



# Update on Carlisle Borough's Climate Action Plan Implementation

Climate Change Advisory Committee (CCAC)

Councilman Joel Hicks

October 24, 2023

# Pennsylvania Local Climate Action

D \*\*

- ICLEI Local Governments for Sustainability – USA hired as contractor
- College student matched with local government
- ICLEI trains student on inventory tool (fall semester) and climate action planning (spring semester)
- Final product: 20 GHG inventories & 20 local climate action plans

- ✓ Caln Township
- ✓ Narberth Borough
- ✓ Jermyn Borough
- ✓ **Carlisle Borough**
- ✓ Derry Township
- ✓ Armstrong Township
- ✓ Bellefonte Borough
- ✓ Indiana Borough
- ✓ Millvale Borough
- ✓ Etna Borough
- ✓ Sharpsburg Borough
- ✓ West Homestead Borough
- ✓ Borough of Munhall
- ✓ Elizabeth Township
- ✓ Borough of Forest Hills

- ✓ City of Reading
- ✓ City of York
- ✓ Chester County
- ✓ Erie County
- ✓ Centre Region Council of Governments

\*\* (Funded through DOE's State Energy Program for PA) – Cost: \$60,000

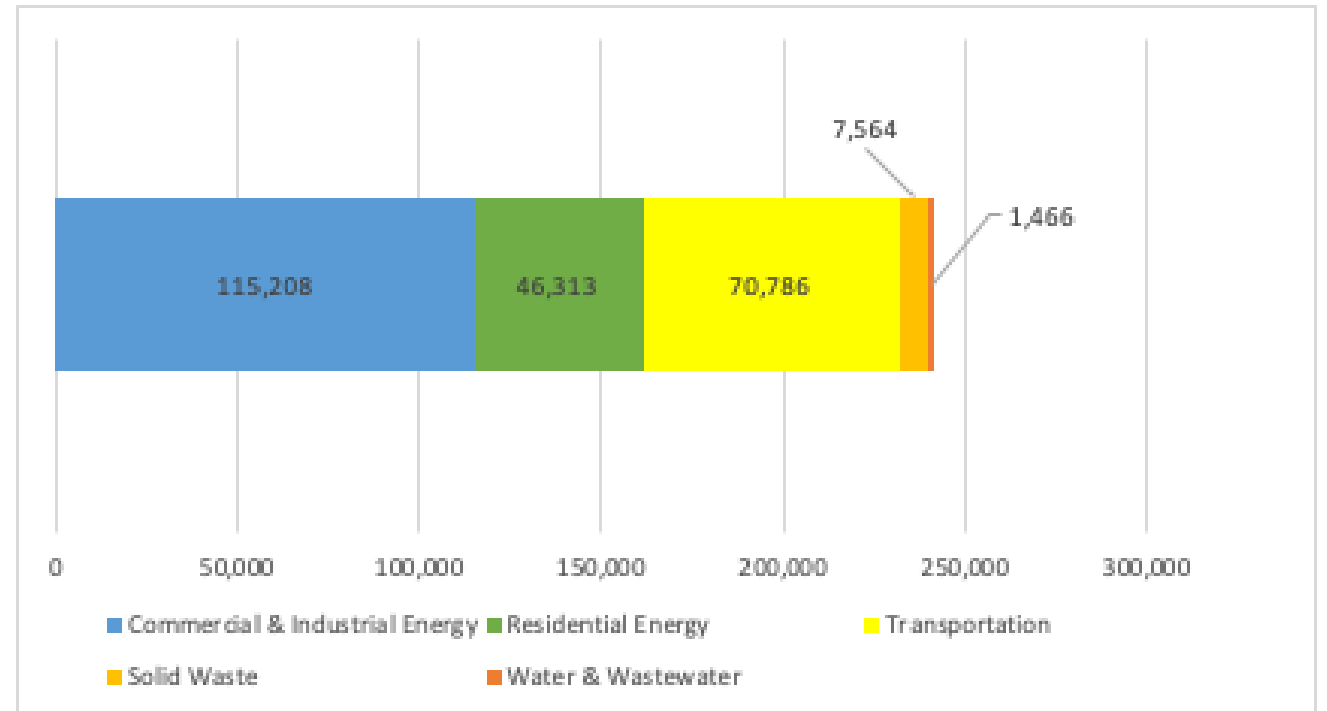
Program costs did not include cost of internships



# Carlisle's GHG Emissions, 2017

Local Government Climate Action Assistance Program (LCAP):  
PA Department of Environmental Protection and ICLEI Local Governments for  
Sustainability

Sector	Emissions (MTCO <sub>2</sub> e)	Percent of Total
Non-Residential Energy	115,208	47.7%
Residential Energy	46,313	19.2%
Transportation	70,786	29.3%
Solid Waste	7,564	3.1%
Water & Wastewater	1,466	0.6%
<b>TOTAL</b>	<b>241,337</b>	<b>100.0%</b>



Metric Tons Carbon Dioxide Equivalent (MTCO<sub>2</sub>e)

# Carlisle Borough Resolution (Part 1)

**NOW, THEREFORE, BE IT RESOLVED,** That the Borough of Carlisle commit to reducing its GHG emissions 26 percent by 2025 and 80 percent by 2050, compared to 2005 levels.

**BE IT FURTHER RESOLVED,** That the Borough of Carlisle commit to meeting or exceeding any future state, federal, or international governmental commitments on GHG emissions.



# Carlisle Borough Resolution (Part 2)

**BE IT FURTHER RESOLVED**, That the Carlisle Borough Council form a Carlisle Climate Action Commission to provide alternative pathways for reaching, and equitably implementing, the borough's climate goals.

**BE IT FURTHER RESOLVED**, That the Carlisle Borough Council, in coordination with the Borough Manager, appoint members to the Carlisle Climate Action Commission that shall include individuals from borough staff, borough council, the business community, the academic community, and any other individuals as the council deems appropriate.

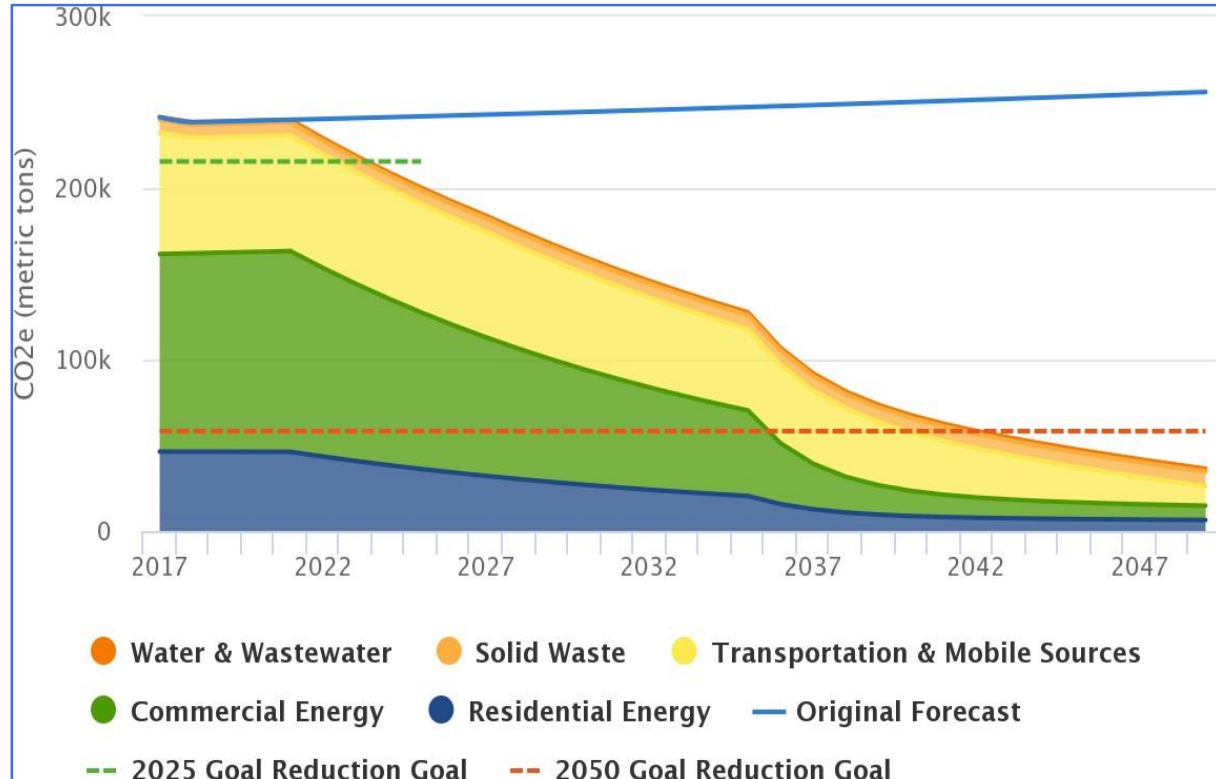
**BE IT FURTHER RESOLVED**, That the public have opportunity to discuss and debate any alternative pathways or recommendations made by the Carlisle Climate Action Commission.

**BE IT FURTHER RESOLVED**, That the Carlisle Borough Council approve an alternative pathway as the basis for a climate action plan through a separate resolution no later than one year from convening of the Carlisle Climate Action Commission.

## Executive Committee:

- Chair
- Borough Manager Rep [none voting]
- 4 Residents at Large
  - Community Engagement Team
  - Transportation TF

# Approved Reductions Pathway



Sector	Description	Number of Distinct Actions	Anticipated MTCO2e Reduction by 2050	Percentage of Total Reduction at 2050
Commercial & Industrial Buildings	Policies and programs to reduce commercial, municipal, and industrial sector energy use and emissions through grid decarbonization, fuel-switching, and conservation.	13	~140,918	55%
Residential Buildings	Policies and programs to reduce residential sector energy use and emissions through grid decarbonization, fuel-switching, and conservation.	9	-55,458	22%
Waste, Composting and Recycling	Policies and programs to reduce solid waste generation.	4	~1,500	2-3%
Water and Wastewater Management	Policies and programs to reduce water demands and corresponding wastewater treatment needs.	0	~336	<1%
Transportation	Policies and programs to reduce on-road vehicle miles traveled and promote electric or low emission vehicles.	5	~59,574	23%

## *Residential Buildings*

**Objective R1: Reduce energy use in residential buildings by and 40% in 2050.**

- Energy assistance grant program funded by CDBG in the amount of \$20,000 (no cost share and only contingent on a low/mod income property owner staying for 5 years)

**Objective R2: Residential Electrification. Reduce use of natural gas, fuel oil, or propane for space and/or water heating (60% of Carlisle households in 2017) by switching 50% to electricity by 2035 and 80% by 2050.**

**Objective R3: Increase residential and commercial awareness of renewable generation providers, including through PAPowerSwitch**

**Objective R4: Increase the percentage of households with rooftop PV solar installations -or- residents who are participants in commercial solar projects to 10% by 2025, 25% by 2035, and 40% by 2050.**

**Objective R5: Tree planting, natural landscapes and reduction of lawn maintenance.**

- Lawn to meadow conversion and tree plantings installed at the yard waste compost site and wastewater treatment plant (FY22, FY23)

## Transportation

### **Objective T1: Increase the adoption of electric and alternative energy vehicles in the vehicle fleet.**

- 2 EV chargers were installed in the parking garage to serve 4 existing compact parking stalls as a pilot to encourage EV use in the downtown

### **Objective T2: Convert the entire municipal light-duty vehicle fleet to electric by 2035 and convert remaining medium and heavy-duty municipal vehicle fleet to electric by 2050.**

- ~50% of police vehicle fleet is converted to hybrid as part of the capital improvement program (CIP)
- Alternative Fuels Incentive Grants (AFIG) for \$35,000 will support the purchase of 5 EV vehicles
- FY23 purchase of 3 e-bikes and 500 total miles to date by staff in SCEP - offsetting code patrol miles that would have been truck IC VMT.

### **Objective T3: Reduce community vehicles miles travelled (VMT) 10% by 2035 and 25% by 2050.**

- Vision Zero resolution adopted by Borough Council to plan an active transportation program for safety and reduce/replace IC VMT
- Applied for TASA and Multimodal grants for shared use paths planned on Noble Boulevard and Waggoners Gap Road
- Completed traffic calming projects on West Willow, Wilson, and North Bedford Streets to reduce pavement area and replacement costs



## **Commercial Buildings**

**Objective C1: Increase rooftop efficiency and solar potential on warehouses and other commercial businesses over a 25 year time span as roofs are replaced.**

**Objective C2: Reduce energy use in commercial buildings by 20% in 2035 and 40% in 2050.**

**Objective C3: Reduce fossil fuel use in existing commercial buildings by at least 25% by 2035, 50% by 2040, and 80% by 2050.**

**Objective C4: Improve stormwater management, incl. agricultural carbon sinks**

## **Municipal Operations and Waste Management**

### **Objective M1: Adapt local ordinances and regulations to encourage carbon reduction strategies.**

- Formed a Land Use Reform (LUR) subcommittee to look at increasing housing density and connecting walkable/bikeable areas:
  - Reduced Minimum Parking Rqmts (draft ordinance)
  - Rezoned for better multimodal access – increase housing density
  - Looking at Maximum Parking Rqmts
  - Drafting Accessory Dwelling Unit (ADU) ordinance

### **Objective M2: Reduce energy use in municipal buildings by 50% in 2035 and achieve net-neutrality by 2050.**

- pre-energy audit information for all Borough facilities provided to a qualified consultant to evaluate GESA program and/or energy reduction goals (site visits and report pending anticipated November-December '23)
- solar powered trash compactors for select park areas installed in 2023
- ongoing evaluation of a comprehensive biosolids management plan that identifies the most cost-effective, safe and beneficial re-use of biosolids; November 1<sup>ST</sup> presentation to Borough Council on proposed approach & estimated cost in draft FY24 budget)
- Evaluation of green roof installation at the water plant

### **Objective WR1: Reduce amount of non-recyclable materials**

### **Objective WR2: Improve community composting facilities to include food waste and divert 50% of compostable waste from landfills by 2035 and 100% by 2050**

- Evaluating in-house solid waste management options that could involve efficient gas-to-energy and reduce transportation emissions from hauls to private landfills. Could include composting and/or processing of food waste.

# Other

- Drafting ordinance to ban single-use plastic (SUP) bags
- Evaluating feasibility of Community Choice Aggregation for borough residents
  - Would include an “opt out” option

# Issues

- Buildings
  - Reaching goals w/o increased local ability to set building code standards is debilitating
  - Principal-Agent Problem – Need help getting landlords to make energy efficient improvements to buildings [owner-occupied housing = 48.5%]
  - 2017 Residential emissions = 153,774,751 kWh
  - 2021 Residential emissions = 238,709,673 kWh [Increase 55.2%]
  - eGrid (2017) = 758 lbs/MWh
  - eGrid (2021) = 672 lbs/MWh [Decrease 11.3%]
- Community Solar? When will this ever get out of committee?
- Lack of Traffic Control in Borough
  - Two major interstates pass thru borough boundaries
  - Both major borough roads are state-owned
  - 2022 data from Tricounty Regional Planning Authority (TCRPA)
    - 48% of VMT from Passenger vehicles [< class 6] is completely pass-thru
    - 82% of VMT from Heavy Freight vehicles [class 6-13] is completely pass-thru

# Issues

- Lack of Insight on NEVI progress
- Need to reduce the “soft costs” of rooftop solar
- Insights into PAMPowerSwitch data would help us assess our goals → currently no insights