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

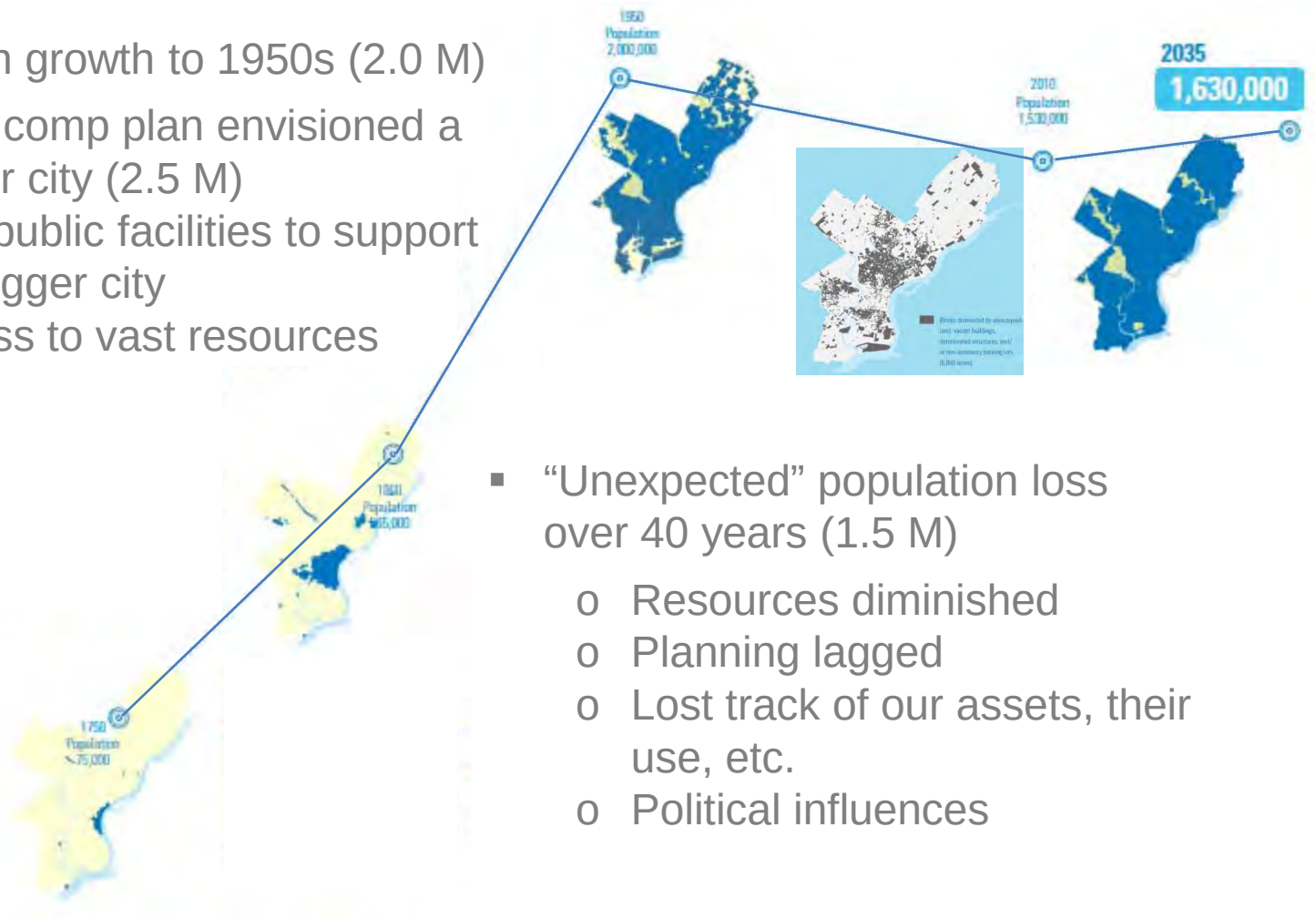
4 Questions and Discussion

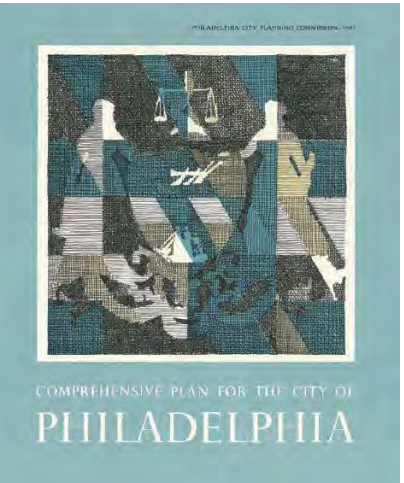
Core Issues

- 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

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





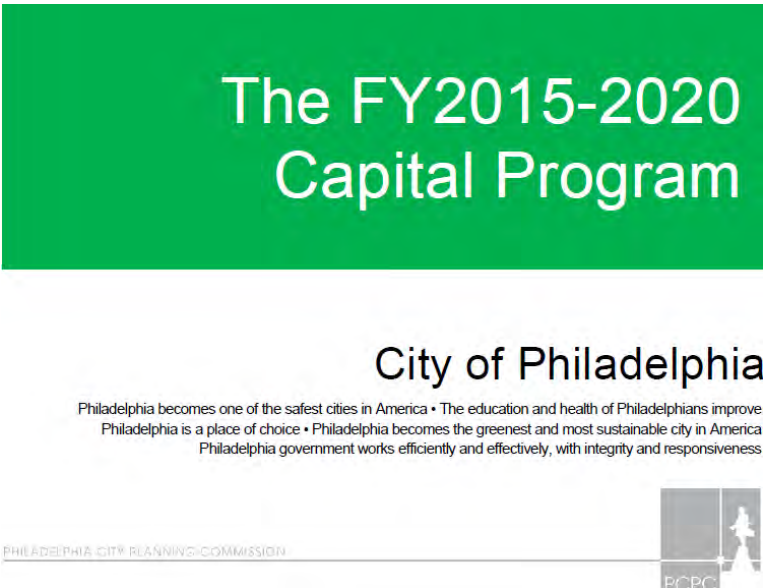
- "Unexpected" population loss over 40 years (1.5 M)
  - Resources diminished
  - Planning lagged
  - Lost track of our assets, their use, etc.
  - Political influences

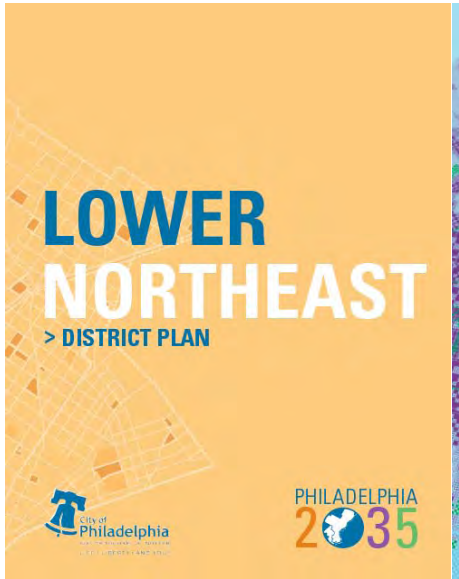
City Portfolio

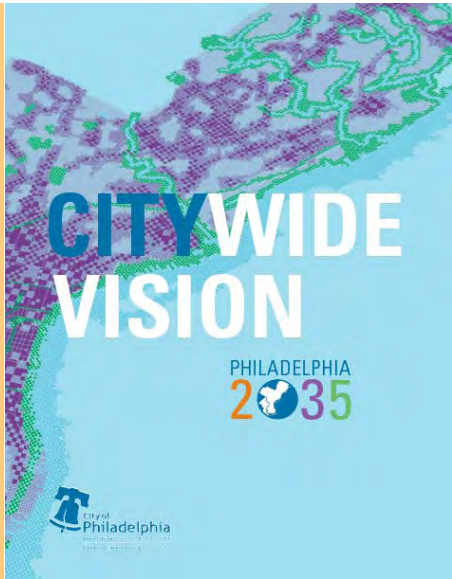
- >1,000 City-owned buildings and structures (excludes PHL)
- ~13.8 million square feet
  - Average size: 27,000 SF
  - Range from 40 to 1.2 M SF
- Average age: 69 years
- Range from 282 years (c.1730) to present

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







Capital Program Responsibilities

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.



DPP Facilities Management Division

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



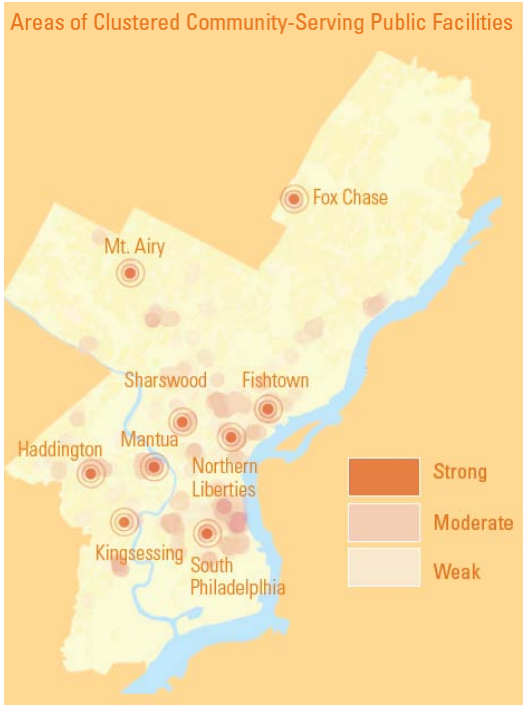
DPP Capital Projects Division

- 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

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



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

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

Initiatives to Resolve the Problem

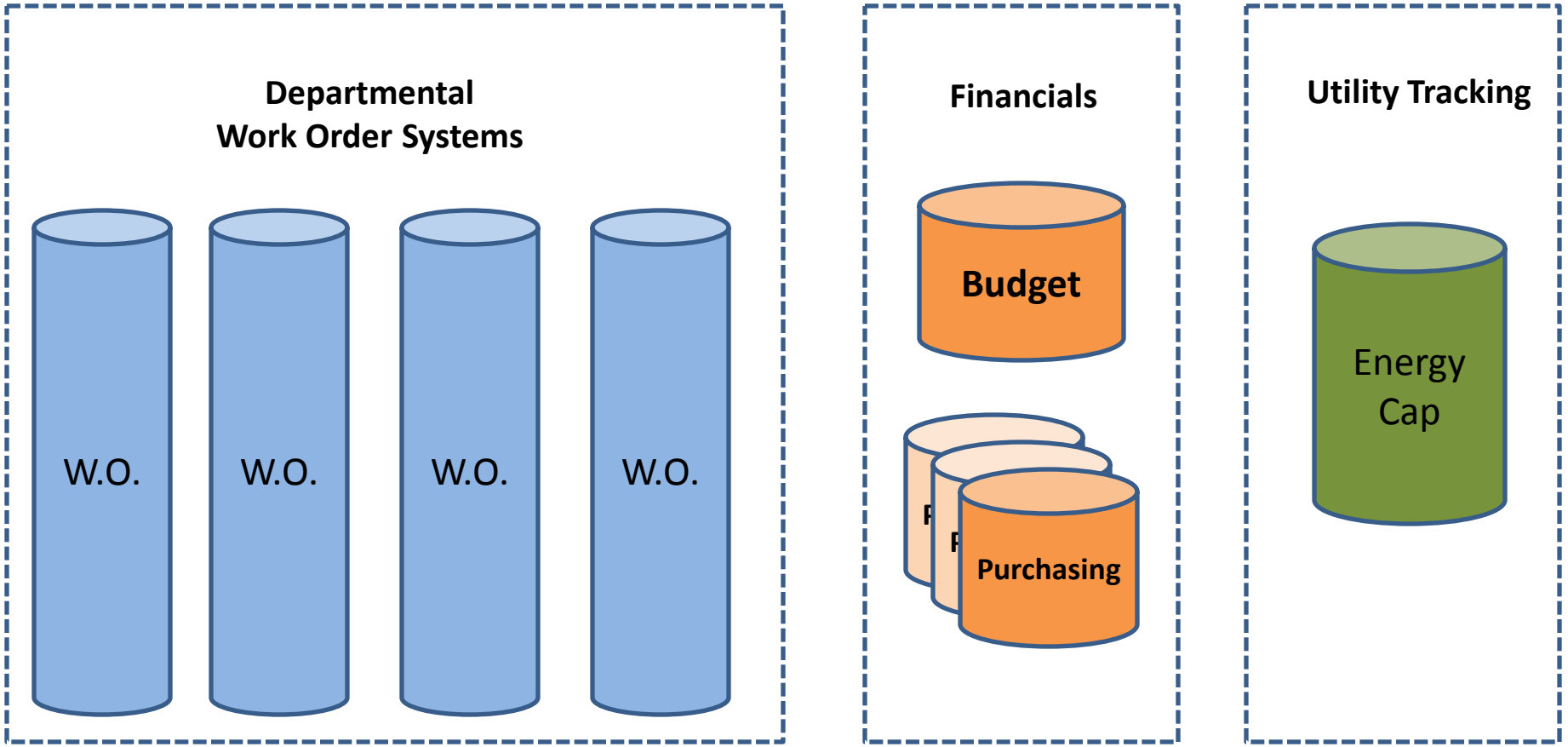
- Preventive Maintenance Unit to avoid deferred capital maintenance
- Collaboration with the Mayor's Task Force on City Facilities
  - Utility Payment and Energy Efficiency
  - Leasing Best Practices
  - Consolidation, merging and co-location of City facilities
- New performance budgeting process will 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

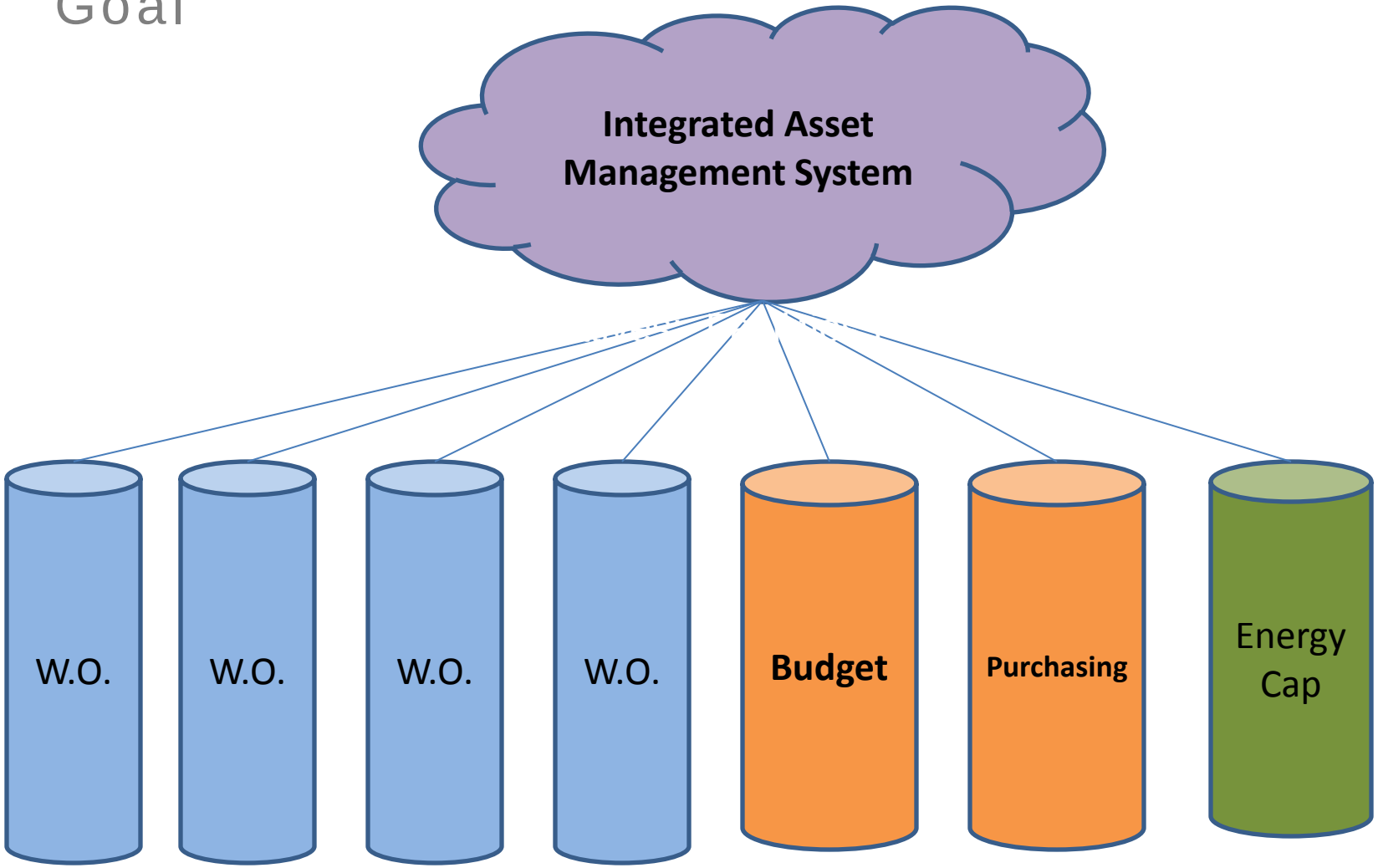
- Capital Project Management Long-Range Facility Planning
- Maintenance Work Orders
- Space Management / Space Assessments
- Utility Cost Tracking & Benchmarking
- O & M Cost Tracking
- Emergency Response & Planning

Current Situation

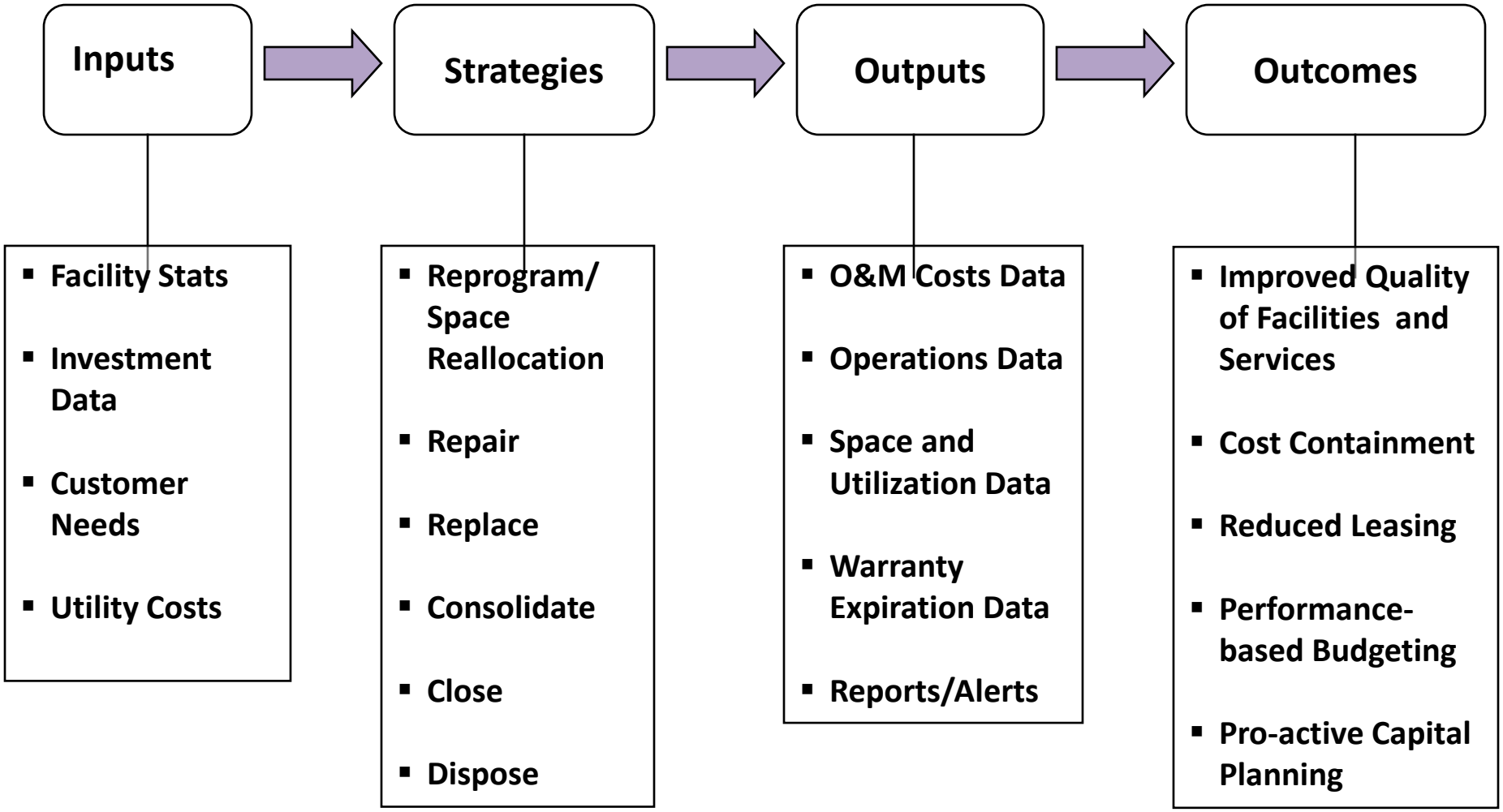


2 Initiatives: Facilities Planning

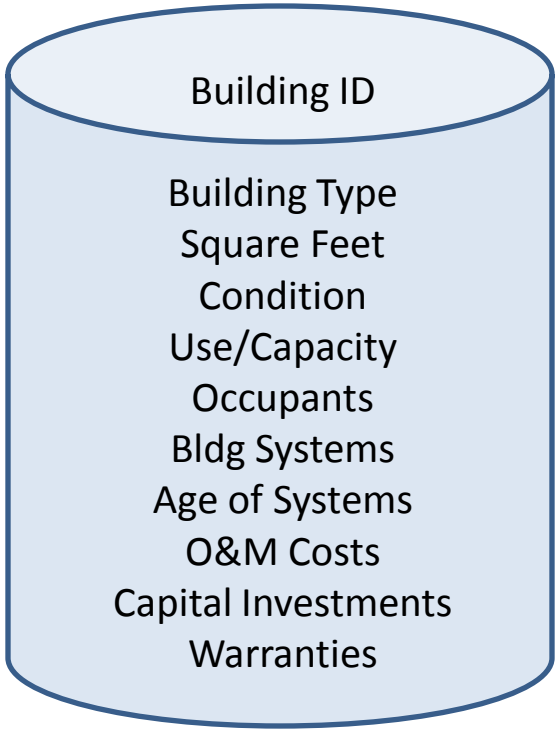
Goal



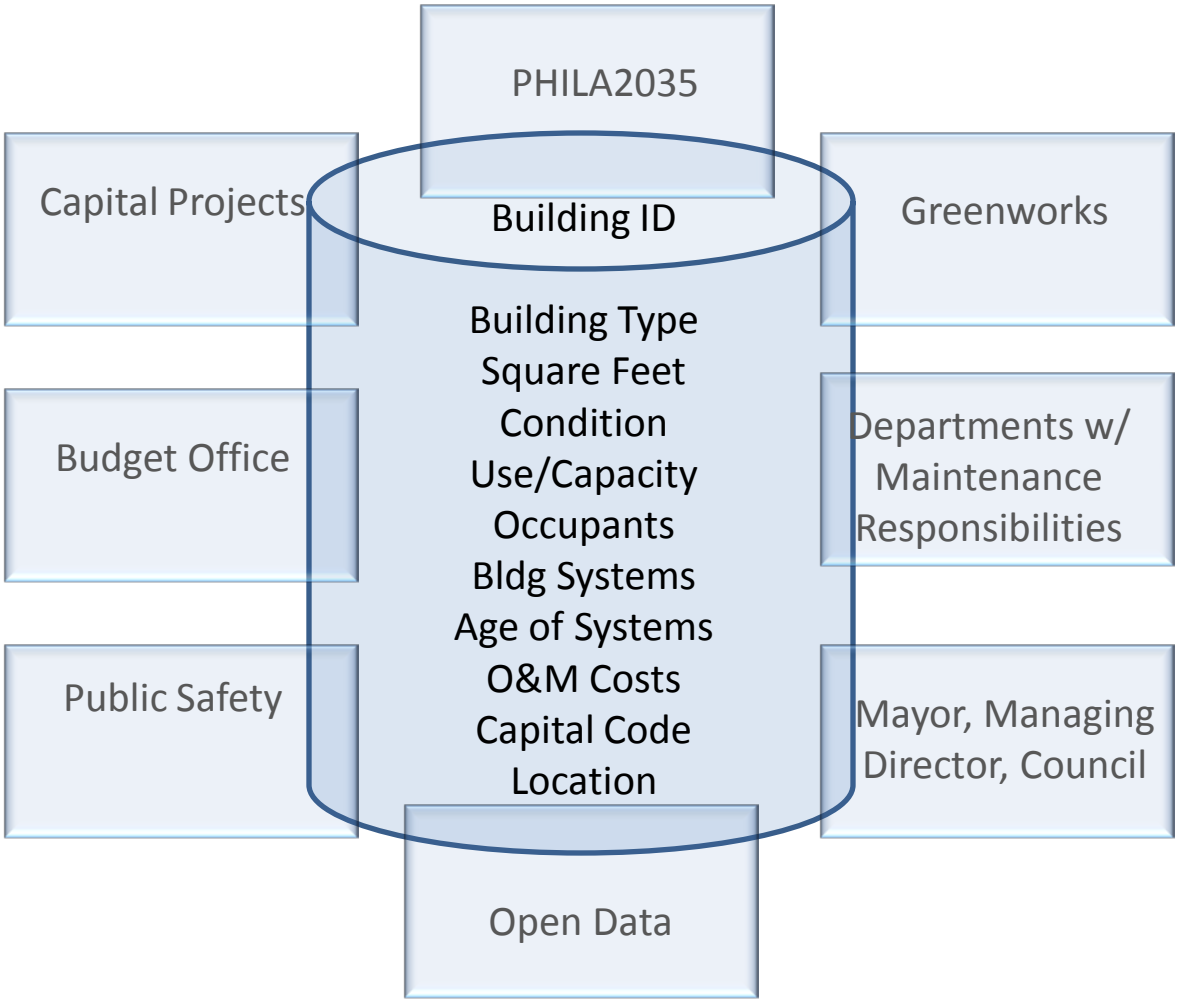
2 Initiatives: Facilities Planning



Asset Data to Capture



Data Consumers



Implement Integrated Asset Management

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

Master facilities database

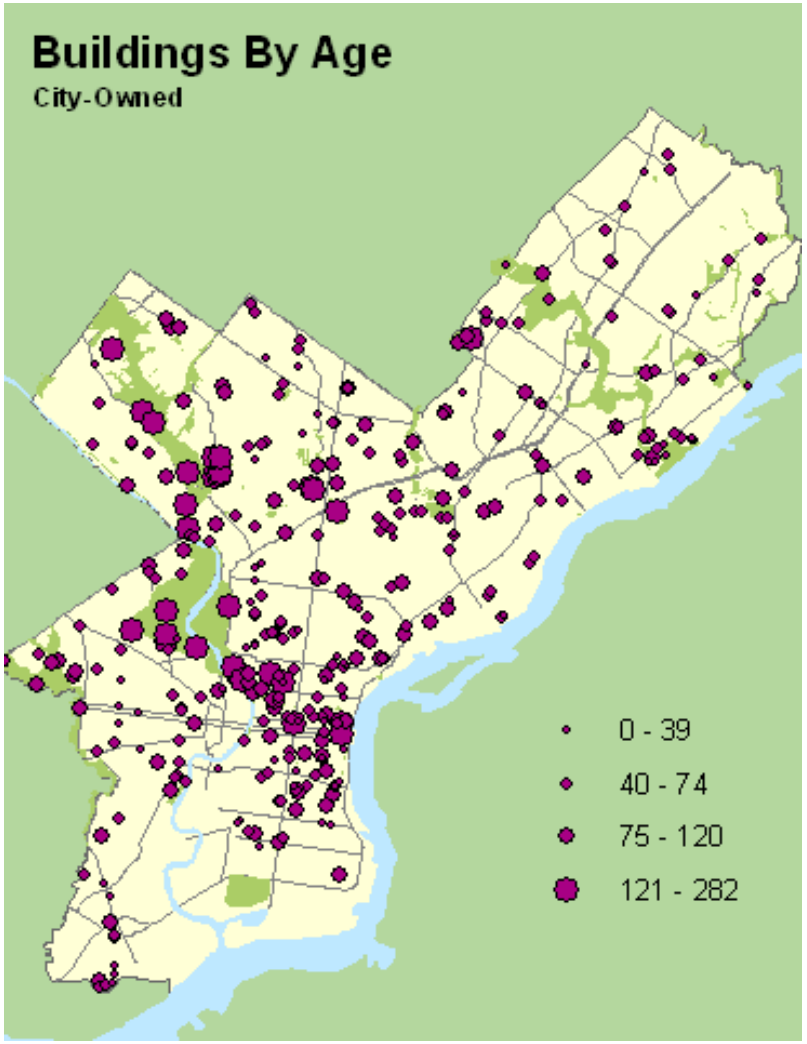
- Step towards integrated asset data management
- Comprehensive inventory of facilities owned and leased: all buildings, fields, playgrounds, fixed equipment
- Basic building characteristics
- Lease info
- Capital expenditures
- Data gaps and static

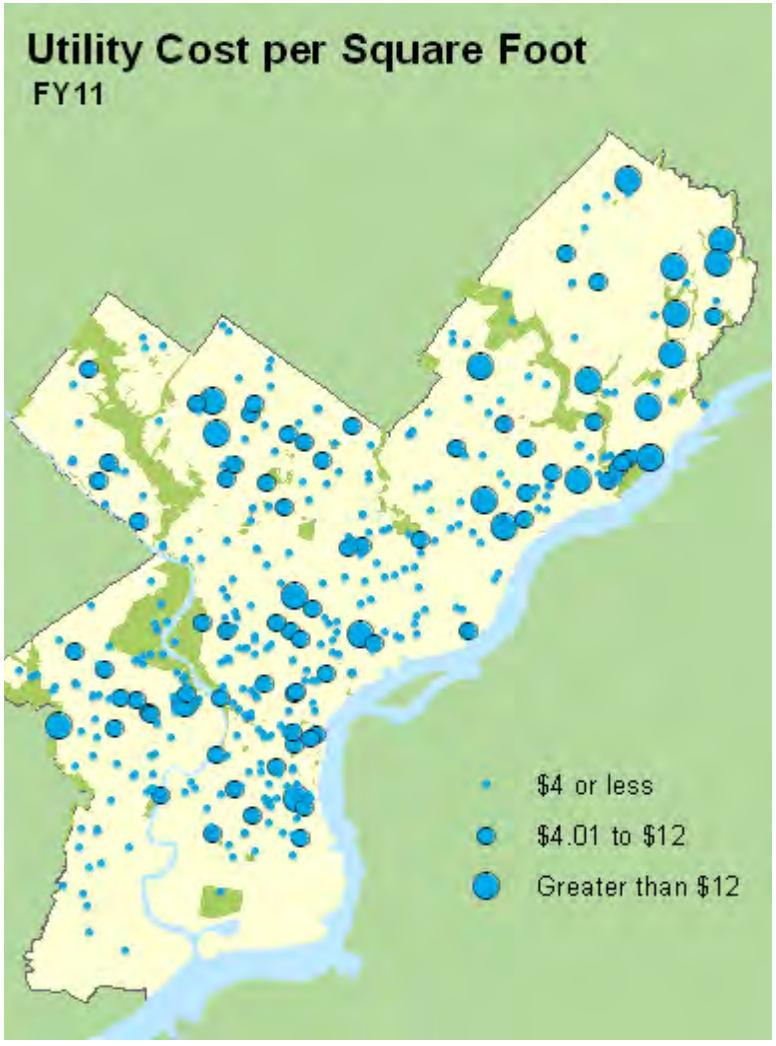
Facility Characteristics

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

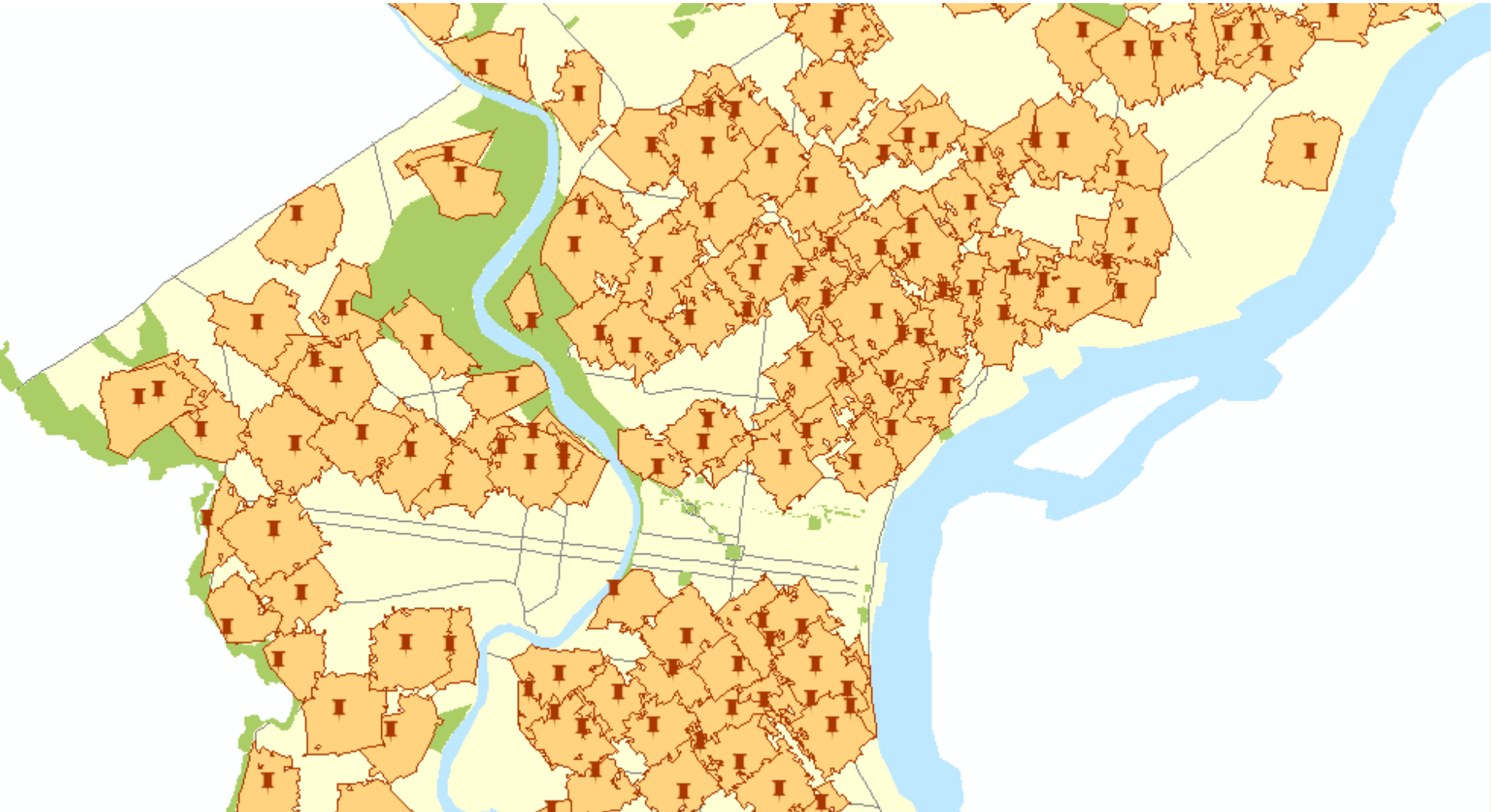
Building Characteristics



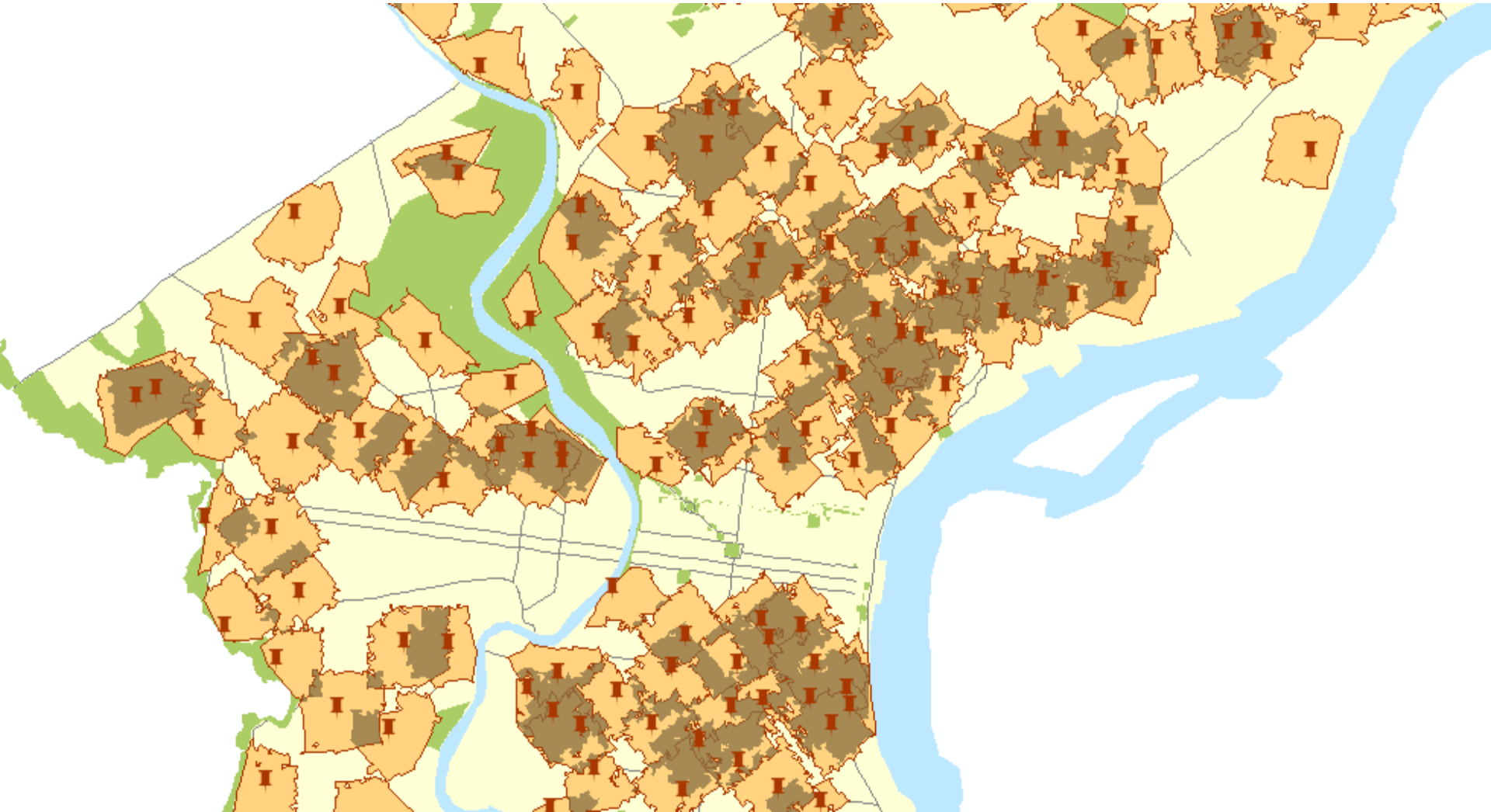


205 Recreation Centers

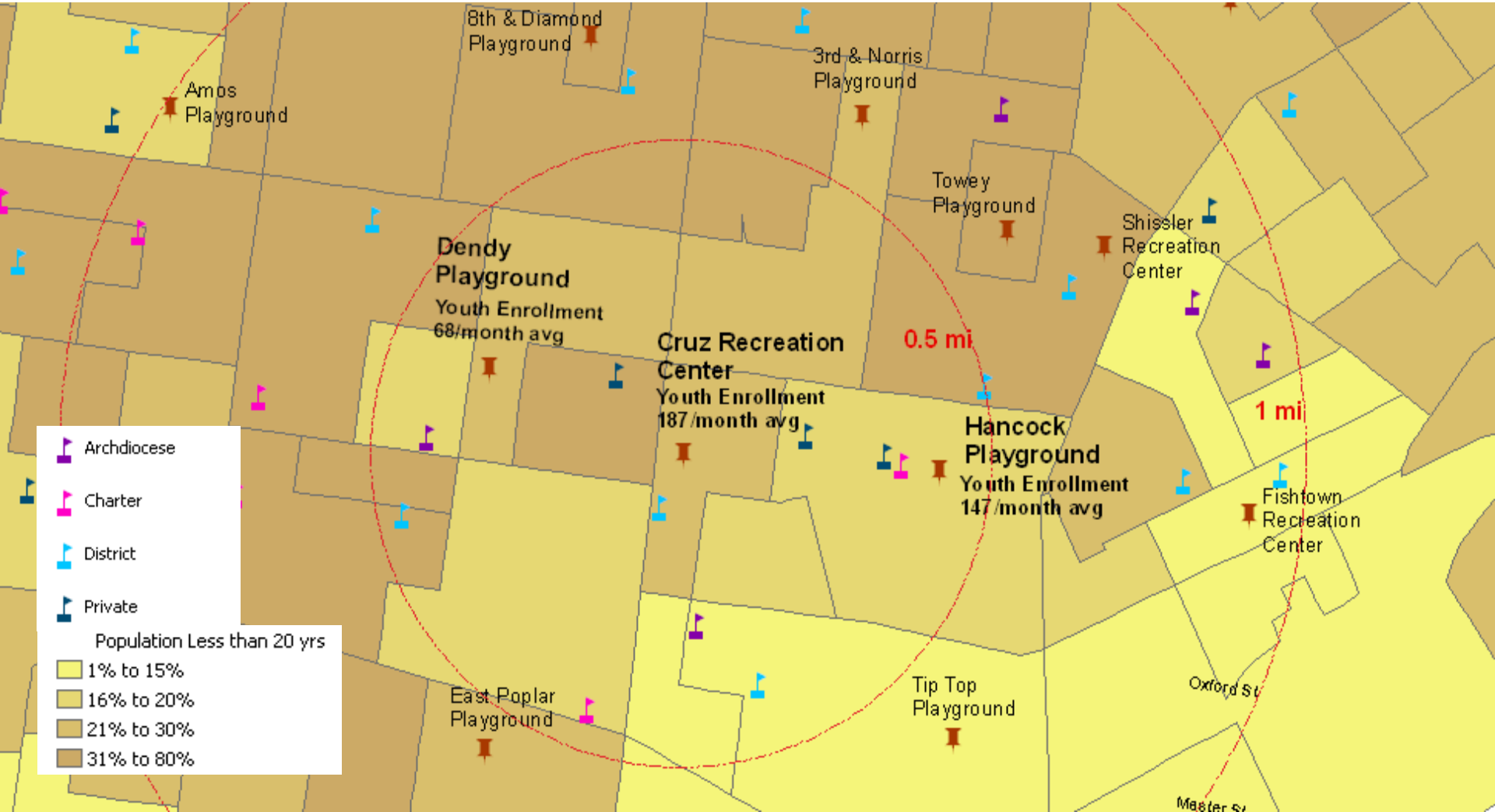
Service Areas: 64 sq. mi. of Walksheds



Estimated Overlap: 28 square miles



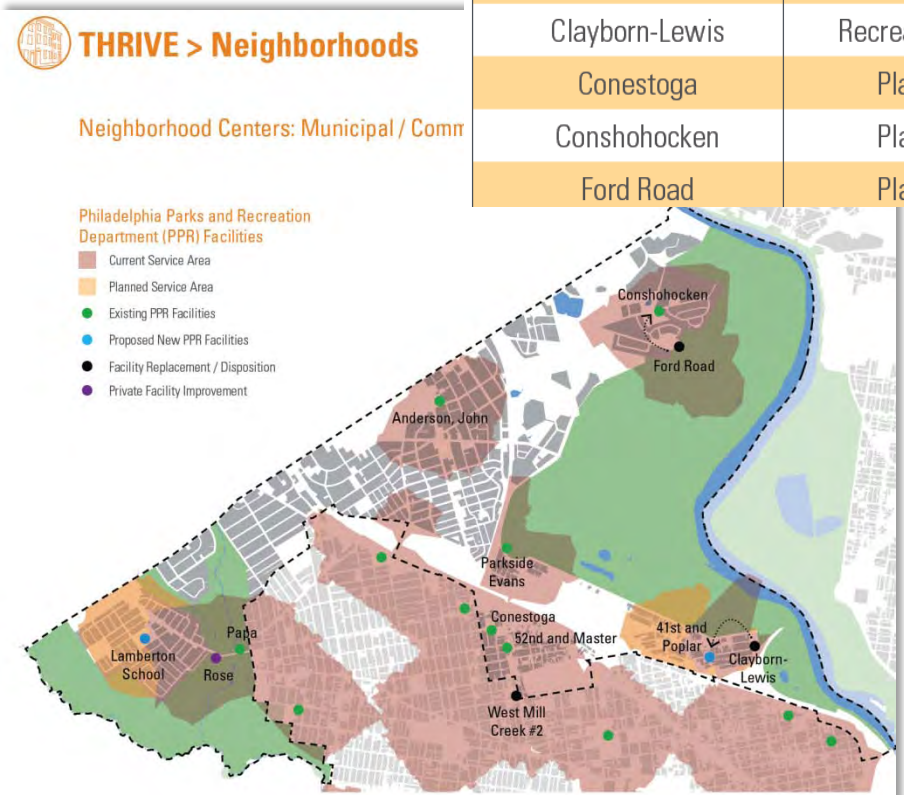
Demand and Demographic Variables



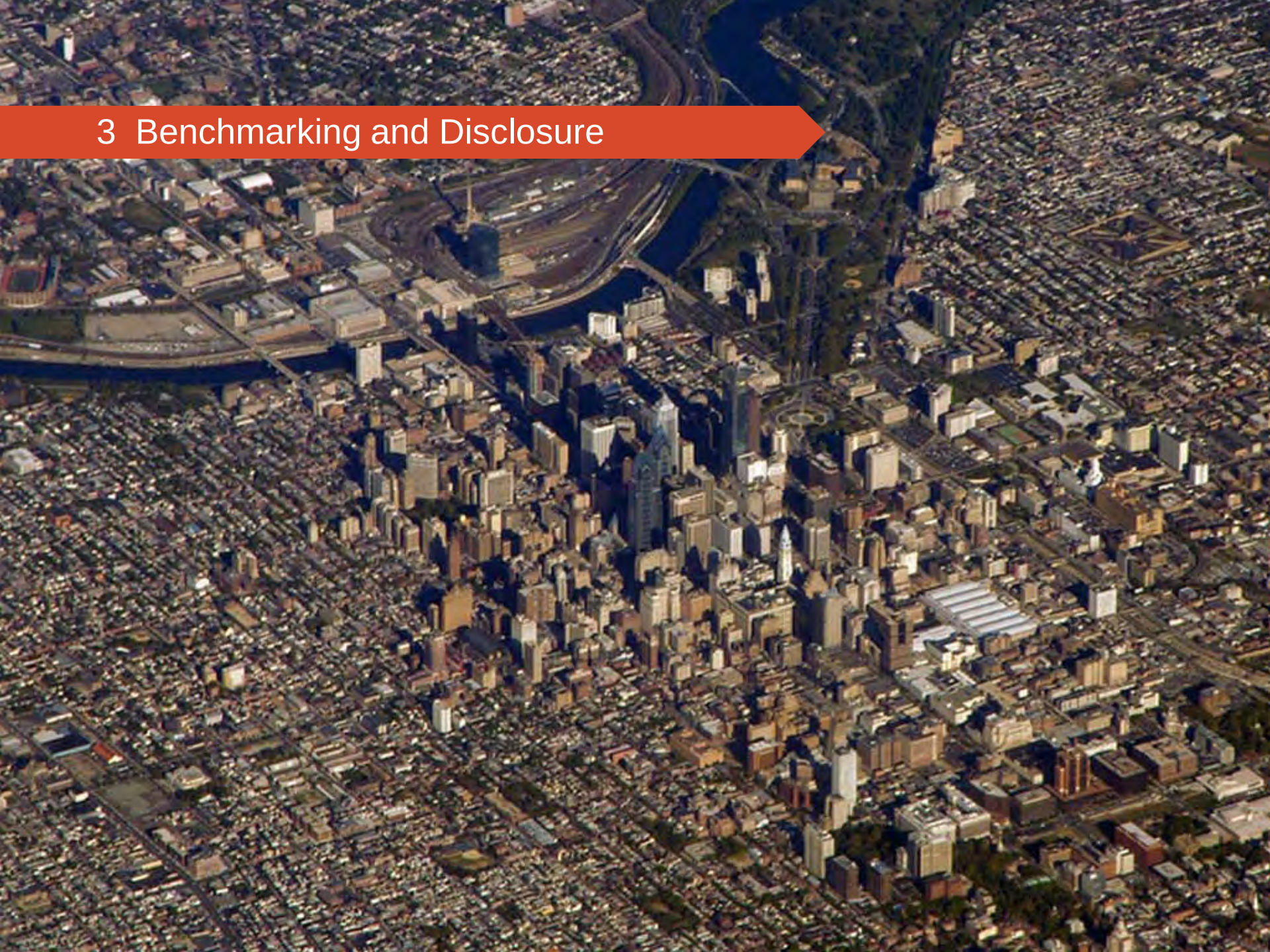
2 Initiatives: Facilities Planning

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%



3 Benchmarking and Disclosure

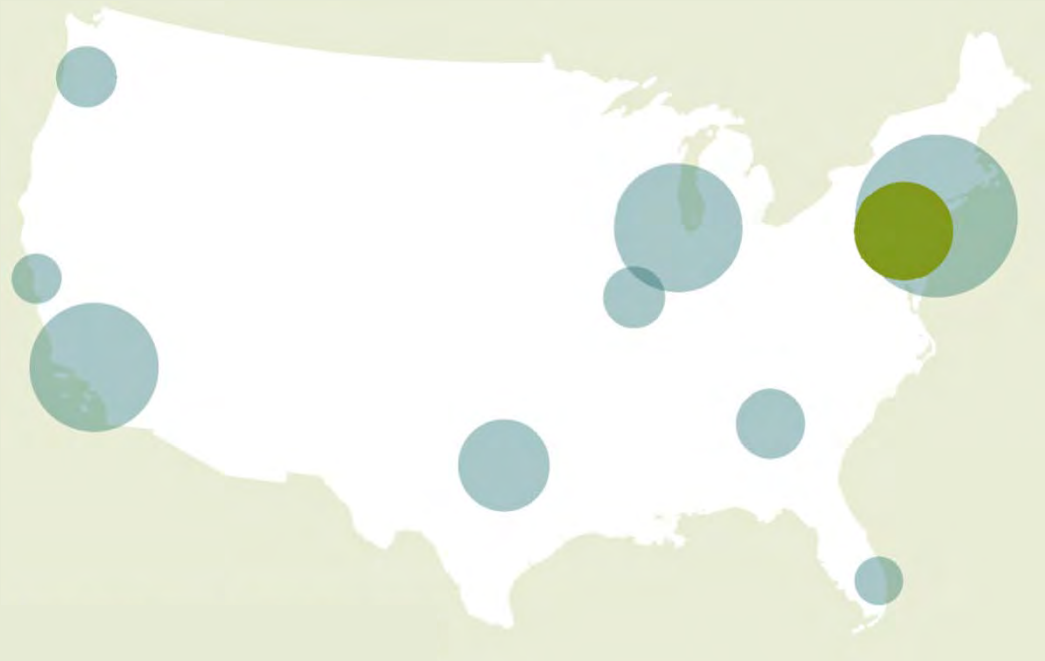


GREENWORKS
PHILADELPHIA

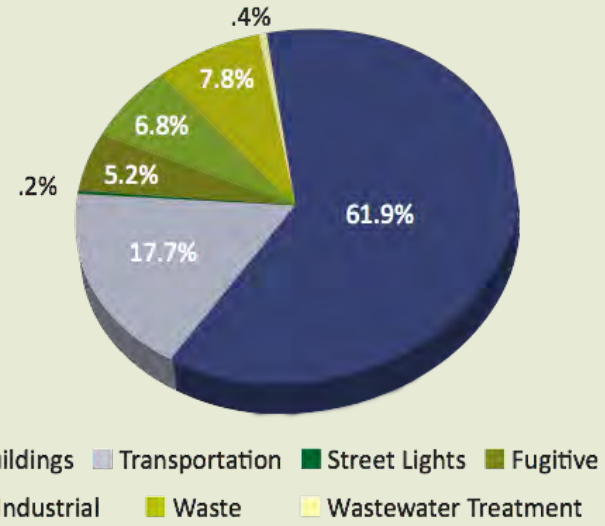
Energy	PHILADELPHIA REDUCES ITS VULNERABILITY TO RISING ENERGY PRICES
Environment	PHILADELPHIA REDUCES ITS ENVIRONMENTAL FOOTPRINT
Equity	PHILADELPHIA DELIVERS MORE EQUITABLE ACCESS TO HEALTHY NEIGHBORHOODS
Economy	PHILADELPHIA CREATES A COMPETITIVE ADVANTAGE FROM SUSTAINABILITY
Engagement	PHILADELPHIANS UNITE TO BUILD A SUSTAINABLE FUTURE

5 goals, 15 targets, over 150 initiatives

Carbons Emissions in Philadelphia and the U.S.

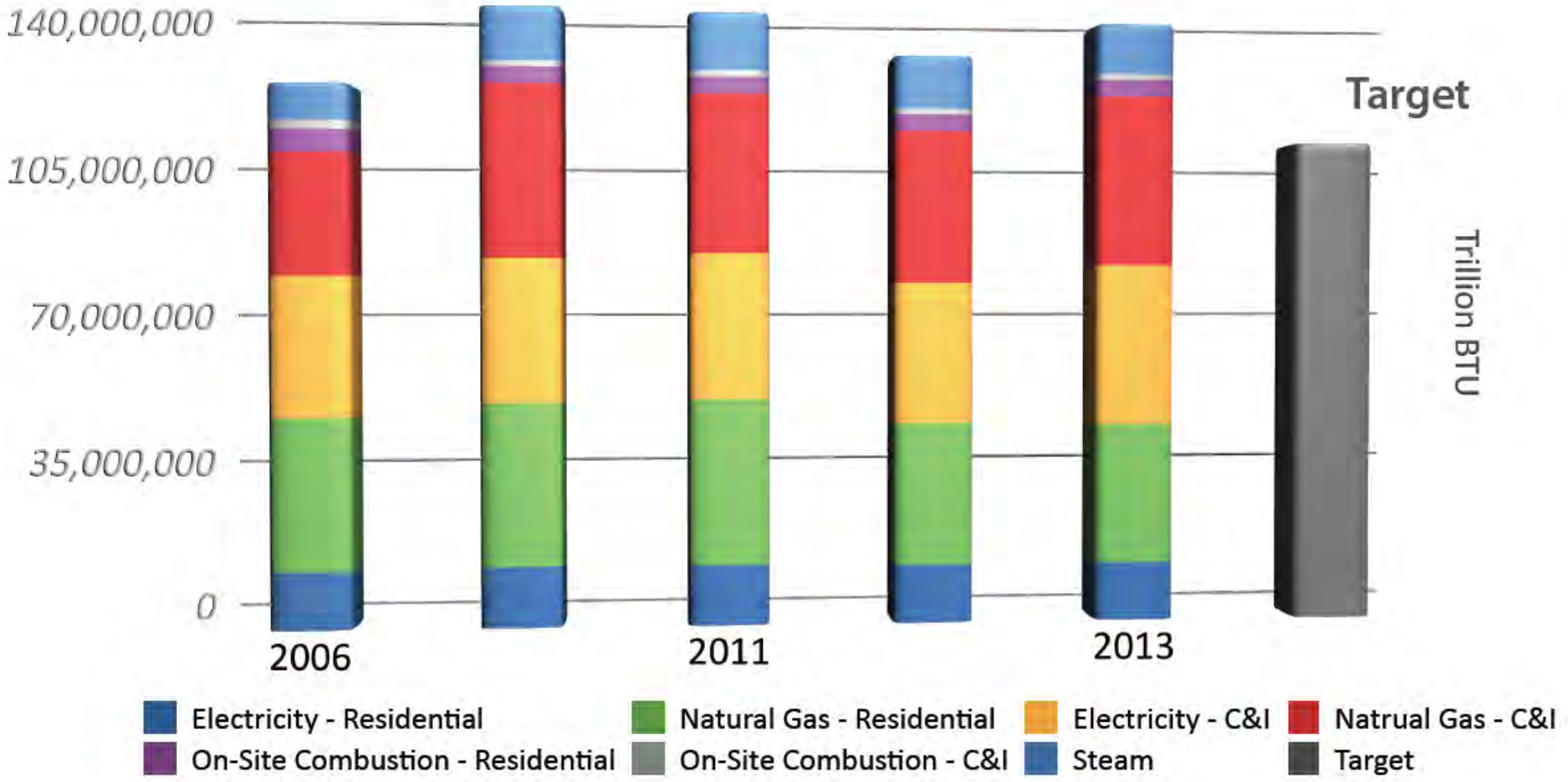


ATLANTA	NEW YORK
CHICAGO	PHILADELPHIA
DALLAS	PORTLAND
LOS ANGELES	SAN FRANCISCO
MIAMI	ST. LOUS

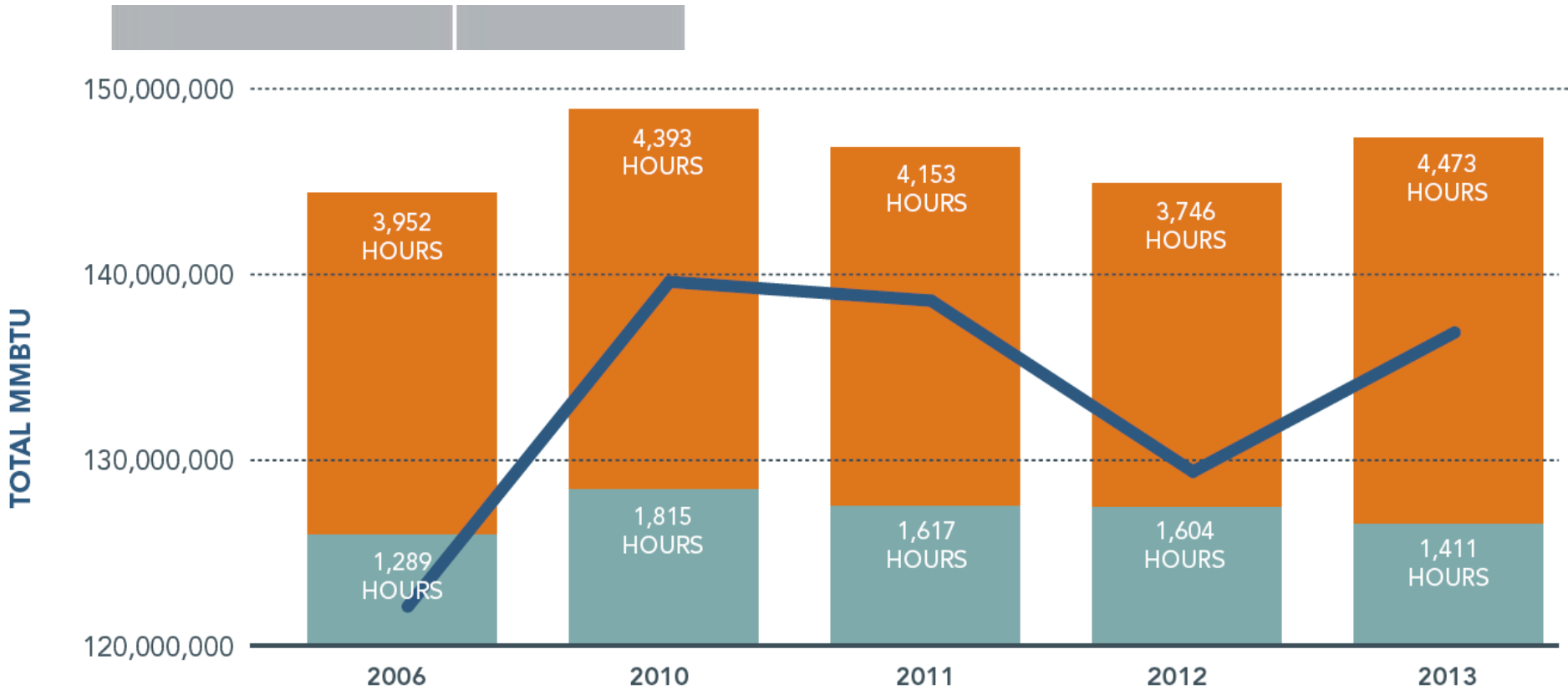


Buildings account for 62% of carbon emissions in Philadelphia

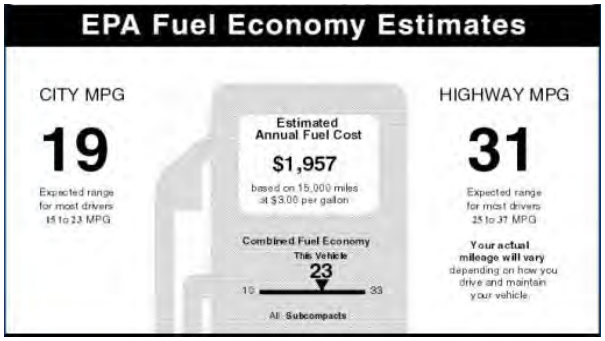
Citywide Building Energy Use Trends



Weather as a driver of citywide energy use



Why Benchmarking?



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 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs.

	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%

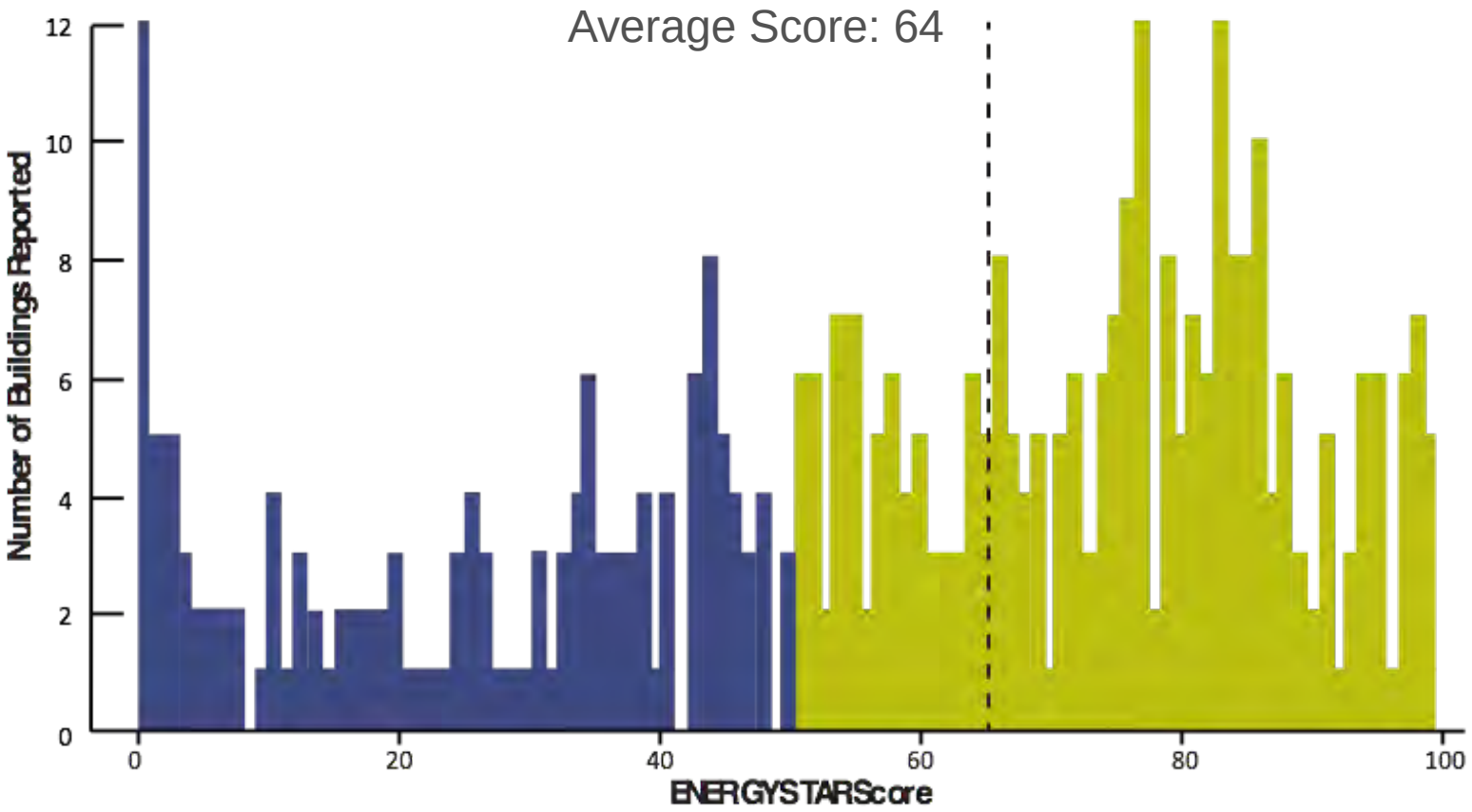
250m
Square ft.
(Non-residential)

Represents
25%
of total
Citywide
square footage

64
Average
ENERGY STAR
Score

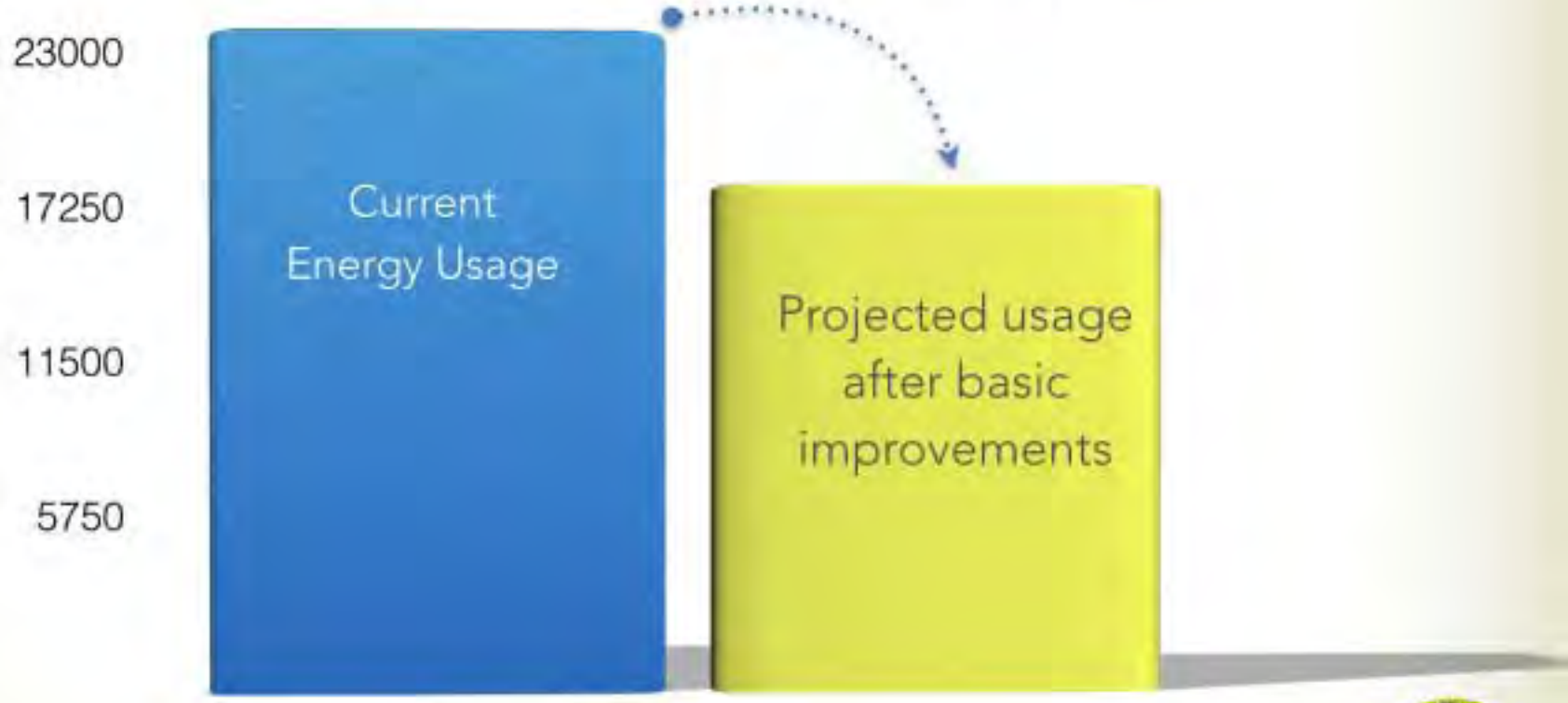
1,700
Buildings

Citywide ENERGY STAR Distribution



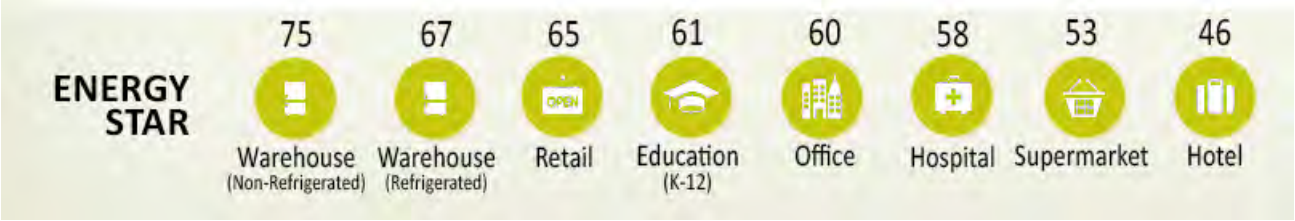
Potential Savings in Benchmarking Portfolio

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)

PECO smart ideas®

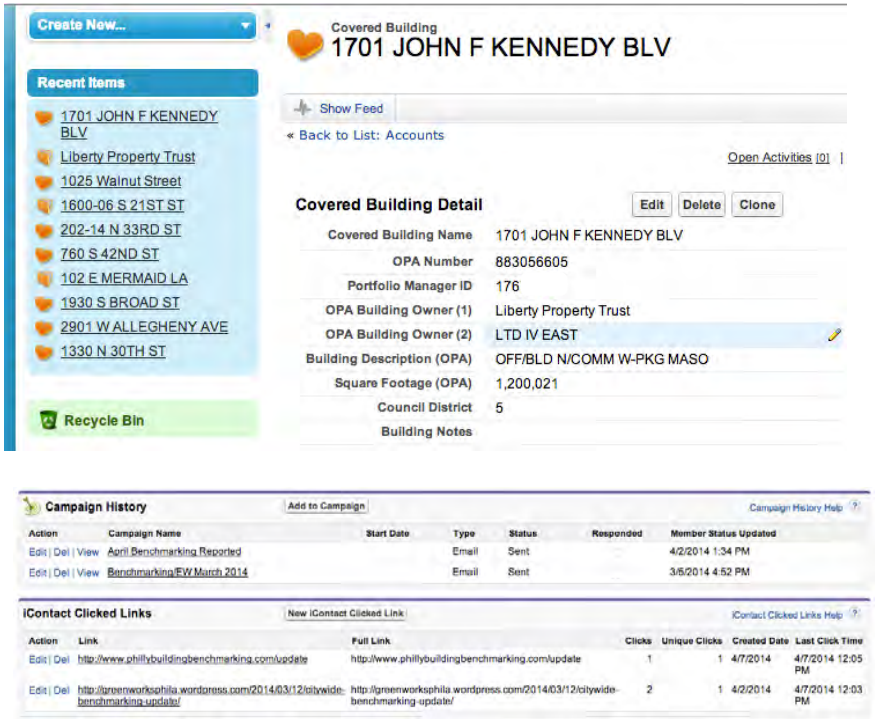
EnergyWorks
ENERGY EFFICIENCY IMPROVEMENTS

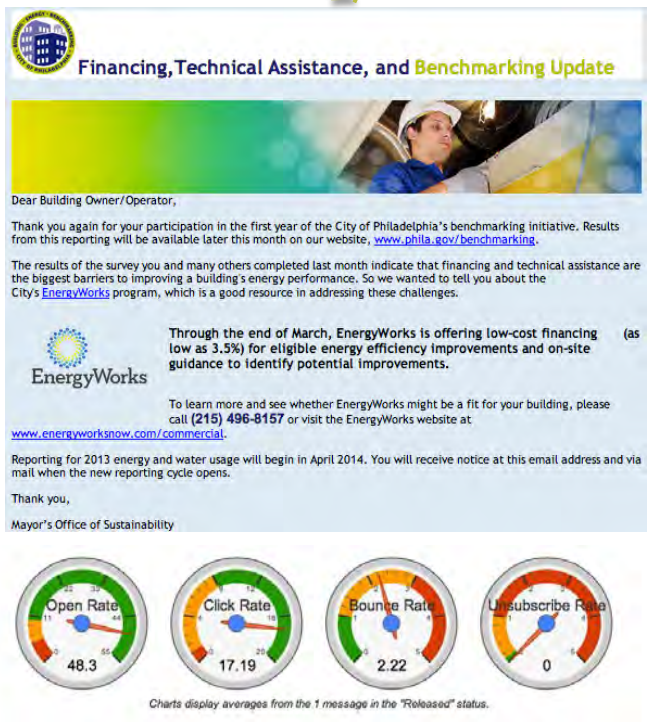
PGW energysense

Managing Data and Outreach with CRM

Building Data Tracking

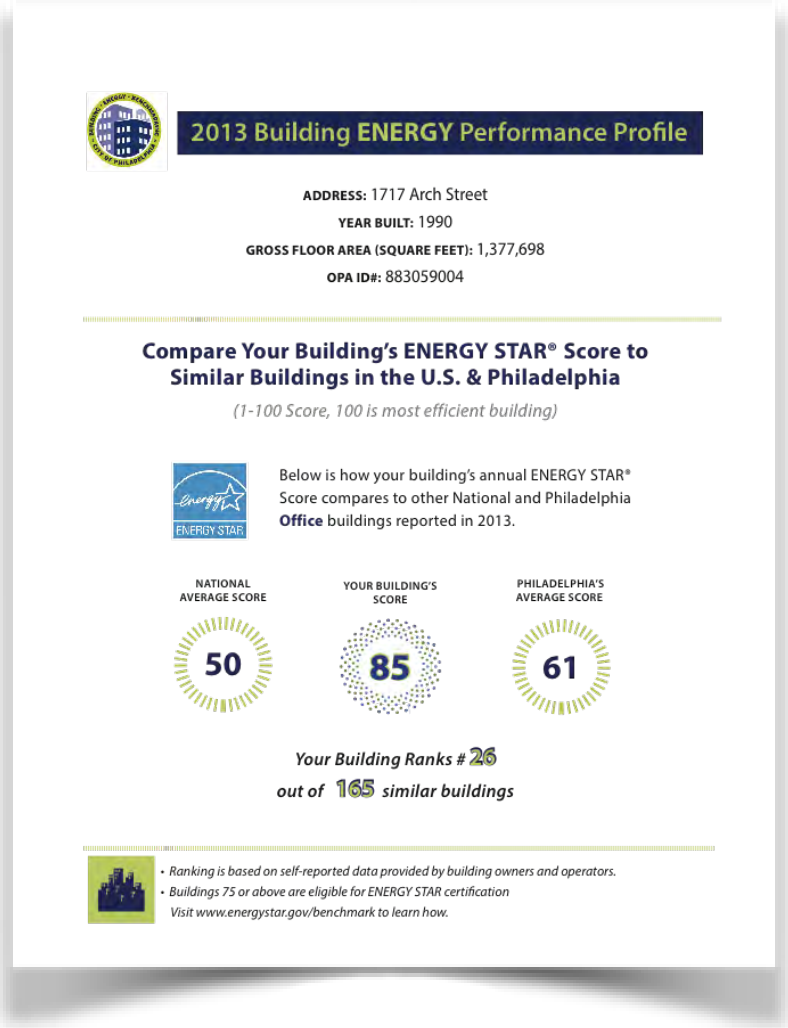
Email Outreach & Marketing





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.

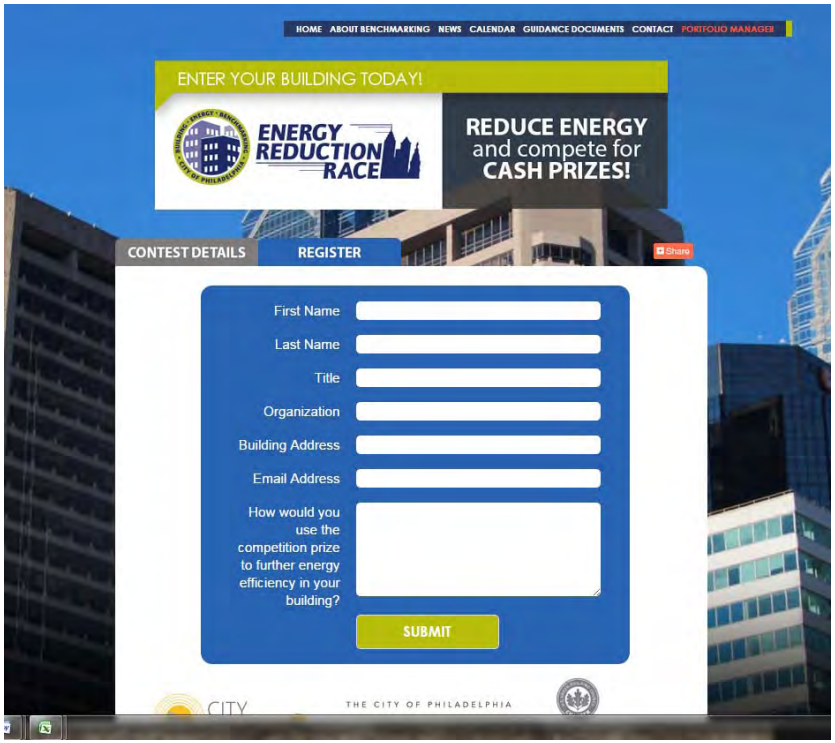
NATIONAL AVERAGE SCORE	YOUR BUILDING'S SCORE	PHILADELPHIA'S AVERAGE SCORE
50	85	61

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



Support from Partner Organizations

Benchmarking and Disclosure in Philadelphia

Alex Dews, Mayor's Office of Sustainability

www.phila.gov/benchmarking

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