America • The education and health of Philadelphians improve
Philadelphia is a place of choice • Philadelphia becomes the greenest and most sustainable city in America
Philadelphia government works efficiently and effectively, with integrity and responsiveness



1 Context and Issues

Capital Program Responsibilities



1 Context and Issues

Department of Public Property (DPP)

Core mission

- The DPP manages the infrastructure that supports City government operations. To this end, the department is responsible for the acquisition, disposition, lease, design, construction, renovation and maintenance of City properties.



1 Context and Issues

DPP Facilities Management Division

- Responsible for the operation, service, repair, and maintenance of 150+ City-owned facilities and property (nearly 5.4M SF), including:
 - “Quadplex:” City Hall (600K SF), One Parkway Building, Municipal Services Building and Criminal Justice Center
 - Licenses and Inspections, Fleet, Streets and Office of Supportive Housing Facilities
 - Police and Fire Departments facilities



1 Context and Issues

DPP Capital Projects Division

- Manage capital improvement program for 15 City operating departments, 1,082 facilities with a total of 11.7 million square feet including:
 - Fire and Police
 - Prisons
 - Parks & Recreation
 - Health
 - Human Services
 - Libraries

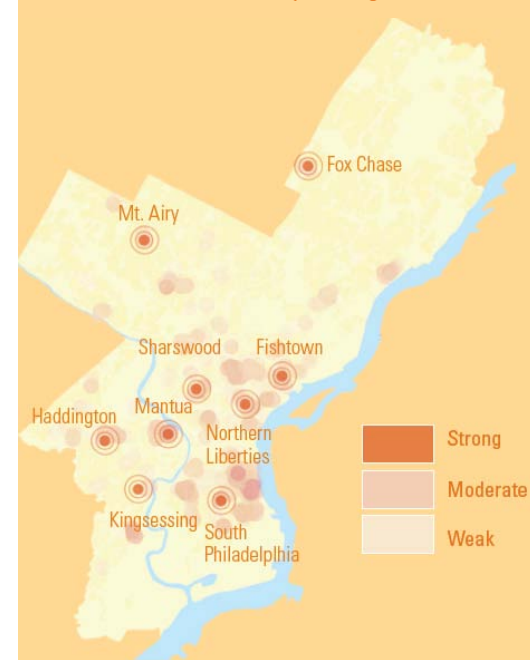


1 Context and Issues

Mayor's Task Force on City Facilities

- Established by executive order in August 2011
 - **Facilities Task Force** appointed by the mayor, chaired and composed of external experts and City Council reps
 - **Facilities Working Group** chaired by the managing director and composed of City administration reps
- Mission
 - Best financial terms for housing City operations
 - Clean, safe, and code-compliant
 - Complementary uses are co-located
 - Underutilized facilities are merged

Areas of Clustered Community-Serving Public Facilities



1 Context and Issues

Mayor's Task Force on City Facilities

- Composition
 - Academia
 - Bar Association, Real Estate Section
 - Building Owners and Managers Association (BOMA)
 - Philadelphia Chamber of Commerce
 - Philadelphia City Council
 - Commercial real estate brokers
 - Other
- Committees
 - Leases
 - Utilities
 - Facilities

1 Context and Issues

Definition of the Problem

- The portfolio of public facilities is too large for our population
- City resources can't support our portfolio
- Building operations and maintenance (O&M) suffer
- Creates deferred maintenance problems
- Capital funding is diverted to deferred maintenance
- Hamstrings the ability to do capital planning and programming
- Limited O&M data to use to manage and measure progress

2 Initiatives: Facilities Planning

Initiatives to Resolve the Problem

- Preventive Maintenance Unit to avoid deferred capital maintenance
- Collaboration with the Mayor's Task Force on City Facilities
 - Utility Payment and Energy Efficiency
 - Leasing Best Practices
 - Consolidation, merging and co-location of City facilities
- New performance budgeting process will consider cost-benefit analysis of capital and operating investments
- Master facilities database that includes pertinent asset information, including
 - Proximity to similar facilities
 - Energy use
 - Facility use
 - Operating cost per square foot

2 Initiatives: Facilities Planning

Integrated Approach

Capital Project
Management
Long-Range
Facility Planning

Maintenance
Work Orders

Space
Management /
Space
Assessments

Utility Cost
Tracking
& Benchmarking

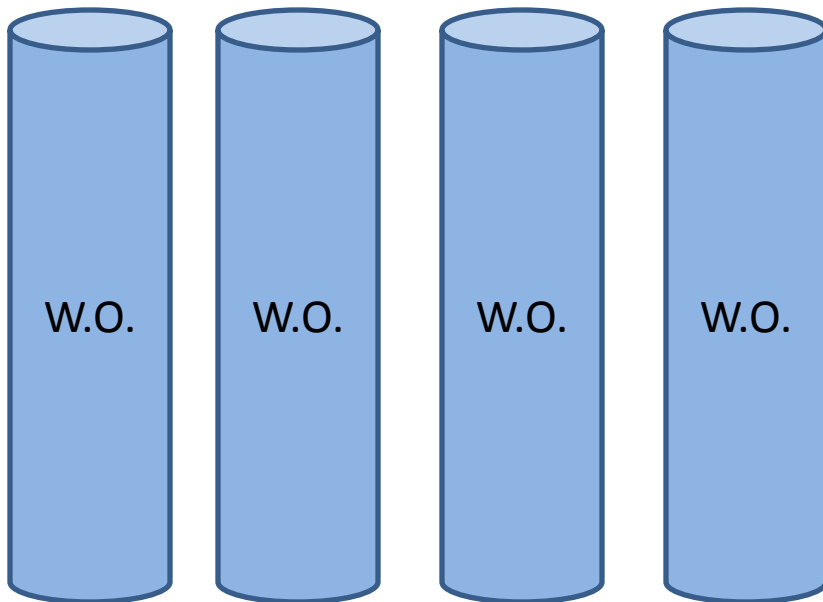
O & M Cost
Tracking

Emergency
Response &
Planning

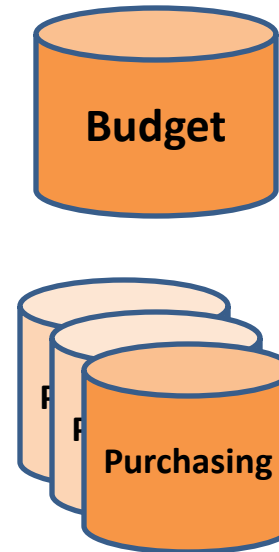
2 Initiatives: Facilities Planning

Current Situation

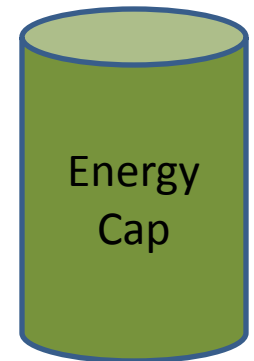
Departmental Work Order Systems



Financials

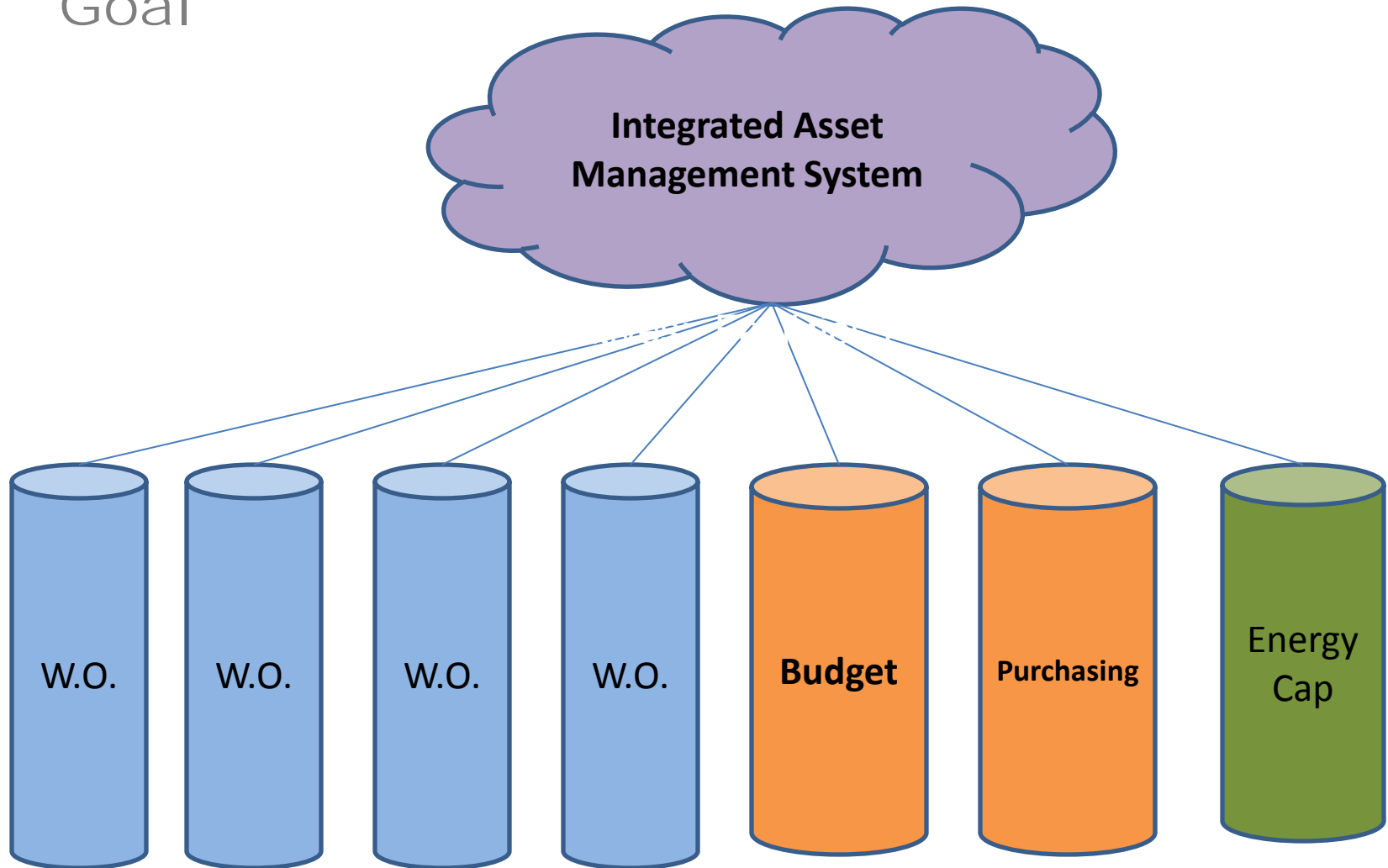


Utility Tracking

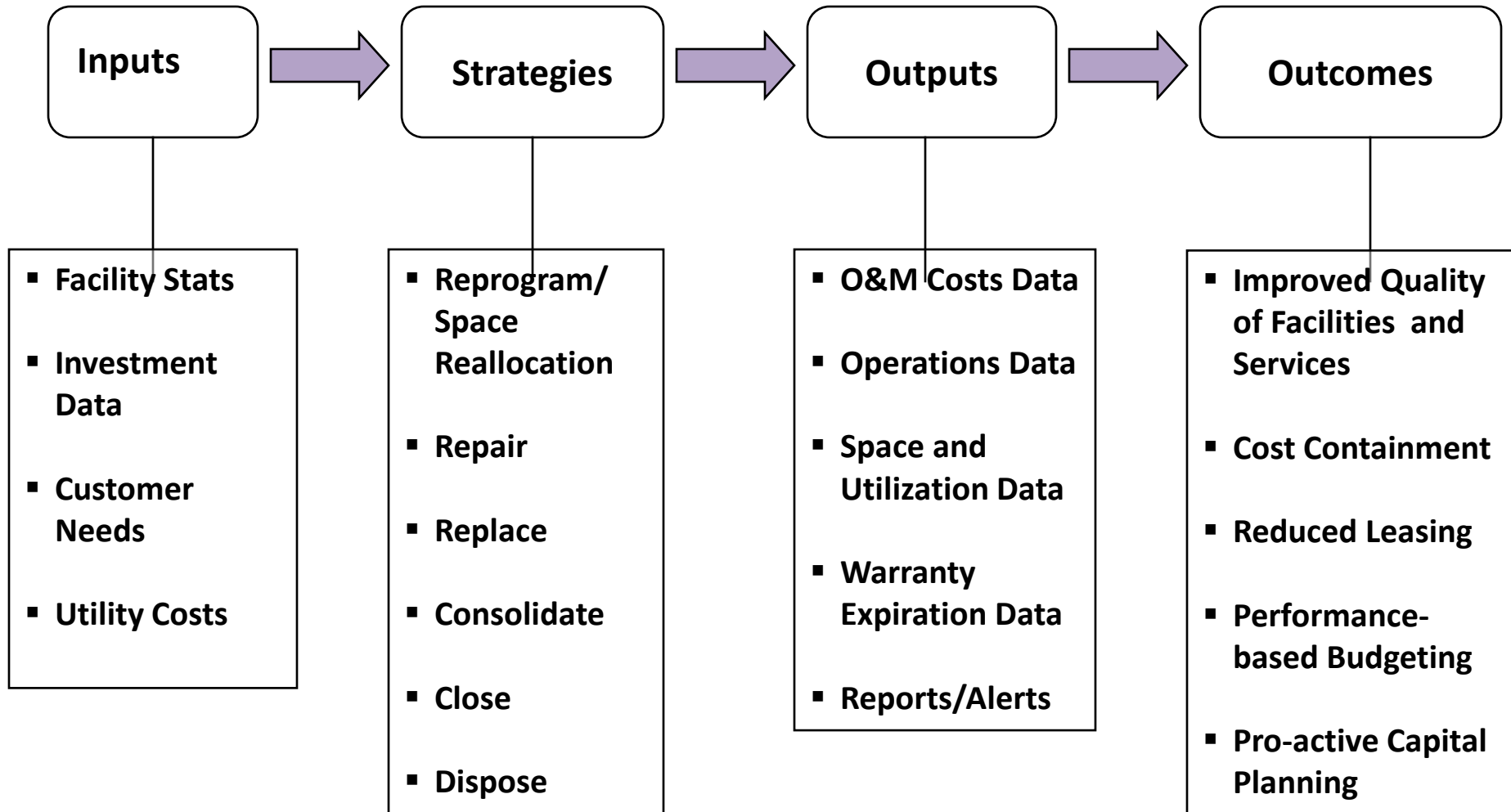


2 Initiatives: Facilities Planning

Goal

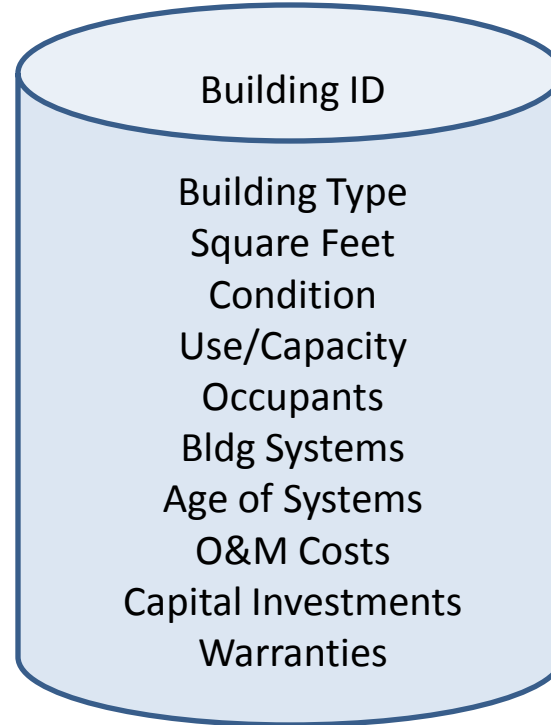


2 Initiatives: Facilities Planning



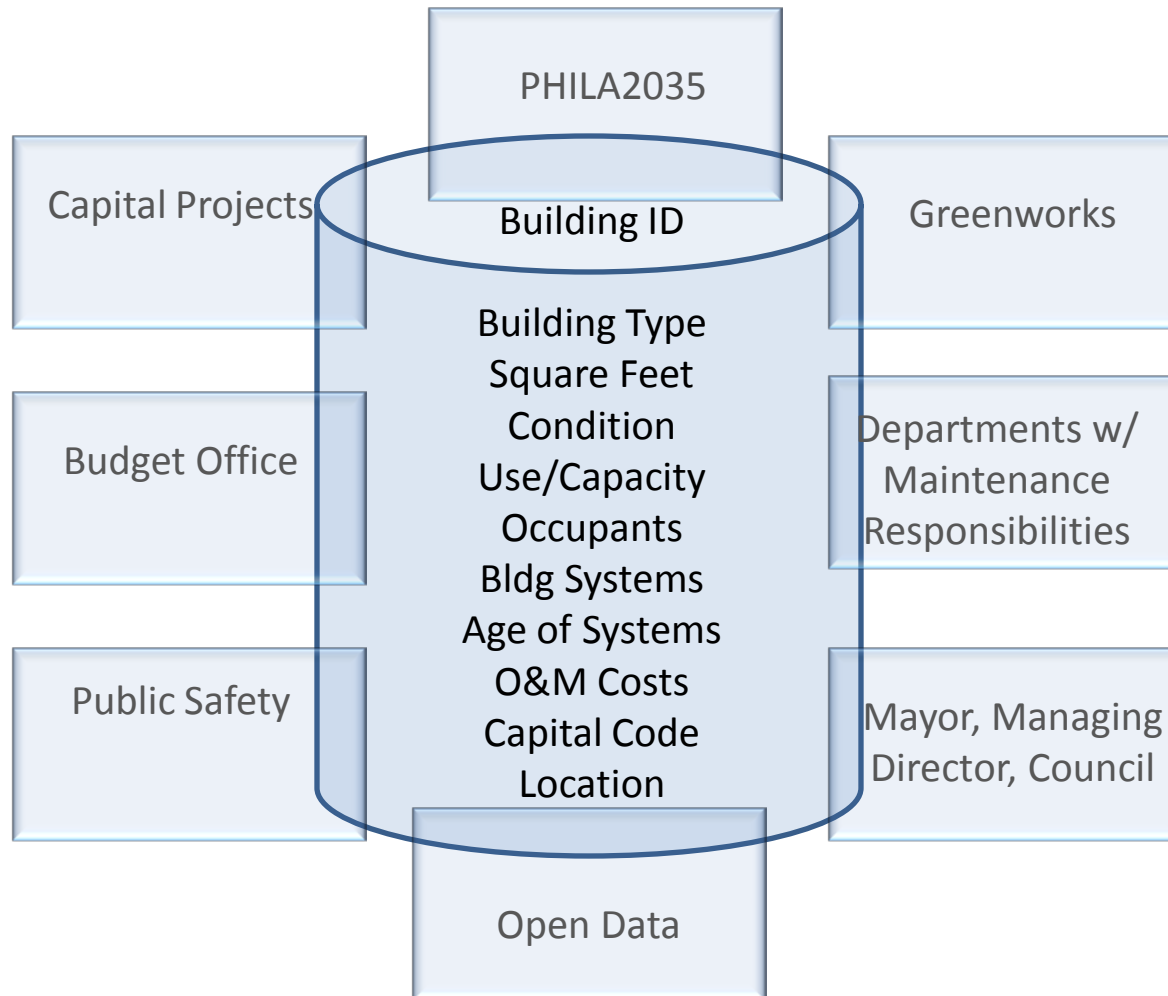
2 Initiatives: Facilities Planning

Asset Data to Capture



2 Initiatives: Facilities Planning

Data Consumers



2 Initiatives: Facilities Planning

Implement Integrated Asset Management

- Established multi-department working group
- Technical study underway
- RFP in early 2015
- Phased implementation depending on RFP responses

2 Initiatives: Facilities Planning

Master facilities database

- Step towards integrated asset data management
- Comprehensive inventory of facilities owned and leased: all buildings, fields, playgrounds, fixed equipment
- Basic building characteristics
- Lease info
- Capital expenditures
- Data gaps and static



2 Initiatives: Facilities Planning

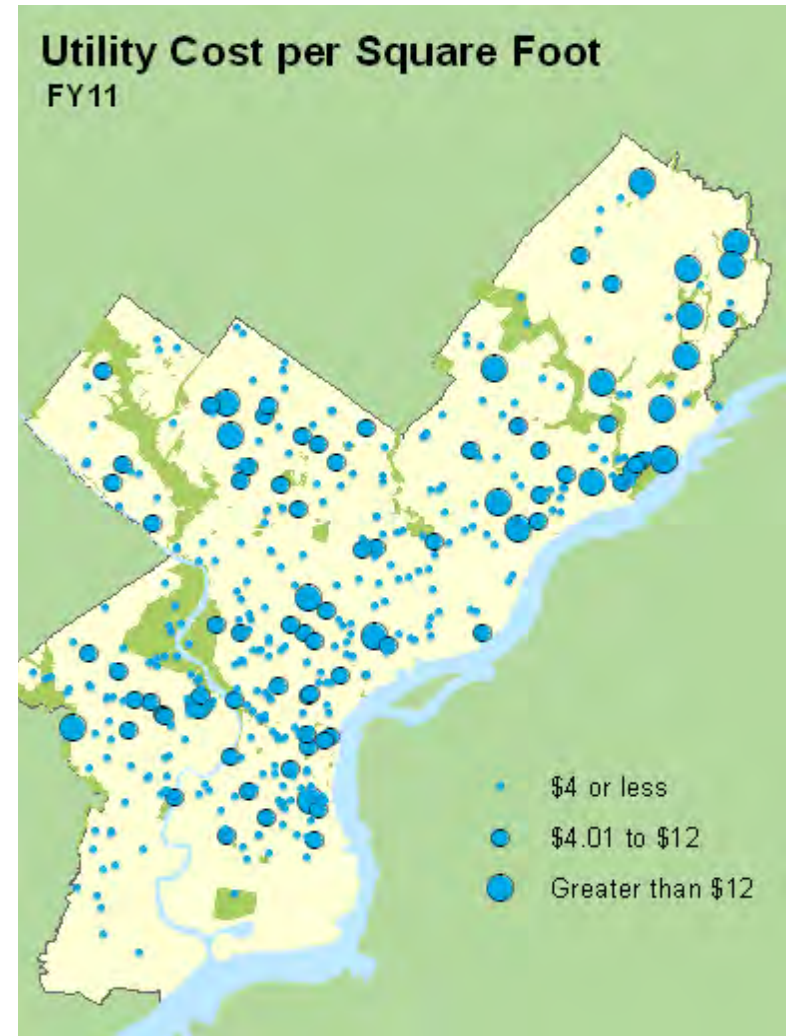
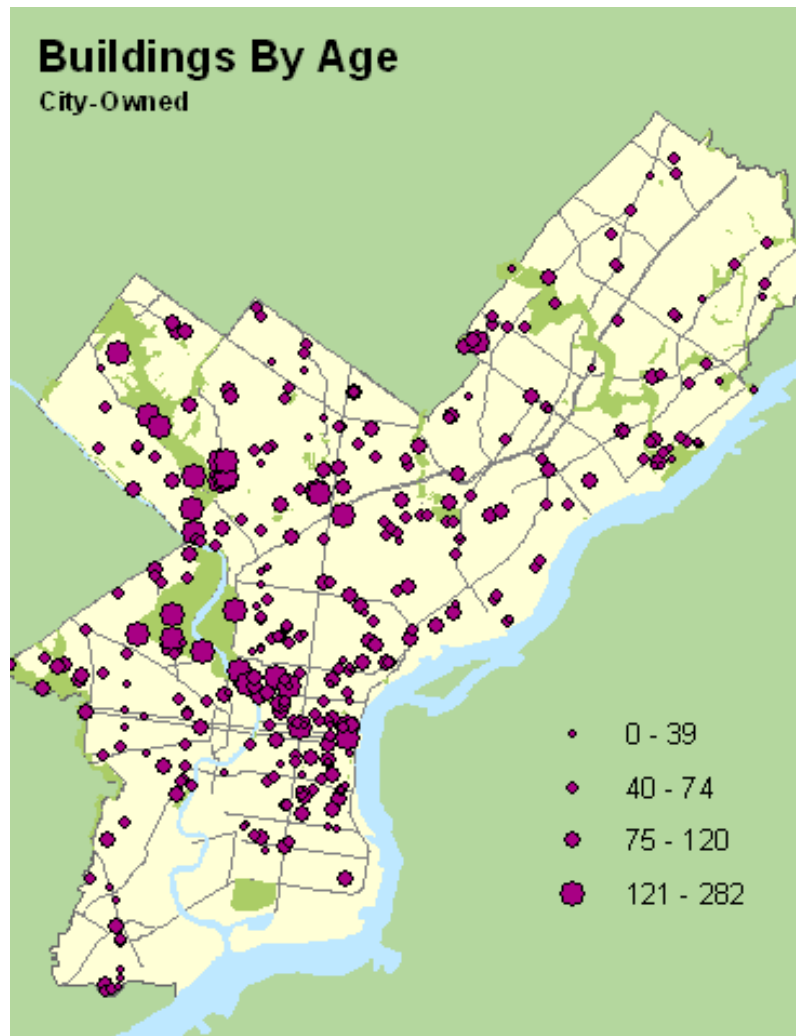
Facility Characteristics

City Facilities and Fixed Assets GeoDB2

	Asset_ID	Asset_Name	Bldg_SQFT	Bldg_SQFT_U	Bldg_FL	Bldg_YR	Site_Acres
	287	City Hall	659,185	100	9	1868	7.59
	1438	Philadelphia Museum of Art (PMA)	631,000	100	4	1929	14.49
	2978	Three Parkway Building	626,880	100	2	<Null>	<Null>
	324	Records Dept Archive Center	601,907	<Null>	1	1953	3.45
	93	Criminal Justice Center	571,570	100	17	1994	1.59
	165	Municipal Services Building (MSB)	500,000	<Null>	16	1968	2.4
	868	District Attorneys Office (D.A.)	484,884	88	<Null>	1930	0.24
	1766	Court Reporter	484,528	100	1	<Null>	<Null>
	319	Eastern State Penitentiary Museum	443,414	<Null>	<Null>	1829	11.49

2 Initiatives: Facilities Planning

Building Characteristics



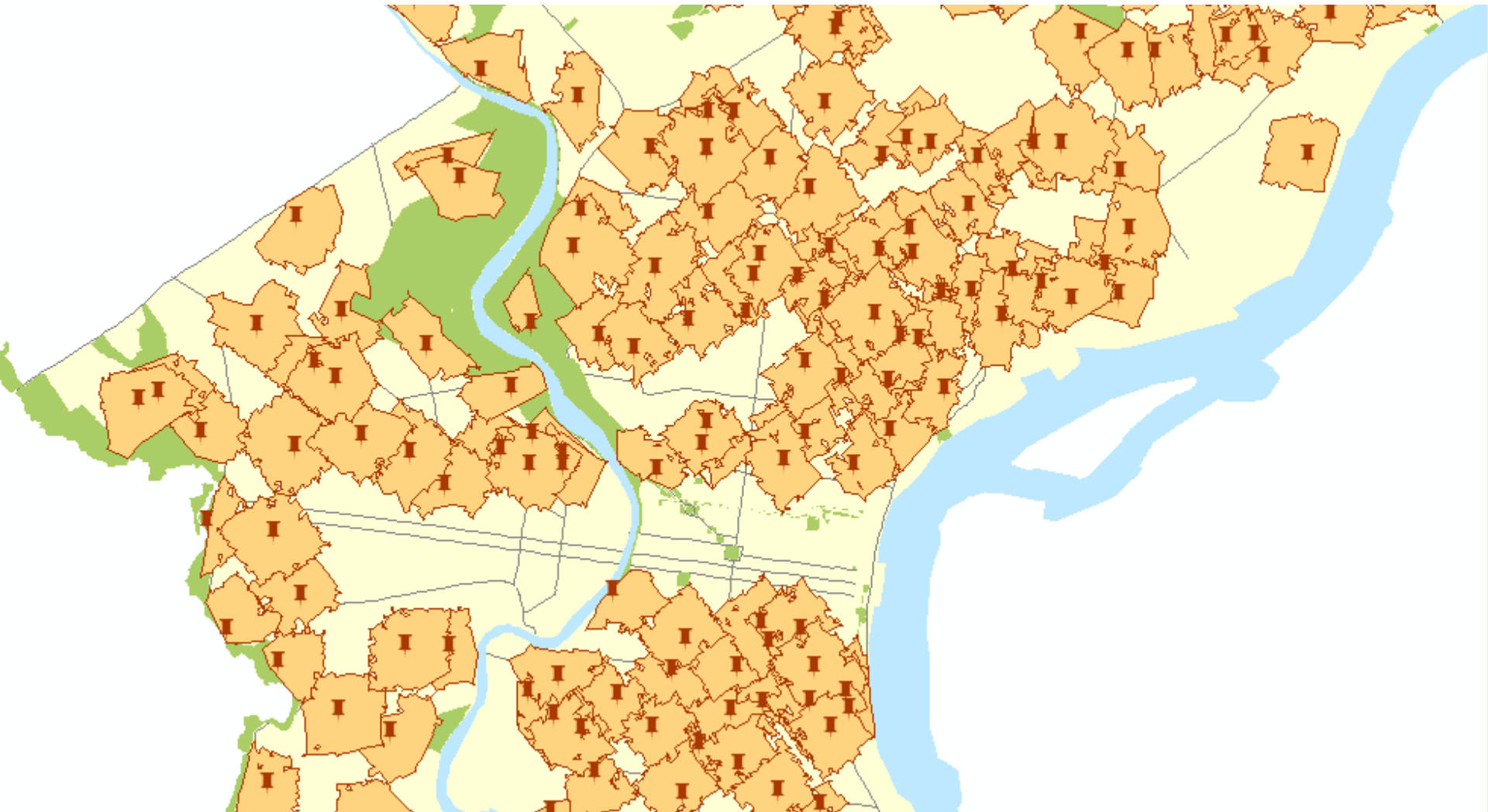
2 Initiatives: Facilities Planning

205 Recreation Centers



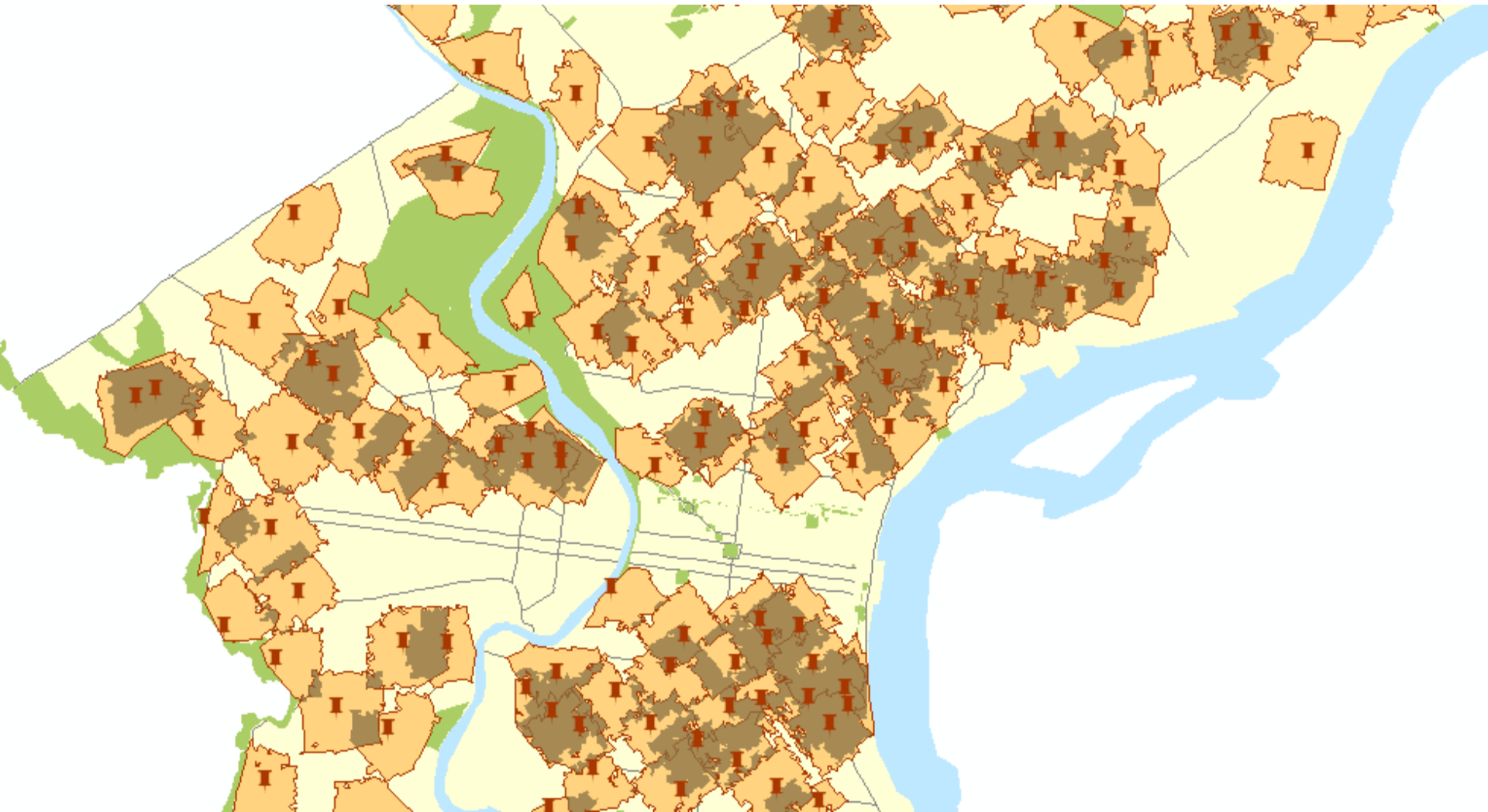
2 Initiatives: Facilities Planning

Service Areas: 64 sq. mi. of Walksheds



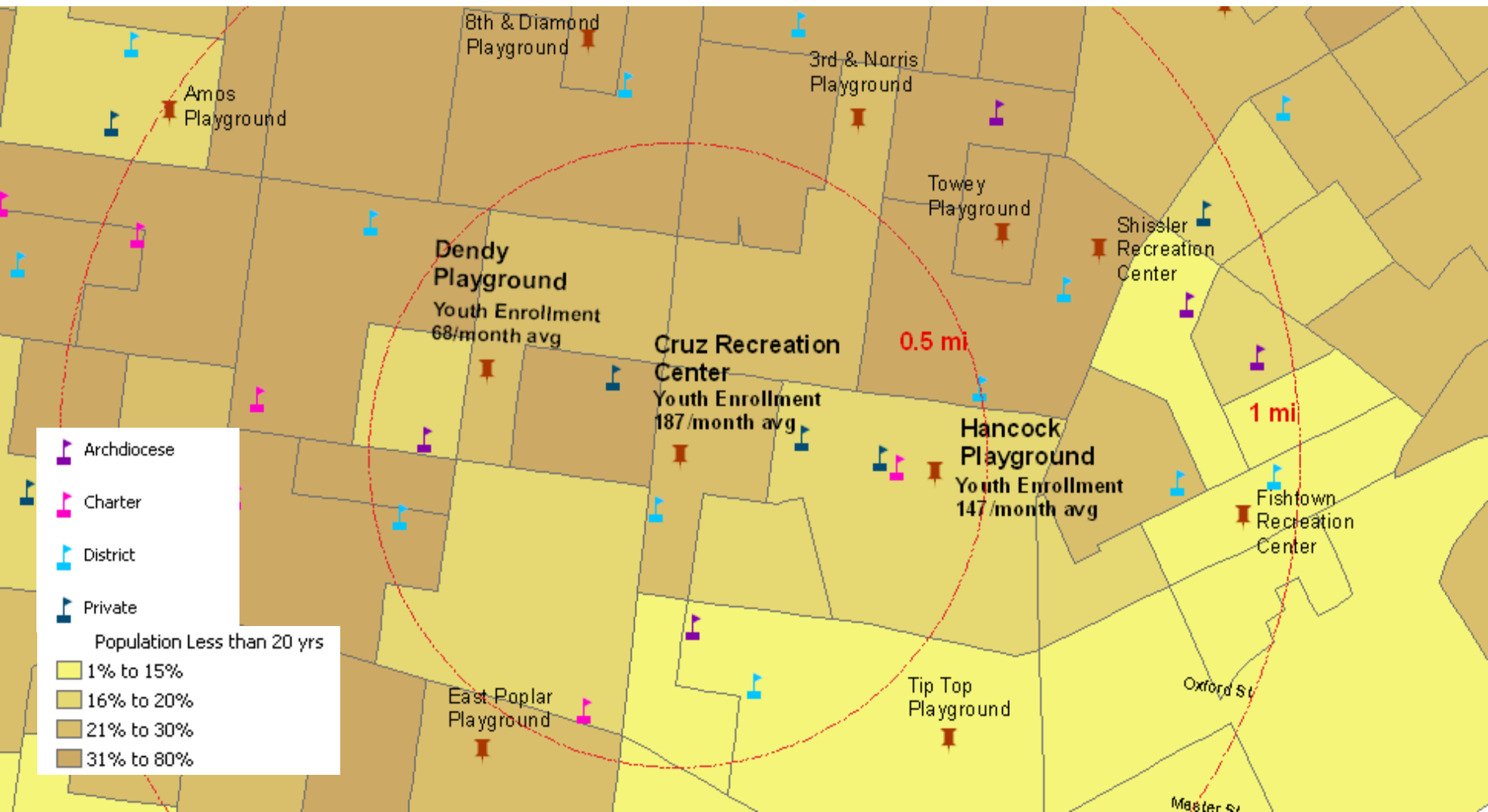
2 Initiatives: Facilities Planning

Estimated Overlap: 28 square miles



2 Initiatives: Facilities Planning

Demand and Demographic Variables



2 Initiatives: Facilities Planning

Phila2035 Example

Facility Name	Type	Service Area (Square Miles)		Overlap	
		Total	In West Park	Sq Miles	Percent
52nd and Master	Playground	14.07	8.10	13.5	96%
John Anderson	Recreation Center	7.46	7.46	0	none
Clayborn-Lewis	Recreation Center	2.92	2.92	0	none
Conestoga	Playground	13.11	7.10	13.05	100%
Conshohocken	Playground	3.22	3.22	1.53	48%
Ford Road	Playground	3.26	3.26	1.53	47%

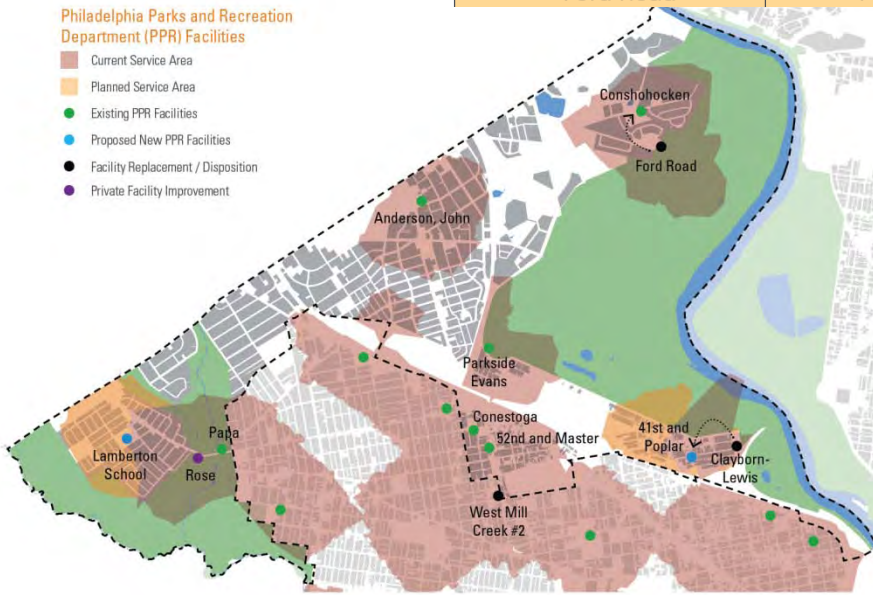


THRIVE > Neighborhoods

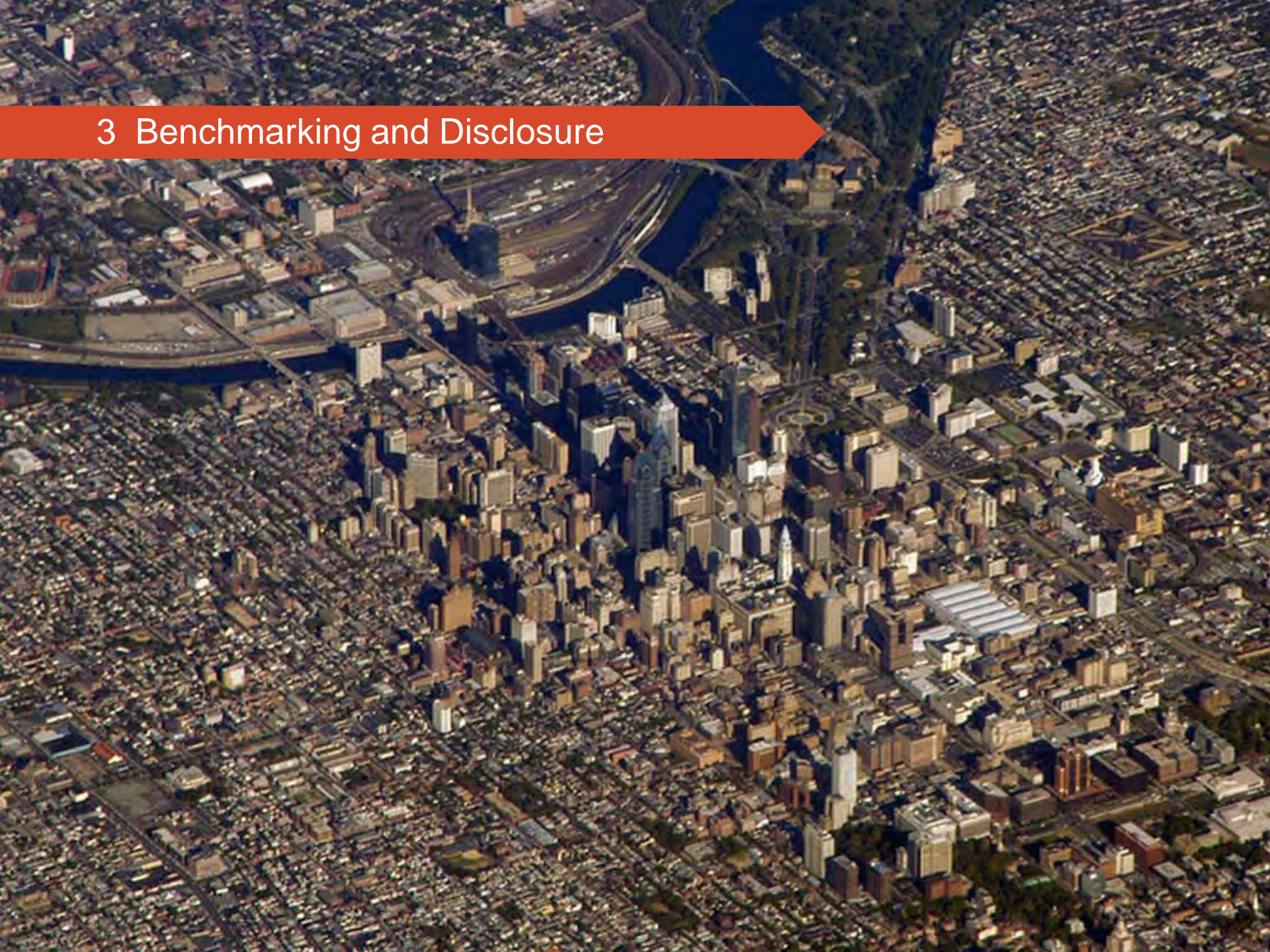
Neighborhood Centers: Municipal / Comm

Philadelphia Parks and Recreation Department (PPR) Facilities

- Current Service Area
- Planned Service Area
- Existing PPR Facilities
- Proposed New PPR Facilities
- Facility Replacement / Disposition
- Private Facility Improvement



3 Benchmarking and Disclosure



GREENWORKS

PHILADELPHIA

Energy

PHILADELPHIA REDUCES ITS VULNERABILITY
TO RISING ENERGY PRICES



Environment

PHILADELPHIA REDUCES ITS ENVIRONMENTAL
FOOTPRINT



Equity

PHILADELPHIA DELIVERS MORE EQUITABLE
ACCESS TO HEALTHY NEIGHBORHOODS



Economy

PHILADELPHIA CREATES A COMPETITIVE
ADVANTAGE FROM SUSTAINABILITY



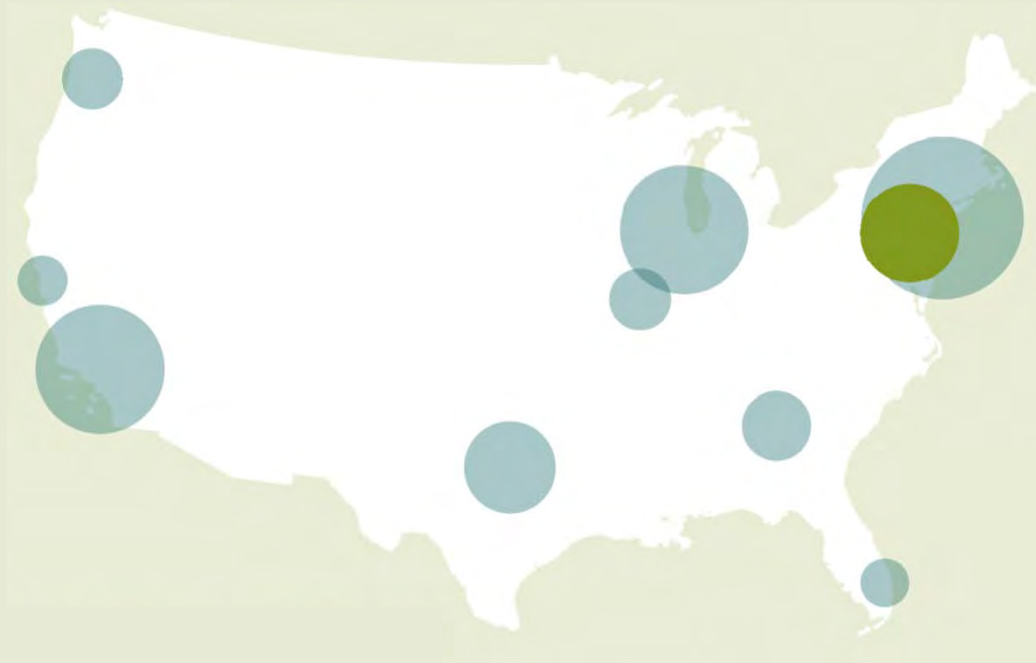
Engagement

PHILADELPHIANS UNITE TO BUILD A
SUSTAINABLE FUTURE

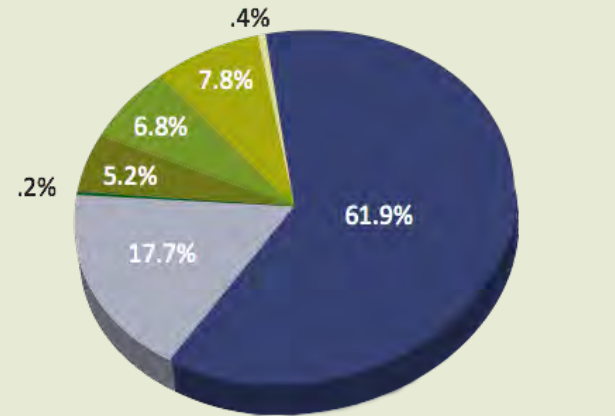


5 goals, 15 targets, over 150 initiatives

Carbons Emissions in Philadelphia and the U.S.



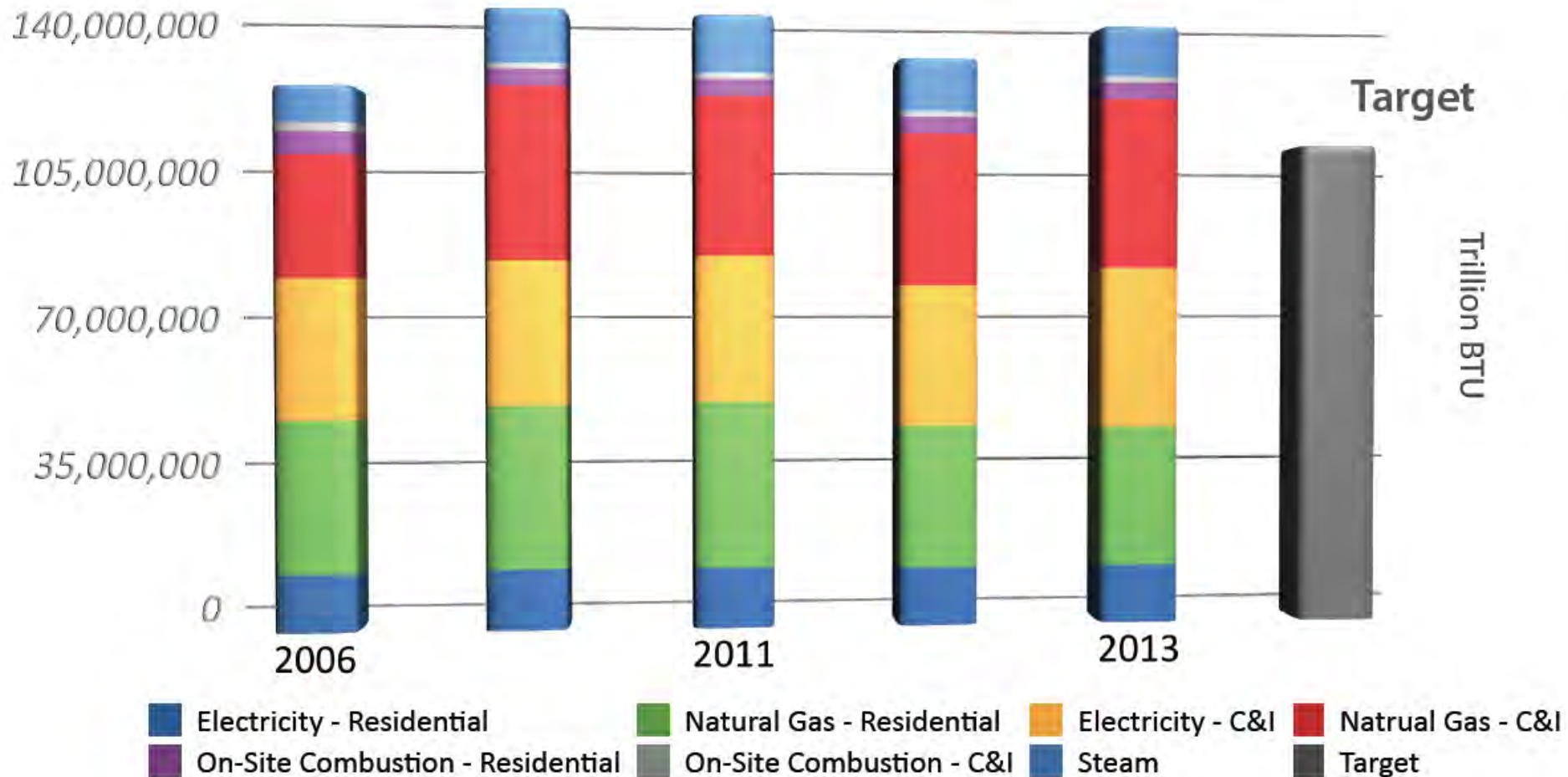
ATLANTA	NEW YORK
CHICAGO	PHILADELPHIA
DALLAS	PORTLAND
LOS ANGELES	SAN FRANCISCO
MIAMI	ST. LOUS



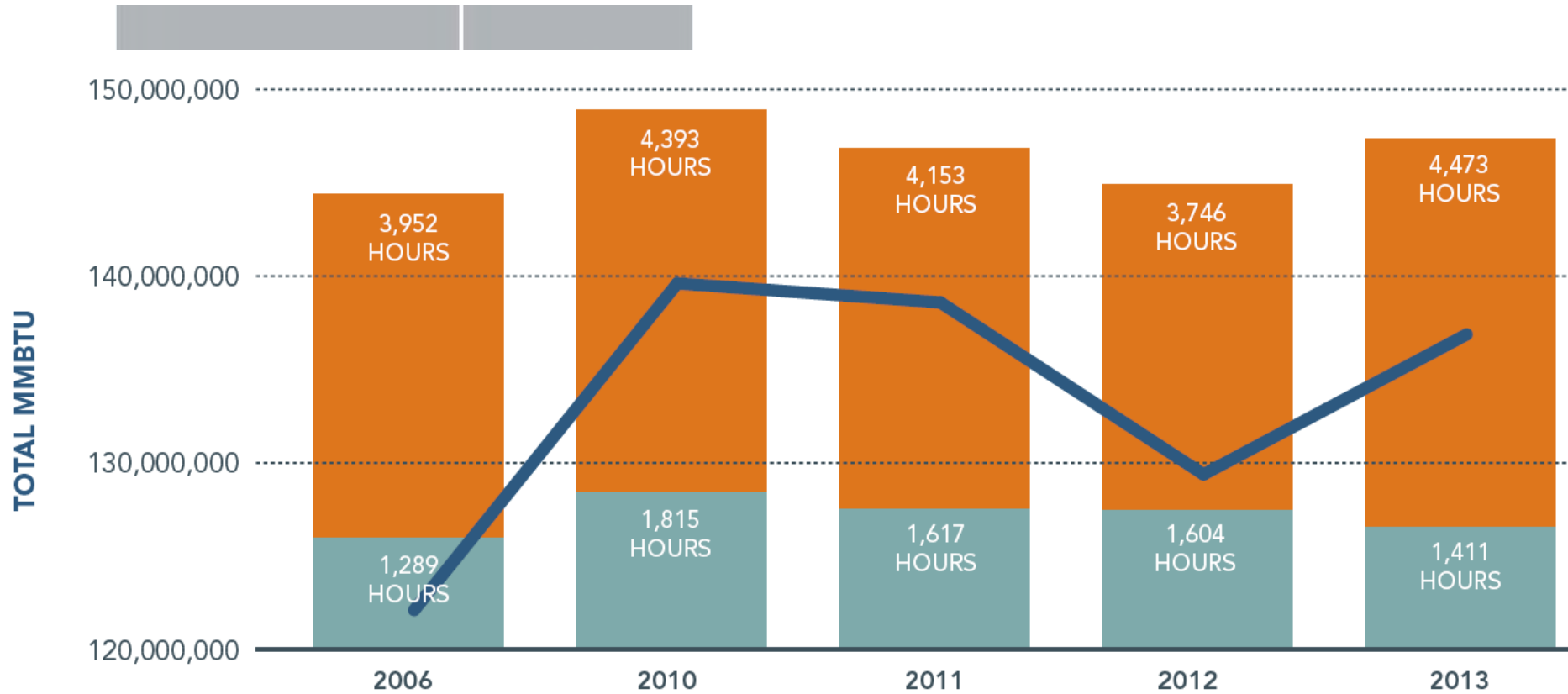
■ Buildings ■ Transportation ■ Street Lights ■ Fugitive
■ Industrial ■ Waste ■ Wastewater Treatment

Buildings account for 62% of carbon emissions in Philadelphia

Citywide Building Energy Use Trends



Weather as a driver of citywide energy use



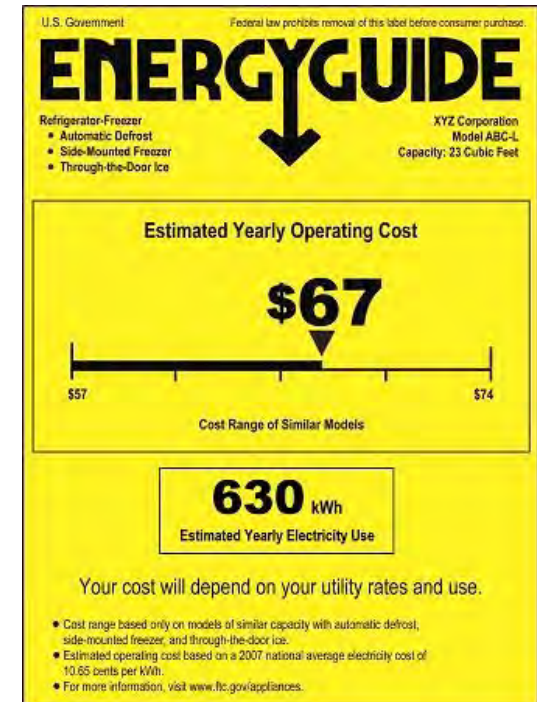
Why Benchmarking?



Item	Price
Hot Cakes	300
Hot Cakes with Egg	450
Hot Cakes with Egg & Bacon	430
Hot Cakes with Egg & Bacon	510
Hot Cakes with Egg & Bacon	410
Hot Cakes with Egg & Bacon	420
Hot Cakes with Egg & Bacon	570



Nutrition Facts	
Serving Size 1 cup (228g)	
Servings per Container 2	
Amount Per Serving	
Calories 280	Calories from Fat 120
% Daily Value*	
Total Fat 13g	20%
Saturated Fat 5g	25%
Trans Fat 2g	
Cholesterol 2mg	10%
Sodium 660mg	28%
Total Carbohydrate 31g	10%
Dietary Fiber 3g	0%
Sugars 5g	
Protein 5g	
Vitamin A 4%	Vitamin C 2%
Calcium 15%	Iron 4%
Percent Daily Values are based on a diet of other people's misdeeds.	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Fiber	25g 30g
Calories per gram:	
Fat 9	Carbohydrate 4 Protein 4



No information = No action

Cities are looking at what drives demand and competition in other industries

Benchmarking

Year Two Compliance Rate: 90%



250m
Square ft.
(Non-residential)

Represents
25%
of total
Citywide
square footage



64



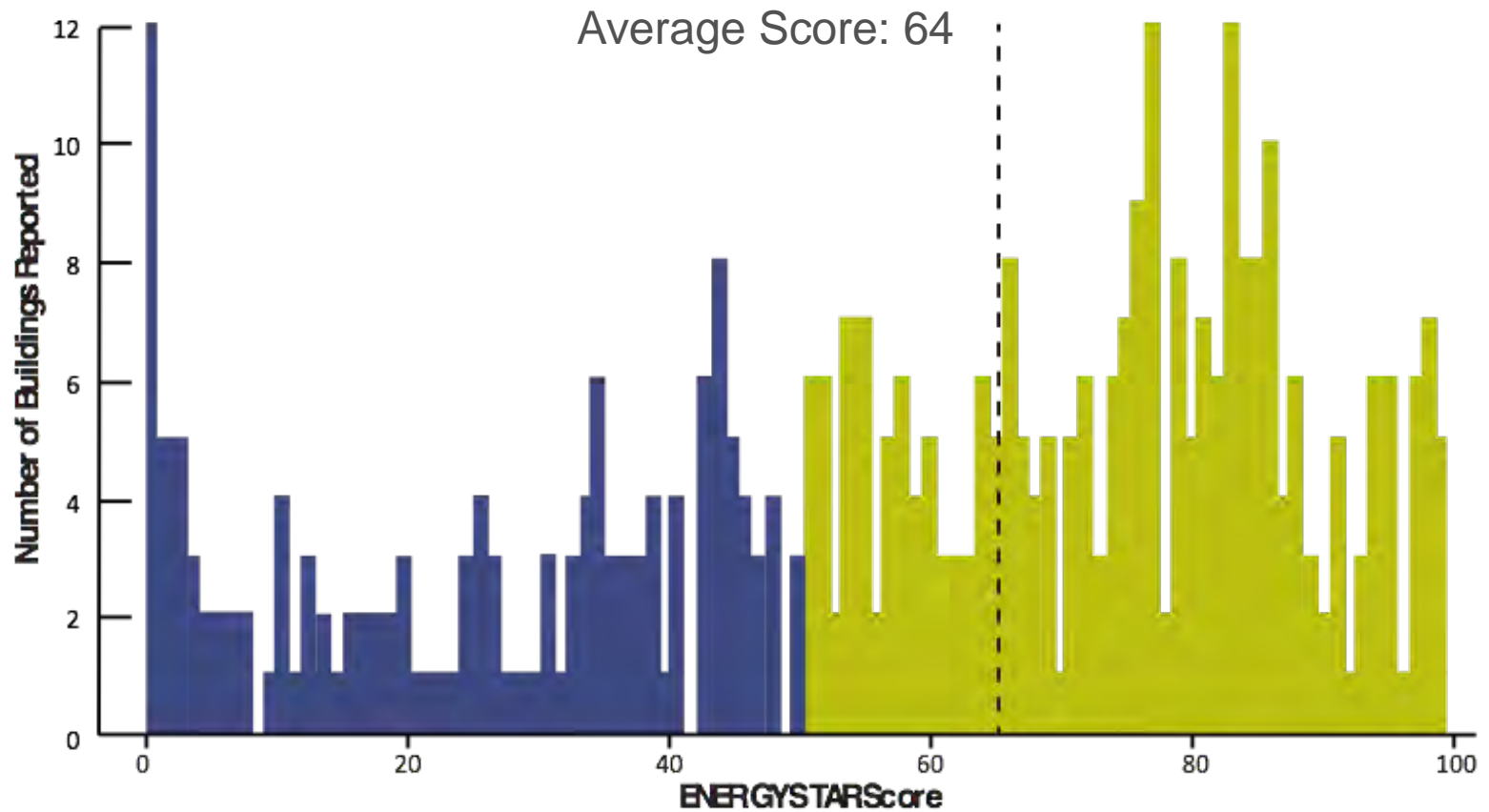
Average
ENERGY STAR
Score



1,700
Buildings



Citywide ENERGY STAR Distribution

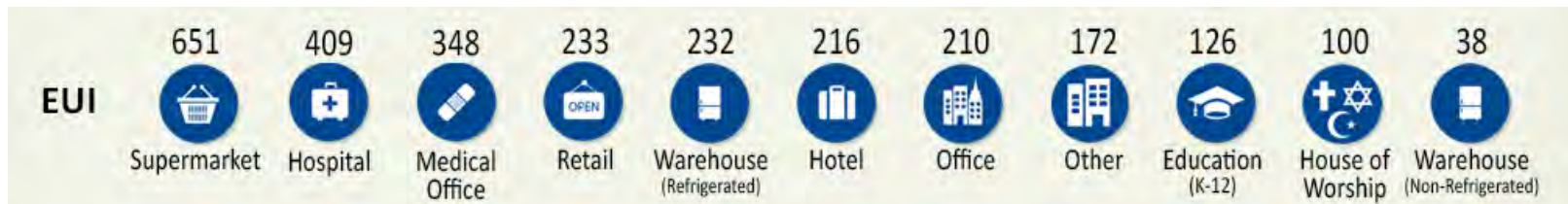


Potential Savings in Benchmarking Portfolio

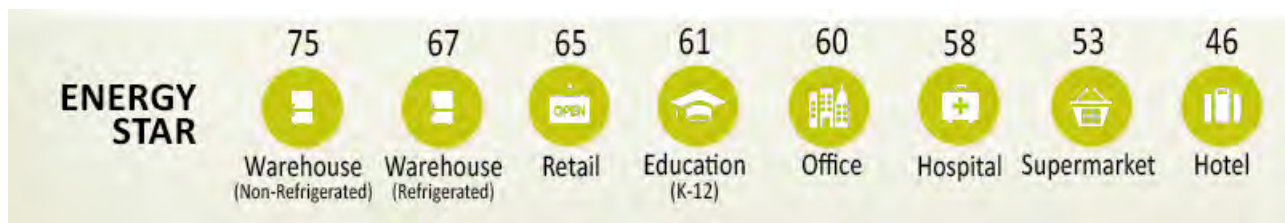
23% energy reduction across 1,700 Buildings
or \$100 million in annual savings



Connecting Performance to Financing and Technical Assistance



Sector Summary by Source EUI (kBtu/per square foot)

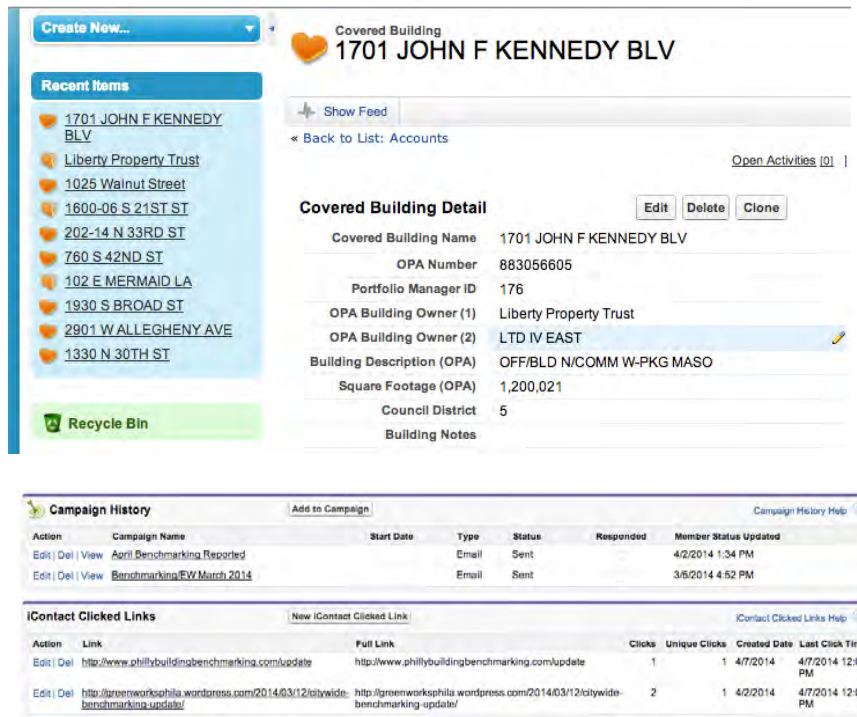


Sector Summary by ENERGY STAR Score (1-100)



Managing Data and Outreach with CRM

Building Data Tracking



Create New...

Covered Building
1701 JOHN F KENNEDY BLV

Recent Items

- 1701 JOHN F KENNEDY BLV
- Liberty Property Trust
- 1025 Walnut Street
- 1600-06 S 21ST ST
- 202-14 N 33RD ST
- 760 S 42ND ST
- 102 E MERMAID LA
- 1930 S BROAD ST
- 2901 W ALLEGHENY AVE
- 1330 N 30TH ST

Recycle Bin

Covered Building Detail [Edit] [Delete] [Clone]

Covered Building Name 1701 JOHN F KENNEDY BLV

OPA Number 883056605

Portfolio Manager ID 176

OPA Building Owner (1) Liberty Property Trust

OPA Building Owner (2) LTD IV EAST

Building Description (OPA) OFF/BLD N/COMM W-PKG MASO

Square Footage (OPA) 1,200,021

Council District 5

Building Notes

Campaign History [Add to Campaign] [Campaign History Help]

Action	Campaign Name	Start Date	Type	Status	Responded	Member Status Updated
Edit Del View	April Benchmarking Reported		Email	Sent		4/2/2014 1:34 PM
Edit Del View	Benchmarking FW March 2014		Email	Sent		3/5/2014 4:52 PM

iContact Clicked Links [New iContact Clicked Link] [iContact Clicked Links Help]

Action	Link	Full Link	Clicks	Unique Clicks	Created Date	Last Click Time
Edit Del	http://www.phillybuildingbenchmarking.com/update	http://www.phillybuildingbenchmarking.com/update	1	1	4/7/2014	4/7/2014 12:05 PM
Edit Del	http://greenworksphila.wordpress.com/2014/03/12/citywide-benchmarking-update/	http://greenworksphila.wordpress.com/2014/03/12/citywide-benchmarking-update/	2	1	4/2/2014	4/7/2014 12:03 PM

Email Outreach & Marketing



Financing, Technical Assistance, and Benchmarking Update

Dear Building Owner/Operator,

Thank you again for your participation in the first year of the City of Philadelphia's benchmarking initiative. Results from this reporting will be available later this month on our website, www.phila.gov/benchmarking.

The results of the survey you and many others completed last month indicate that financing and technical assistance are the biggest barriers to improving a building's energy performance. So we wanted to tell you about the City's [EnergyWorks](#) program, which is a good resource in addressing these challenges.

Through the end of March, EnergyWorks is offering low-cost financing (as low as 3.5%) for eligible energy efficiency improvements and on-site guidance to identify potential improvements.

To learn more and see whether EnergyWorks might be a fit for your building, please call (215) 496-8157 or visit the EnergyWorks website at www.energyworksnow.com/commercial.

Reporting for 2013 energy and water usage will begin in April 2014. You will receive notice at this email address and via mail when the new reporting cycle opens.

Thank you,

Mayor's Office of Sustainability

EnergyWorks

Open Rate 48.3

Click Rate 17.19

Bounce Rate 2.22

Unsubscribe Rate 0

Charts display averages from the 1 message in the "Released" status.

Providing Individual Feedback and Driving Competition between Buildings

Customized Reporting



2013 Building ENERGY Performance Profile

ADDRESS: 1717 Arch Street

YEAR BUILT: 1990

GROSS FLOOR AREA (SQUARE FEET): 1,377,698

OPA ID#: 883059004

Compare Your Building's ENERGY STAR® Score to Similar Buildings in the U.S. & Philadelphia

(1-100 Score, 100 is most efficient building)



Below is how your building's annual ENERGY STAR® Score compares to other National and Philadelphia Office buildings reported in 2013.

NATIONAL
AVERAGE SCORE



YOUR BUILDING'S
SCORE



PHILADELPHIA'S
AVERAGE SCORE



Your Building Ranks # **26**
out of **165** similar buildings



- Ranking is based on self-reported data provided by building owners and operators.
 - Buildings 75 or above are eligible for ENERGY STAR certification
- Visit www.energystar.gov/benchmark to learn how.

Energy Reduction Race

The screenshot shows the 'Energy Reduction Race' registration page. At the top, there's a navigation bar with links: HOME, ABOUT BENCHMARKING, NEWS, CALENDAR, GUIDANCE DOCUMENTS, CONTACT, and PORTFOLIO MANAGER. Below this is a banner with the text 'ENTER YOUR BUILDING TODAY!' and 'REDUCE ENERGY and compete for CASH PRIZES!'. The main content area is titled 'CONTEST DETAILS' and 'REGISTER'. It contains a registration form with fields for First Name, Last Name, Title, Organization, Building Address, Email Address, and a text area for 'How would you use the competition prize to further energy efficiency in your building?'. A 'SUBMIT' button is at the bottom of the form. The footer includes the City of Philadelphia logo and the text 'THE CITY OF PHILADELPHIA'.

Support from Partner Organizations

LOCAL PARTNERS



DELAWARE VALLEY
GREEN BUILDING
COUNCIL

UTILITY PARTNERS



NATIONAL PARTNERS





Benchmarking and Disclosure in Philadelphia
Alex Dews, Mayor's Office of Sustainability
www.phila.gov/benchmarking



Benchmarking Performance of Public Facilities: Making Smart Decisions about Energy and Use

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