

2030 DISTRICTS IN PENNSYLVANIA

**A WHAT DOES A COMMUNITY OF HIGH PERFORMANCE BUILDINGS IN
PITTSBURGH MEAN FOR PLANNING IN THE COMMONWEALTH?**

**SEAN C. LUTHER, LEED GREEN ASSOCIATE
GREEN BUILDING ALLIANCE (WESTERN PA)**



www.go-gba.org

Our Vision...

The places where we live, work, learn, and play will be healthy and high performing.





Green Building Service Areas for Pennsylvania

- Greater Pittsburgh Branch
- Laurel Highlands Branch
- Northwest PA Branch

Outside of GBA's Network

- Green Building Association of Central PA
- Delaware Valley Green Building Council

GREEN BUILDING ALLIANCE

INSPIRE

Pittsburgh 2030 District

Downtown
community of
properties
committed to
2030 Challenge

Green Schools Academy

Advance
sustainable K-12
design,
construction, &
operations

PROVE

DASH

National triple
bottom line
building
performance tool

EQUIP

Knowledge Network

Events, tours,
education,
networking,
community,
awareness, case
studies, &
resources.

Online Learning

Green building
products
certification &
labeling course
GBALearn.org

2030 DISTRICTS...

- 1. GET EDUCATED:**
2030 CHALLENGE &
PITTSBURGH 2030 DISTRICT
- 2. GET LOCAL:**
THIS MAKES SENSE FOR PA
CITIES
- 3. GET REAL:**
WHAT IS THE IMPACT FOR
PLANERS?





INTERNATIONAL 2030 CHALLENGE

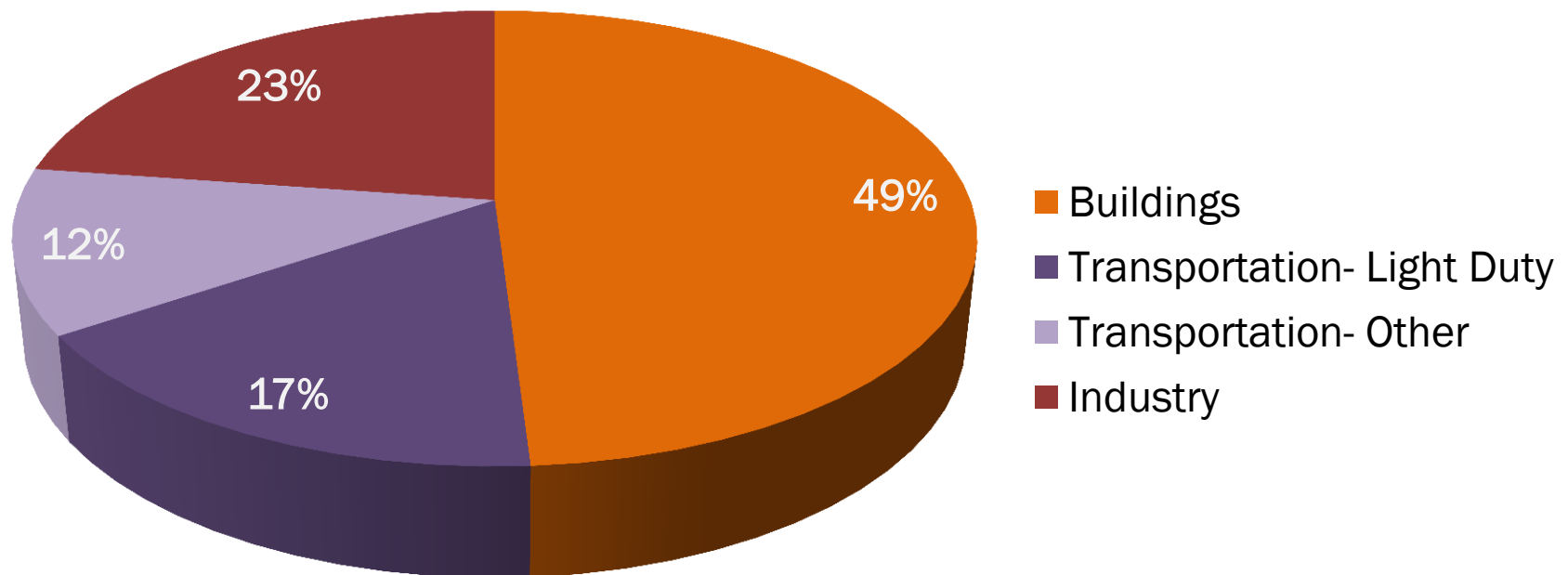
WHY FOCUS ON BUILDINGS? WHO IS THIS ED GUY? WHY 2030?
HOW DOES ANY OF THIS RELATED TO PITTSBURGH?

2030 CHALLENGE



U.S. ENERGY CONSUMPTION

Detail by Sector



Source: ©2010 2030, Inc. / Architecture 2030. All Rights Reserved.
Data Source: U.S. Energy Information Administration (2009).

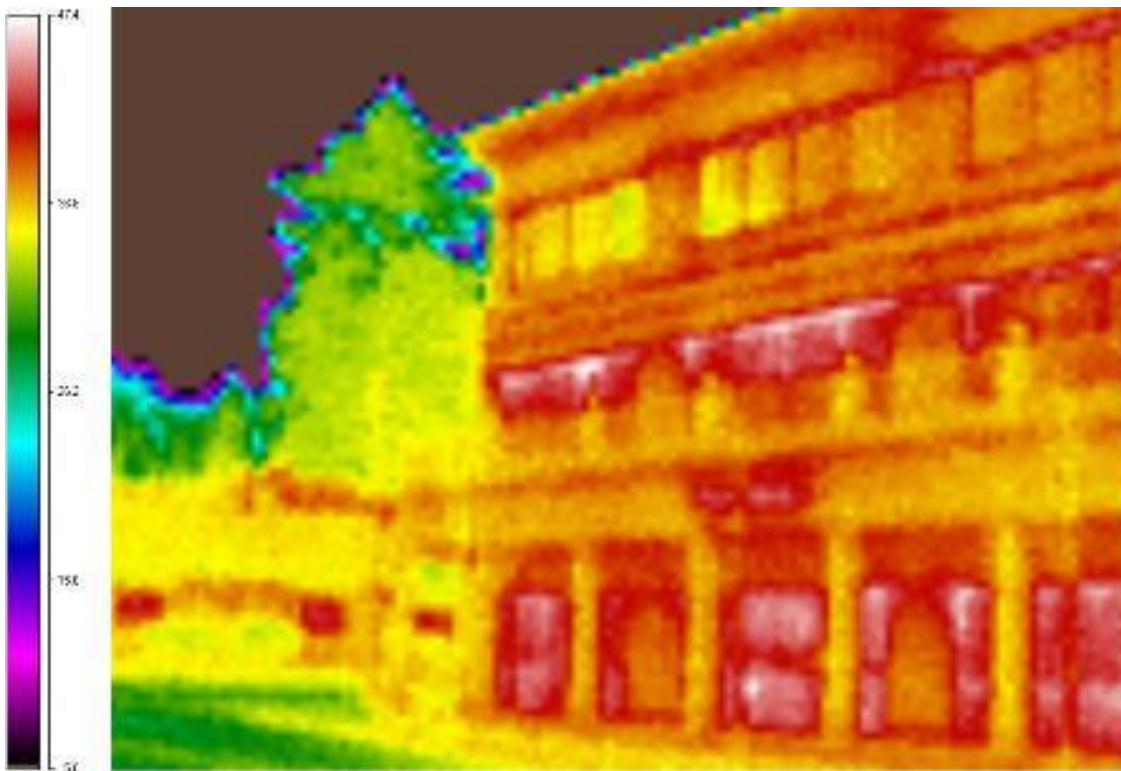
2030 CHALLENGE



BUILDINGS ARE...



THE PROBLEM



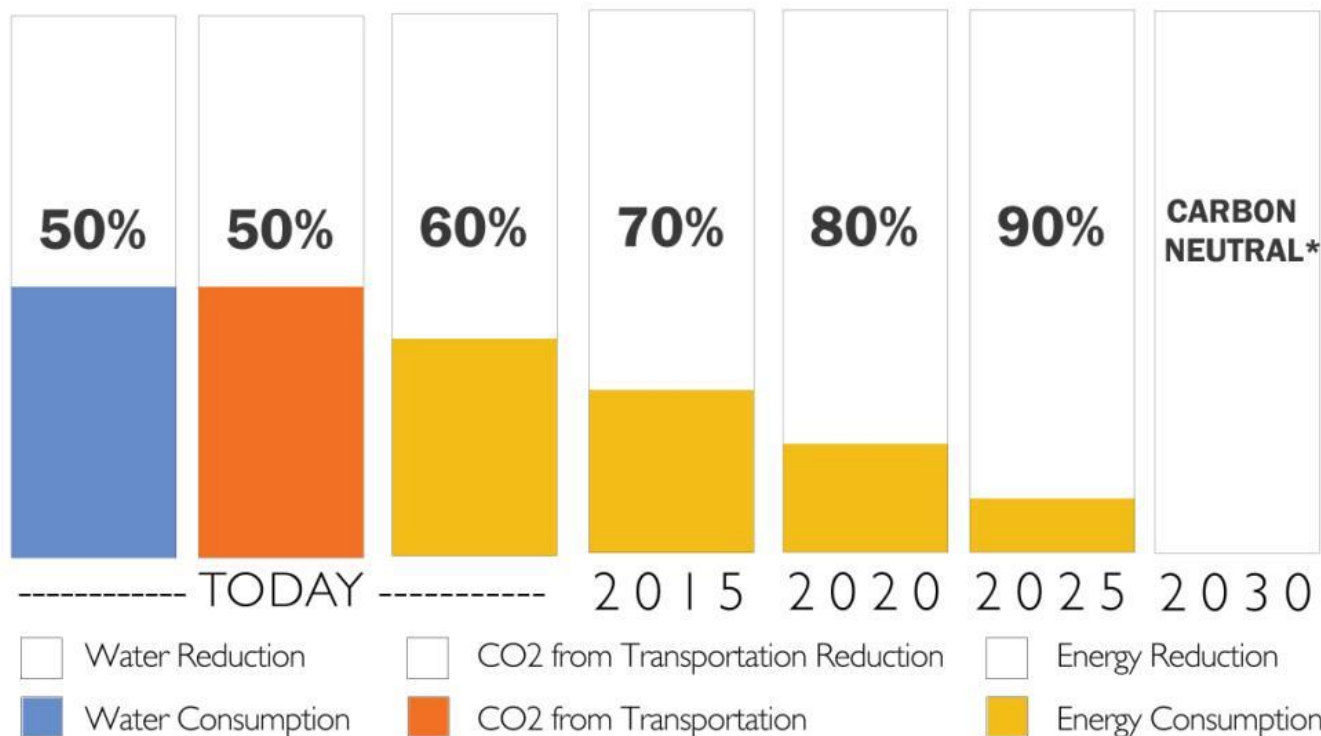
BUILDINGS ARE . . . THE SOLUTION



2030 CHALLENGE



NEW BUILDING & MAJOR RENOVATION TARGETS



The 2030 Challenge for Planning: New Buildings & Major Renovations

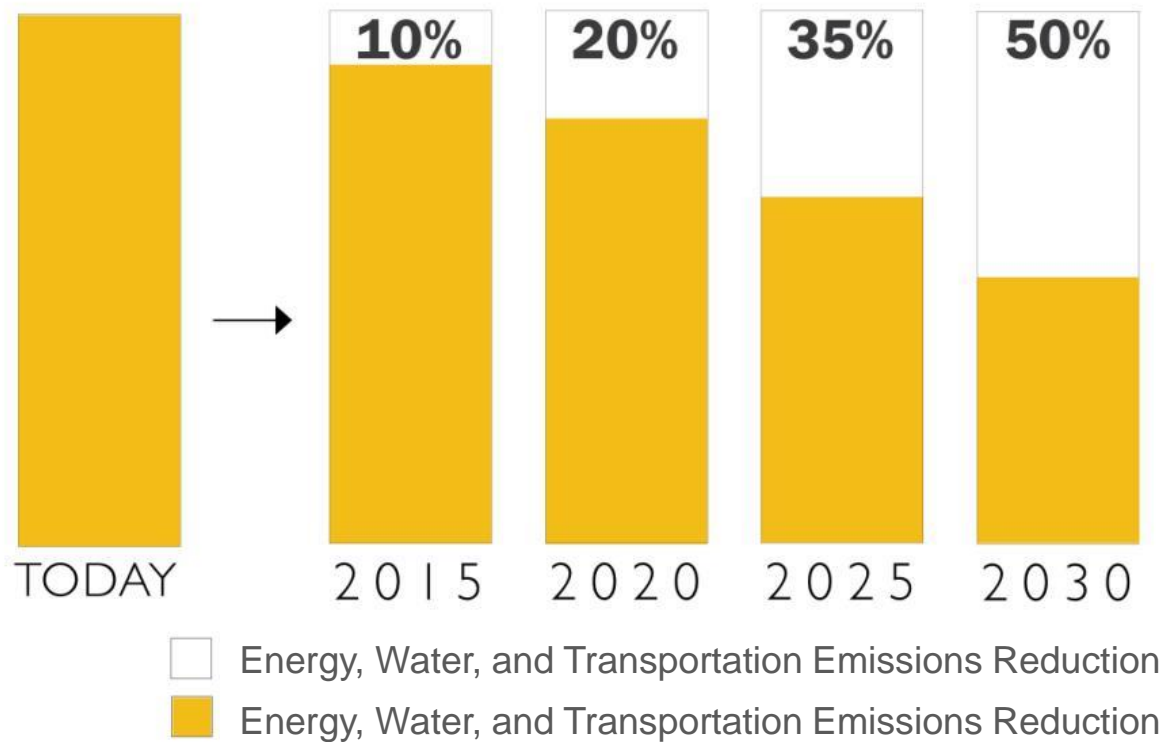
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*Using no fossil fuel GHG-emitting energy to operate.

2030 CHALLENGE



EXISTING BUILDING TARGETS



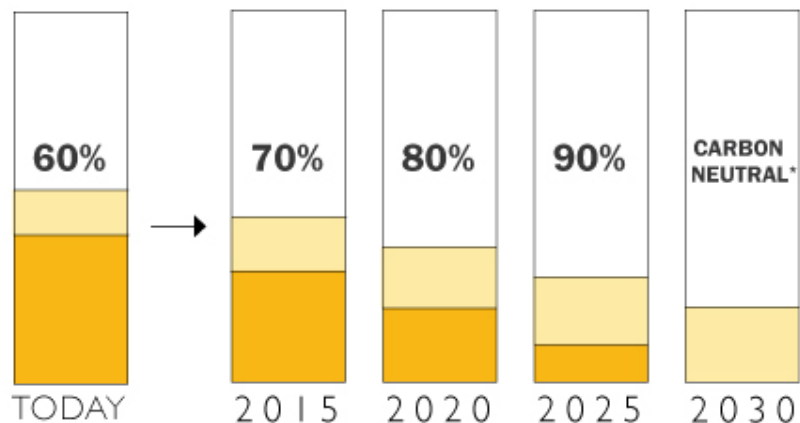
The 2030 Challenge for Planning: Existing Buildings

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2030 CHALLENGE



MEETING THE CHALLENGE



Fossil Fuel Energy Reduction
 Renewable
 Fossil Fuel Energy Consumption

The 2030 Challenge

Source: ©2010 2030, Inc. / Architecture 2030. All Rights Reserved.
 *Using no fossil fuel GHG-emitting energy to operate.



DESIGN STRATEGIES

The largest energy reductions can be achieved through design.



TECHNOLOGIES AND SYSTEMS

Including on-site renewable energy systems.



OFF-SITE RENEWABLE ENERGY

20% maximum.

Meeting the 2030 Challenge

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2030 CHALLENGE

SEATTLE
2030
DISTRICT



CLEVELAND
2030
DISTRICT



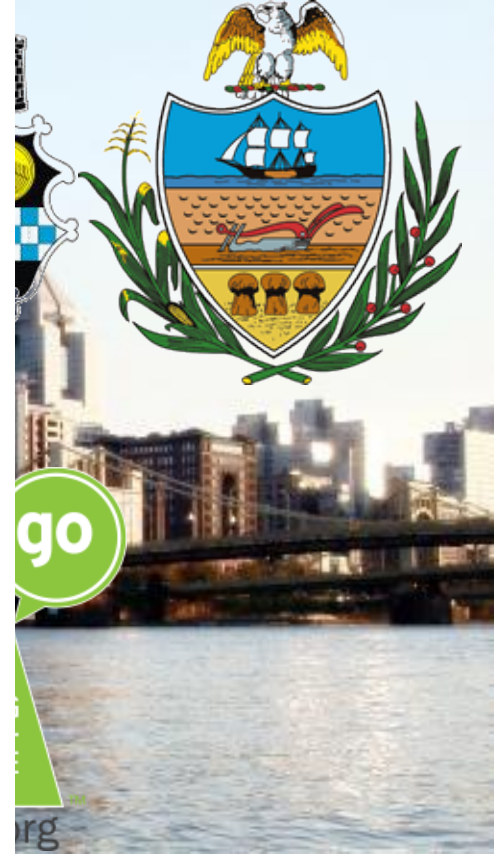
PITTSBURGH 2030 DISTRICT

A **GREEN BUILDING ALLIANCE** Strategic Inspiration

Presented by:



also sponsored by:





PITTSBURGH
2030
DISTRICT

DISTRICT TOTALS:

450 properties

56,000,000 ft²

100% of the

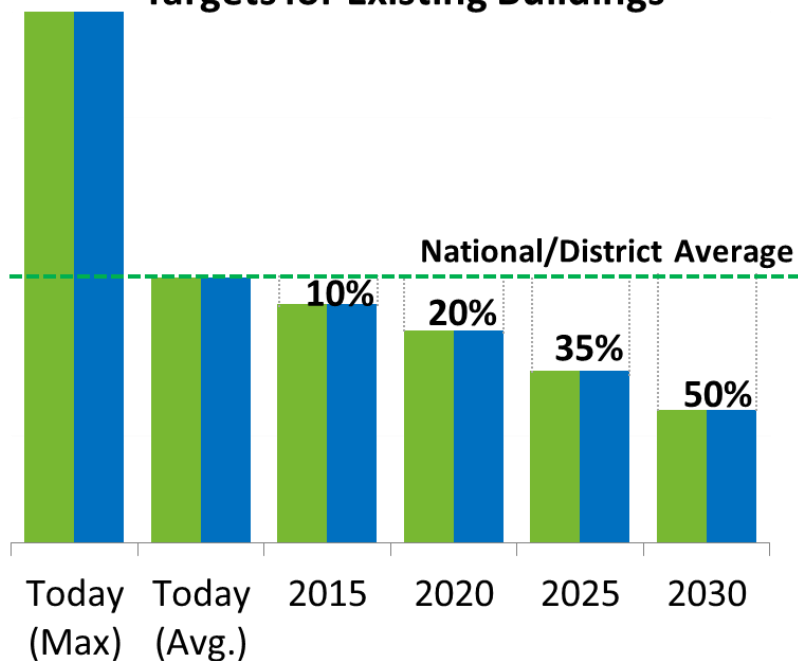
PITTSBURGH
2030
DISTRICT

PITTSBURGH 2030 DISTRICT

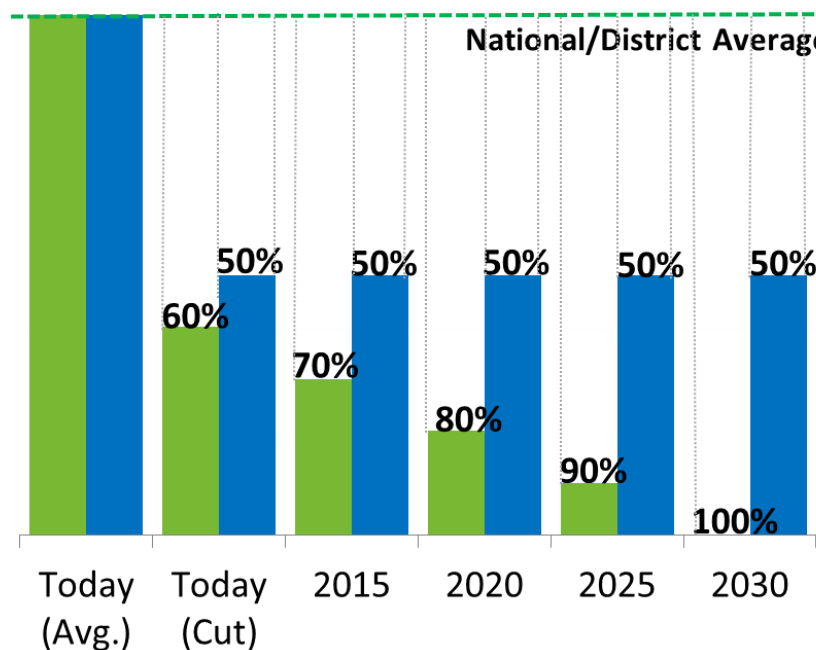


DISTRICT GOALS...

Targets for Existing Buildings



Targets for New Buildings & Major Renovations



= Energy Consumption
 = Water Consumption & Transportation Emissions

Indoor Air Quality – In Development

PITTSBURGH 2030 DISTRICT

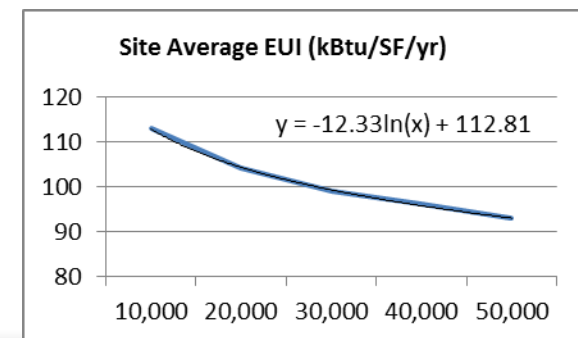


BASELINES:

ENERGY

- 2003 COMMERCIAL BUILDINGS ENERGY CONSUMPTION SURVEY (CBECS)

Bank/Financial Institution	Floor Space	Weekly Operating Hours	Workers on Main Shift	# of PCs	% Gross Floor Area Air Conditioned	% Gross Floor Area Heated	Floor Space	Site Average EUI (kBtu/ft2/yr)	Estimated Curve
	10,000	65	23	22	>=50%	>=50%	10,000	113	112.81
	20,000	65	46	44	>=50%	>=50%	20,000	104	104.263495
	30,000	65	69	66	>=50%	>=50%	30,000	99	99.2641105
	40,000	65	92	88	>=50%	>=50%	40,000	96	95.7169905
	50,000	65	115	110	>=50%	>=50%	50,000	93	92.9656305



CURRENT PROGRESS



BASELINES:

WATER - DISTRICT HISTORIC AVERAGE COMPILED BY
PITTSBURGH WATER AND SEWER AUTHORITY (2009-2012):

Use Type	PRELIMINARY 2009-2012 WUI (Gal/SF/year)
Commercial	10
Residential	87
Entertainment/culture	3
University Campus	28
Office <2,000,000 SF	12

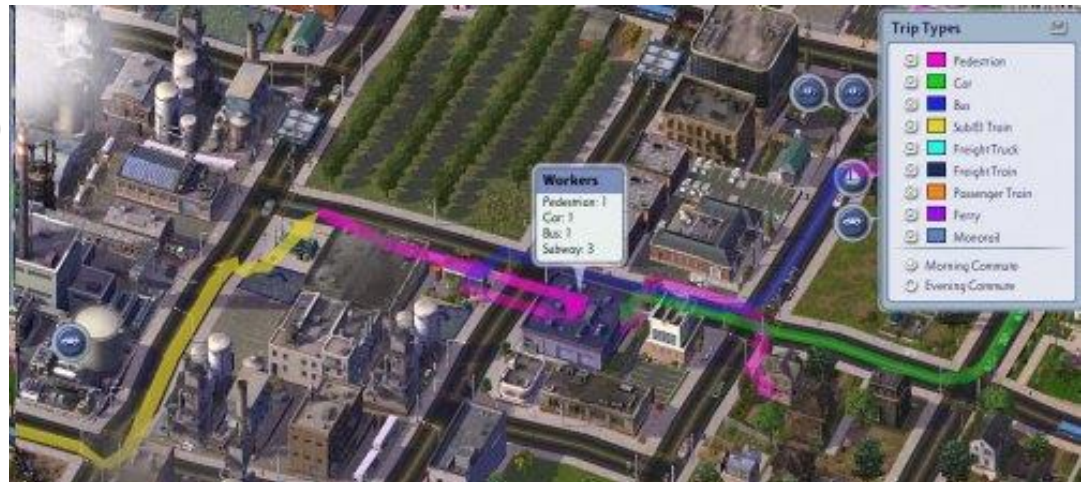


PITTSBURGH 2030 DISTRICT



BASELINE: TRANSPORTATION

- **PARTNER:** SOUTHWESTERN PENNSYLVANIA COMMISSION (SPC)
- **APPROACH:**
 - WILL ESTABLISH
 - District average mode split
 - Associated air emissions
 - COMMUTER TRANSPORTATION WITHIN DISTRICT BOUNDARY
 - Mode x Distance (from zip)
 - Think Sim City...
- **TIMELINE:**
 - COMPLETE IN 2013 Q4



PITTSBURGH 2030 DISTRICT



BASELINES:

INDOOR AIR QUALITY (COMING SOON)

- TARGETED FOR BETA TESTING IN 2014





Property Partners (Existing Buildings)



Property Partners (Future Developments)



PITTSBURGH
2030
DISTRICT

GRAND TOTAL OF COMMITMENTS:

100 properties

30,162,483 ft²

53% of the

PITTSBURGH
2030
DISTRICT

PROJECT PARTNERS

PROPERTY
PARTNERS

COMMUNITY
PARTNERS

RESOURCE
PARTNERS

GBA Members & Stakeholders

WHY A 2030 DISTRICT

ENERGY EFFICIENCY IN EXISTING BUILDINGS =
IMPROVED ECONOMIC COMPETIVENESS FOR PENNSYLVANIA CITIES

2012...



1974...



WHY A 2030 DISTRICT?



ECONOMIC COMPETITIVENESS

BoA CORPORATE CENTER
1992



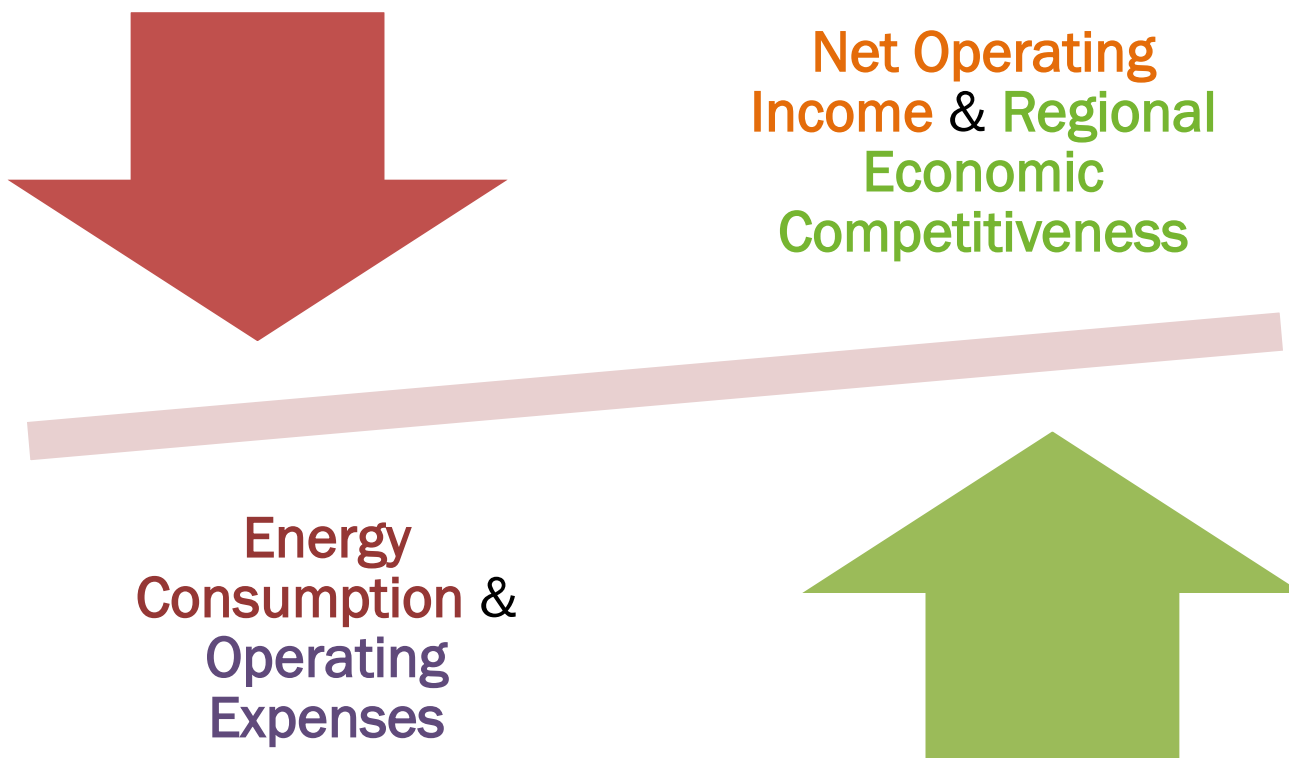
ONE PNC PLAZA
1972



AS GOES PITTSBURGH...



WHY A 2030 DISTRICT?



WHY A 2030 DISTRICT?

PITTSBURGH
2030
DISTRICT



EFFICIENT BUILDINGS = JOB SECURITY

IMPLICATIONS FOR PLANNING PROFESSIONALS

WHAT DOES A 2030 DISTRICT IN YOUR CITY MEAN FOR YOU?

IMPLICATIONS FOR PLANNERS



Across the United States, 2030 Districts are being formed to meet the energy, water and vehicle emissions targets called for by *Architecture 2030* in the *2030 Challenge for Planning*.

Through unique public/private partnerships, property owners and managers are coming together with local governments, businesses, and community stakeholders to provide a business model for urban sustainability through collaboration, leveraged financing, and shared resources. Together, they are developing and implementing creative strategies, best practices, and verification methods for measuring progress towards a common goal.

Established in Seattle, 2030 Districts are at the forefront of regional – and national – grassroots efforts to create strong environmental partnerships, coalitions, and collaboration around ambitious, measurable and achievable goals.

Interested in establishing a 2030 District? Check out the [2030 Districts Toolkit](#).

[Seattle](#) | [Cleveland](#) | [Pittsburgh](#) | [Los Angeles](#)

IMPLICATION FOR PLANNERS



PITTSBURGH
2030
DISTRICT

LEED

On-Site
Renewables

Zoning
Changes

IgBC

Grey Water
Reuse



Mandatory Energy Benchmarking

IMPLICATION FOR PLANNERS



2030 DISTRICTS ARE NOT...

- MANDATORY
- RELATED TO LEED STANDARDS
- RELIANT ON RENEWABLE ENERGY
- EXPENSIVE
- INTRUSIVE TO ZONING, BUILDINGS, OR HEALTH CODES (BUT WE COULD USE SOME HELP IN THAT ARENA!)
- DEALING WITH SOLID WASTE

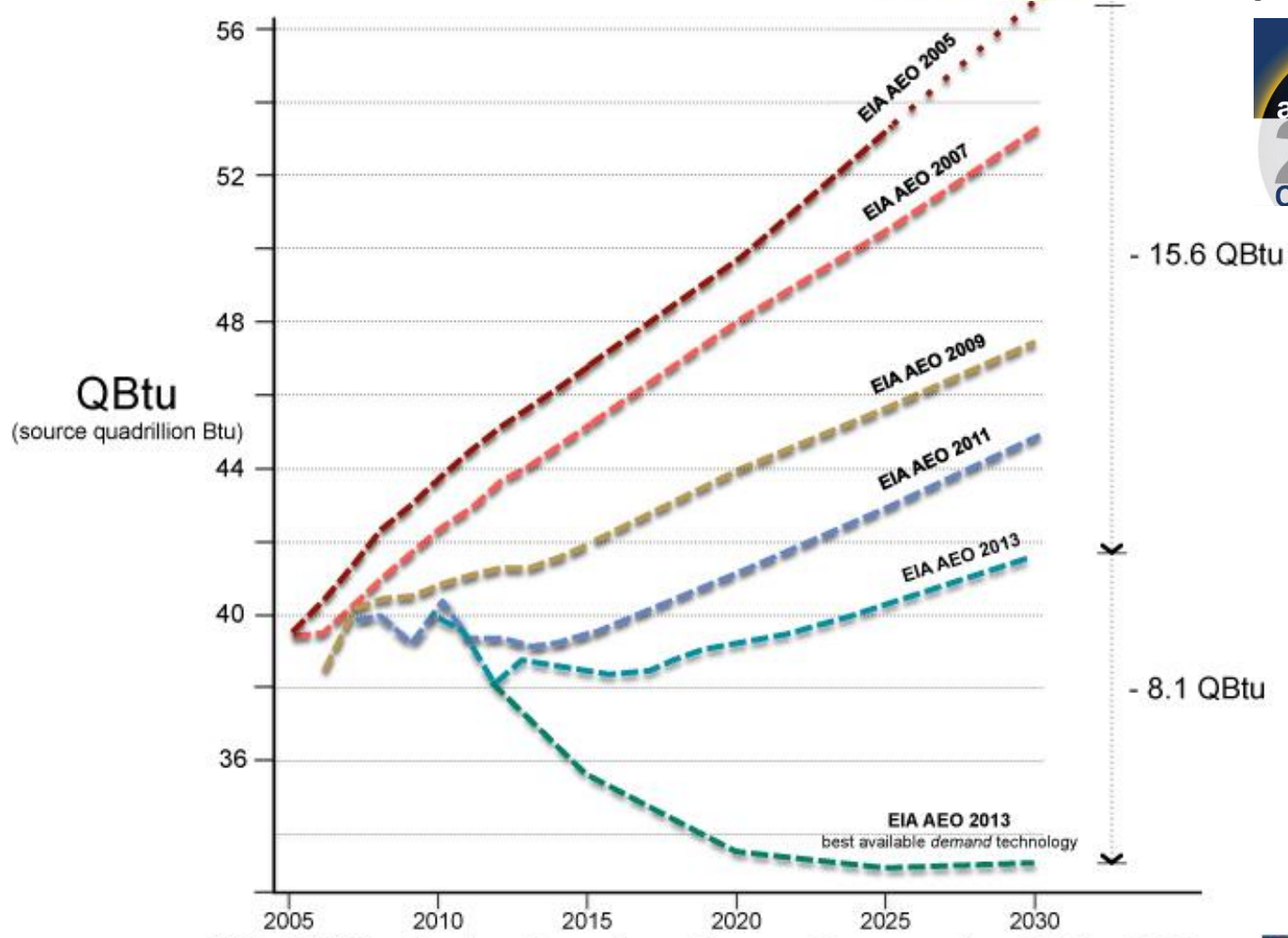
IMPLICATION FOR PLANNERS



BUT 2030 DISTRICTS ARE

- WORKING...

IMPLICATIONS FOR PLANNERS



U.S. Building Sector Operations Energy Consumption 2005 - 2030

Source: Architecture 2030, U.S. Energy Information Administration, Annual Energy Outlook (EIA AEO)



QUESTIONS?

WWW.GO-GBA.ORG

2030DISTRICT.ORG/PITTSBURGH

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