



# **Infrastructure Action Team Meeting #3**

## **Energy and Utilities**

City Planning - Kara Smith, Sarah Yeager, Flore Marion

Green Building Alliance – Megan Zeigler

November 10, 2020

# Tonight's Agenda

- Brief welcome, intro, and review of highlights from last meeting
- Climate Action Plan Presentation
- Duquesne Light Presentation
- Residential Energy Conservation
- 2030 and Oakland Energy Master Plan
- Breakout Group Discussion: Energy and Utilities
- Regroup and review
- Wrap up



# Staff Team Introductions

## DEPARTMENT OF CITY PLANNING

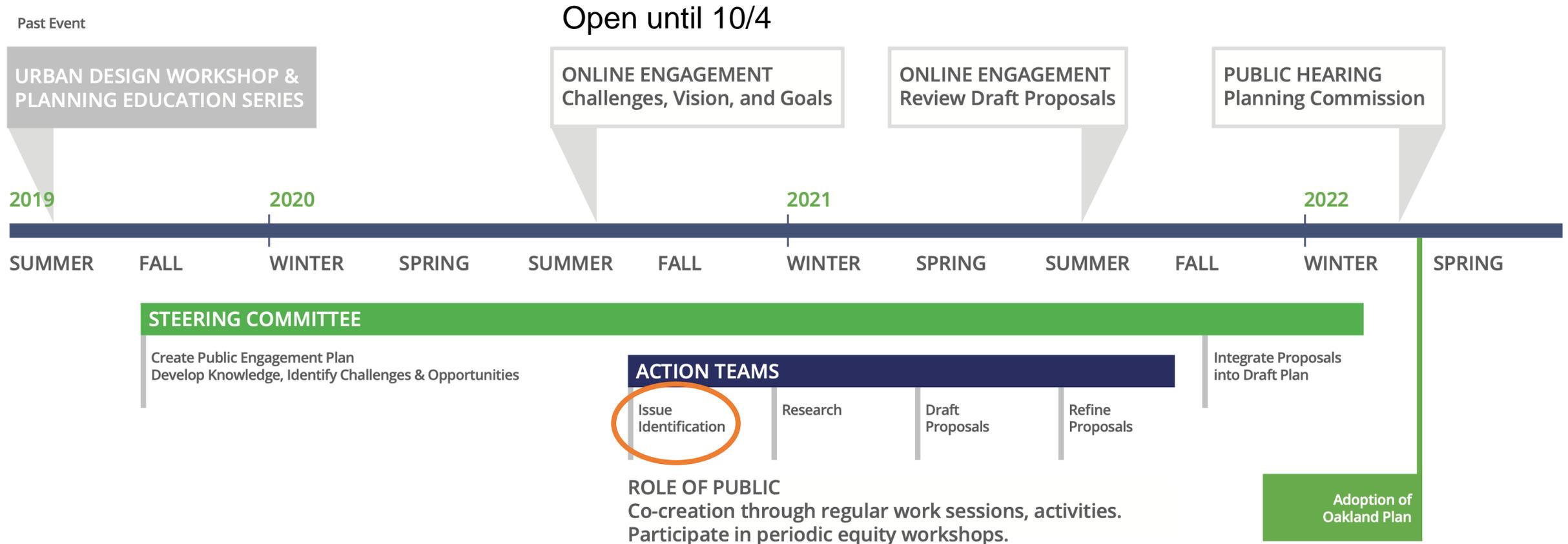
- Flore Marion – Energy Advisor
- Kara Smith – Environmental Planner
- Sarah Yeager – Climate and Energy Planner

## GREEN BUILDING ALLIANCE

- Megan Zeigler, VP of Planning and Policy



# Planning Process



**We are here**



# Our Expectations for Your Behavior

Action Team members are expected to participate in good faith. The following rules of behavior apply to all members:

1. Prepare for and attend all meetings;
2. Participate fully and honestly, commenting constructively;
3. Treat fellow members with respect, particularly when there are differences of opinion;
4. Allow others to say what they believe is true without fear of reprisal;
5. Abide by the rule that only one person can talk at a time; and
6. Only represent your views when speaking with others about the planning process.

*Those who routinely break these rules will no longer receive invites to meetings and will be removed from mailing lists.*



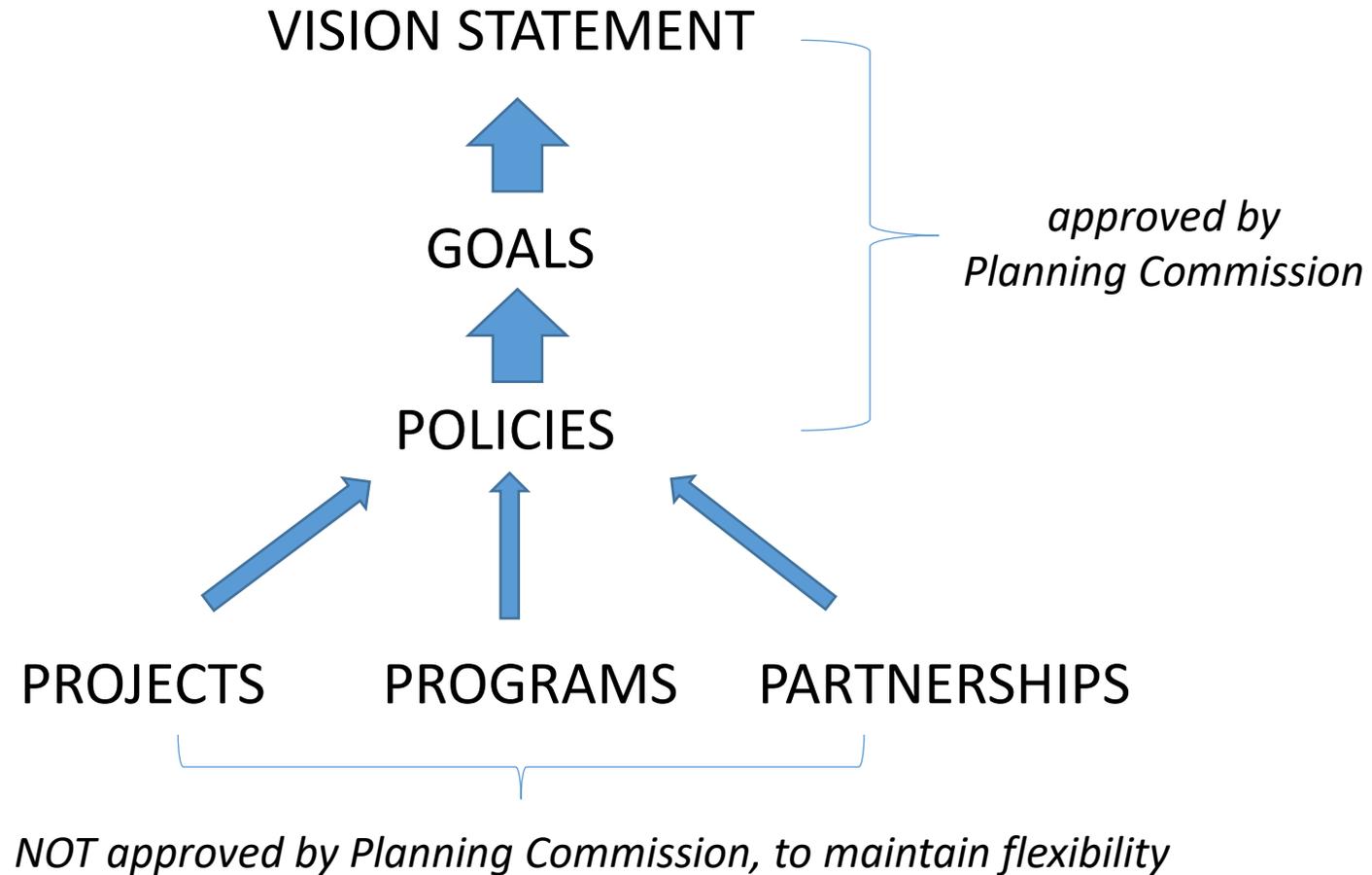
# Role of the Action Teams

- Meeting regularly by Zoom to identify issues and opportunities, gather information, and develop proposals.
- Conducting engagements with the broader community (online for now) to inform our work and share our ideas.
- Developing draft proposals including what, who, and how.
- Presenting our ideas back to the Steering Committee to get their input and understand where two Action Teams should work together on a topic.
- Refine our proposals based on input from the general public and the Steering Committee. Create a table called an Implementation Matrix.



Neighborhood Plan Guide: <https://pittsburghpa.gov/dcp/neighborhood-planning-guide>

# Plan Framework



Neighborhood Plan Guide: <https://pittsburghpa.gov/dcp/neighborhood-planning-guide>

# Topics for the Infrastructure Action Team

## REQUIRED TOPICS:



Stormwater



Parks and Open Space



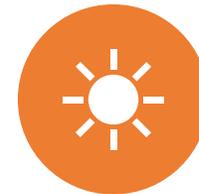
Energy and Utilities



Waste and Recycling



Tree Canopy and Habitat Restoration



Climate Adaption

## OPTIONAL TOPICS:



Urban Agriculture



Digital Network



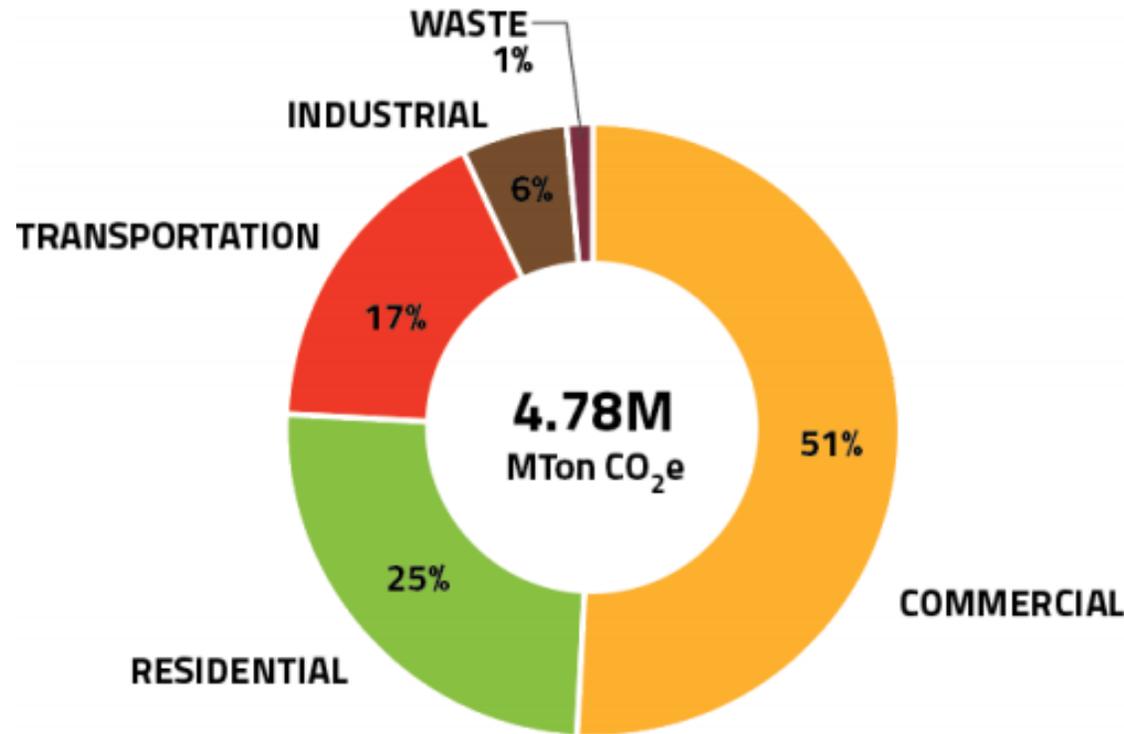
Air Quality



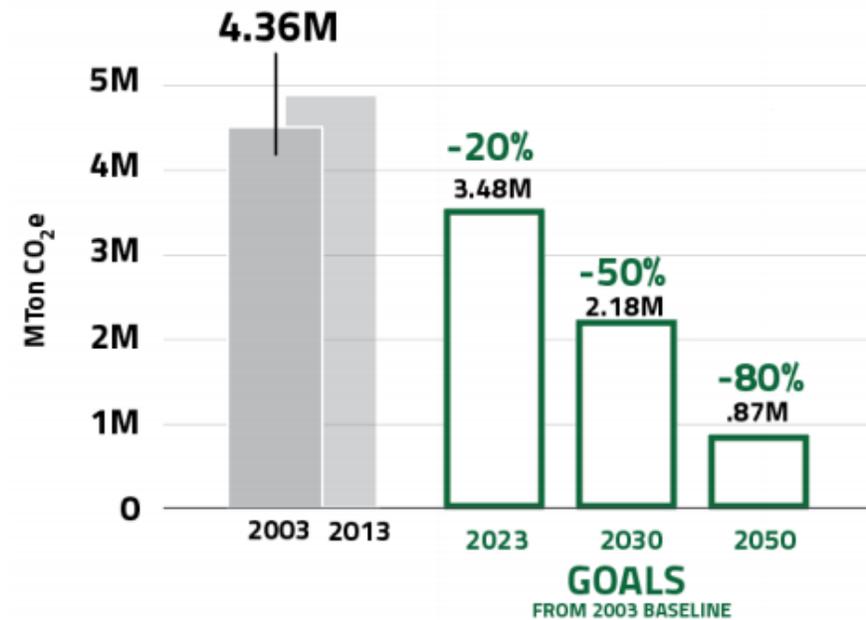
# Climate Mitigation

Sarah Yeager, City of Pittsburgh  
Climate and Energy Planner

# Climate Action Plan Overview



## TOTAL EMISSION REDUCTIONS:



**20% GHG Reduction by 2023**  
**50% GHG Reduction by 2030**  
**80% GHG Reduction by 2050**



# Climate Action Plan Goals

## 2030 GOALS:

### CITY OPERATIONS

**100%** renewable elect.

**100%** fossil fuel free fleet

Divestment of City pensions

### CITY OF PITTSBURGH

**50%** energy & water use

**50%** transport emission

Zero waste

## Climate Action Plan 3.0

Energy Generation and Distribution

Buildings and End Use Efficiency

Transportation and Land Use

Waste and Resource Recovery

Food and Agriculture

Urban Ecosystems



# Climate Action Plan Strategies

## Objective

 **50%  
by 2030**

## Strategies



**LOWER ENERGY  
CONSUMPTION**



**REDUCE EMISSIONS  
FROM  
TRANSPORTATION**



**MODERNIZE ENERGY  
INFRASTRUCTURE**

## Goals

Implement and prioritize district energy systems

Implement community solar projects or other local renewable energy initiatives at scale

Align land use and development decisions with climate goals

New financing programs for energy efficiency, renewables, and infrastructure

Benchmarking, audit, and retro-commissioning (RCx) policies for existing buildings

Incentives and demonstration projects for building decarbonization with a focus on City facilities

Electrify city fleets and buses

Improve access to charging infrastructure and encourage private EV ownership

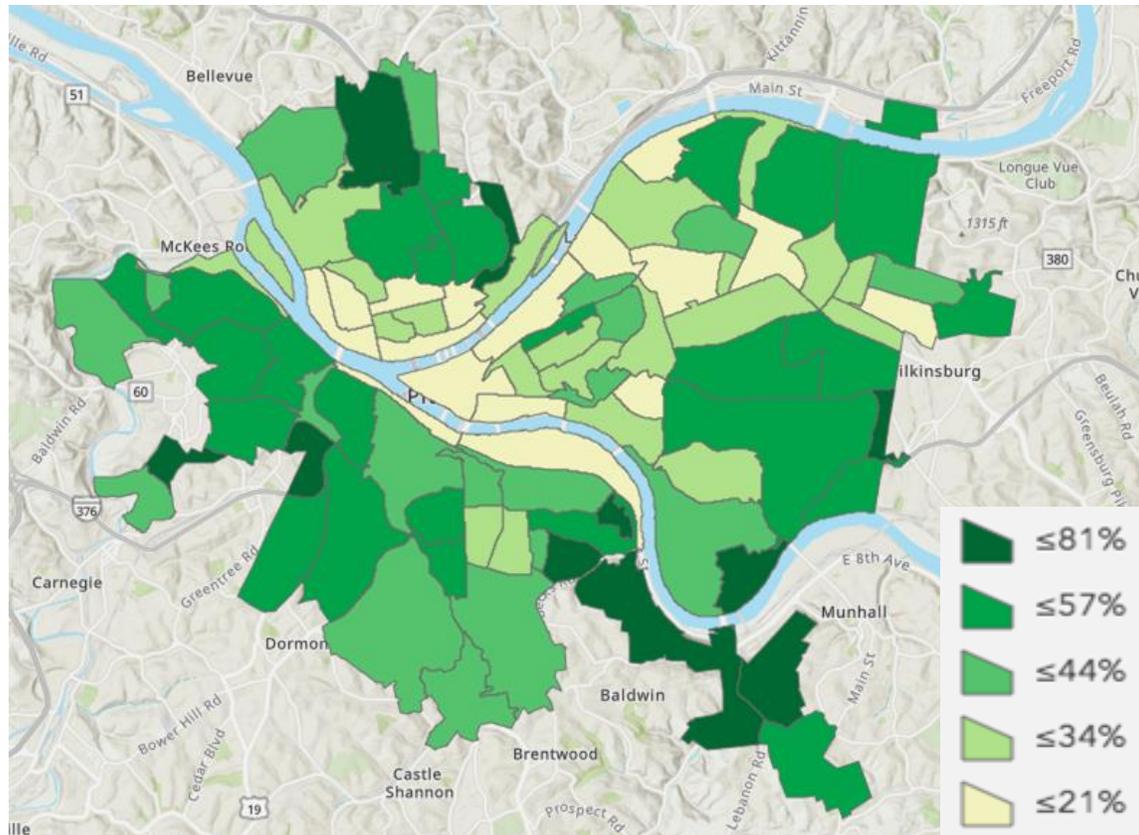
Implement high priority segments in the walking and bicycling network



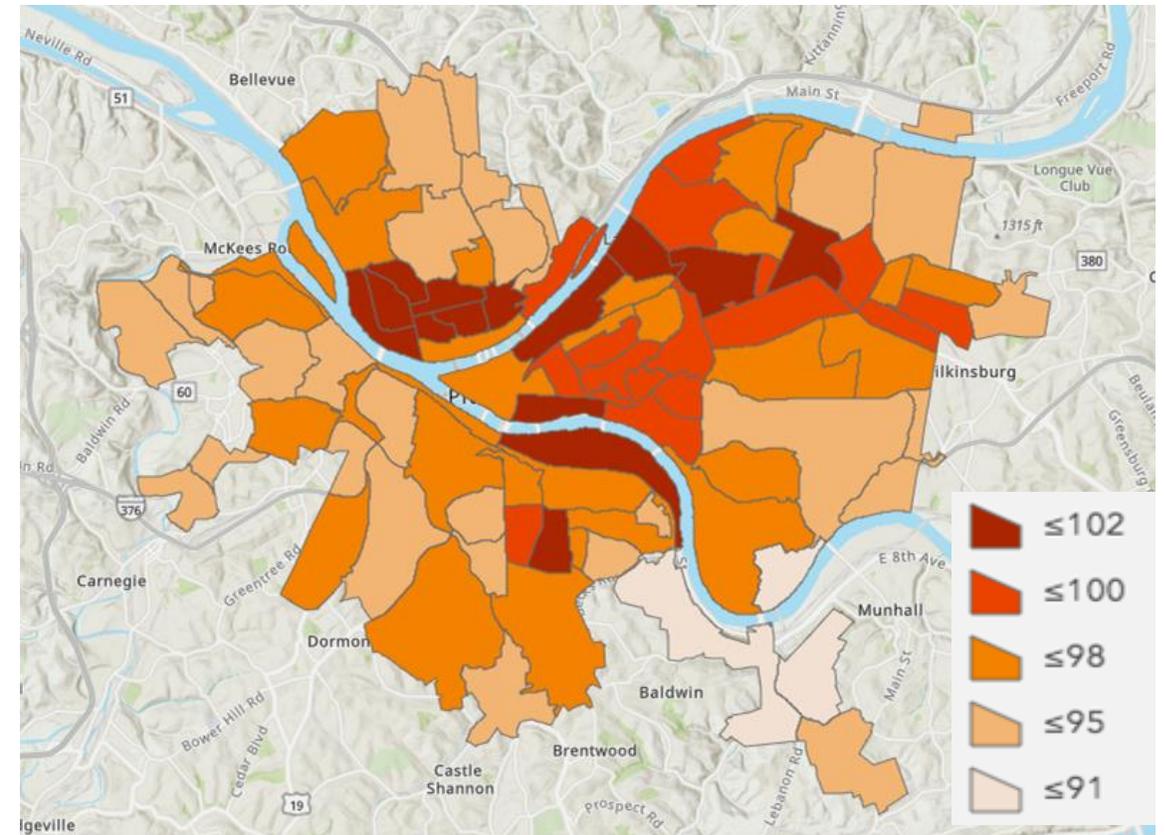
# Climate Adaptation

# Urban Heat Island

## Tree Canopy (%)



## Summer Surface Temperatures



# Maps of 311 Flooding Incidents by Year

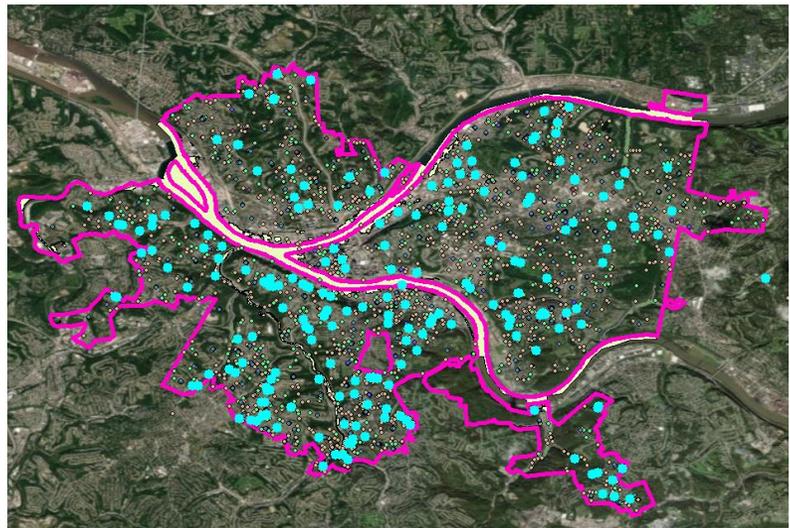
*Pittsburgh, PA*

Total 311 Flooding Events by Year

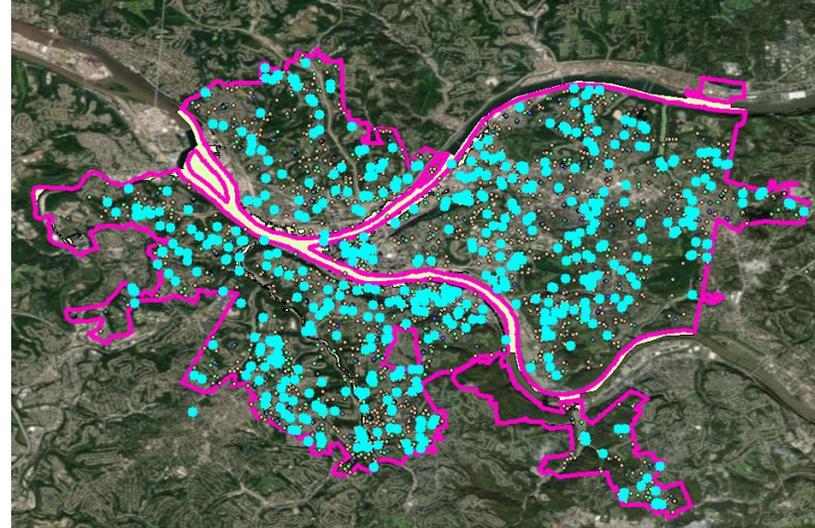
- 2015 - 238
- 2016 - 581
- 2017 - 642
- 2018 - 1038
- 2019 - 756

**Total 3255**

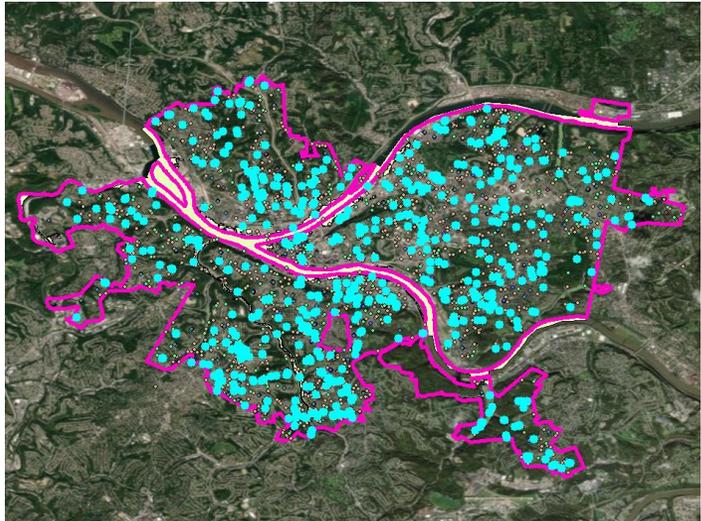
## 2015



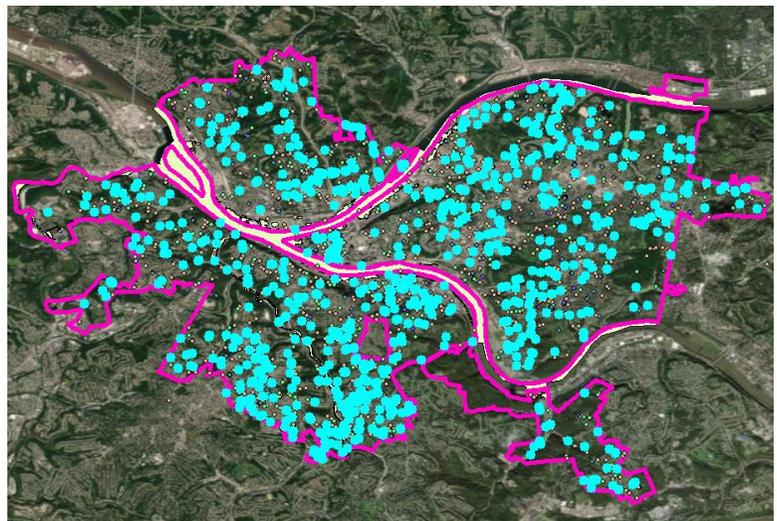
## 2016



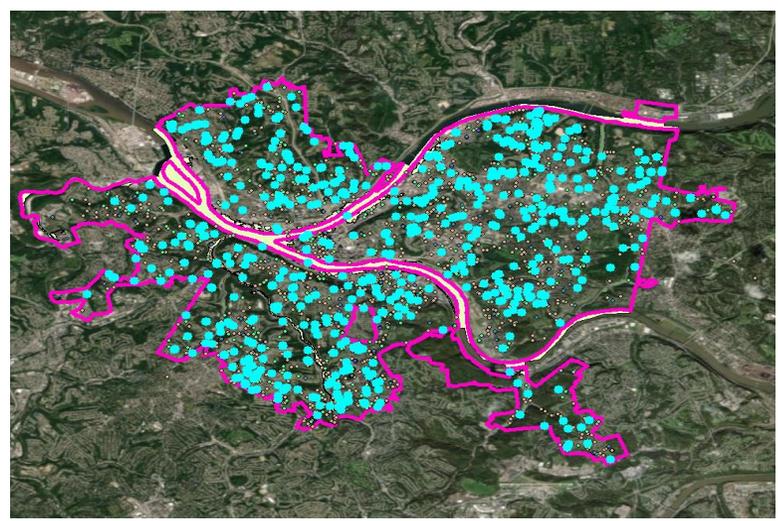
## 2017



## 2018



## 2019



# Map of Landslide Incidents by Incident Source

Pittsburgh, PA

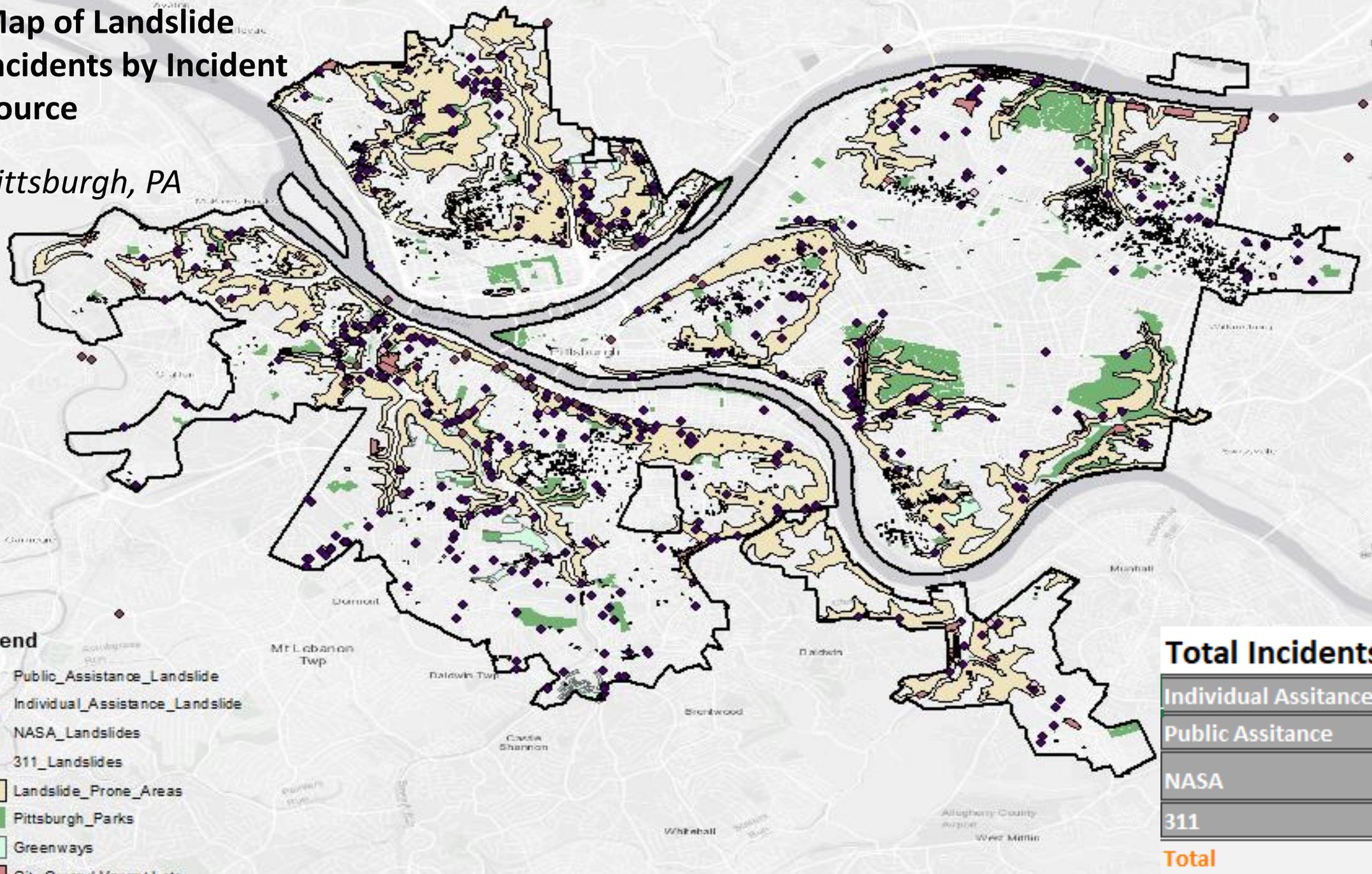


Figure 20

- Legend**
- ◊ Public\_Assistance\_Landslide
  - ◊ Individual\_Assistance\_Landslide
  - ◊ NASA\_Landslides
  - ◊ 311\_Landslides
  - Landslide\_Prone\_Areas
  - Pittsburgh\_Parks
  - Greenways
  - City Owned Vacant Lots

## Total Incidents by Source

Individual Assitance	28
Public Assitance	9
NASA	51
311	680
<b>Total</b>	<b>768</b>

Map data: © 2023 Esri, DeLorme, Garmin, IGN, Intermap, Inc., Swire, GeoEye, USDA, USGS, AeroGRID, IGN, Esri, Air Photo, USDA, NOAA, CNES, Airbus, GeoEye, USDA, USGS, AeroGRID, IGN, Esri, Air Photo, USDA, NOAA, CNES, Airbus, GeoEye

# Elizabeth Cook

Duquesne Light





We are a nonprofit organization working to preserve affordable home ownership and revitalize neighborhoods. RTP provides critical home repairs, accessibility modifications and energy-efficiency upgrades to those in need, at no cost to them.

Presented by Lucy de Barbaro, program manager at RTP

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# Who We Serve and How



- Allegheny County Homeowners living in a low-income household - families that are typically between 200% - 150% less than Federal Poverty Guidelines

## 2019 IMPACT

- **134** homes made safer and healthier for **207** residents and their families!
- **\$3.1 Million** spent on materials, suppliers and subcontractors
- **\$23,000** average per home investment
- **759** individual volunteers meaningfully engaged
- **\$150,000** leveraged for our clients through coordination with other service providers

Residential Energy Efficiency has been previously housed at CCI which merged with RTP in June 2020.

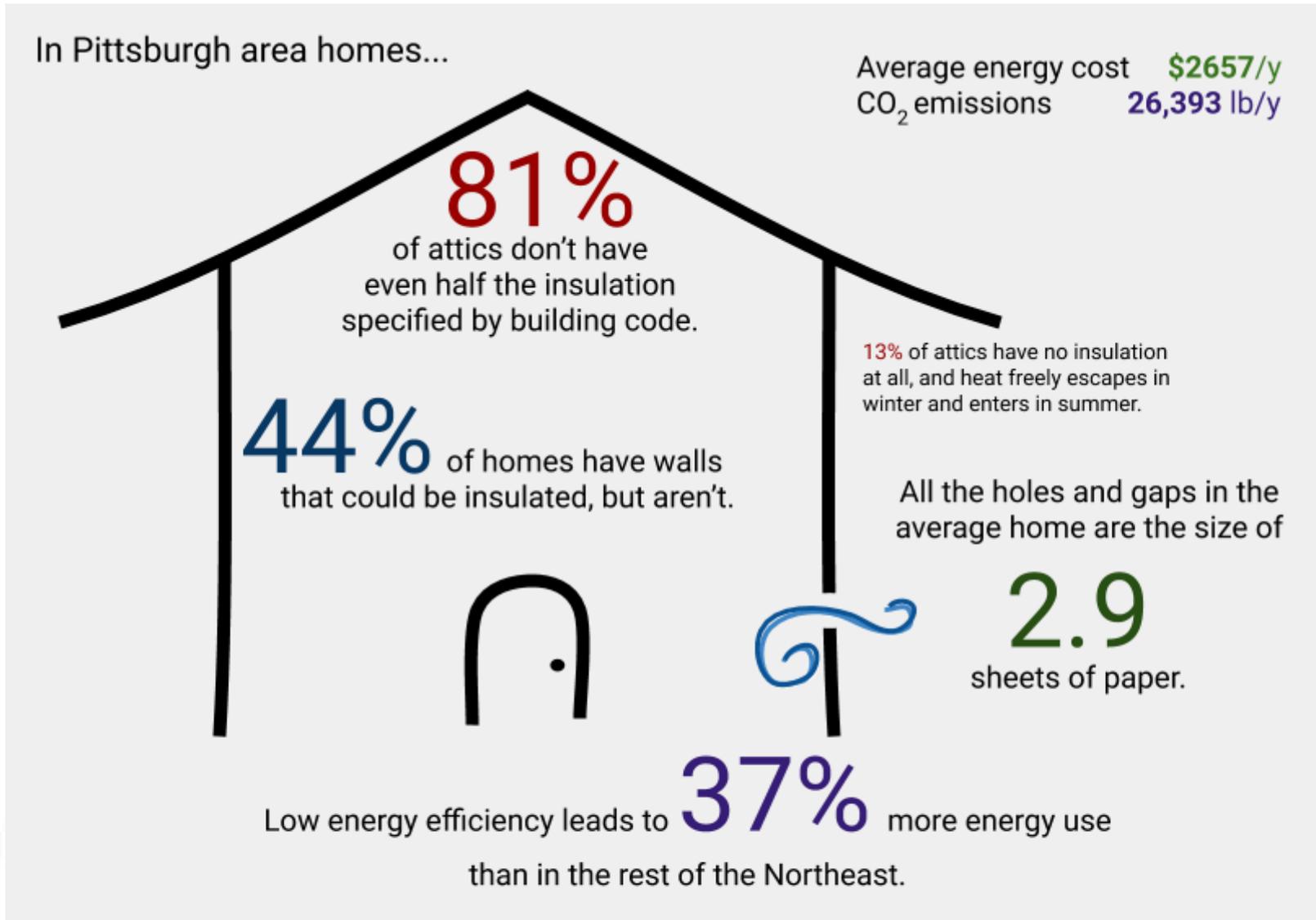


Energy education  
delivered to 300+ residents  
in Oakland & Uptown

2016-2017 program, ran by CCI in collaboration with Uptown Partners, OPDC and GTEC, delivered 15% electricity and 1% heating savings through 12-month long educational engagement with 300+ residents of Oakland and Uptown, and raised awareness of home health issues that are common in our region, like radon, lead, mold.

Additionally, 20 homes received weatherization-style energy efficiency improvements; average improvement was 22% at an investment of \$9,000 per home.

CCI also established specific knowledge of Pittsburgh area homes, as we have performed over 400 energy audits for a fee or as part of low-income programs



Pittsburgh homes are twice as leaky as national average

We receive average Home Efficiency Score of 2.8 (scale 1-10); national average is 4.7

Average age of home: 1930, national: 1963

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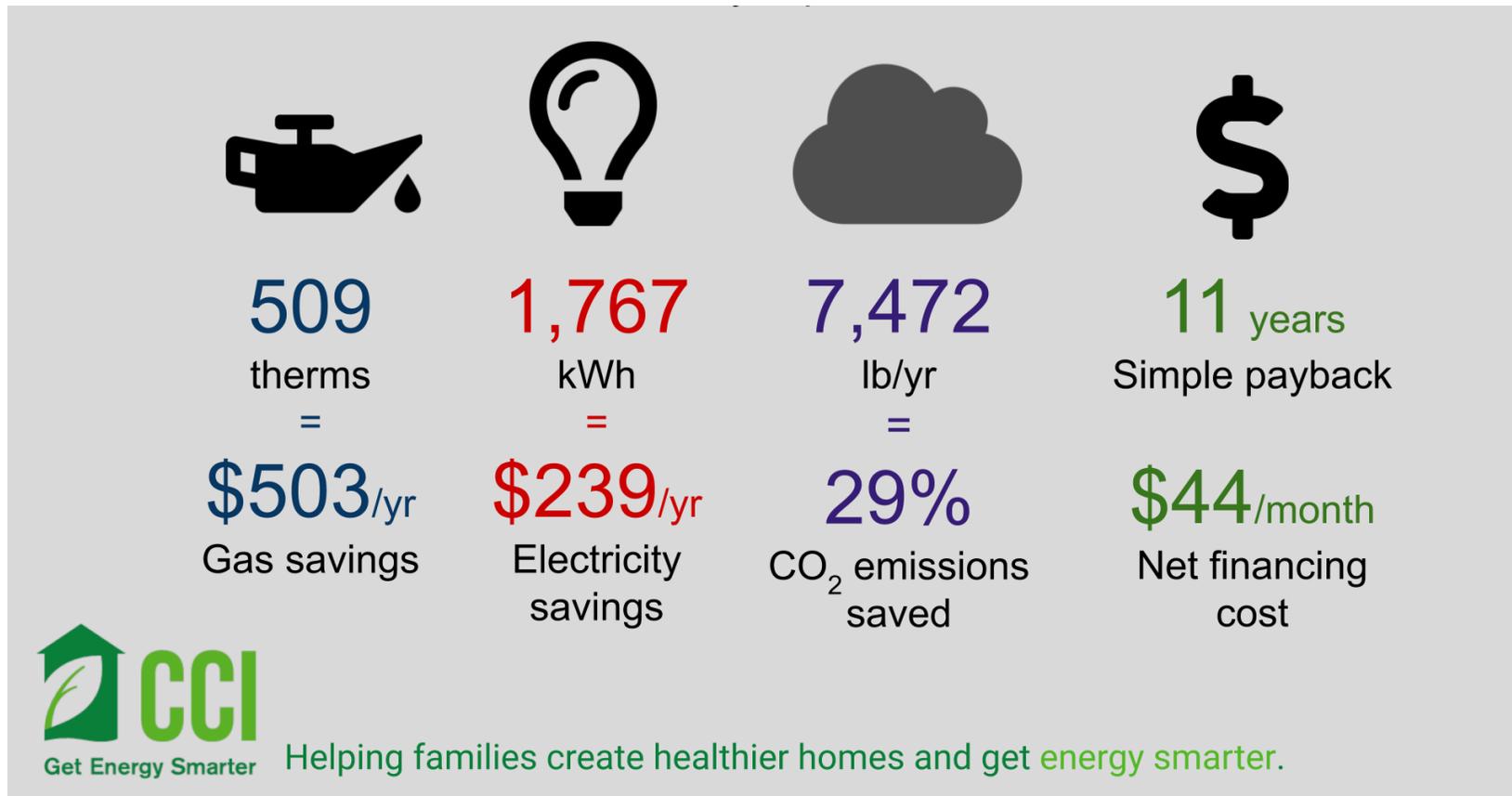
# Typical improvements for homes:

However, sometimes homeowners here face these additional barriers to EE:

- Knob and tube wiring (very costly to bring up to code; insulation cannot be added with k&t)
- Brick/masonry walls that cannot be easily insulated (23% of homes, compared to 1.5% nationally)
- Moisture in the basement: wet basement should not be air-sealed; again, remediation can be rather costly
- Leaky roof, etc. needs upgrade before EE can be implemented

- Seal the leaks into the attic, at basement rim joists, and at doors and windows  
**(#MostCostEffective measure)**
- Seal ducts in unconditioned spaces
- Add insulation
- Upgrade furnace or AC
- Add storm windows

We have helped homeowners to understand the specific recommendations for homes, as well as energy saving potential and cost of energy efficiency improvements. Energy Efficiency can pay for itself:



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# Valuation of Energy Efficiency (EE)

Improving valuation of EE would help homeowners get a fair payback for investments that save energy and reduce emissions, and it would drive future demand for retrofits

## What we need:

- Value EE in real estate transactions, require energy audit at the time of sale or refinancing, account for efficiency in appraisals and in mortgage lending
- Support benchmarking, like home energy scores
- Otherwise improve transparency of home energy consumption, for both rental and non-rental homes
- Access to utility data is key to:
  - Identifying cost-effective energy-saving opportunities
  - Measuring performance
  - Driving innovation, behavior changes
- Strong adoption and enforcement of EE in building codes and in development projects that receive tax incentives, etc.

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# Equity: Addressing High Energy Burdens & Helping Low- and Middle-Income Families

## What we need:

### Legislation to

- Reauthorize and expand WAP (116th –Weatherization Enhancement and Local Energy Efficiency Investment and Accountability Act, HR 2041)
- Raise income eligibility for LIHEAP, allow states to use 30% of funding for WAP
- HOPE for HOMES (HR 2, HR 4447) –support for weatherization work force (hit by Covid-19) as well as incentives for energy efficiency; rebate amounts doubled for moderate income households. See <https://www.building-performance.org/hope4homes> for sign-on letters

Quoted from ACEEE Energy Efficiency & Climate Policy Forum 2020, presentation by K Rinaldi of AnnDyl Policy Group

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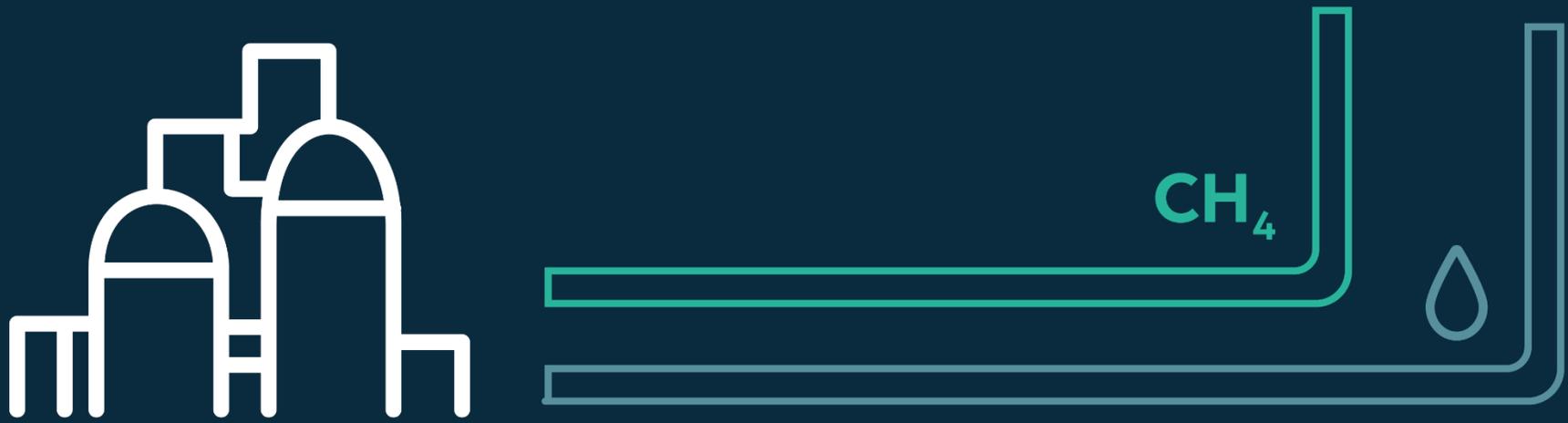
# RTP's 2021 outlook

- In 2021, EE component will be added to all RTP retrofit projects, assuming critical home repairs leave some room in the project's budget. RTP will tackle air sealing, attic insulation and some additional low-cost EE measures
- We have funding for West Oakland, Hill District and Uptown from McAuley Ministries and expect to serve 15 local homeowners in 2021
- RTP served Oakland through URA's HAP program, however, this is currently not open for applications
- Homeowners in AC with total household income below 60% of the [Allegheny County Area Median Income \(AMI\)](#) can fill out our interest form <https://www.rtpittsburgh.org/apply> but it is not a guarantee of service and will depend also on funding for that community.
- For-fee energy audits are available at <https://www.rtpittsburgh.org/sound-home-plan>
- DIY EE resources: <https://getenergysmarter.org/diyresources>
- Any questions ? [ldbarbaro@rtpittsburgh.org](mailto:ldbarbaro@rtpittsburgh.org)

# Megan Zeigler

## 2030 and Oakland Energy Masterplan



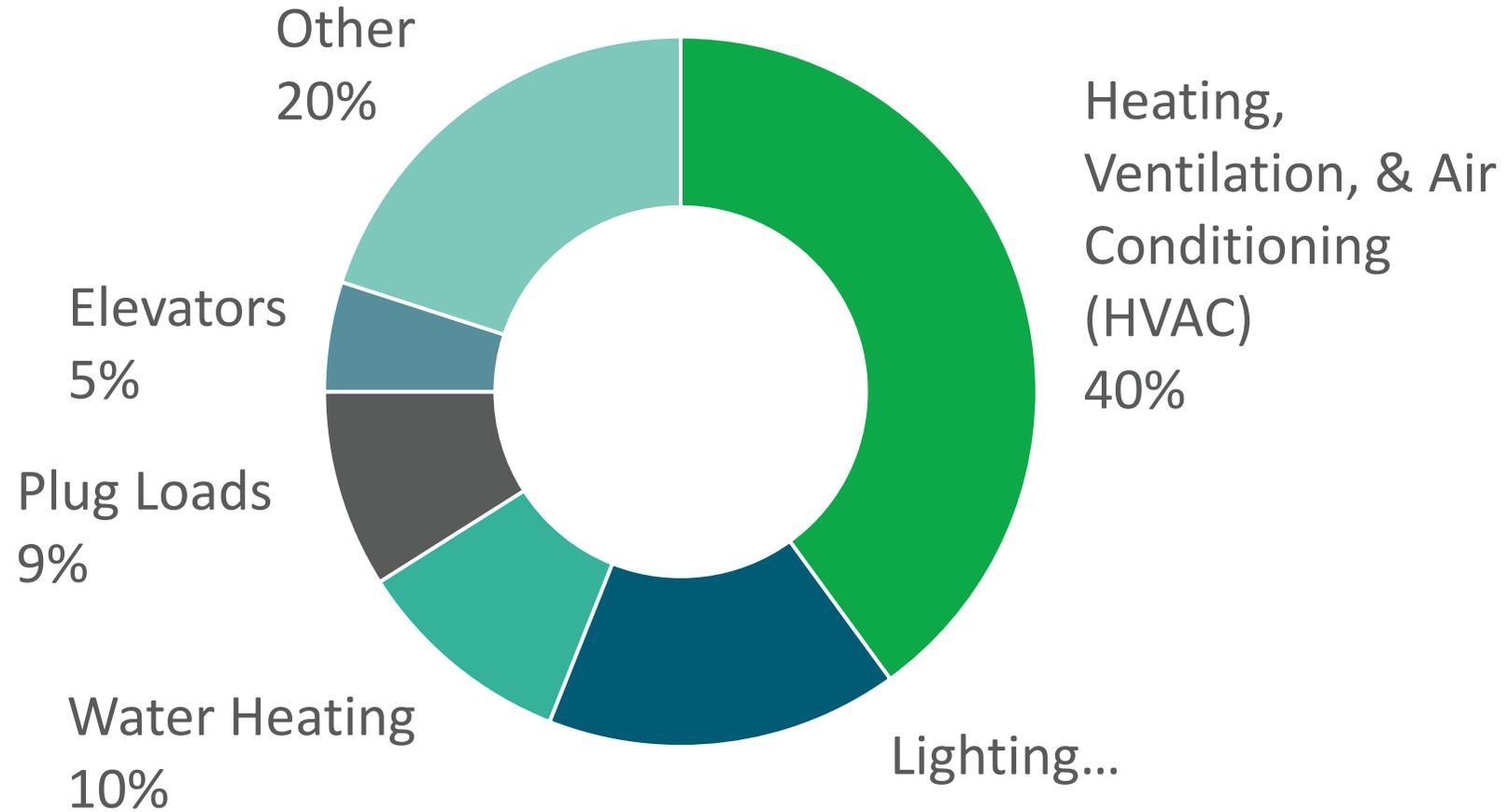


Electricity use reductions in a building  
save

3 times

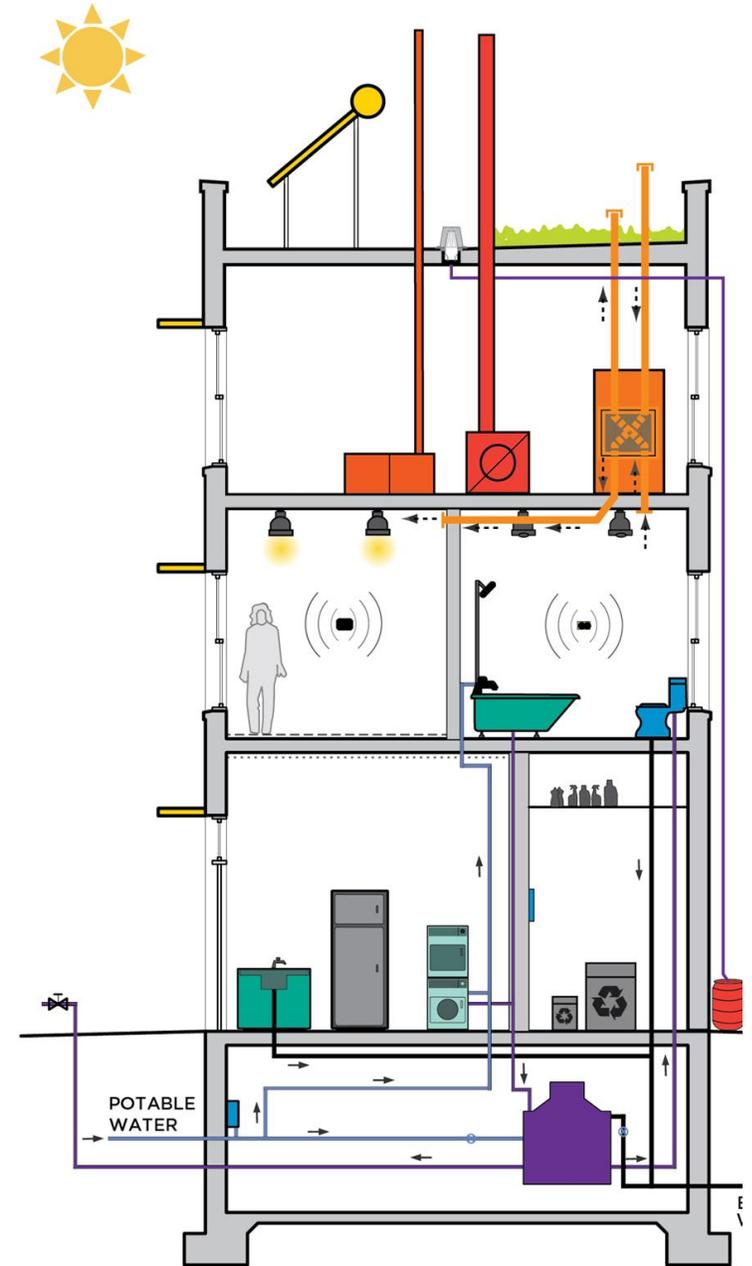
that amount at the power generation plant  
due to thermal and transmission losses

# Average Building Energy Breakdown



# Whole Building Approach

All systems must work together in sync – lighting, HVAC, plumbing, and building envelope



# 556 BUILDINGS COMMITTED

SQUARE FEET  
COMMITTED



2019  
**23.1%**  
ENERGY  
REDUCTION

**19.8%**  
WATER  
REDUCTION

**26%**  
CO<sub>2</sub> EMISSIONS  
REDUCED FROM  
TRANSPORTATION  
(2018 DATA)

**122**  
BUILDINGS'  
INDIVIDUAL IAQ  
DATA

**\$43M**  
DOLLARS  
SAVED

# Current Commitment

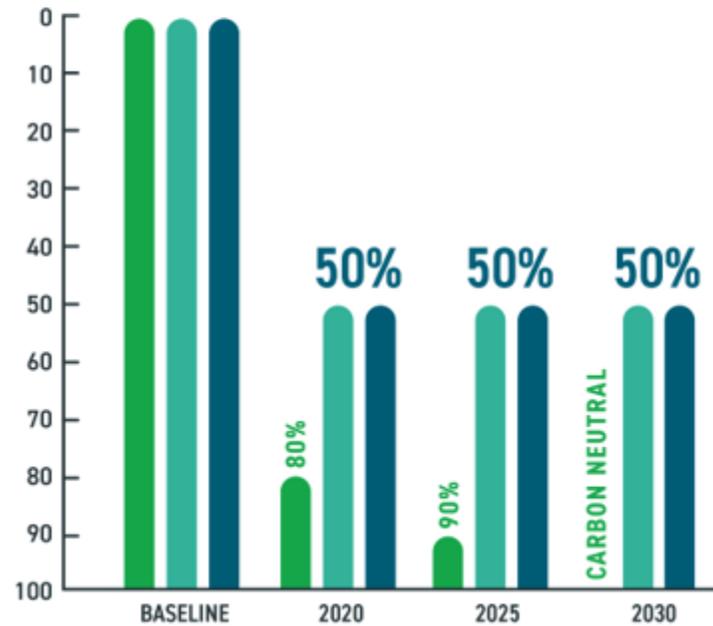
ENERGY USE  
WATER USE  
CO<sub>2</sub> FROM TRANSPORTATION

## The 2030 Challenge

### EXISTING BUILDINGS



### NEW BUILDINGS & RENOVATIONS



# Oakland Energy Master Plan

## Overarching Goals

- **Clean Energy:** low-carbon and renewable sources; radical reduction of carbon emissions and pollutants in order to achieve 50% reduction in energy use by 2030 and set a path for carbon neutrality
- **Reliability:** ensure delivery of high quality power; maintain low frequency and duration of outages
- **Resilience:** energy system durability and redundancy (especially for critical use facilities such as hospitals)
- **Affordability:** maintain market competition to keep energy/utility rates reasonably low
- **Predictability:** monitor and manage energy market changes; minimize rate volatility
- **Transparency:** clarity regarding cost/price of energy; understanding of market forces that affect cost/price
- **Local Control:** greater consumer control regarding energy resources and energy providers
- **Economic Development:** channel energy revenue to local economy; help drive business and job creation
- **Innovation:** solve problems, develop scalable solutions, and create opportunities, create intellectual property and support entrepreneurship
- **Justice:** achieve and maintain equity; protect vulnerable populations and promote energy literacy

# Project Timeline

July 2019 – March 2020

March 2020 – December 2020

January 2021 – June 2022

July 2022 – 2050

## Planning and RFQ

- Interviews
- Mapping Workshops
- RFQ Development
- Consensus building

## Funding and RFP

- Shortlisted the RFQ Responses
- Notified all firms
- Developed a cost share calculation
- Developed an MOU
- Refining the RFP

## Selection

- RFP Release and firm selection
- Secure funding
- Complete the scope of all 3 Phases
- Establish an implementation strategy

## Implement

- Collaborate on energy improvements when appropriate
- Building and district system upgrades as needed