

Local Climate Action Program

Building climate resiliency in our Pennsylvania communities

Brandi Robinson
Associate Teaching Professor
Department of Energy and Mineral Engineering
brobinson@psu.edu

Peter Buck
Associate Director of Climate & Sustainability Education
Penn State Sustainability
peterbuck@psu.edu





Chair, Centre Region Climate Action and Adaptation Plan
Technical Advisory Group I

Chair, Centre Region Climate Action and Adaptation Plan
Technical Advisory Group II

Co-author, Penn State's Faculty Senate Climate Action
Resolution

Former Chair, Ferguson Township Climate Action Committee



Director, State College Area School District School Board

Former Chair & current member, Intergovernmental Solar Power
Purchase Agreement Working Group

Vice-Chair, Centre Region Climate Action and Adaptation Plan
Technical Advisory Group I

Board member, Centre Region Climate Action and Adaptation
Plan Technical Advisory Group II

Co-author, Penn State's Faculty Senate Climate Action
Resolution

Former Chair, Ferguson Township Board of Supervisors

A global challenge with local solutions based on a love of home



Closing the Gap: Delivering on the U.S. Nationally Determined Contribution

Meeting the U.S. NDC Requires Swift Use of Several Existing
Federal Authorities to Reduce Greenhouse Gas Emissions

April 2023



Pennsylvania Climate Action Plan

2021

Strategies for government, business, agriculture, and community
leaders—and all Pennsylvanians

Logos for Pennsylvania Department of Environmental Protection, ICF, PennState, and HAMEL Environmental Solutions are at the bottom.

RESOLUTION 2023-11

A RESOLUTION OF THE TOWNSHIP OF FERGUSON, CENTRE COUNTY, PENNSYLVANIA COMMITTING THE TOWNSHIP TO DEVELOPING AND IMPLEMENTING A STRATEGY TO ACHIEVE NET ZERO GREENHOUSE GAS EMISSIONS NO LATER THAN 2050; TO BECOME A LEADER IN THE REGION AND COMMONWEALTH IN PURSUING GOALS ESTABLISHED BY SAID STRATEGY; AND TO ENGAGE OTHER STAKEHOLDERS IN A DIALOGUE TO DEVELOP COURSES OF ACTION TO REDUCE THE IMPACT OF HUMAN-INDUCED CLIMATE CHANGE TO PENNSYLVANIA AND PEOPLE AND PLACES AROUND THE WORLD.

WHEREAS, the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change in Paris agreed to hold the increase in the global average temperature to well below 2°C above pre-industrial levels, and to pursue efforts to limit the increase to 1.5°C above pre-industrial levels in order to prevent catastrophic harm to people and ecological systems on which life depends; and

WHEREAS, the United Nations Environment Program's 2016 "Bridge the Gap Report" concluded that, in order to have a 50% chance of limiting warming to 1.8°C, global carbon dioxide emissions from all nations must be net zero between 2045 and 2050; and to have a 60% chance of limiting warming to 2°C, carbon dioxide emissions from all sources must be net zero between 2050 and 2075. Moreover, to achieve these warming limits, many of the scenarios in the relevant literature that successfully limit warming to below 2°C assume that the use of negative emissions technologies is necessary; and

WHEREAS, both the magnitude and speed needed to achieve these reductions necessary to prevent dangerous human-induced warming urgently requires all local government entities to cooperate with other levels of government, the private sector, educational institutions, agriculture, and others to rapidly develop strategies to reduce greenhouse gas (GHG) emissions to net zero to achieve the Paris Agreement's warming limit goals; and

WHEREAS, any delay in reducing GHG emissions makes the Paris Agreement's warming limit goals much more difficult, if not impossible to achieve, as existing GHG emissions levels are rapidly reducing the remaining carbon budgets that must constrain total global GHG emissions to achieve said goals; and

WHEREAS, a growing number of local government entities and private and public sector organizations around the world have committed to begin planning to reduce their GHG emissions to net zero as quickly as possible but no later than 2050 or, at minimum, achieve 100% non-fossil fuel generated electricity by that date; and

WHEREAS, the Constitution of the Commonwealth of Pennsylvania, Article I, Section 27 guarantees that "The people have a right to clean air, pure water, and to the preservation of natural, scenic, historic, and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustees of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people;" and

WHEREAS, Pennsylvania contributes approximately 1% of global GHG emissions, which, according to the Commonwealth's Third Pennsylvania Climate Impacts Assessment Report, is affecting agriculture, energy, human health, infrastructure, recreation, water quality, forests, and other ecosystems in Pennsylvania, and human health and ecological systems around the world. Despite this, neither the Pennsylvania state government nor the clear majority of Pennsylvania local governments have established a GHG emissions strategy designed to achieve a GHG reduction target consistent with the urgent need to prevent very dangerous climate change; and

WHEREAS, green building practices and standards have been established, and the cost of non-fossil fuel generated energy including solar and geothermal power have fallen to the point that the

replacement of fossil-fuel generated energy with renewable energy is reaching price parity with non-renewable energy; and

WHEREAS, green building and renewable energy industries employ thousands of Pennsylvanians; and

WHEREAS, agriculture and forestry have played important roles in Ferguson Township's economy and culture for generations, and are integral in sinking carbon, providing additional ecosystem services, beauty, and recreation, as well as affording a high quality of life for people and our environment; and

WHEREAS, universities in Pennsylvania, including Penn State University provide jobs that research, support, and educate Pennsylvania's renewable energy industry and conduct innovative, national, state-level, and local climate assessments and planning assistance; and

WHEREAS, the Township of Ferguson is a Home Rule Municipality whose governing Charter includes a Community and Environmental Bill of Rights guaranteeing a sustainable energy future.

NOW, THEREFORE, BE IT HEREBY RESOLVED:

1. The Township of Ferguson shall immediately begin to develop a strategy to achieve net zero GHG emissions as quickly as possible, but no later than 2050, and to commit to achieving the GHG emissions reductions target determined by said strategy and by the date identified therein; and
2. Lead by example to rapidly pursue these goals in a manner that is transparent, fair, and economically responsible; and
3. Engage peer governments, non-governmental organizations, businesses, and universities to raise awareness and identify courses of action to reduce the impacts and embrace the opportunities created by human-induced warming to Pennsylvania and places around the world.

RESOLVED this 19th day of June, 2023.

**FERGUSON TOWNSHIP
BOARD OF SUPERVISORS**
By: *[Signature]*
Steve Miller, Chairman
Board of Supervisors

(SEAL)

ATTEST:
[Signature]
Candice Pirocha, Secretary

History of the LCAP

- Started by Heidi Kunsch, DEP Energy Programs Office
- Matched university faculty and students across PA with local government officials
- Partnered with ICLEI, the Department of Environmental Protection's Energy Programs Office and Centre Sustains in the Centre Region Planning Agency





PennState
Sustainability

LCAP @ Penn State

- Began leadership of the program in 2022-2023 academic year
- Operates as a sequence of 2 3-credit courses
- Maintains partnership with DEP Office of Energy Programs
- Maintains partnership with ICLEI
- Developed partnership with Centre Sustains

Penn State LCAP Communities

2022-2023

- Bucks County
- Doylestown Borough
- Doylestown Township
- East Fallowfield Township
- Erie
- Lower Macungie Township
- Lower Merion Township
- Reading
- Scranton
- State College Borough
- Uwchlan Township
- Wormleysburg Township

2023-2024

- Centre County
- Churchill Borough
- Conshohocken Borough
- Dept of Conservation and Natural Resources
- Homestead, Borough
- Lower Macungie Township
- Mechanicsburg Township
- Palmer Township
- Solebury Township
- State College Borough

Fall semester: inventory



Establish communication plans for each team and learn about the community



Collect, interpret, and analyze data



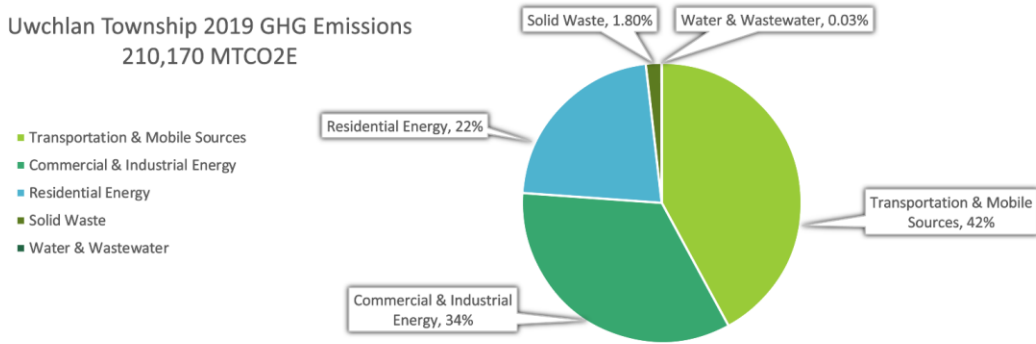
Utilize ClearPath tools to turn data into an inventory



Present the inventory to the local government publicly

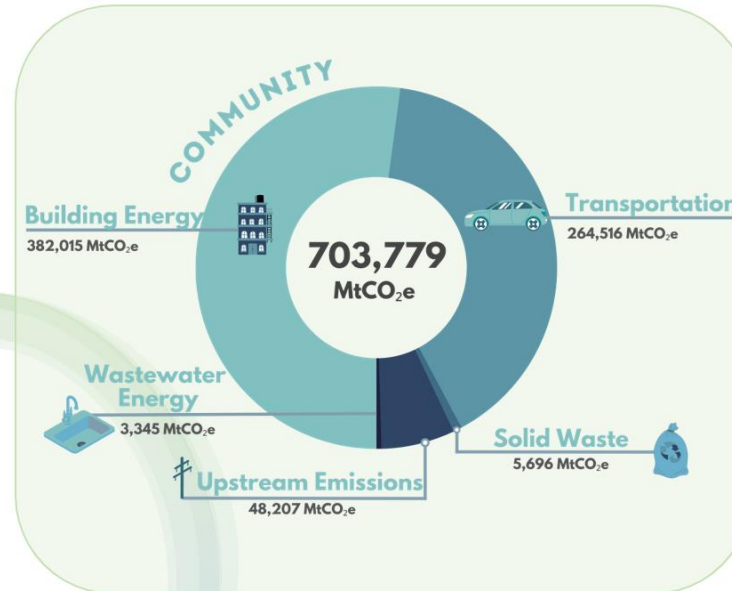
Uwchlan Emissions Profile 2019

Uwchlan Township 2019 GHG Emissions
210,170 MTCO₂E



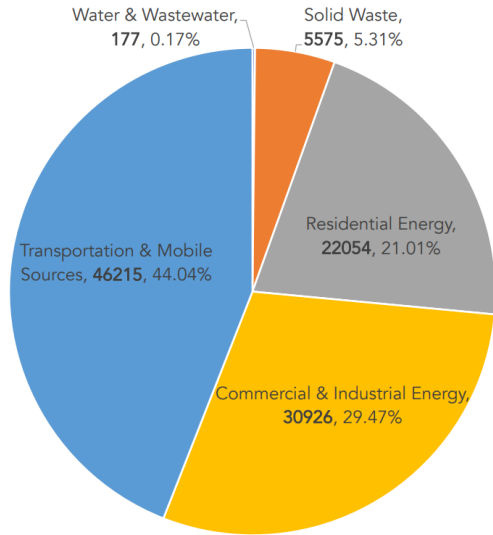
Lower Merion Township, Mattea Derr & Steve Vitale

2019 Greenhouse Gas Inventory



- **Methodology:**
 - ICLEI Global Protocol for Community-Scale Greenhouse Gas Emission Inventories
- **Data sources:**
 - Electricity & Natural Gas for all sectors – Peco/Exxon Mobile
 - Residential heating fuels – U.S. American Community Survey
 - Transportation – DVRPC
 - Total emissions only
 - Start and end in township
 - Wastewater – Philadelphia Water Department
 - Upstream Emissions – U.S. Department of Energy
 - Solid Waste – Lower Merion Township
- **Not included due to unavailable data:**
 - Fuel oils used in commercial and industry sectors

2019 Baseline Emissions: 104,947 MTCO₂e



*Values in metric tons (MT) CO₂e

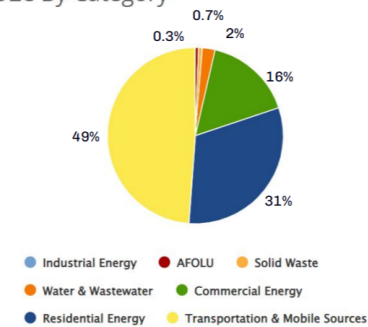
Doylestown Township, Caden Vitti

Annual Emissions Breakdown, 2019

Emissions Breakdown

- 78,666 metric tons (48.9%)
- 50,474 metric tons (31.4%)
- 26,172 metric tons (16.3%)
- 3,811 metric tons (2.37%)
- 1,100 metric tons (0.68%)
- 503 metric tons (0.31%)

CO₂e By Category



Total: 160,726 metric tons (MT) CO₂e / year

Highest contributors to emissions: transportation, residential energy, and commercial energy

Spring semester: climate planning



Creating a scope of work
and deliverables to
advance local climate
action



Delegating pieces of that
work to students



Presenting the findings to
the local government
publicly



What are some
examples?

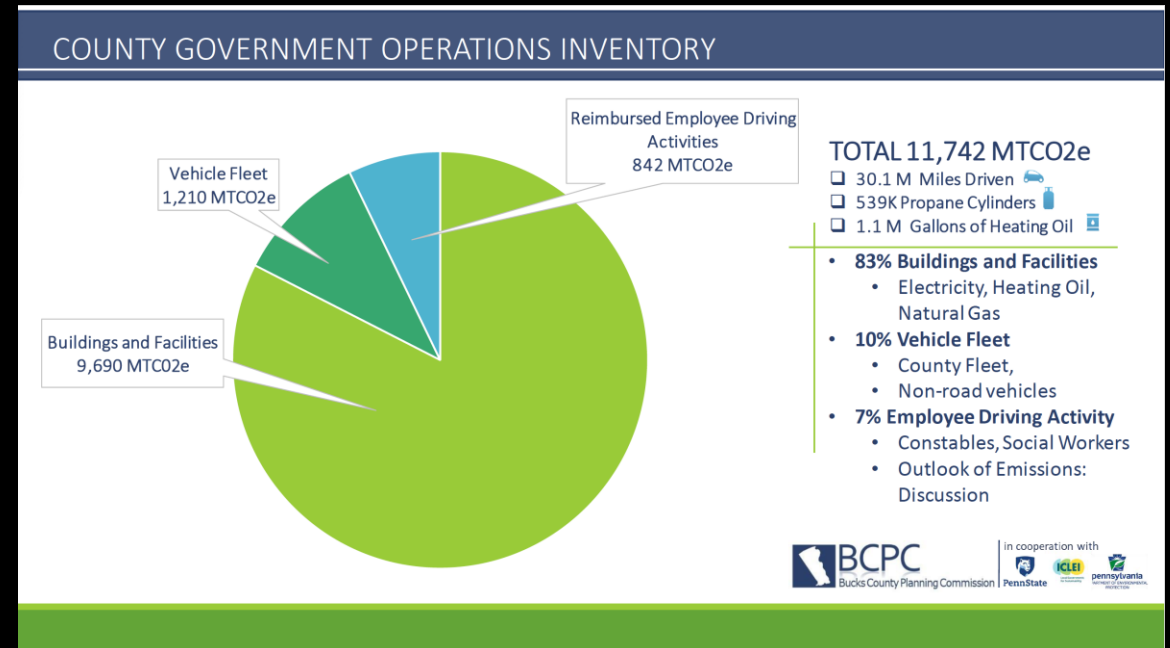
Spring Project Examples: Bucks County Local Government Operations Inventory



LCAP SEMESTER TWO | BCPC BOARD MEETING MAY. 3. 2023

BCPC
Bucks County Planning Commission

in cooperation with
PennState **ICLEI** **pennsylvania**
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Spring Project Examples: Uwchlan Township Accessory Solar Use

Section 603.6

Accessory structures and systems on properties that provide alternative energy sources for the property ["system(s)"]. System structures may be installed in side or rear yards, except to the extent permitted in section a.(1) below. All systems are subject to permits under the Township Building Code in effect at the time of construction.

[Added 10-13-2009 by Ord. No. 2009-07]

a. Solar energy systems.

- (1) To minimize visual impact, rooftop arrays shall be placed on the side of the roof away from any road when efficiently possible.
- (2) Rooftop arrays shall not be higher than the peak of the roof or higher than 15 inches above the roof surface at any point.
- (3) Ground-mounted solar panels shall be placed in side or rear yards only.
- (4) The maximum height of a ground-mounted solar panel array shall be 15 feet to its highest point and all portions of the solar panels shall be within the side and rear yard building setbacks but in no case less than 15 feet from a property line. The area of the panels shall be calculated and added to the maximum building and impervious coverage that is permitted on the subject property.
- (5) Ground-mounted assemblies must be screened in accordance with § 608 of the ordinance, but not to an extent which precludes adequate and efficient operations.

Guidance Documents

- [DVRPC](#)
- [Chesco Planning Commission](#)
- [PennFuture](#)

Findings

- Ambiguity
- Details missing
- May be restrictive

Spring Project Examples: Lower Merion Township



LOWER MERION TOWNSHIP SUSTAINABILITY PLAN

June 7, 2023

FIGURE 16: FORECAST FOR GREENHOUSE GAS EMISSIONS FROM LOWER MERION TOWNSHIP MUNICIPAL OPERATIONS WITH IMPLEMENTATION STRATEGIES APPLIED, MTCO₂e

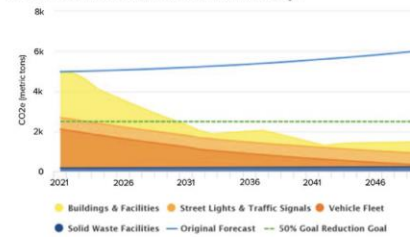


Figure 16 presents the forecast for annual greenhouse gas emissions from municipal operations from 2021 through 2050 under a scenario in which the implementation strategies in Table 1 are completed within the projected timeframes. The blue line represents the original business-as-usual forecast while the green line represents a 50% emissions reduction goal. The figure demonstrates that implementing the modelled strategies would help the Township halve the emissions from municipal operations by roughly 2031. By 2050, the recommended strategies would reduce emissions by around 3,000 MtCO₂e per year. The figure demonstrates that additional actions which were not modelled would likely be necessary in order to achieve a SBT of 63% reduction by 2030 and net zero by 2050.

Figure 17 presents the forecast for annual greenhouse gas emissions from Township community activities from 2019 through 2050 under a "business-as-usual" scenario in which climate actions are not implemented. Annual greenhouse gas emissions overall are expected to decrease by around 150,000 MtCO₂e per year by 2050, owing mostly to projected increases in transportation fuel efficiency and more stringent federal emissions standards.

Table 2 demonstrates the potential emissions reduction benefit of various strategies for community activities that are proposed in this Sustainability Plan. Annual CO₂e Avoided represents the annual greenhouse gas emissions from community activities that are expected to be reduced by implementing each strategy. Most of the strategies will take several years to complete, so while reductions are ex-

pected to accumulate as soon as implementation begins, the values in Table 2 reflect the annual greenhouse gas emissions project completion onward. Percent reduction of CO₂e is based on the projected annual greenhouse gas emissions from municipal operations in the year the project is completed. The values in Table 2 represent multiple strategies implemented to the maximum extent possible within an ambitious timeline. The actual emission reductions will depend on the ability of the Township government to successfully educate stakeholders and implement community initiatives, and the willingness of community stakeholders to adopt the practices within the recommended timeframe.

Figure 18 presents the forecast for annual greenhouse gas emissions from community activities from 2019 through 2050 under a scenario in which the implementation strategies in Table 2 are completed within the projected timeframes. The blue line represents the original business-as-usual forecast while the red line represents the 63% SBT emissions reduction goal. The figure demonstrates that implementing the modelled strategies would help the broader Township community reduce emissions by approximately 1/3 by 2030. By 2050, the recommended strategies would reduce emissions by more than 1/2. The figure demonstrates that additional actions which were not modelled would likely be necessary in order to achieve a SBT of 63% reduction by 2030 and net zero by 2050.

FIGURE 17: BUSINESS-AS-USUAL FORECAST FOR GREENHOUSE GAS EMISSIONS FROM LOWER MERION TOWNSHIP COMMUNITY ACTIVITIES, MTCO₂e

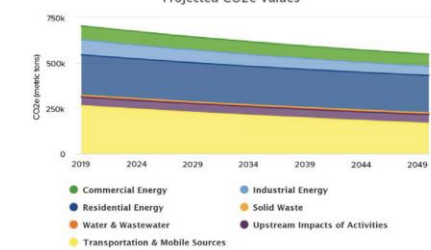
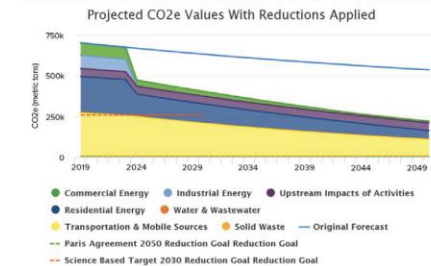


TABLE 2: IMPLEMENTATION STRATEGIES FOR COMMUNITY ACTIVITIES, ESTIMATED GREENHOUSE GAS REDUCTIONS

Reduction Strategy	Annual CO ₂ e Avoided Metric Tons	Annual CO ₂ e Avoided % Reduction
Energy Transition Initiatives & Incentives	222,069	41%
Community Vehicle Transition	63,820	12%
Residential Energy Efficiency	11,799	2%
Commercial Energy Benchmarking	2,327	0.4%
Increase Multimodal Access	605	0.1%

FIGURE 18: FORECAST FOR GREENHOUSE GAS EMISSIONS FROM LOWER MERION TOWNSHIP COMMUNITY ACTIVITIES WITH IMPLEMENTATION STRATEGIES APPLIED, MTCO₂e



Spring Project Examples: City of Scranton

Scranton Survey Promotional Materials

Participate in Scranton's
SUSTAINABILITY AND CLIMATE ACTION SURVEY

SHARE YOUR THOUGHTS TO

- Inform equitable, just climate policy
- Improve your community

TAKE THE ANONYMOUS SURVEY

CONTACT US 340 N Washington Ave (570) 348-4193 ext. 4512
Scranton, PA 18503

Participa en Scranton's
ENCUESTA SOBRE SOSTENIBILIDAD Y ACCIÓN POR EL CLIMA

COMPARTA SUS IDEAS PARA:

- Informar políticas climáticas equitativas y justas
- Mejorar su comunidad

RESPONDA A LA ENCUESTA ANÓNIMA

CONTACTO 340 N Washington Ave (570) 348-4193 ext. 4512
Scranton, PA 18503

Participate in Scranton's
SUSTAINABILITY AND CLIMATE ACTION SURVEY

SHARE YOUR THOUGHTS TO

- CREATE CLIMATE ACTION
- COMMENT ON CURRENT ENVIRONMENTAL POLICIES
- IMPROVE YOUR COMMUNITY
- BE VOCAL

Scan to take the anonymous survey



Consulting Services for City of Scranton's Climate Action Plan

Request For Proposal
Office of Economic and Community Development 91843

Project ID: 2023-RFP-091

Release Date: Monday, June 26, 2023

Due Date: Wednesday, July 26, 2023 10:00am

Posted Monday, June 26, 2023 5:00pm

All dates & times in Eastern Time

CLOSED

7. SCOPE OF WORK

7.1. Consulting Services for City of Scranton's Climate Action Plan

Purpose of Request:

The City of Scranton is seeking a qualified Consultant or team of Consultants with experience in climate action planning to provide facilitation, technical, and design services for developing a Sustainability and Climate Action Plan. The Plan will serve as a roadmap for the City to equitably achieve climate mitigation, resilience, and sustainability goals.

The successful Consultant will provide the skills, tools, and analysis necessary for creating a Sustainability and Climate Action Plan for the City of Scranton that delivers a prioritized set of achievable actions that Scranton can implement in order to meet or exceed citywide Greenhouse Gas emission (GHG) reduction targets, resilience goals and prepare the city for the impacts of climate change while helping the city continue to prosper and grow.

Mutually beneficial

- **For students:**
 - Real-world, transferrable skills in
 - Maintaining a professional relationship,
 - greenhouse gas accounting,
 - stakeholder engagement, and
 - action plan development.
- **For municipal partners:**
 - Benchmarking needed to measure successful future outcomes,
 - a roadmap for action opportunities,
 - Groundwork needed to access federal and state funding, and
 - an understanding of community interest and priorities.

What does it take?

MUNICIPALITIES

- Access to data
- Regular meetings with students
- Direction for spring project work

STUDENTS

- Time management
- Curiosity and analytical thinking
- Strong communication skills
- Ability to work independently

Join us next year to work on local solutions in your community.

<https://sustainability.psu.edu/programs/lcap/>

Thank you!

brobinson@psu.edu

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