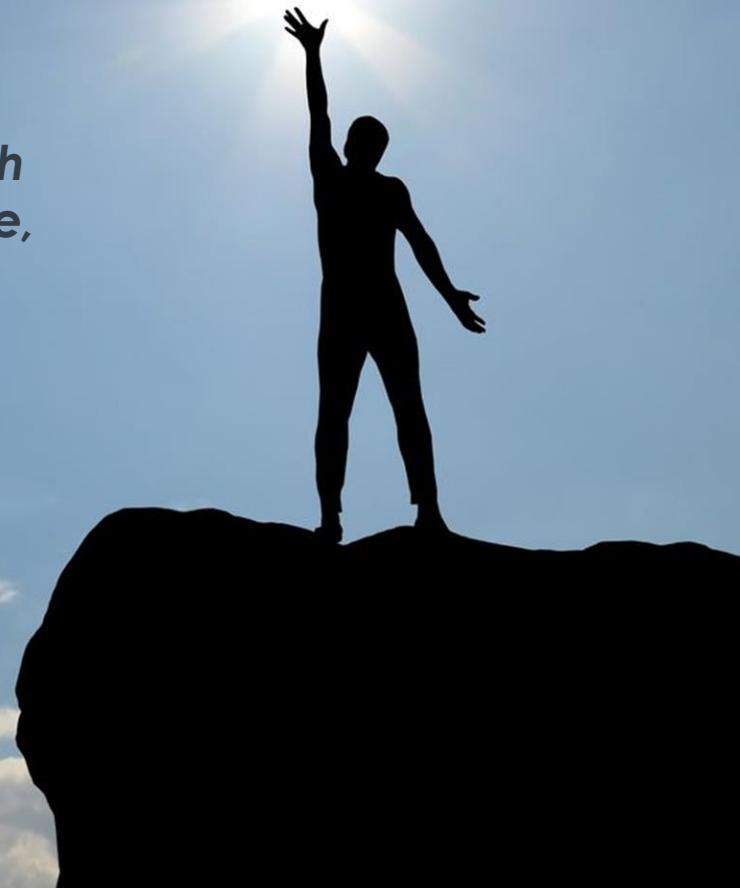


Measurement and Meaningful Actions: Sustainable Business Performance Programs

Matthew M. Mehalik, Ph.D.
Program Manager, Sustainable Pittsburgh
Adjunct Assistant Professor, Heinz College,
Carnegie Mellon University

National Academies

November 12, 2015







PITTSBURGH
**Green Workplace
Challenge**

Overview of the 2014 – 2015 Competition

Responding to Demand for Climate Action



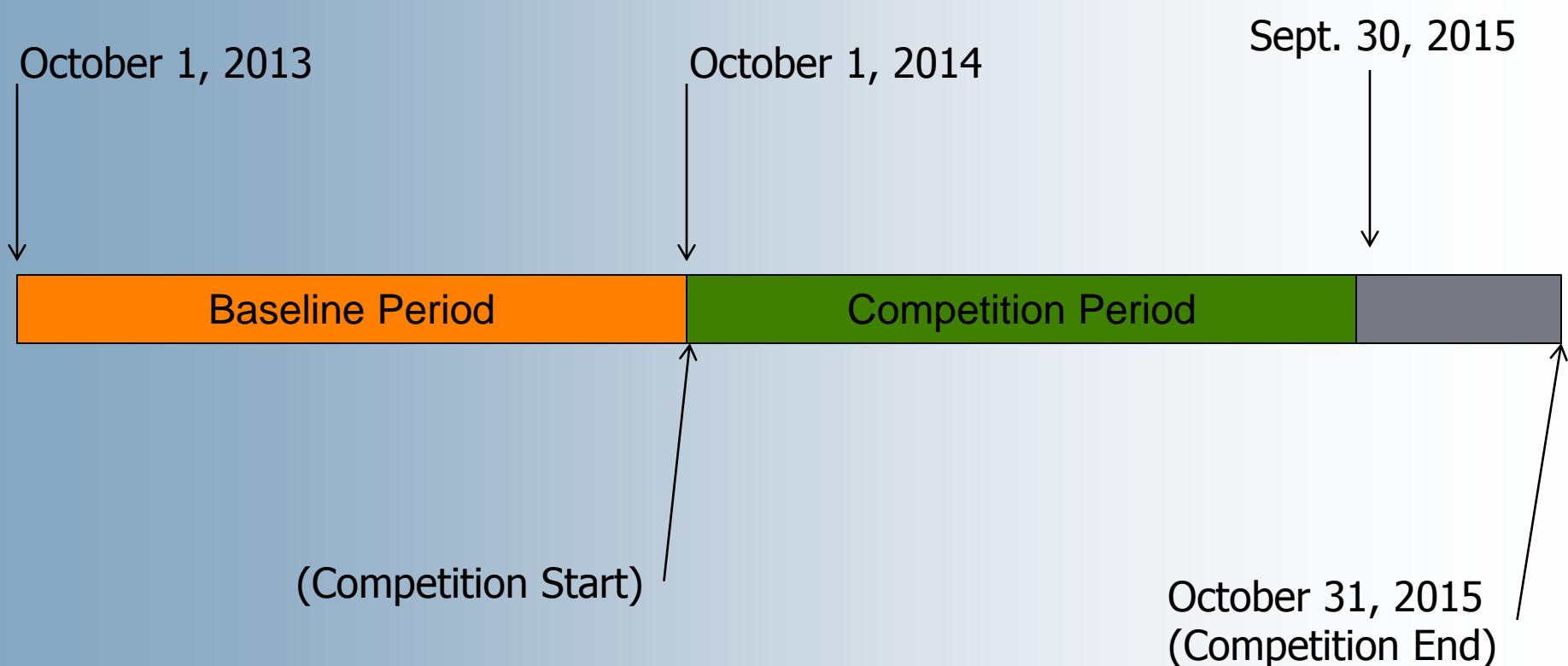
A PROGRAM OF
SUSTAINABLE PITTSBURGH

Businesses wanted:

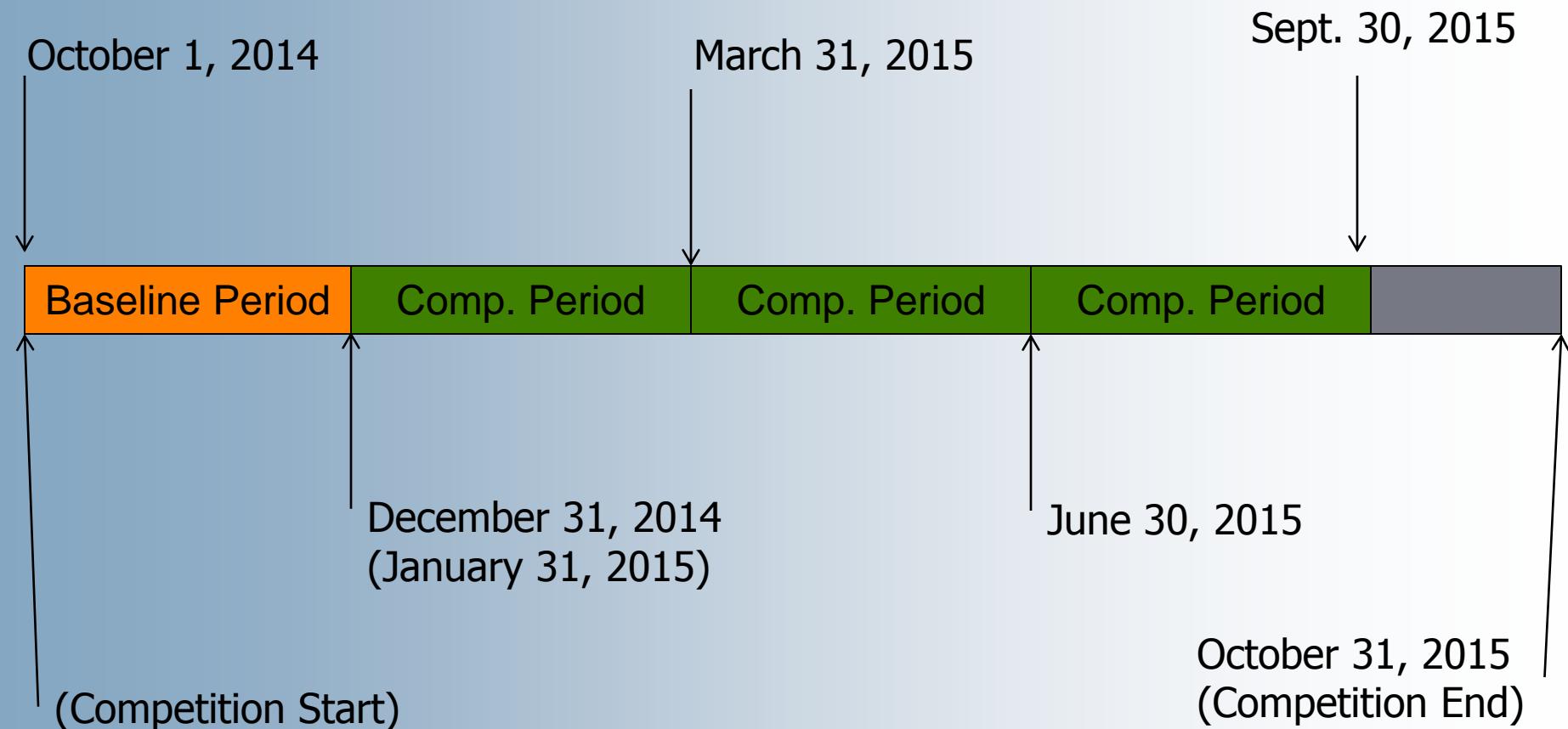
- Ability to measure progress
- Business case for actions
- Employee engagement



Energy and Water Baselines



Waste and Commuter Baselines



2014-2015

Green Workplace Challenge

Oversight Committee

Jamin Bogi

Policy and Outreach Coordinator
Group Against Smog and Pollution

Teresa Bradley

Zero Waste Services Coordinator
Pennsylvania Resource Council

Aftyn Giles

Sustainability Coordinator
City of Pittsburgh

Kathy Hrabovsky

Sustainability Manager
Allegheny County

Mario Leone

Borough Manager
Monaca Borough

Joyce O'Connor

Principal
Cardinal Resources LLC

Lisa Kay Schweyer

Program Developer
CommuteInfo Program
Southwestern Pennsylvania
Commission

Aurora Sharrard

VP of Innovation
Green Building Alliance

Sara Thompson

Landscape Architect
Pashek Associates

Mary Whitney

University Sustainability Coordinator
Chatham University

P I T T S B U R G H
**Green Workplace
Challenge**



Pittsburgh GWC
@pittsburghgwc

#gwcpgh



TWEETS

670

PHOTOS/VIDEOS

66

FOLLOWING

302

FOLLOWERS

323

FAVORITES

56

Follow

Tweets



Pittsburgh GWC @pittsburghgwc · 6h

We're getting excited for GWC Workshop #10! Stay tuned on social media tomorrow morning, because we have... pic.twitter.com/hEaX4POe7I

BIG GWC NEWS!





Who's Signed up?



Thomas Merton Center
Pittsburgh's Peace and Social Justice Center



BNY MELLON



Bayer





2242

Actions
Completed V 1 -2



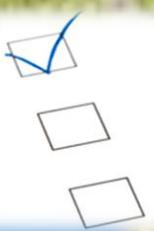
ENERGY STAR



reFuel



3900+ Actions Completed V 1 - 3



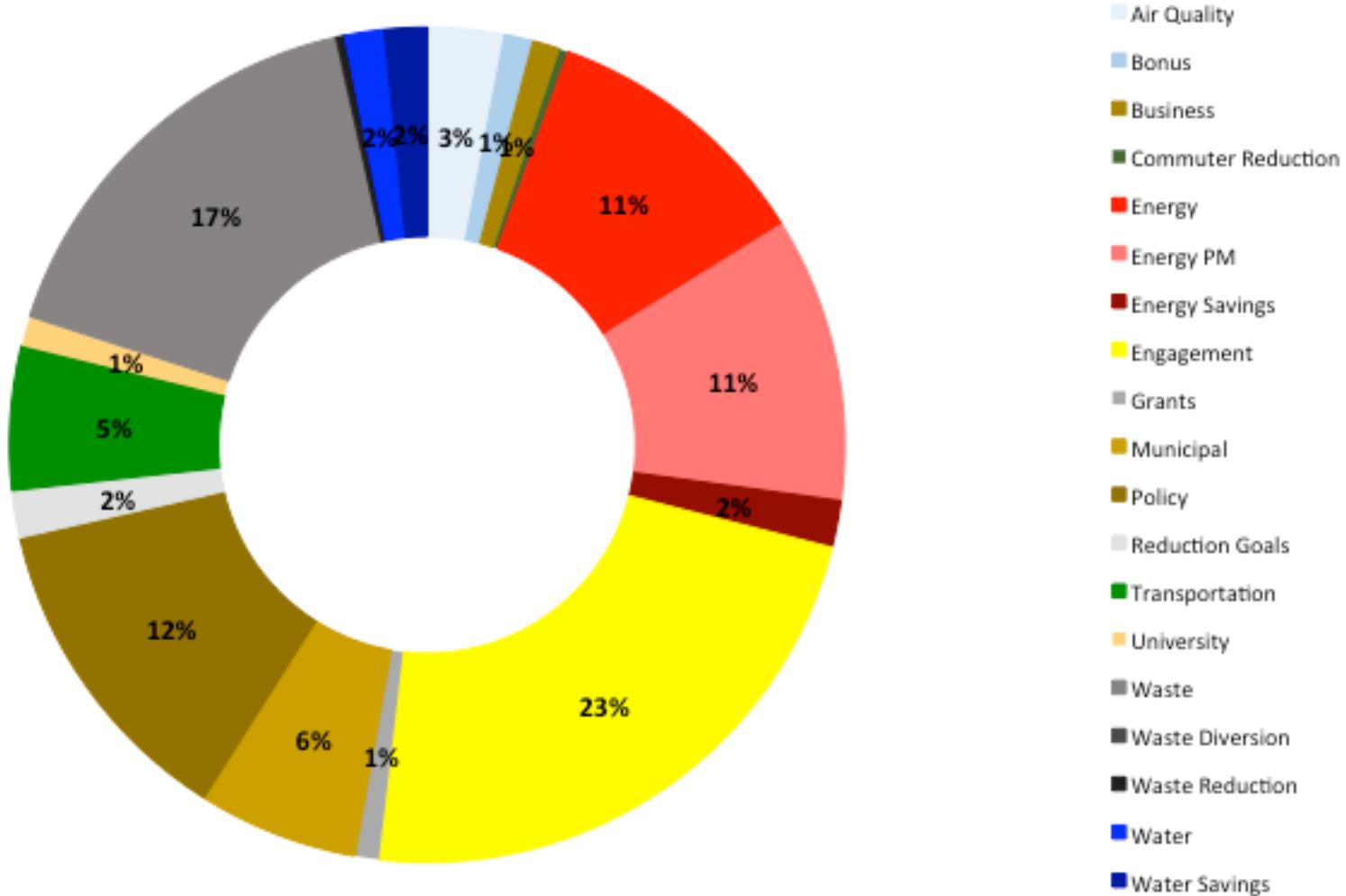
ENERGY STAR



commuteinfo.org
a better way to work

refuel

Total Actions by Category



An aerial photograph of a nuclear power plant. Two large, light-colored cooling towers stand prominently, each emitting a thick, white plume of steam into the sky. The plant's complex structure of buildings and pipes is visible in the foreground and middle ground. A river or body of water is visible at the bottom left. The background shows a mix of green fields and forested areas.

Total Energy Saved V 1 - 2

93,000,000+ kWh

A photograph of a residential street featuring several houses. The houses are two-story, single-family homes with different architectural styles. One house on the left is made of dark brick with a large front porch. Another house in the center is white with dark trim and a prominent front porch. The houses are surrounded by lawns and trees, with fallen leaves scattered on the ground and sidewalks. The lighting suggests it might be late afternoon or early evening.

8200 US Households' Annual Electricity Usage



Value of Energy Saved

\$7.4 Million

\$7.7 – 8.1 Million
including the social
cost of carbon



22,800
MtCO₂e

Greenhouse
Gas
Emissions
Reduced

578 Airline Flights Of 500 miles

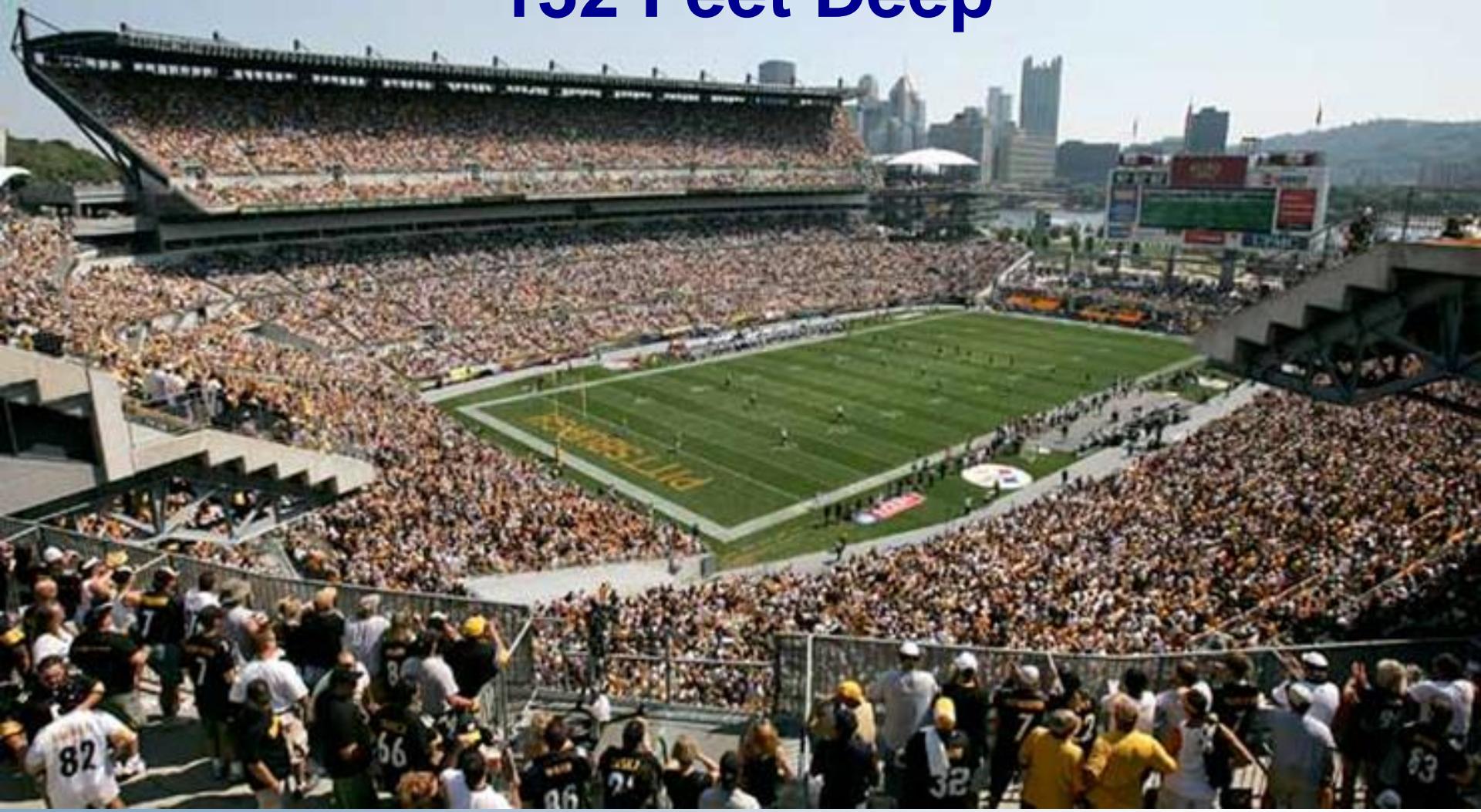


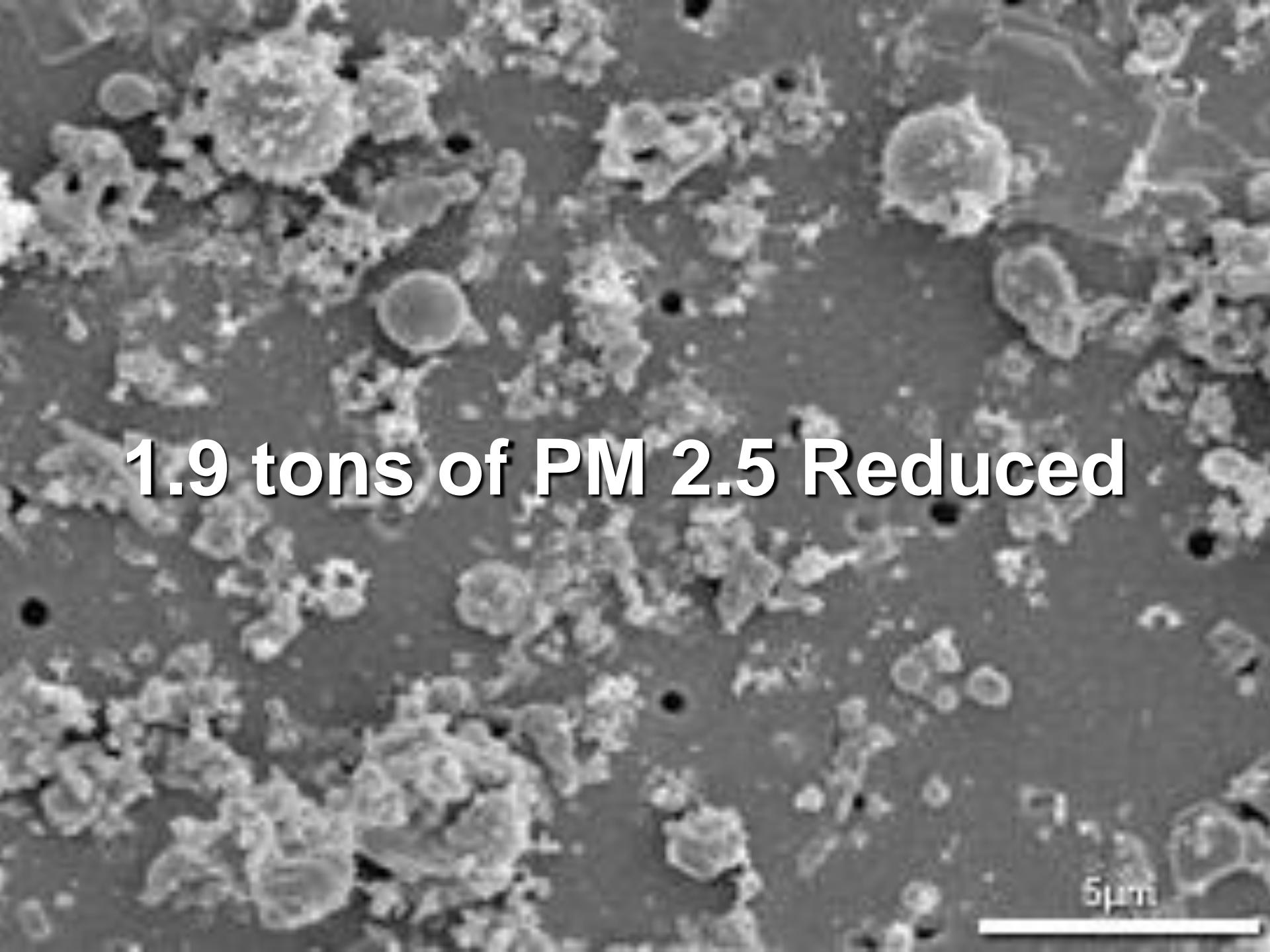
About 4 day's worth flights leaving
Pittsburgh Intl. on a typical day

**Amount of
Water Saved V 1 -2
96,000,000 gal**



Enough Water to Fill the
Playing Surface of Heinz Field
132 Feet Deep





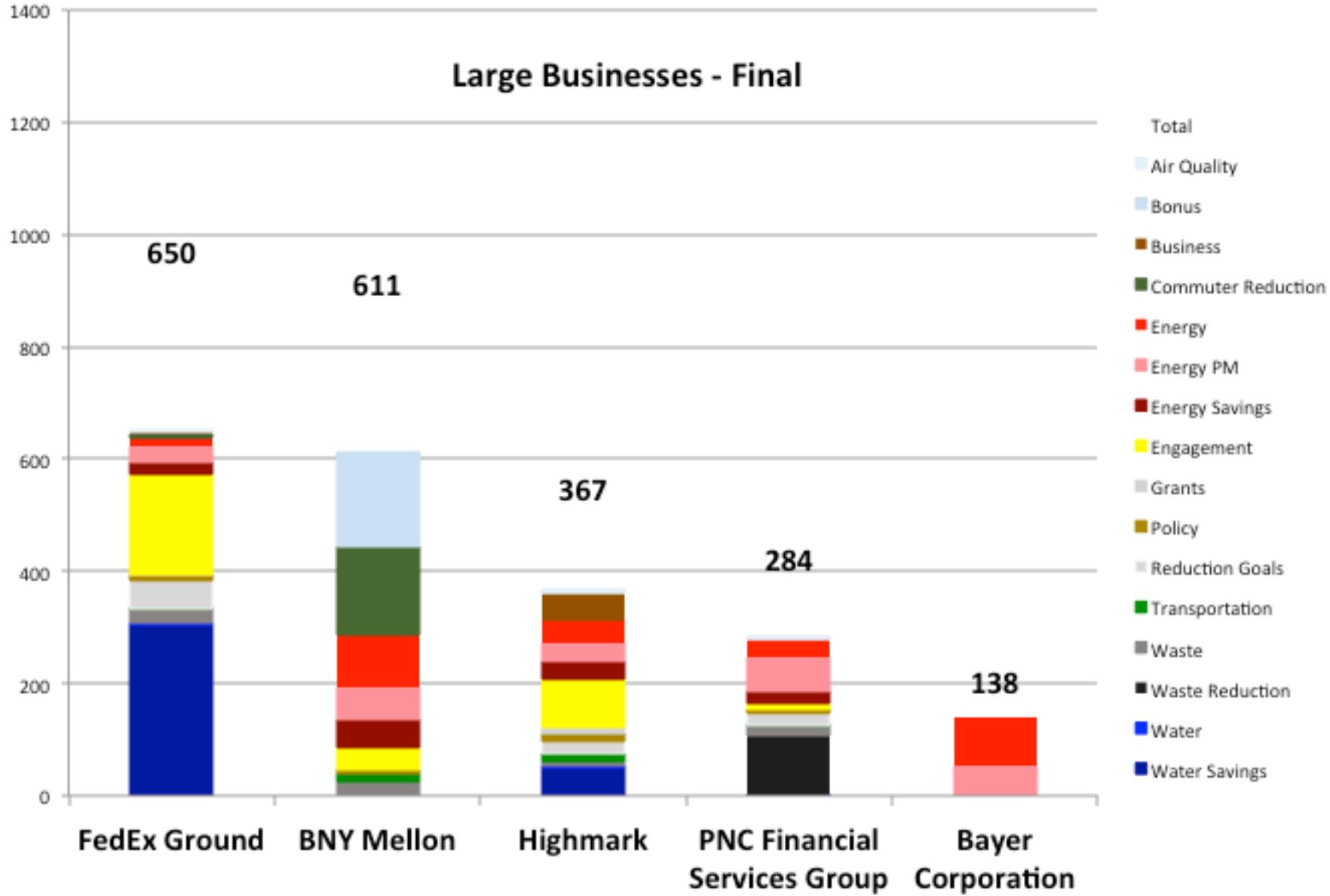
1.9 tons of PM 2.5 Reduced

5 μ m

Air Pollutants Reduced V 1 - 2

Pollutant	Amount	
NOx	102.7 tons	 X 9
SO2	406 tons	 X 1.3
N2O	2412 pounds	 X 8
Mercury	4.2 pounds	0.1 mg/m ³ OSHA  x 3459

Large Businesses - Final



PITTSBURGH
**Green Workplace
Challenge**



Top Energy Saver



22% Reduction

PITTSBURGH
Green Workplace
Challenge



Top Water Saver



76% Reduction

PITTSBURGH
**Green Workplace
Challenge**



All-Stars Competing in EPA's Energy Star Team Battle of the Buildings



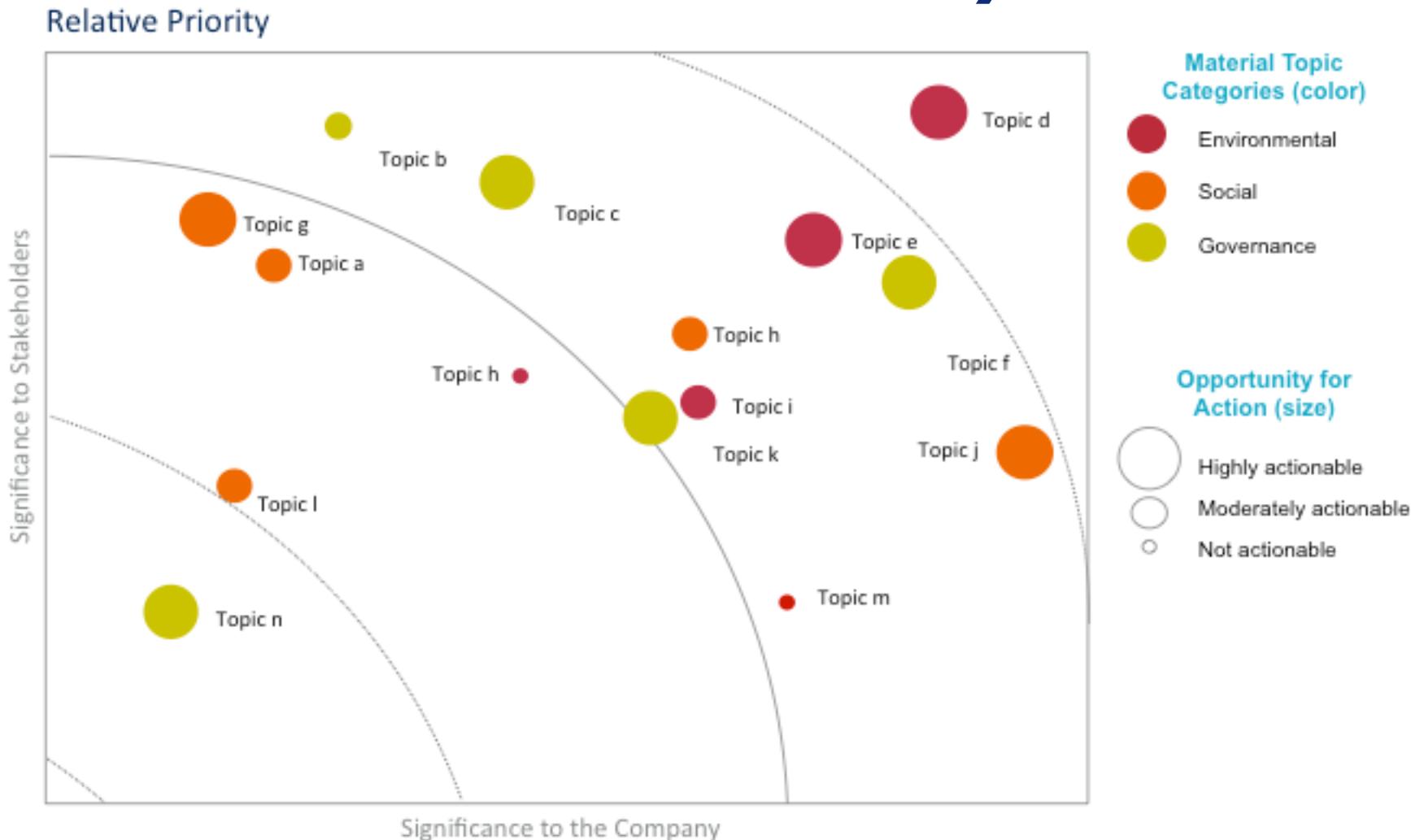
EMERGENT SUSTAINABILITY THROUGH ADDRESSING REGIONAL MATERIALITY CHALLENGES

What is Materiality?

Issues that:

- ***Reflect an organization's significant economic, environmental, and social impacts***
- ***Would substantively influence the assessments and decisions of stakeholders***

What is Materiality?



GRAB ME

DELL US Equity 96) Settings 97) Actions 98) Output 99) Feedback Relative Valuation

Comp Source Bloomberg % Rev. by Industry FY2012 Region Global Currency USD

1) Whole Firm > Metric DELL Low Comp Range High

2) Computer Hardware EV/EBITDA T12 3.89 3.56 12.8

3) Computer Peripherals Rev 1 Yr Gr 0.94 -24.44 177.8

4) Information Technology CT Gross Margin 22.25 8.12 46.8

5) Computer Storage Op Margin 7.14 -1.35 31.2

R&D % T12 1.38 0.00 5.8

(i) Analyze Industry

DELL US Median

21) Overview 22) Comp Sheets 23) Markets 24) EPS Preview 25) Ownership 26) Credit 27) Custom 28) Create Template 29) ms 30) mmm 31) Custom ... 32) Valuation 33) Esg 34) Esg

Add Column <Enter a field, e.g. P/E> 93) Fields 19) Save As ...

Name	Ticker	Mkt Cap (USD)	ESG Disc Score:Y	GHG Intens/Std:Y	Total Waste:Y	% Women Emp:Y	% Women on Bd:Y
Average		55.58B	39.59	12.6	0.04	28.97	14.25%
100) DELL INC	DELL US	26.43B	47.11	5.9	0.04	33.00	8.00%
101) HEWLETT-PACKARD CO	HPQ US	43.50B	45.87	14.70	0.09	32.9	40.00%
102) INTL BUSINESS MACHINES COR	IBM US	229.72B	42.98	28.6	0.08	28.1	15.38%
103) APPLE INC	AAPL US	497.29B	35.95	2.0	0.00	N.A.	12.50%
104) LENOVO GROUP LTD	992 HK	8.80B	47.11	2.19	0.01	N.A.	9.09%
105) ACER INC	2353 TT	2.94B	21.90	N.A.	N.A.	N.A.	N.A.
106) ASUSTEK COMPUTER INC	2357 TT	7.78B	74.79	0.7	0.00	13.8	0.00%
107) COGNIZANT TECH SOLUTIONS-A	CTSH US	18.27B	36.36	38.11	N.A.	31.00	12.50%
108) ACCENTURE PLC-CL A	ACN US	41.30B	40.50	7.90	N.A.	35.00	25.00%
109) COMPUTER SCIENCES CORP	CSC US	4.01B	24.38	N.A.	N.A.	N.A.	10.00%
110) SYNTEL INC	SYNT US	2.41B	N.A.	N.A.	N.A.	N.A.	N.A.

11) Edit Comparables 12) Select Stats 13) Group by 14) Zoom 100%

Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 14 20 7300 7500 Germany 43 69 9204 1210 Hong Kong 85 2 2977 6000
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 2 2 318 3000 Copyright © 2012 Bloomberg Finance L.P.
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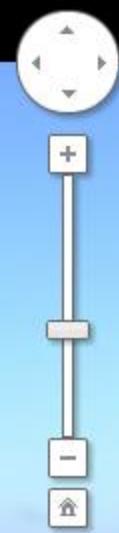
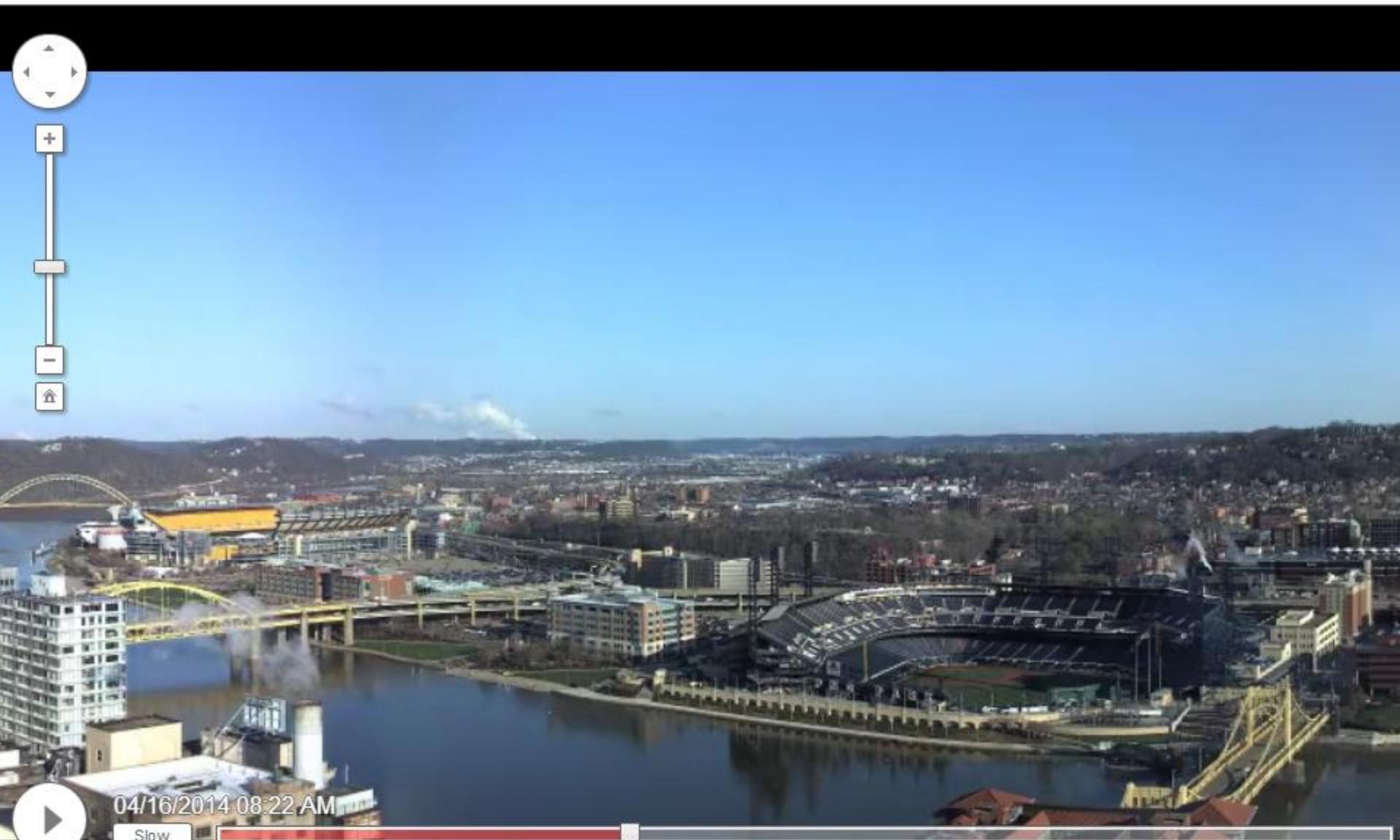
CREATE Lab Breathcam



05/08/2014 08:22 AM

Slow

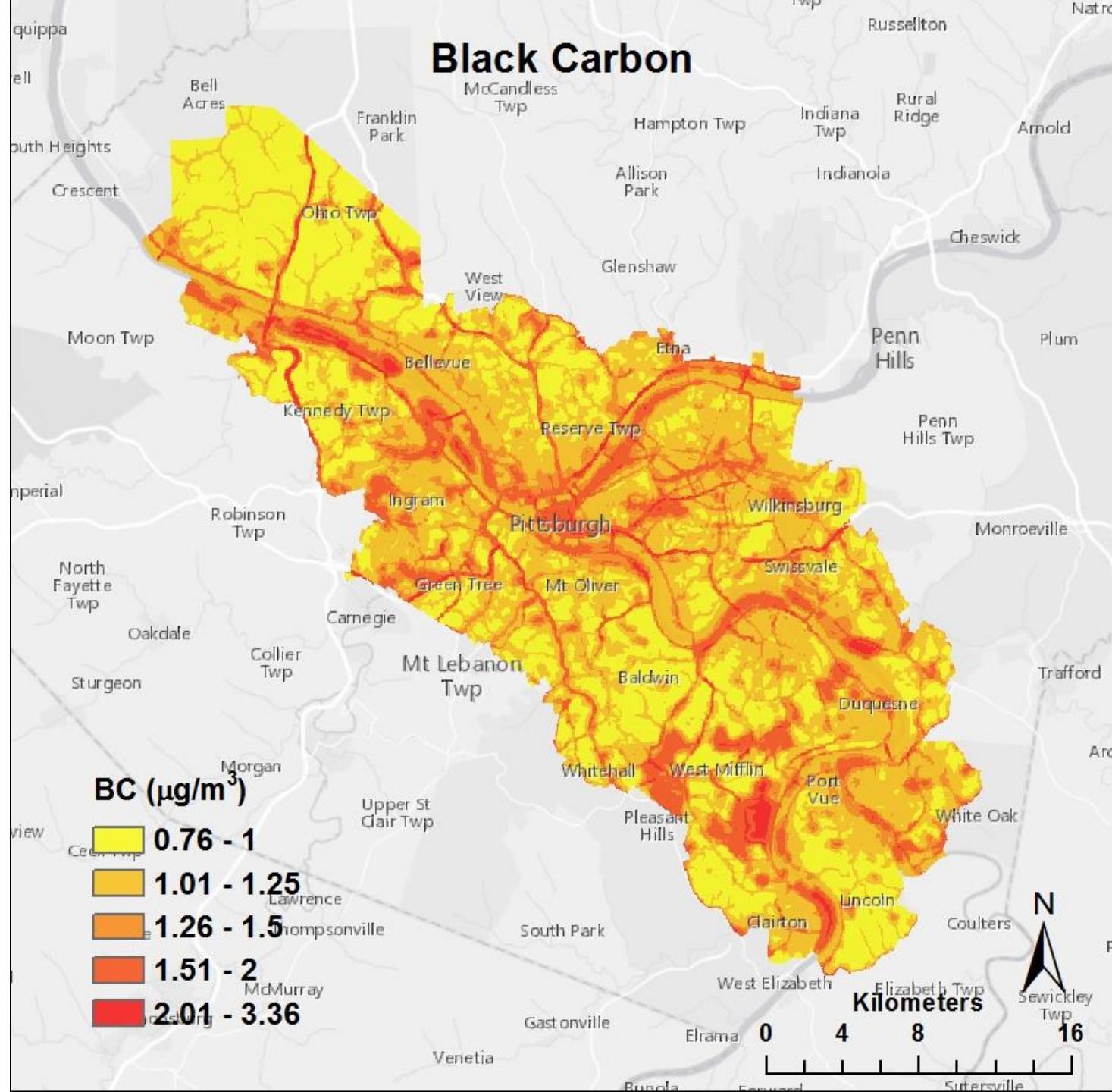
CREATE Lab Breathcam



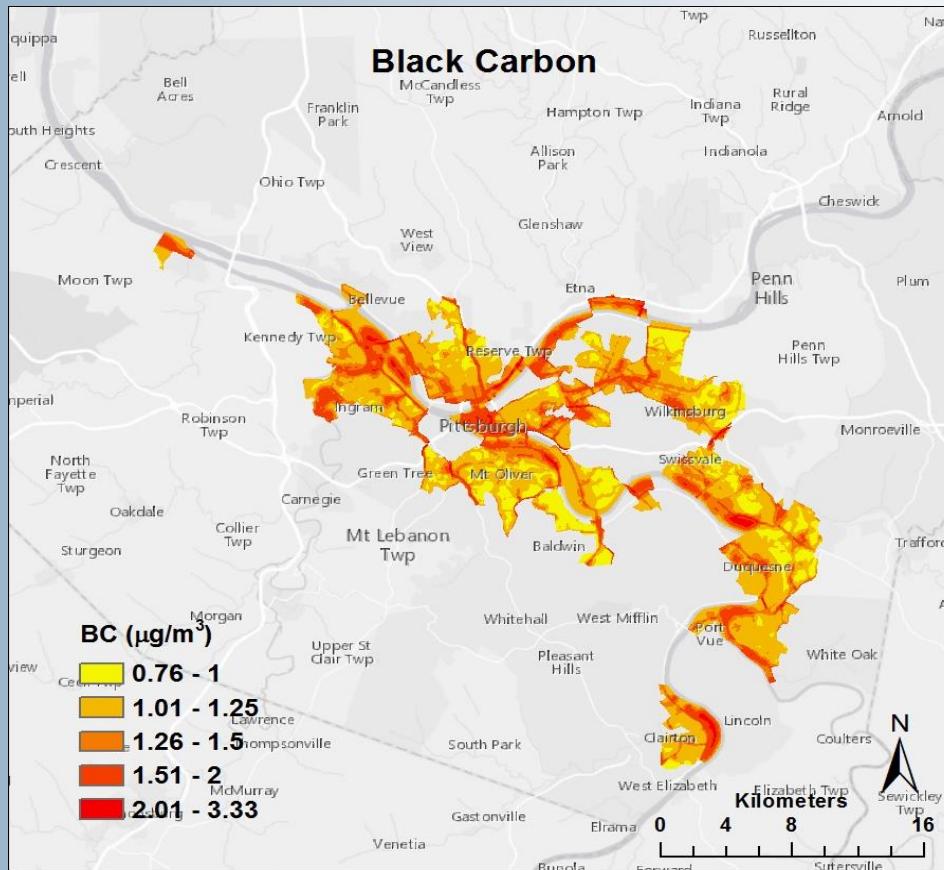
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Slow

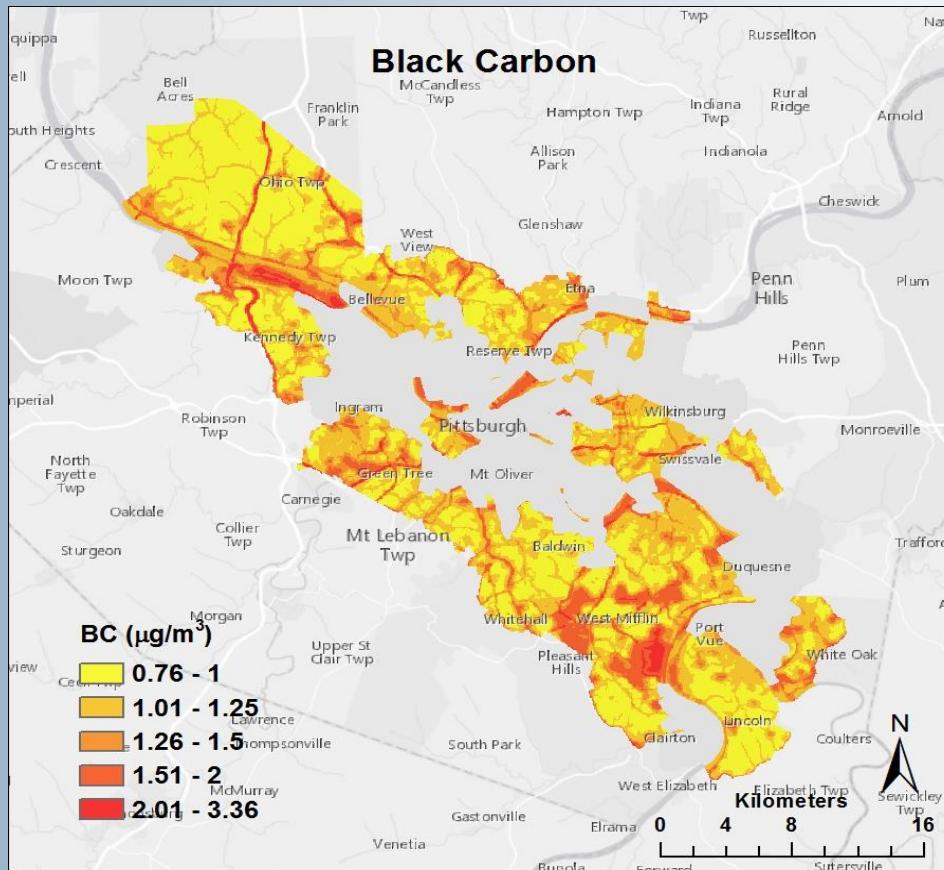
Black Carbon



Environmental justice communities



Non-EJ communities



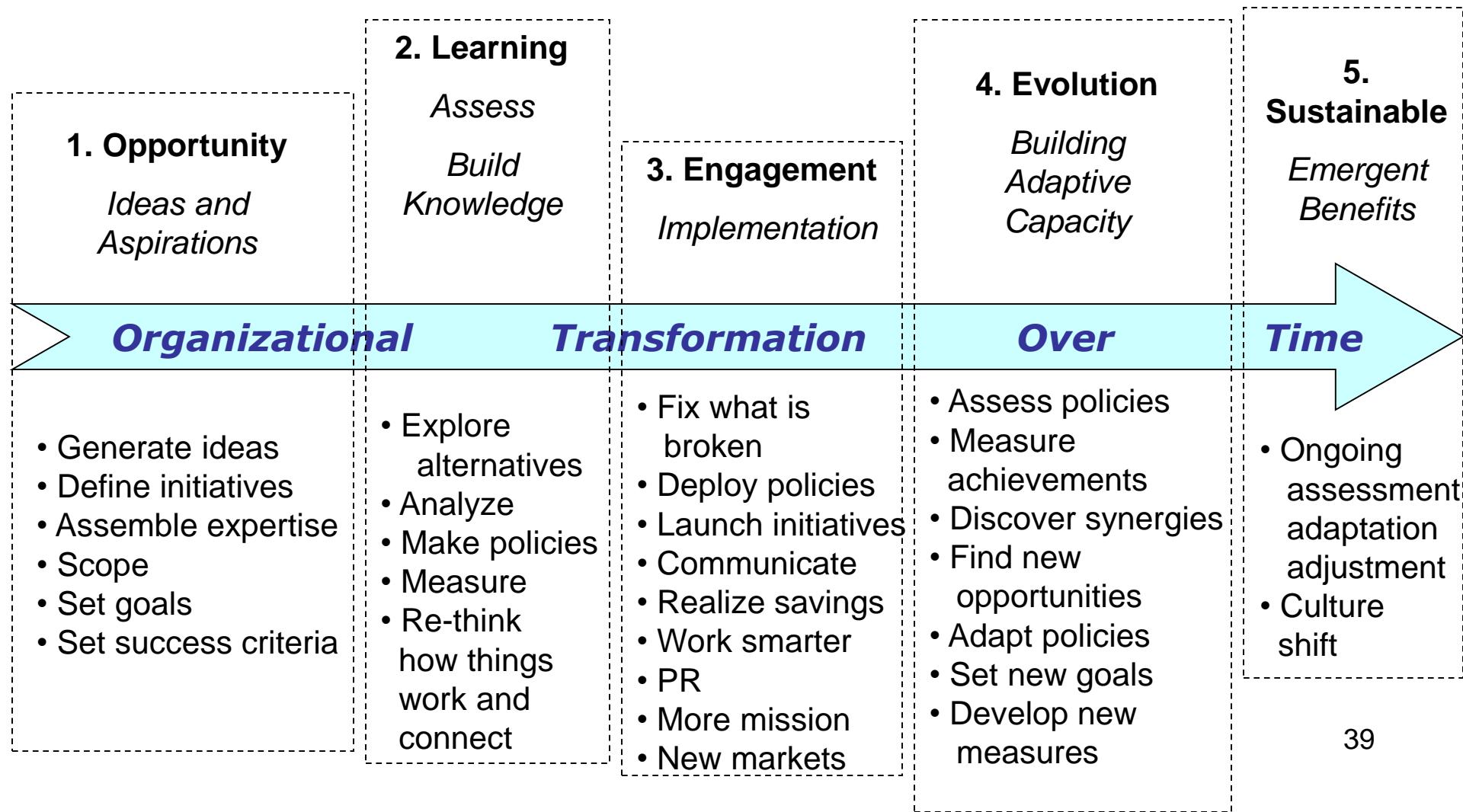




SOUTHWESTERN PENNSYLVANIA SUSTAINABLE BUSINESS COMPACT



Pathway for Capacities for Emergent Sustainability





SOUTHWESTERN PENNSYLVANIA SUSTAINABLE BUSINESS COMPACT

Diversity, Equity & Inclusion

Water Quality & Stewardship

Energy Efficiency & Conservation

Transportation

Sustainable Materials Management

Citizen Civic Engagement

**Smart Growth, Sustainable
Communities, and Green Buildings**

Health & Wellness

Workforce Development

Air Quality Improvements

Economic Prosperity

Governance and Management



Baseline



- 4.b1. The business avoids placing new production sites near environmentally sensitive or protected areas and/or uses precautionary principle, highest level of safeguarded operational techniques for operating near such environments.
- 4.b2. The business practices and/or contributes to historic preservation programs in the region.
- 4.b3. The business has chosen to occupy existing space rather than new construction for a majority of its facilities.



4.e1. The business has constructed or resides in a SWPA LEED certified building, space, or neighborhood.

4.e2. The business has rehabilitated an existing space or structure using LEED-EB guidelines or equivalent.

4.e3. The business has transformed and occupies a formerly blighted or abandoned property.

4.e4. The business occupies a historic or civically significant space.

4.e5. The business examines the neighborhood walk score, transportation score, and the housing and transit affordability index in its decisions about where to locate its facilities.

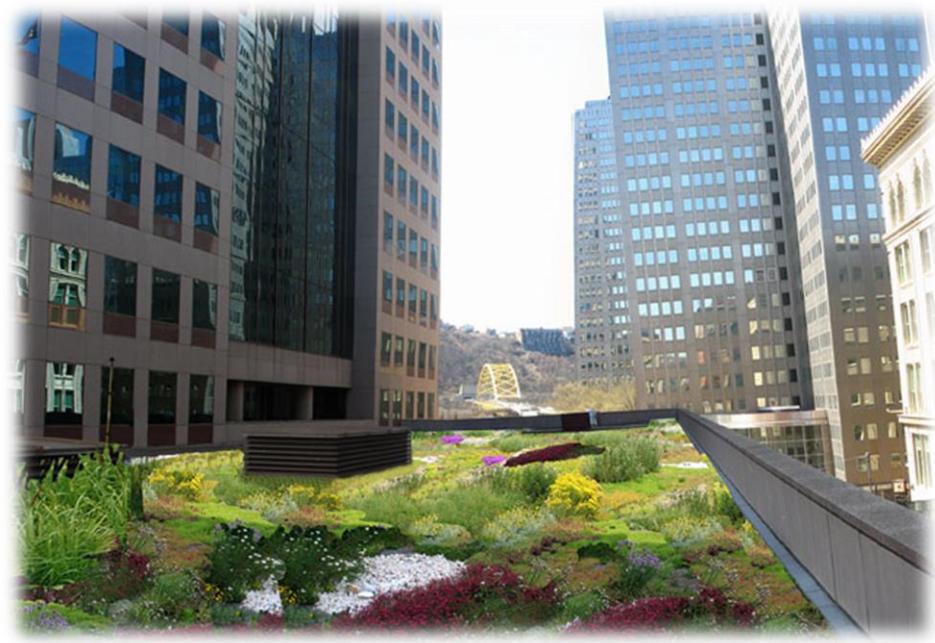


4.t1. The business resides in a facility with a green roof.

4.t2. The business supports the adoption of smart growth strategies for SWPA's sustainable development.

4.t3. The business promotes to the community a LEED-based approach to building design, responsible construction methods, and the renovation of existing structures.

4.t4. The business has received regional recognition for its adoption and promotion of smart growth, sustainable community, and green building practices.





4.t5. The business supports initiatives to ensure our region's residents have access to quality and affordable housing.

4.t6. The business has received regional recognition for its initiatives to ensure our region's residents have access to quality and affordable housing.

4.t7. The business has received regional recognition for its regional conservation activities.





SOUTHWESTERN PENNSYLVANIA SUSTAINABLE BUSINESS COMPACT





SOUTHWESTERN PENNSYLVANIA SUSTAINABLE BUSINESS COMPACT

Baseline: 43 "Yes" out of 50
Adjusted: 50 "Yes" out of 50

Engaged: 76 "Yes" out of 81
Adjusted: 81 "Yes" out of 81

Transformative: 35 "Yes" out of 39
Adjusted: 23 "Yes" out of 39

Total Score: 281



Answers Verified: 79%



CONGRATULATIONS!! You are eligible for Leader Status.*To be eligible for Champion Status:
You need to verify at least 80% your "Yes" answers.

I am authorized to submit information on behalf of my organization.

Confirm This Status



SOUTHWESTERN PENNSYLVANIA
SUSTAINABLE BUSINESS COMPACT

- **21 Businesses Participating**
- **804 Actions Completed**
- **273 Actions Qualified with Transparent Information**

Top 10 Actions (of 170) in:

- **Diversity, inclusion (4/10)**
- **Energy Efficiency (2/10)**
- **Financial Performance**
- **Water Efficiency**
- **Waste Reduction**



SOUTHWESTERN PENNSYLVANIA
SUSTAINABLE BUSINESS COMPACT



2013 - 2015



Solutions & Technologies





SOUTHWESTERN PENNSYLVANIA
SUSTAINABLE BUSINESS COMPACT



2013 - 2015





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SUSTAINABLE BUSINESS COMPACT



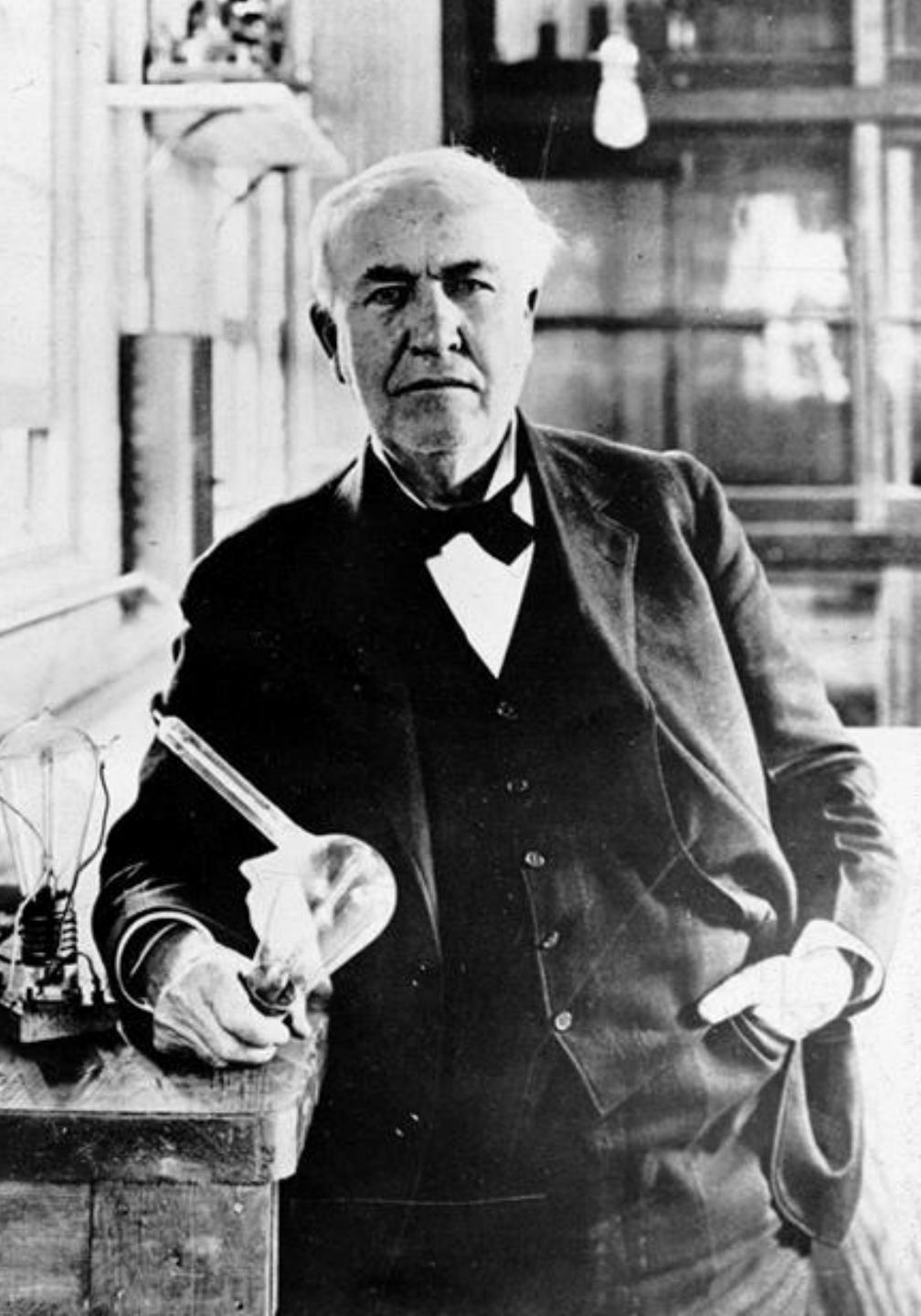
2014 - 2016

UPMC **LIFE
CHANGING
MEDICINE**



SOUTHWESTERN PENNSYLVANIA SUSTAINABLE BUSINESS COMPACT





CAN WE
CREATE THE
GREATEST
INVENTION OF
THE 21ST
CENTURY?

COMPETE. SAVE. WIN.

Thank You!

mmehalik@sustainablepittsburgh.org

