# Tackling Energy Transition Through Planning: How Planning, Goal Setting, and Collaboration Can Lead to Results

PA APA Conference

10/12/25

# Introductions


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# Municipal Pressing Issues Discussion

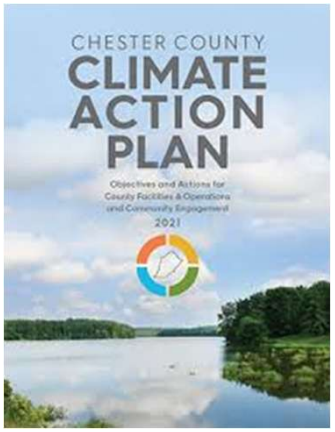
Issues:

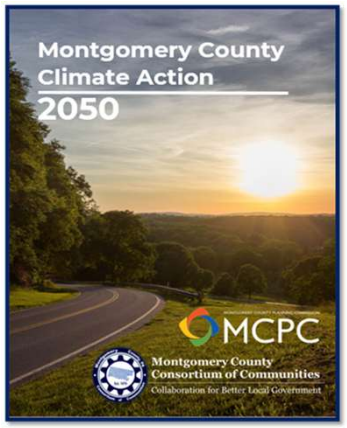
# Regional Context

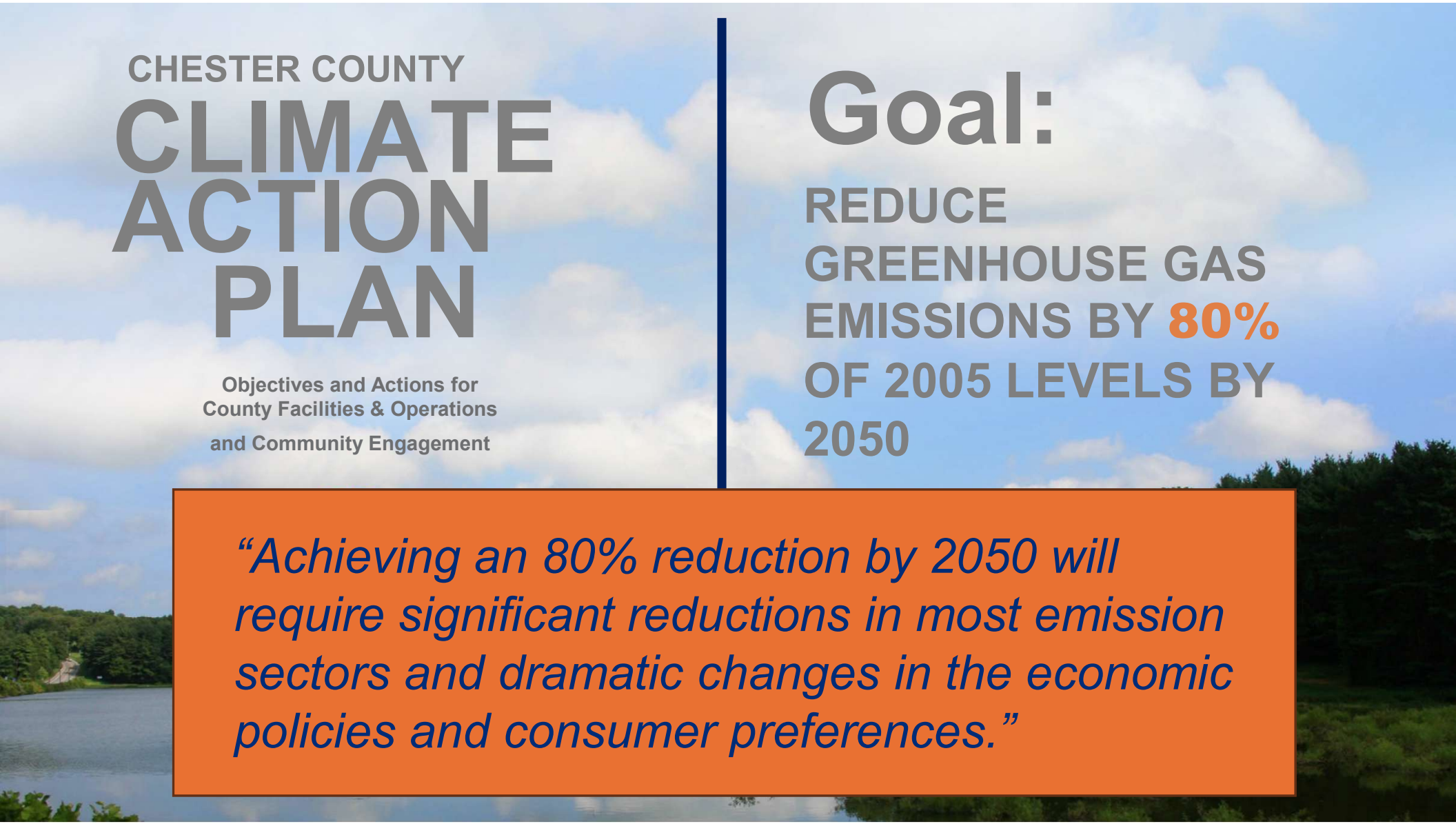
CLIMATE ACTION PLAN

Philadelphia MSA

dvrpc







CHESTER COUNTY

# CLIMATE ACTION PLAN

Objectives and Actions for
County Facilities & Operations
and Community Engagement

## Goal:

REDUCE GREENHOUSE GAS EMISSIONS BY **80%** OF 2005 LEVELS BY 2050

*"Achieving an 80% reduction by 2050 will require significant reductions in most emission sectors and dramatic changes in the economic policies and consumer preferences."*

CHESTER COUNTY

# CLIMATE ACTION PLAN

BUILDINGS AND ENERGY

62%

TRANSPORTATION AND LAND USE

27%

WASTE MANAGEMENT

3%

AGRICULTURE, FOOD, AND FORESTRY

3%

## CHESTER COUNTY FACILITIES & OPERATIONS ACTIONS

## COMMUNITY-WIDE ENGAGEMENT ACTIONS

Plan identifies potential impact, priority, timeframe, and primary implementer(s) for each action.

# MONTCO 2050 CLIMATE ACTION

## OUR VISION

To empower and encourage the people, business, and communities of Montgomery County to become healthier, sustainable and more resilient to climate change by:

**REDUCING** greenhouse emissions across public and private sectors,

**TRANSITIONING** to clean, renewable sources of energy and transportation,

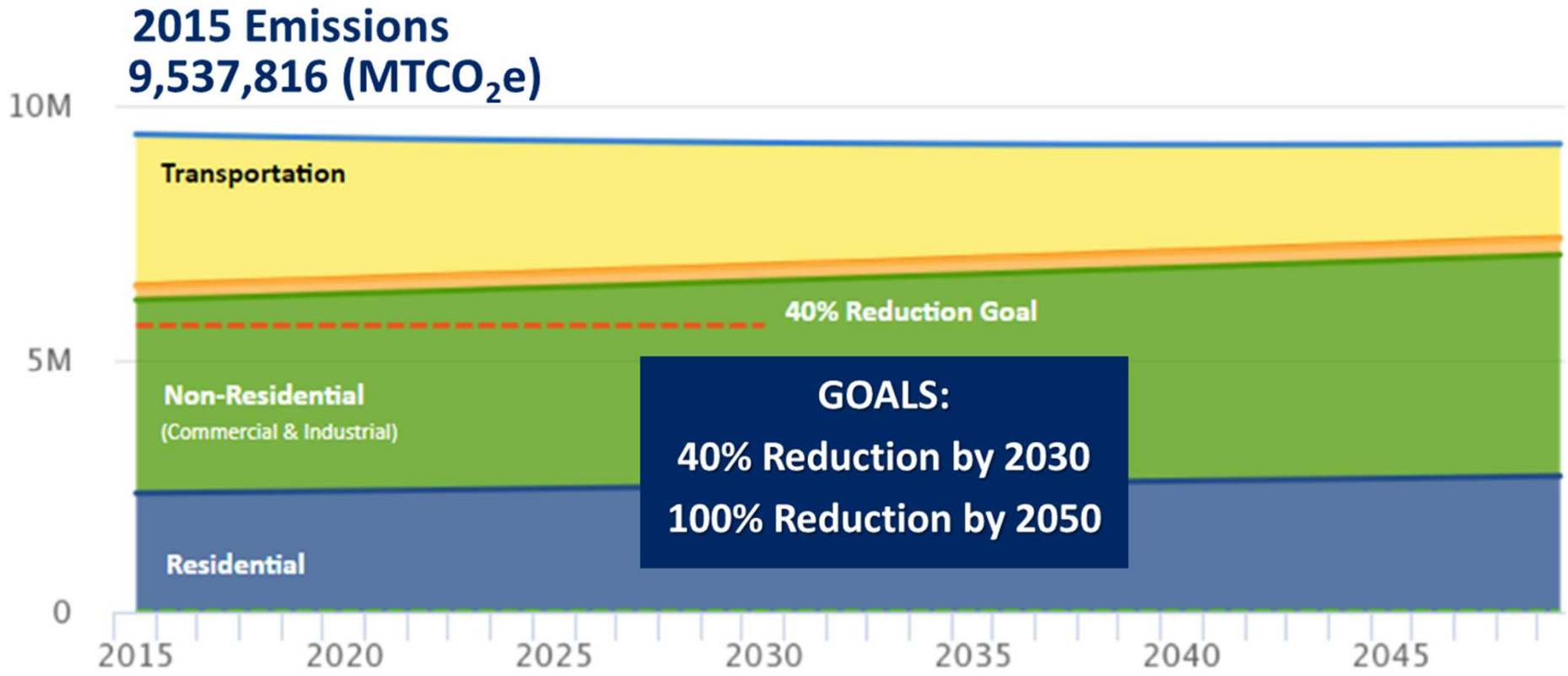
**PRESERVING** our environment through adaptation and resiliency planning, and

**ESTABLISHING** a framework for regional collaboration to combat climate change.

MONTCO 2050
CLIMATE ACTION

## Regional GHG Forecast, 2015-2050

"Business as Usual" Model with no Additional Measures Taken



## Plan Strategies

MONTCO CLIMATE ACTION 2050

- The writing team debated how to tackle this section.
- We are covering a broad geographic area filled with many different types of communities.
- We wanted to draft strategies that cast a wide net. This is a guiding and supporting document for our stakeholders.
  - Support existing actions tackling climate change
  - Support a broad swath of future actions tackling climate change and related issues.

# LESSONS LEARNED

**The most important things, from an organizational culture perspective:**

- Quantitative targets
- Buy-in from other departments
- Willingness to take risks/try new things
- Account for climate in budget decisions
- Staff capacity

- **Scope for a county-wide climate action plan is difficult**
- **Planning is like an onion…lot of layers layers**
- **Need to find champions**

CHESTER COUNTY Planning COMMISSION

# Ordinance Tools

How Planners Can Promote Change

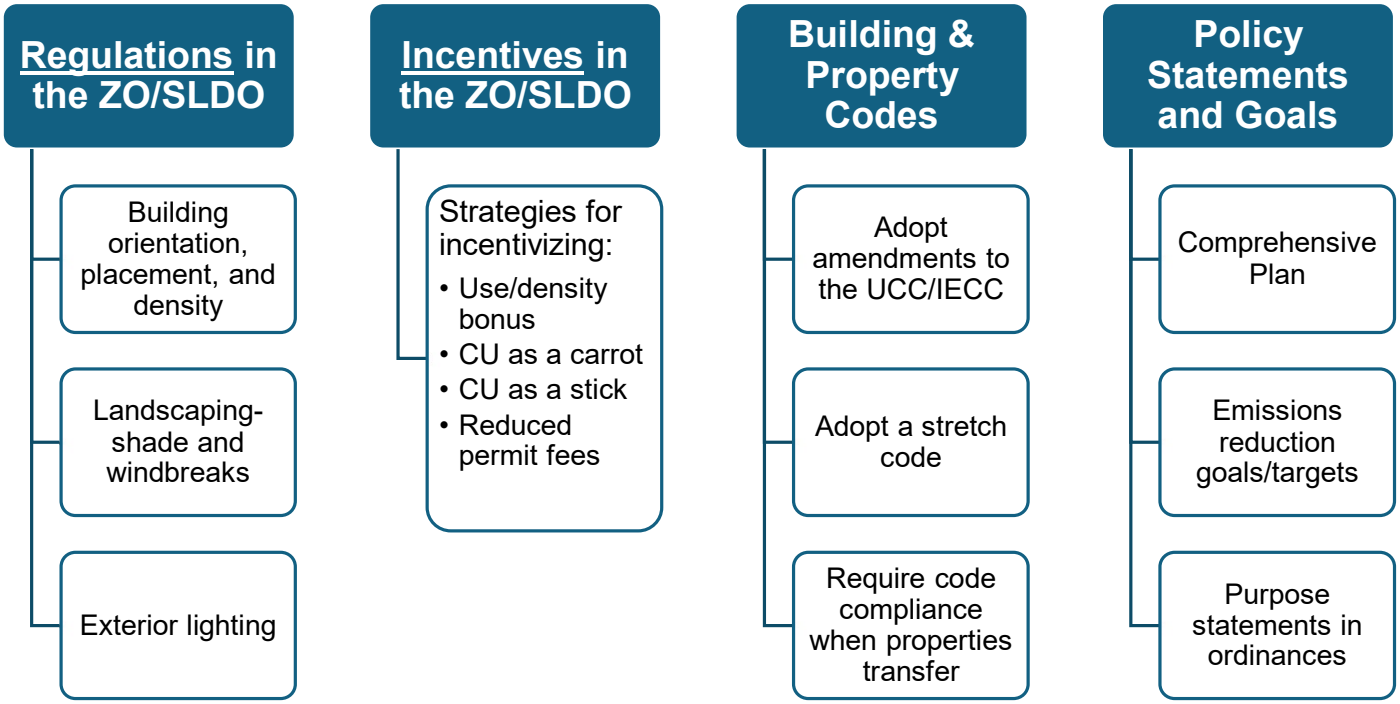
# Building Energy Ordinance Toolkit

- Strategies & examples for regulating and incentivizing energy transition at the local level
- Most of these strategies have already been implemented in one or more PA municipalities

CHESTER COUNTY Planning COMMISSION

MONTGOMERY COUNTY PLANNING COMMISSION MCPC

# Regulating Building Energy
## IN MUNICIPAL ORDINANCES



# Regulating Building Energy
## IN ZONING AND SUBDIVISION ORDINANCES

## EXAMPLES:

**Narberth Borough (**Montgomery County)
- Energy efficiency requirements for conditional use approval for apartments and institutional buildings

**Kennett Township** (Chester County)
- Permits additional bldg. height in exchange for renewable energy, green building design, or TDRs in commercial district

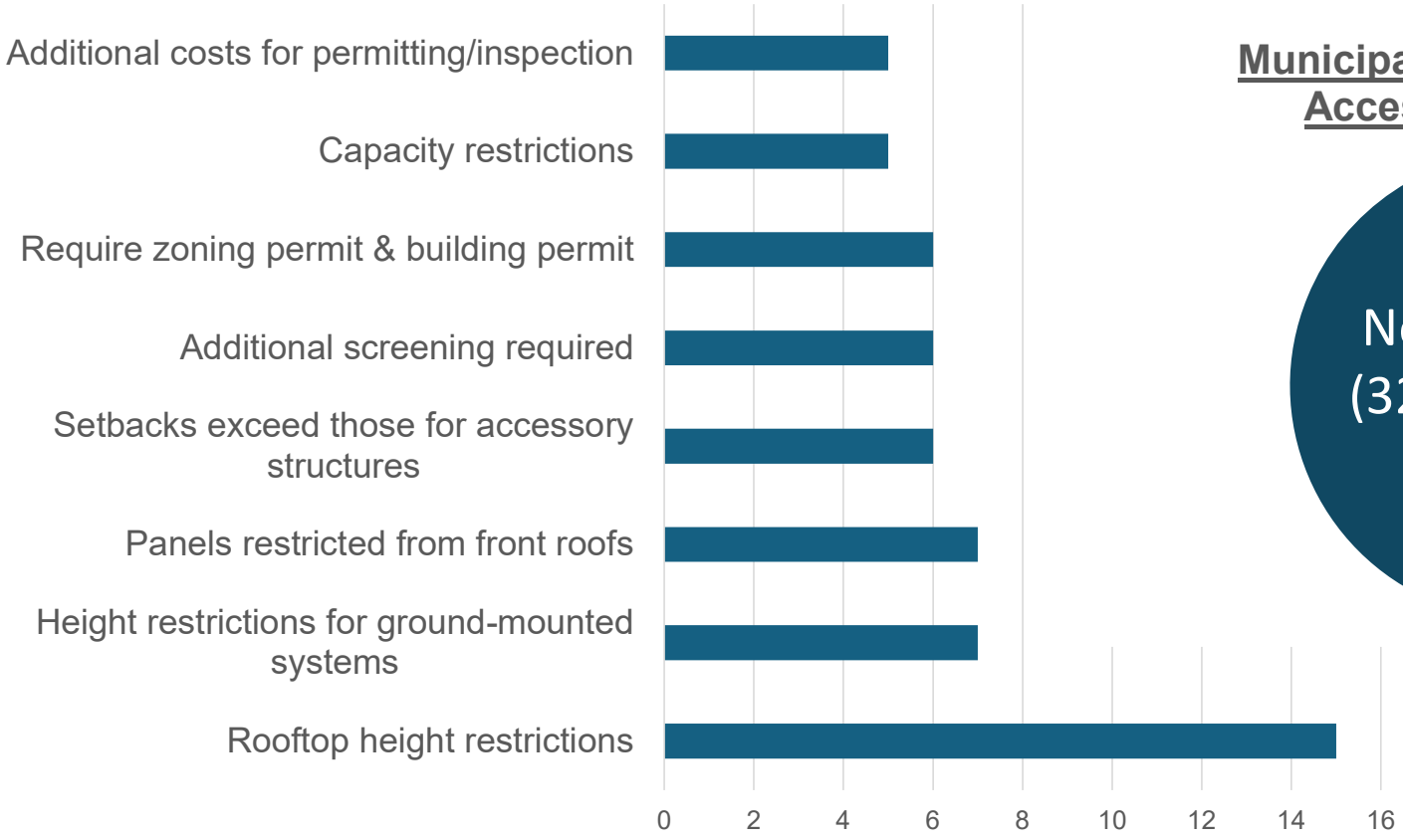
**City of Chester (**Delaware County)
- Increased site design flexibility for green roofs, LEED, EV charging, and pervious pavement.

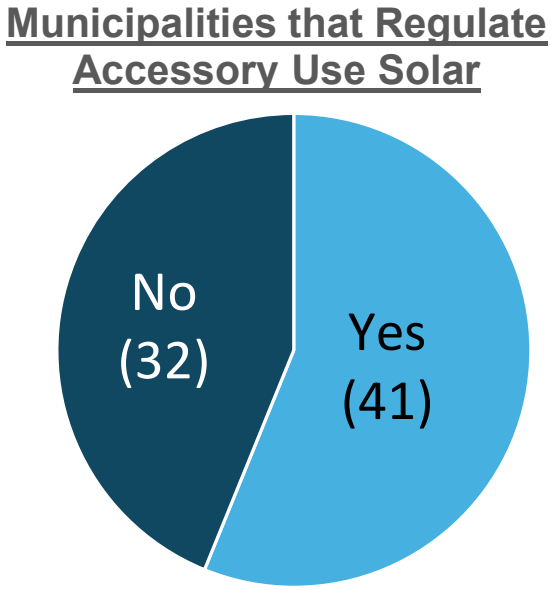
**Doylestown Twp.** (Bucks County)
- Awards points for green building elements, and each point equates to a 1% reduction in permit fees

# SOLSMART

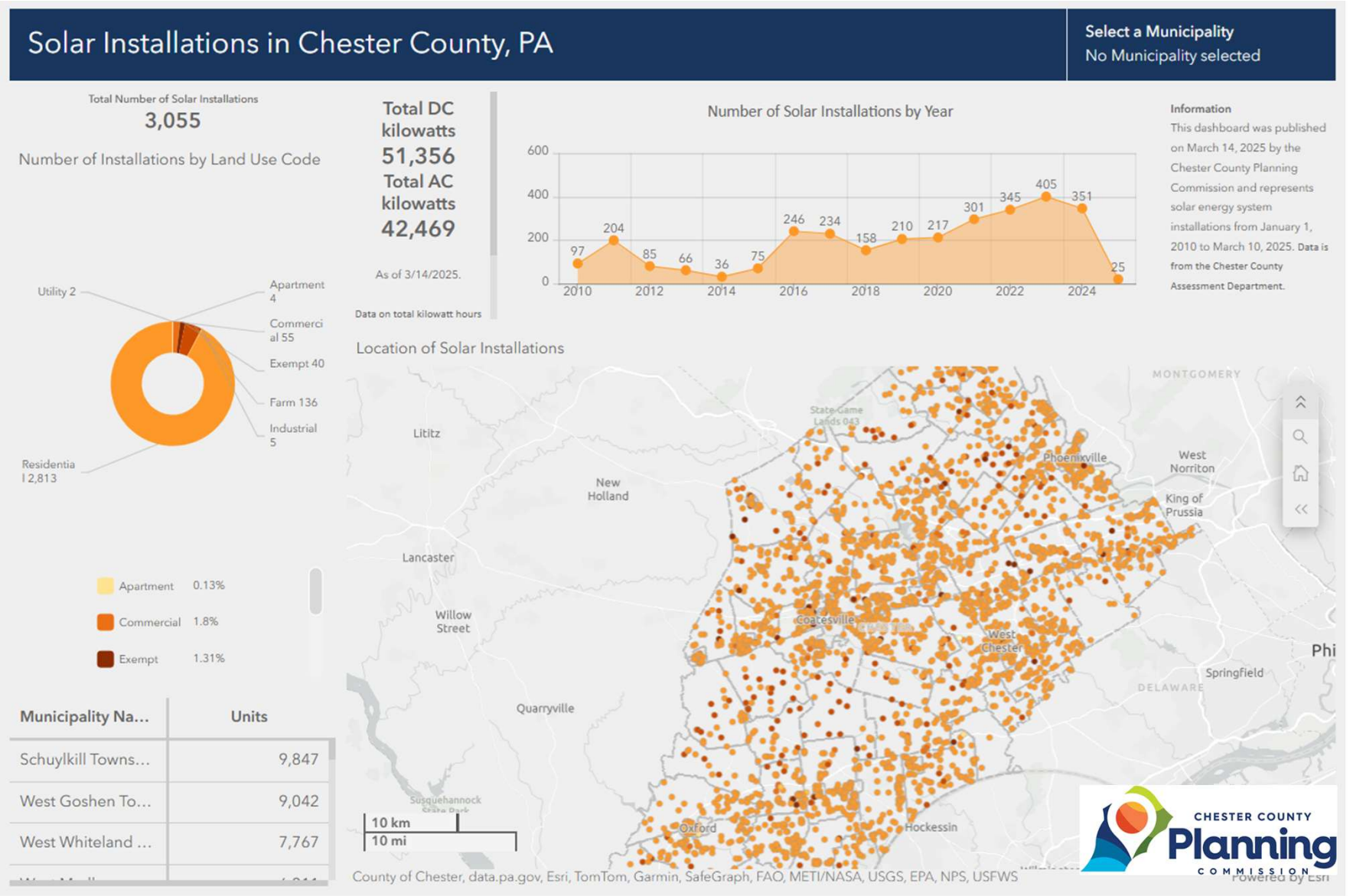
NATIONALLY DISTINGUISHED. **LOCALLY POWERED.**

# Solar ordinance inventory



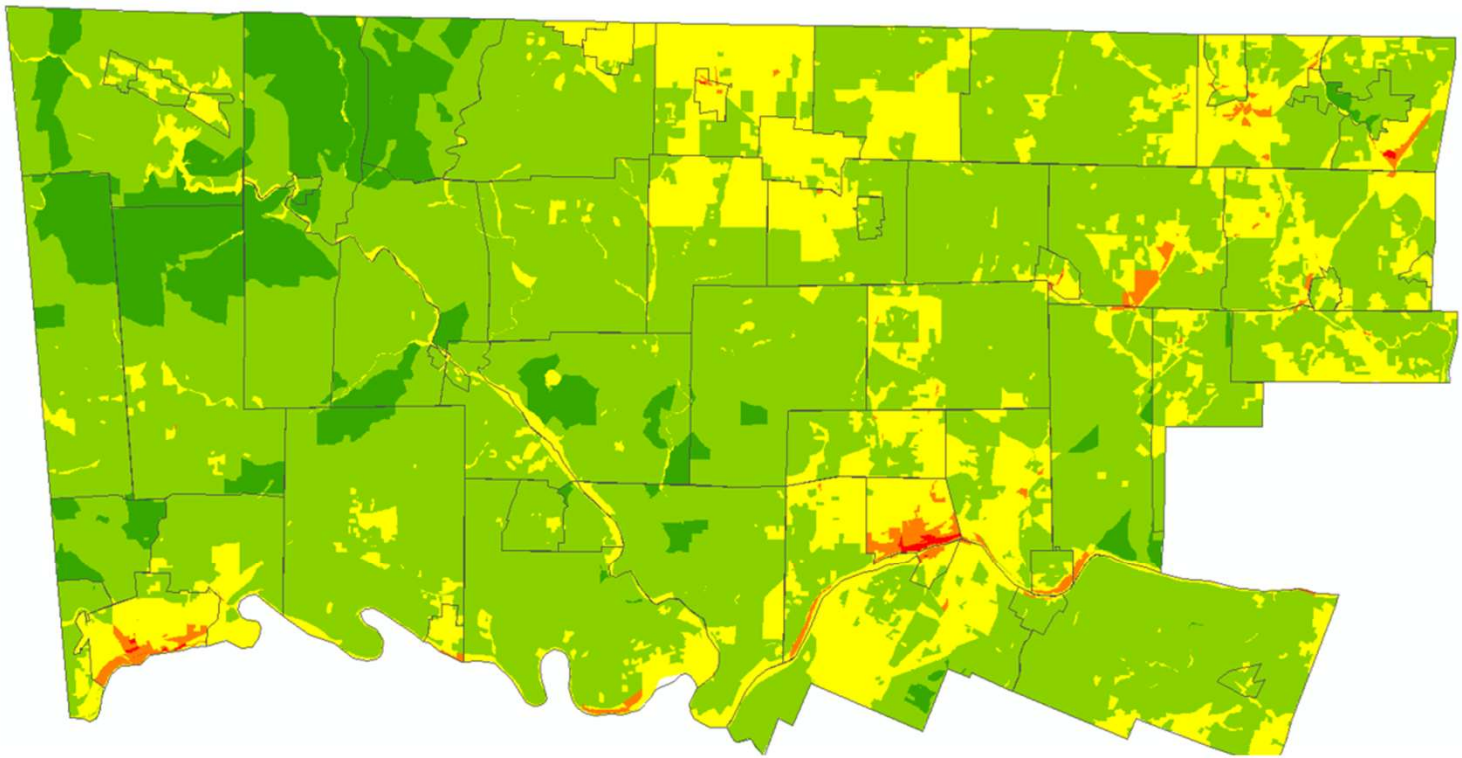
# Solar map


Solar Installations in Chester County, PA
Select a Municipality
No Municipality selected
Total Number of Solar Installations
3,055
Number of Installations by Land Use Code
Utility 2
Apartment 4
Commercial 55
Exempt 40
Farm 136
Industrial 5
Residential 2,813
Apartment 0.13%
Commercial 1.8%
Exempt 1.31%
Total DC kilowatts
51,356
Total AC kilowatts
42,469
As of 3/14/2025.
Data on total kilowatt hours
Number of Solar Installations by Year
600
400
200
0
97
204
85
66
36
75
246
234
158
210
217
301
345
405
351
25
2010
2012
2014
2016
2018
2020
2022
2024
Information
This dashboard was published on March 14, 2025 by the Chester County Planning Commission and represents solar energy system installations from January 1, 2010 to March 10, 2025. Data is from the Chester County Assessment Department.
Location of Solar Installations
Municipality Na...
Units
Schuylkill Towns...
9,847
West Goshen To...
9,042
West Whiteland ...
7,767
Lititz
New Holland
Lancaster
Willow Street
Quarryville
Phoenixville
West Norriton
King of Prussia
Coatesville
West Chester
Springfield
DELAWARE
MONTGOMERY
Oxford
Hockessin
10 km
10 mi
County of Chester, data.pa.gov, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS
CHESTER COUNTY Planning COMMISSION

SUSTAINABLE HOAs CHESTER COUNTY

- **HOA Sustainability Summit** and follow-up topical info sessions
- Web-based **resource library**
- Created a template for HOAs to create **Sustainability Action Plans**

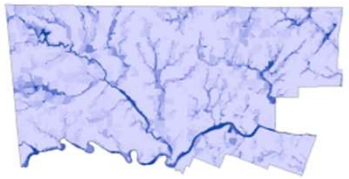
# CLIMATE CHANGE POTENTIAL VULNERABILITY ANAYLSIS

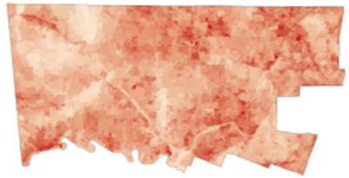


Potential Risk

Low Value — High Value

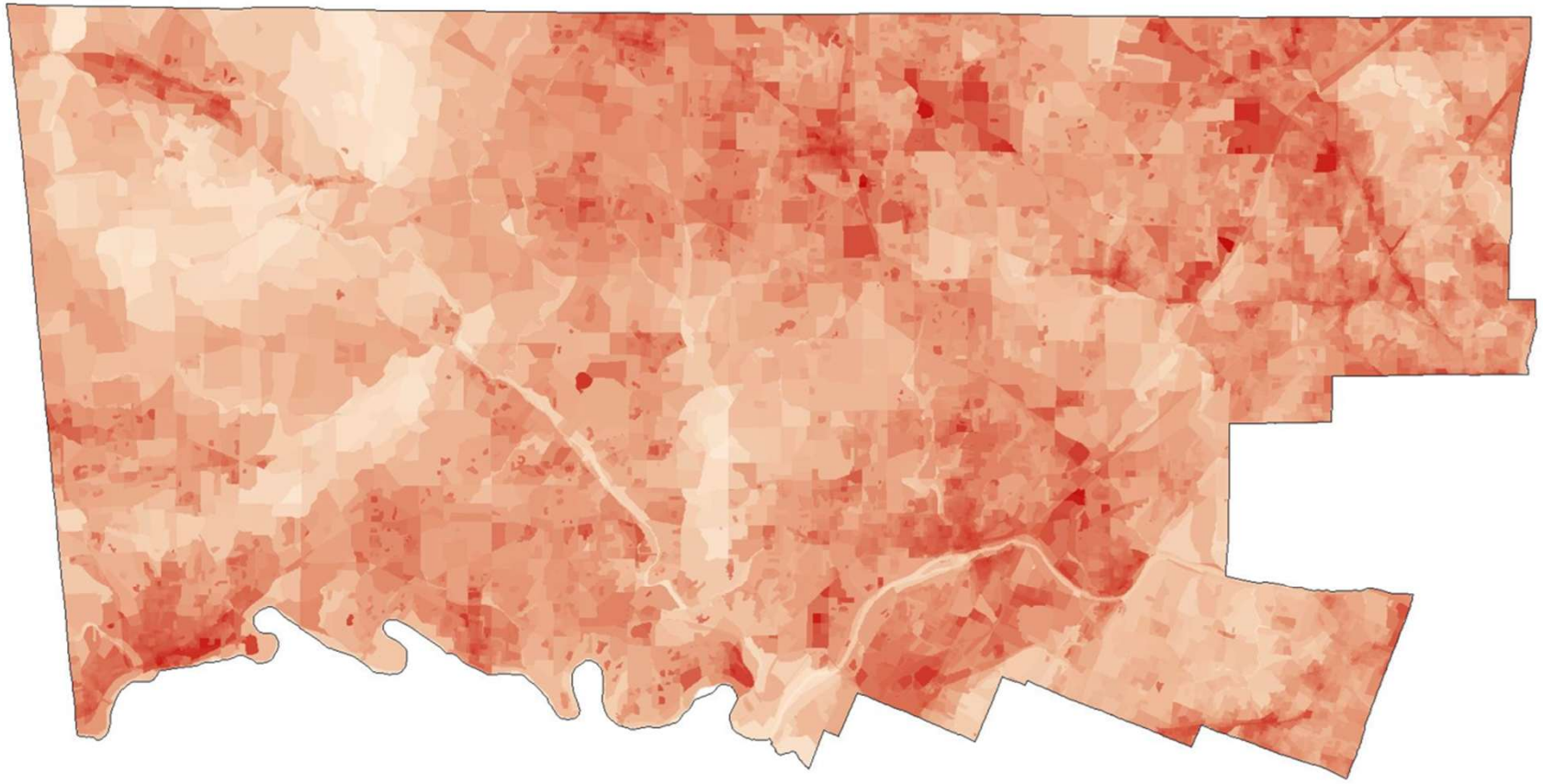
Each Index contributes equally to the final climate change potential impact value.





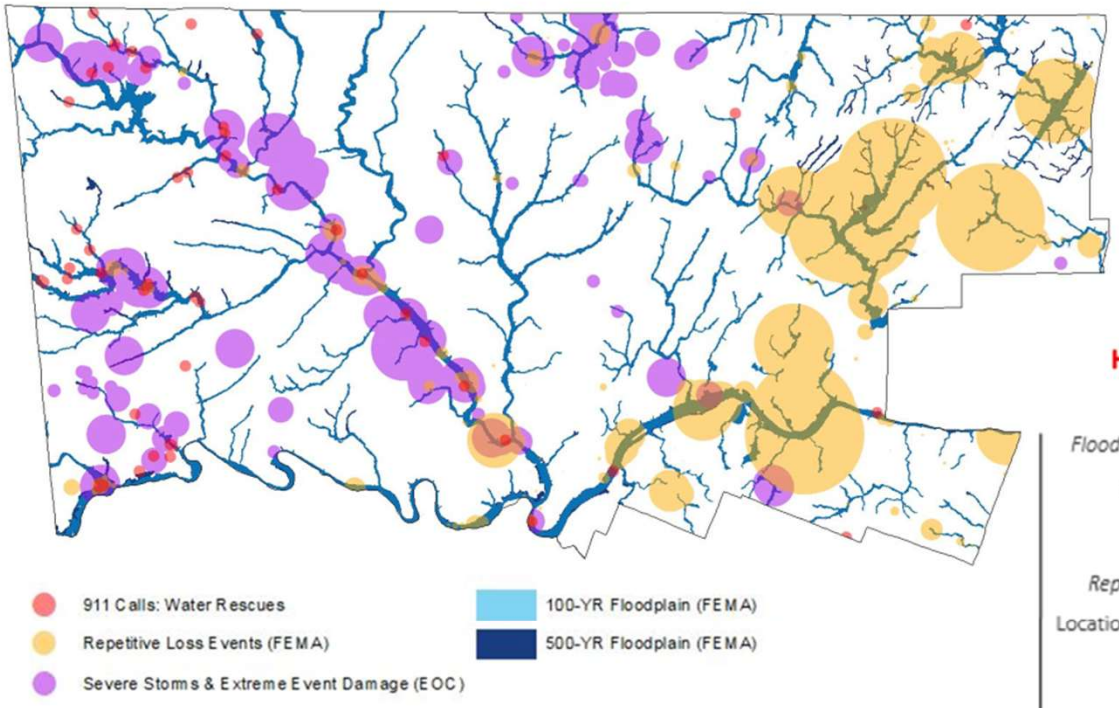
Montgomery County, PA
Planning Commission

# FACTOR 1: HEAT RISK INDEX




Montgomery County, PA
Planning Commission

# FLOOD RISK DATA INPUTS




All indicators were ***weighted subjectively*** by the Montgomery County Planning Commission's Environmental Section.

**HIGH IMPACT**
8 – 20 PTS

*Flood Zone Designations*
100-YR Areas

*Repetitive Loss Events*
Locations For Repetitive Loss Properties

*Flood Zone Designations*
500-YR Areas

**MEDIUM IMPACT**
4 – 6 PTS

*Severe Storms + Extreme Events*
Locations For All Damage Types

*Degree Of Damage From Severe Storms + Extreme Events*
Types Of Damage

*Repetitive Loss Events*
Total Monetary Losses Paid

**LOW IMPACT**
0 –2 PTS

*911 Calls: Water Rescues*
Locations For All Water Rescues

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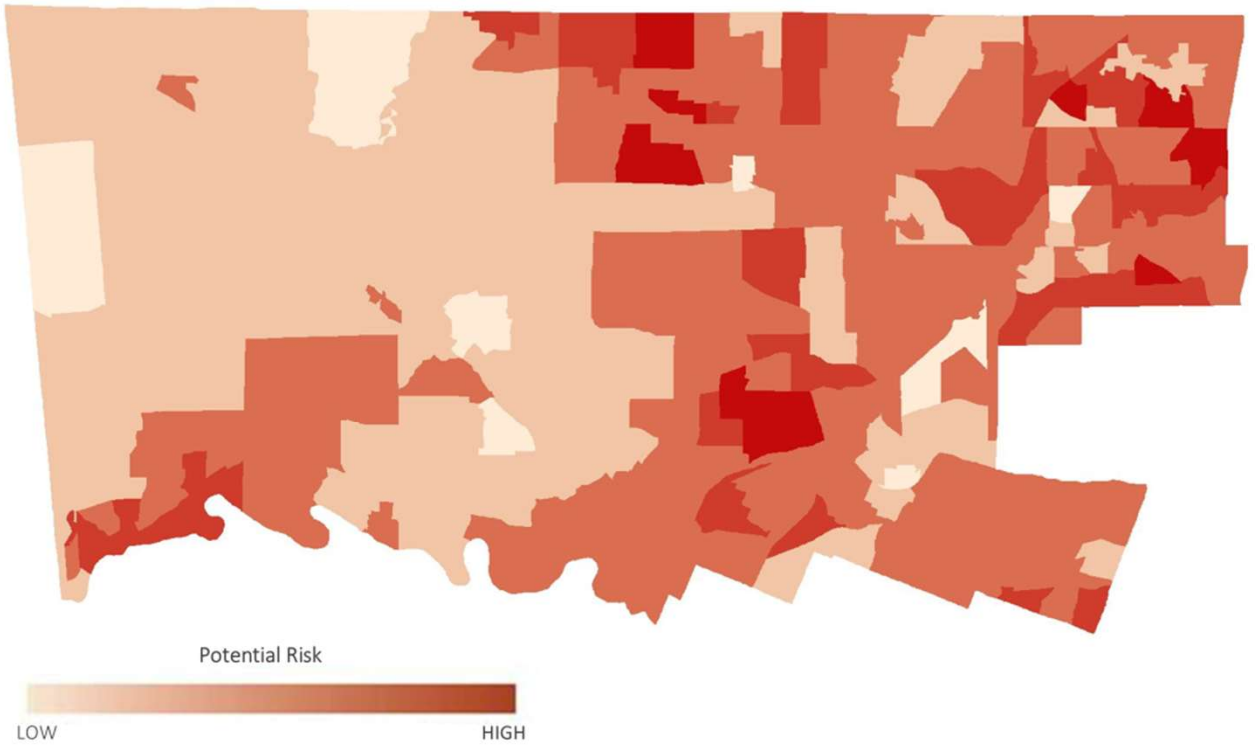
Planning Commission

# DVRPC'S INDICATORS OF POTENTIAL DISADVANTAGE (IPD)

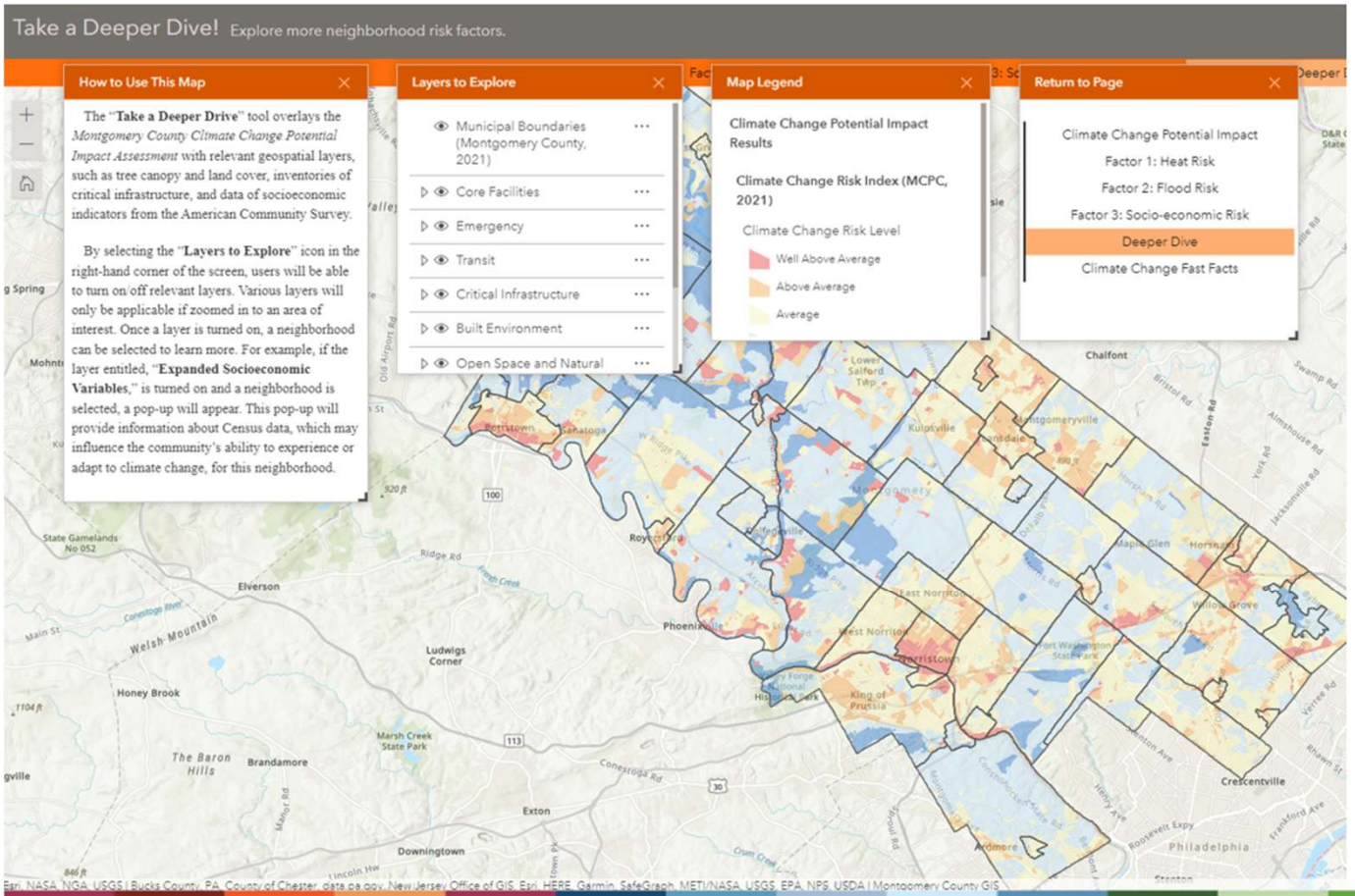
The IPD analysis identifies populations of interest under Title VI and EJ using U.S. Census American Community Survey (ACS) 2014-2018 five-year estimates data and maps these populations in each of the *Census tracts* in the region via GIS. Each population group is an "indicator" in the analysis and includes the following:




- FEMALE
- LOW-INCOME
- YOUTH
- ETHNIC MINORITY
- RACIAL MINORITY
- OLDER ADULTS
- FOREIGN BORN
- DISABLED
- LIMITED ENGLISH PROFICIENCY

Montgomery County, PA
Planning Commission

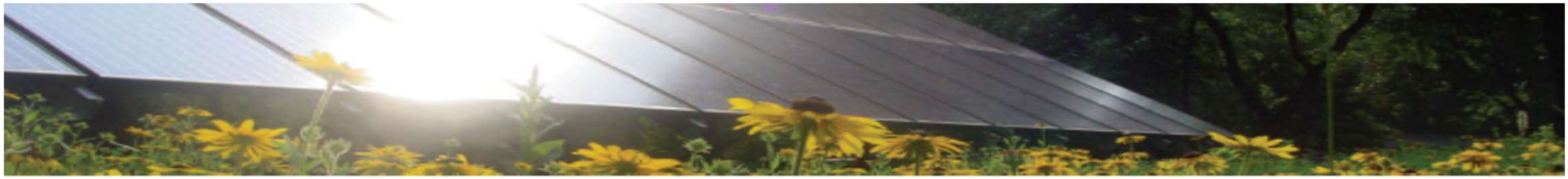
# DEEPER DIVE TOOL




We added key information to an online GIS Application enable users to understand *people, places and things* that are vulnerable and will continue to be vulnerable to climate change.

Additional information will be categorize under the characterized:

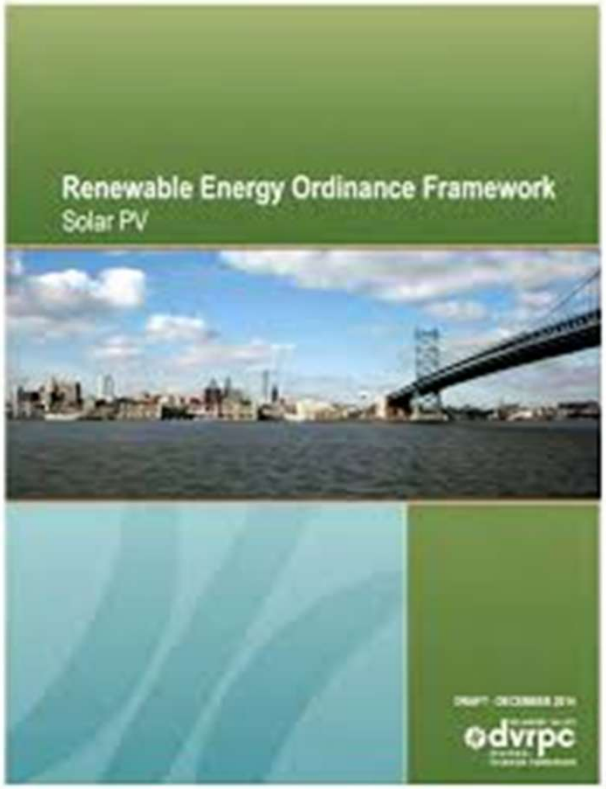
Core Facilities
Emergency Infrastructure
Critical Infrastructure + Transit
Built Environment
Open Space + Natural Features

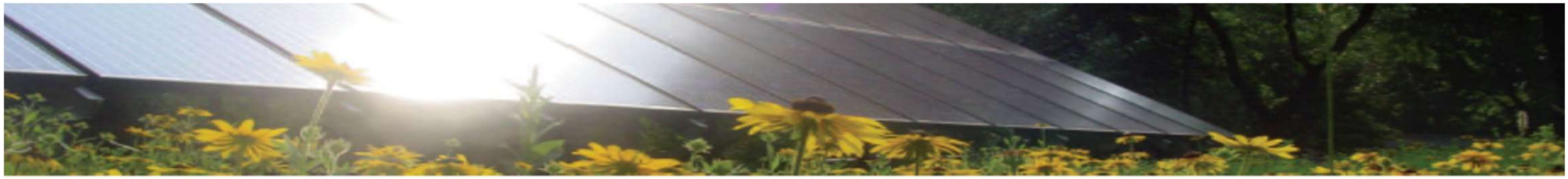


# Model Ordinance Genesis

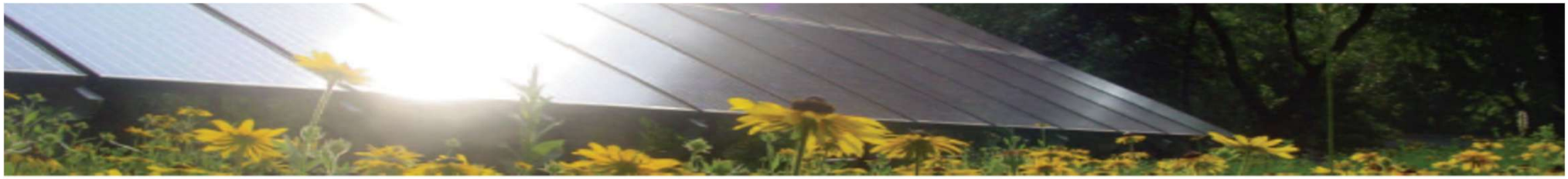
**How we got here**

- Based on DVRPC's Solar Framework
- Solar market and technologies are changing
  - There is a need to adapt
- Collaborative project spearheaded by DVRPC
  - With support of the counties with input from key stakeholders
- Montgomery County is the first to publish it
- Hope municipalities and other counties use it





East Greenville
Pennsburg
Red Hill
Upper Hanover
Marlborough
Green Lane
Salford
Telford
Souderton
Franconia
Hatfield Twp.
Hatfield Bor.
Montgomery
Lansdale
Horsham
Hatboro
Upper Moreland
Lower Moreland
Bryn Athyn
Upper Salford
Lower Salford
Towamencin
North Wales
Upper Gwynedd
Lower Gwynedd
Upper Dublin
Ambler
Abington
Rockledge
Jenkintown
Douglass
New Hanover
Upper Frederick
Lower Frederick
Worcester
Whitpain
Cheltenham
Whitemarsh
Springfield
Skippack
Perkiomen
East Norriton
Plymouth
Norristown
Limerick
Trappe
Collegeville
Lower Providence
West Norriton
Bridgeport
Upper Pottsgrove
Lower Pottsgrove
Pottstown
Royersford
Upper Providence
Upper Merion
West Conshohocken
Lower Merion
Narberth

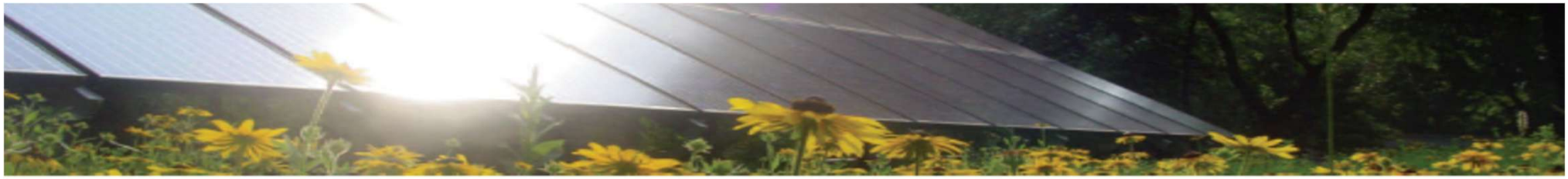


# Model Ordinance Structural Shift

**Use-based** → **Size-based**

- Accessory Use
  - Solar tied to the primary use
  - Allowed net metering but not commercial sale of energy
- Primary Use/Utility-Scale
  - Solar development meant for the commercial sale of energy

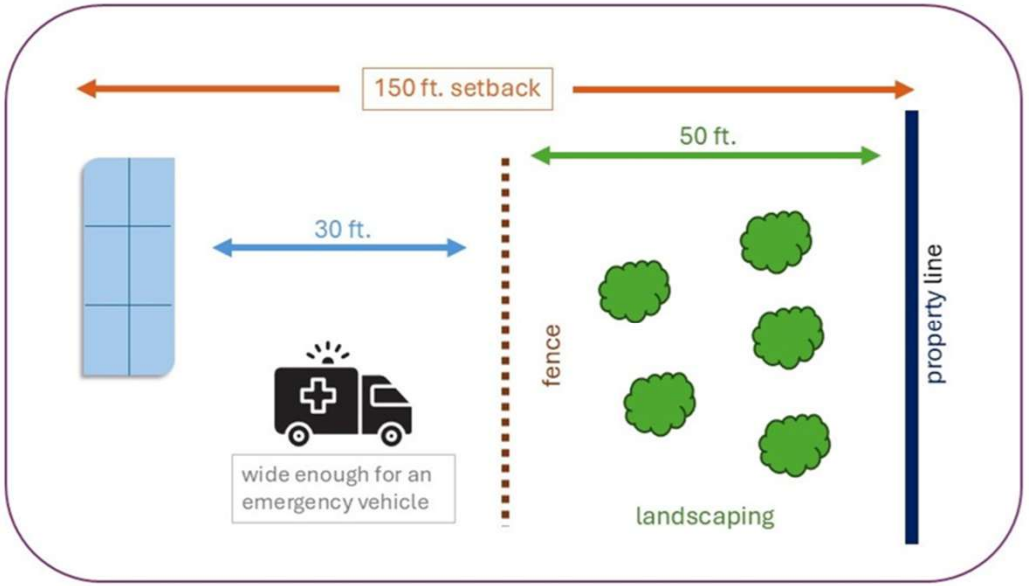
- Small
  - Less than 4,000 square feet
- Medium
  - 4,000 square feet to 5 acres
- Large
  - 5 acres or more that generate electricity for off-site use

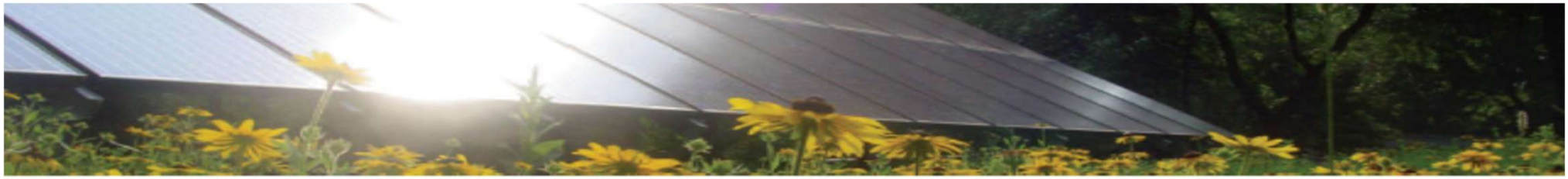


# Ordinance Issues

**Setbacks**

- Rooftop
  - Use National Fire Protection Code or an approved alternative
- Ground-mounted
  - Small and medium scale use accessory structure setbacks
  - Large scale has a 150-foot setback





# Ordinance Issues

**Safety and First Responder Issues**

- Meet all federal and state codes
- Proper signage and fencing
- Solar developer required to design and fund emergency response training before the solar panels are installed and provide training every two years
- Ensure there are interior pathways and spaces that allow emergency vehicles to navigate safely.

# What is Fully Charged?

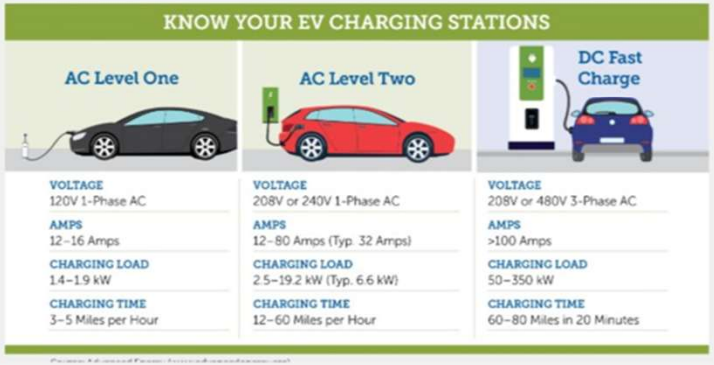
- Experience Builder product hosted on the Planning Commission's website
- Support the transition to electric vehicles (EV)
- By helping stakeholders make educated decisions about the need for, and placement of, electric vehicle infrastructure throughout the county.

# Educational Component

**Electric Vehicle & Electric Vehicle Charging Station Technology Explained**

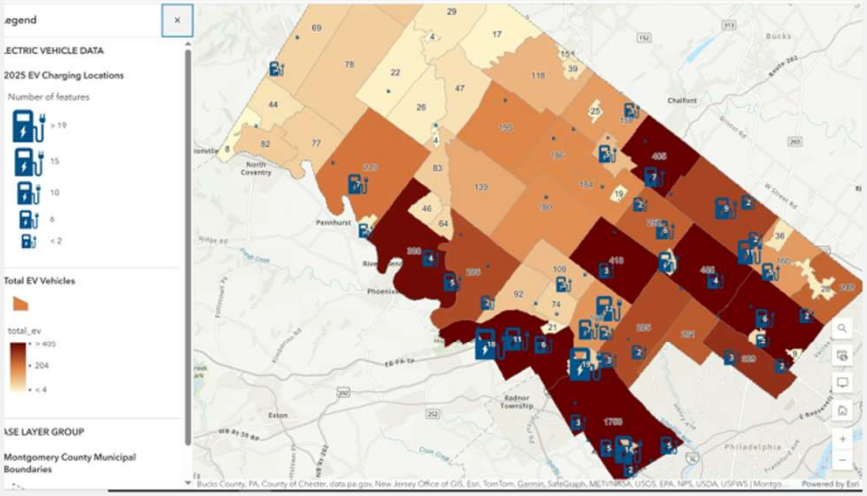
The Delaware Valley Regional Planning Commission (DVRPC) produced the study "Planning for Electric Vehicles in Montgomery County" which was created to guide investment in public electric vehicle charging stations by examining the feasibility and usefulness of installing chargers at county owned facilities in Montgomery County. The following summary of EV and EVCS technology is based on their excellent work.

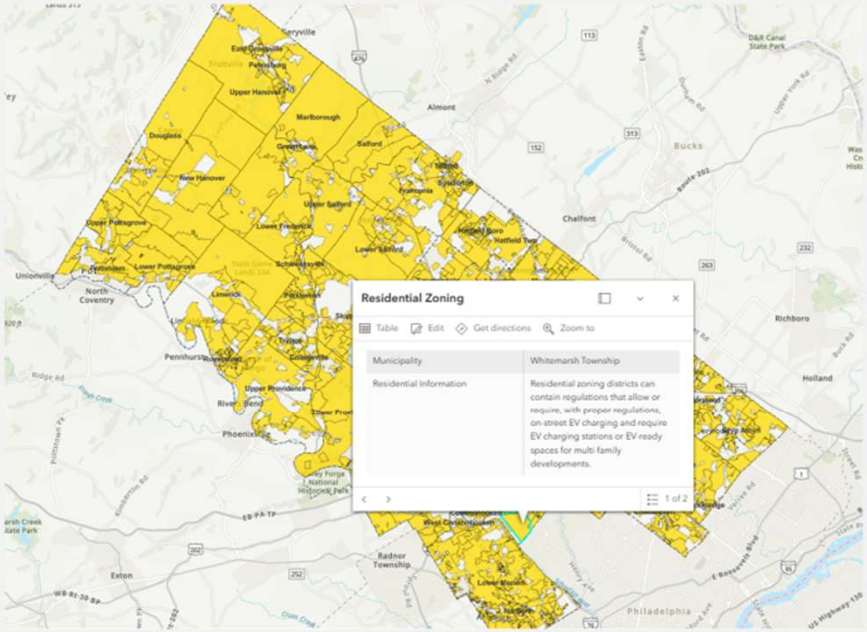
An electric vehicle (EV) is the generic term for a vehicle that gets some or all of its power from an electric motor. For the purposes of this product, "EV" only includes battery electric vehicles, plug-in electric vehicles, and plug-in hybrid-electric vehicles, omitting hybrid-electric vehicles that do not require plug-in charging. Just as internal combustion engines need to be refueled with gasoline in order to operate, EV batteries need to be charged on a regular basis using a charging station or other power source referred to as EVCS. Different types of chargers are appropriate for various needs when considering the amount of charging needed, where the vehicle will charge, the amount of time the vehicle can stop at a charging station, and the electrical wiring available to install charging equipment. There are three types of charging stations: Level 1, Level 2, and Level 3 (also called Direct Current Fast Charging or DCFC). Charging time depends on the size of the vehicle's battery and the level of charger being used, but general ranges are listed in the figure below.




- Municipal focus, but want to be accessible to all stakeholders
- Electric vehicle basics
- Electric vehicle charging stations (EVCS) basics
  - Level 1
  - Level 2
  - Level 3:
    Direct Current Fast Charger (DCFC)

# Interactive EV Mapping



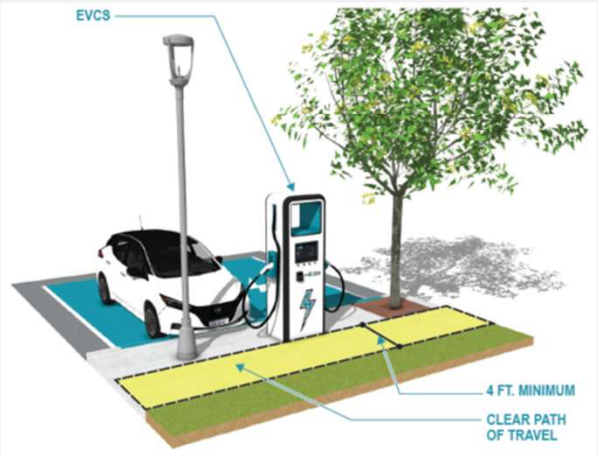
# EV Municipal Issues

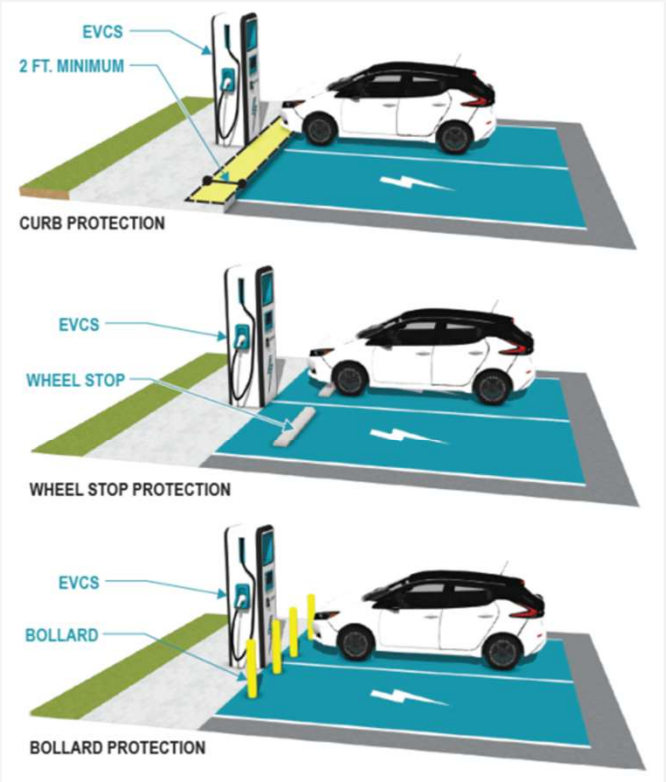
**Issues surrounding the economics of EV charging:**

- Financing the infrastructure
- Promoting charging on non-residential properties
- Permits
- Understanding who will use the chargers
- Charging costs and user turnover
- Maintenance
- Homeowners' associations
- Potential fire hazards
- Multifamily & attached housing charging (on-street charging)

# Electric Vehicle Supply Equipment and Charging Station Model Ordinance

- Charging Equipment Design Standards
  - Installation standards to ensure safety
  - Accessibility
  - Fire safety
  - Signage to ensure transparency

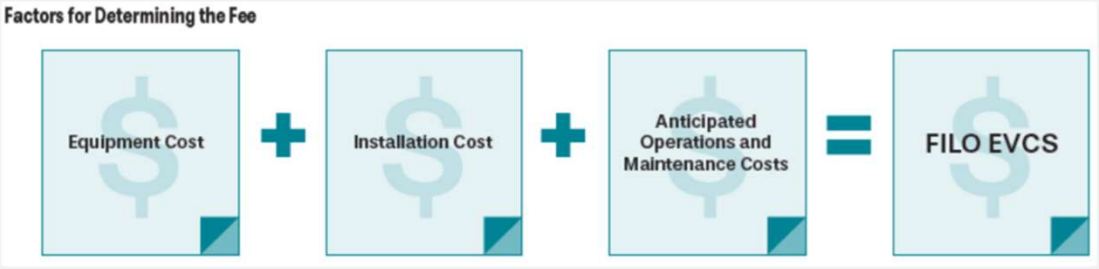




# Electric Vehicle Supply Equipment and Charging Station Model Ordinance

## Off-Street EV Charging Station Regulations

- Allowed in all zoning districts
- Parking requirements
- Safety standards for parking garages
- Fee-in-lieu of option




## Residential On-Street EV Charging Station Regulations

- Allowed in the public right-of-way
- Recommended the spot is reserved, but enforcement fall on the EVCS owner

## Municipal EV Charging Station Regulations

- Gives the municipality latitude in installation
- Ensures safety and consistency

# Zoning Success & Challenges Discussion

Successes:

Challenges:

# Regional Tools

Planning & Tools at a Regional Level Finding Success In a Larger Arena with More Resources

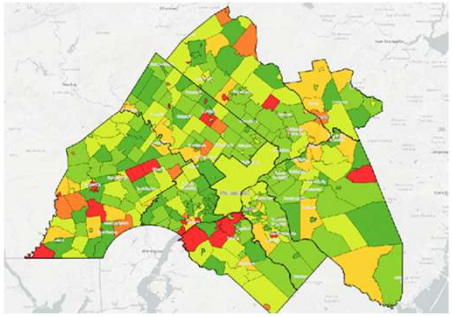
# Climate Action Planning

**Regional Climate Action Plan:** Planning process for net-zero GHG emissions by 2050 for the Philadelphia Metropolitan Statistical Area (MSA)

- Priority Climate Action Plan (PCAP) completed March 2024
- Comprehensive Climate Action Plan (CCAP) due Dec. 2025

CLIMATE ACTION PLAN
Philadelphia MSA
dvrpc

**Regional Greenhouse Gas Inventory:** Economy-wide inventory that is allocated to the county and municipal levels and published every five years



*GHG Inventory Map*

**Energy Transition Framework:** High-level framework outlining pathways to a net-zero transition in the buildings and electricity sectors for the Greater Philadelphia region

# DVRPC Office of Sustainable Energy Programs

**Turnkey Support** to assist municipalities (77 to date) with converting streetlights to LEDs.

SUSTAINABLE ENERGY PARTNERSHIP OF SOUTHEAST PA

**Facilitated Decision-Making** to support SE PA counties with procurement of large-scale renewables for operations.

SUSTAINABLE BUILDINGS COLLABORATIVE
ENERGY BENCHMARKING PROGRAM
dvrpc

**Standardized Policy Education and Implementation** to bring a benchmarking program to SE PA municipalities.

**Southeast PA Regional Energy Center**

**Establish an Administrative Backbone** to scale regional energy transition work effectively.

# Tools You've Used Successfully

Let's end on a good note...what's worked for you?