

SOLEBURY TOWNSHIP BOARD OF SUPERVISORS
February 6, 2024 – 9:30 A.M.
Solebury Township Hall/Virtual - Hybrid Meeting
MEETING MINUTES

Attendance: Mark Baum Baicker, Chair, Hanna Howe, Vice-Chair, Christy Cheever, John S. Francis, Kevin Morrissey, Christopher Garges, Township Manager, Michele Blood, Assistant Township Manager, and Catherine Cataldi, Secretary. Mark L. Freed, Township Solicitor were also in attendance.

The recording device was turned on.

I. The meeting was called to order followed by the Pledge of Allegiance.

II. Approval of Bills Payable – January 25, 2024

Res. 2024-34 – Upon a motion by Mr. Francis, seconded by Mr. Morrissey, the list of Bills Payable dated January 25, 2024 was unanimously approved as prepared and posted.

III. Approval of Meeting Minutes – January 16, 2024

Res. 2024-35 – Upon a motion by Ms. Howe, seconded by Ms. Cheever, the Minutes of the January 16, meeting were unanimously approved as prepared and posted.

IV. Announcements / Resignations / Appointments

Executive Session

Mr. Baum Baicker announced that an Executive Session was held directly prior to the Board of Supervisors meeting discussing Legal, Planning and Zoning Matters.

Resignation of Michael Miernicki from the Land Preservation Committee

Res. 2024-36 – Upon a motion by Mr. Baum Baicker, seconded by Mr. Morrissey, it was unanimously agreed to accept the resignation of Michael Miernicki from the Land Preservation Committee effective immediately.

V. Supervisor Comment – No Supervisor Comment

VI. Presentation

Local Climate Action Plan (LCAP) Presentation

Following introductions, Lisnormary Loubriel Perez, Nattalie McShan and Brandi Robinson, Co-Director presented the 2022 Emissions Inventory Profile for Solebury Township (copy of which is attached). Highlights of the presentation included: Climate Change Impact in PA; Importance of Greenhouse Gas Inventories; ICELI’s ClearPath Software; Metric Ton Carbon Dioxide Equivalent (MTCO_{2e}); Resident Energy; Commercial & Industrial Energy; Process & Fugitive (Natural Gas Leakage); Transportation; Solid Waste; Wastewater Emissions; Agricultural Emissions; and LCAP Spring 2024 Goals.

The Board expressed gratitude to Ms. Perez, Ms. McShan and Ms. Robinson.

Mr. Francis questioned the difference in the date used compared to the Delaware Valley Regional Planning Commission data. Ms. McShan and Ms. Robinson explained the difference in the data including the duration and scope.

Mr. Francis questioned whether propane was included in the natural gas statistics. Ms. Robison advised that yes propane was included.

Mr. Robinson expressed gratitude to Kate Robeson-Grubb, Township Sustainability / Administrative Specialist.

VII. New Business

Emergency Operations Plan Update

The Emergency Operations Plan update included the inclusion of Christopher Clewell, Public Works Director to handle Logistics.

Res. 2024-37 – Upon a motion by Mr. Francis, seconded by Ms. Cheever, it was unanimously agreed to adopt the Emergency Operations Plan update.

Gasiorowski Zoning hearing Board Application – Authorize Solicitor to Attend

The applicants, Henry & Michele Gasiorowski, are requesting a special exception pursuant to Section 27-2109 C.4. or variance from that section, and variances from Sections 27-2205.1.B.(3)(c), 27-2208.3.C, D, and E, 27-2205.1.A, 27-2208.5.C.(3), and Section 8-401.1.A. and C. and a determination under Section 8-402.1A. in connection with the construction of a pool house at the property located at 2744 River Road, New Hope, Solebury Township, Bucks County, and identified as Tax Parcel No. 41-028-058.

Res. 2024-38 – Upon a motion by Mr. Baum Baicker, seconded by Mr. Francis, it was unanimously agreed to authorize the Township Solicitor to communicate with the Zoning Hearing Board to represent the interest of the Board of Supervisors in this matter.

VIII. Public Comment

IX. Adjournment

The meeting was adjourned at 10:03 am.

Respectfully submitted,
Catherine Cataldi, Secretary



Solebury Township, PA 2022 Greenhouse Gas Inventory Profile

Presented to: Solebury Township, Board of Supervisors

Presented by: Lisnormary Loubriel Perez and Nattalie McShan

Meet the Team



Lisnormary Loubriel Perez
B.S. Energy & Sustainability Policy
B.A. Political Science
Tampa, FL



Nattalie McShan
B.S. Energy & Sustainability Policy
Minor in Political Science
Ramstein, Germany

Local Climate Action Program (LCAP)

- **Sponsored by:**
 - Pennsylvania Department of Environmental Protection, Energy Programs Office
 - ICLEI: Local Governments for Sustainability
 - Penn State Sustainability



Brandi Robinson

Associate Teaching
Professor

Department of Energy and
Mineral Engineering



Peter Buck

Associate Director of
Climate & Sustainability
Education

Penn State Sustainability

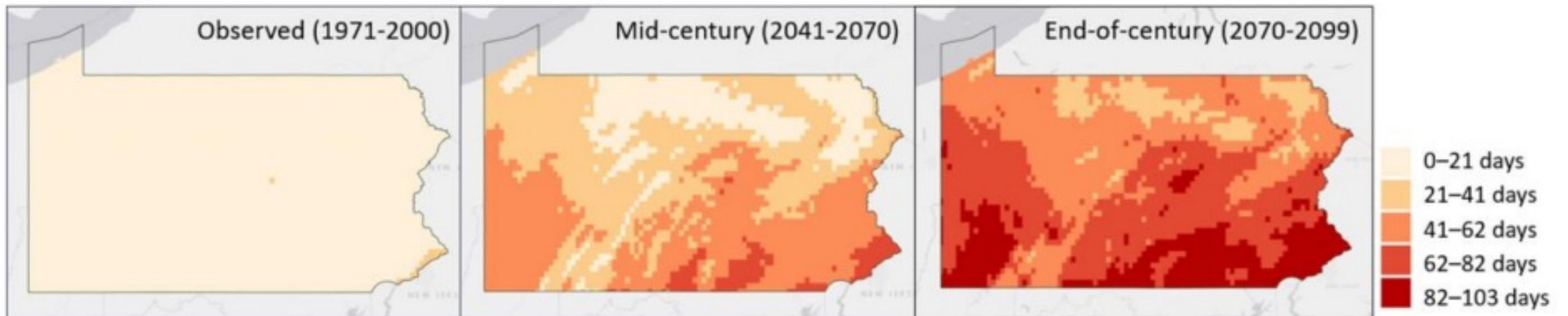


Climate Change Impacts in PA

According to the 2021
Pennsylvania Climate
Impacts Assessment

- Increasing Average Temperatures
- Heat Waves
- Heavy Precipitation
- Sea Level Rise
- Inland Flooding
- Landslides
- Severe Tropical and Extra-Tropical Cyclones

Average Annual Number of Days with Temperatures >90°F





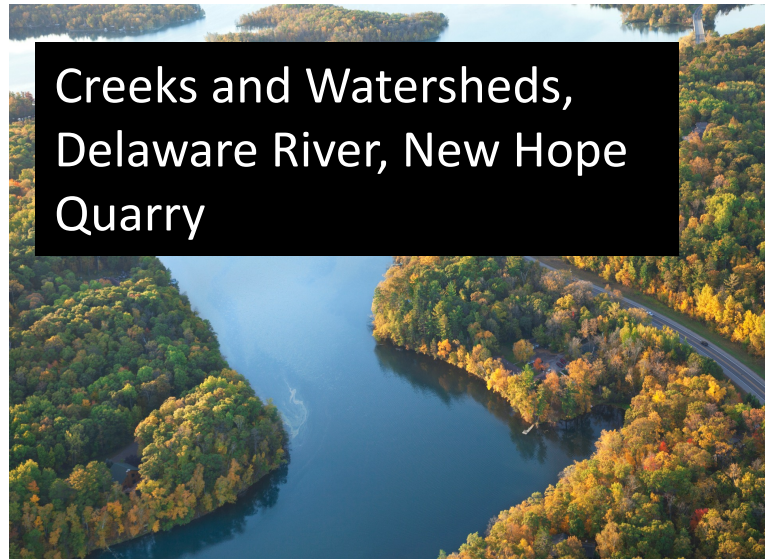
Forest migration,
invasive species



Deterioration of homes
and buildings



Farming production, soil
health and longevity



Creeks and Watersheds,
Delaware River, New Hope
Quarry

Importance of Greenhouse Gas Inventories



Forecasting



Identifying and Reducing Emissions



Tracking Progress



Informing Decision-Making and Climate Action Plans



Understanding Climate Risks



Motivating Community Action

Inventory Records For Residential Energy

Residential Heating Natural Gas - 2022	Edit Delete
Residential Heating Propane - 2022	Edit Delete
Residential Heating Electricity - 2022	Edit Delete
Residential Heating Natural Gas - 2022	Edit Delete
Residential Heating Fuel Oil and Kerosene - 2022	Edit Delete
Residential Heating Wood - 2022	Edit Delete

CO2e By Record

Residential Heati...	██████████
Residential Heati...	██████████
Residential Heati...	██████████
Residential Electri...	██████████
Residential Natur...	██████████

ICELI's ClearPath Software

- Each sector has a recommended or required calculator
- Input = Activity Data (ex: PECO)
- Output = Calculated Emissions (CO2e)

Inputs

	Value	Units
Calculation Inputs		
Use this section to enter the quantity of energy used and related data		
Were emissions calculated externally from ClearPath? ?	No <input type="text"/>	
Electricity Used ?	42142.408	MWh <input type="text"/>
Number of Households (optional) ?	<input type="text"/>	Households <input type="text"/>
Population (optional) ?	8650	People <input type="text"/>
Building Area (optional) ?	<input type="text"/>	Square feet <input type="text"/>

Outputs

Name	Value
Electricity Energy Equivalent (MMBtu) ?	143831
Energy Cost (\$)	0
CO2 (MT)	12861
CH4 (MT)	0.93666
N2O (MT)	0.13381
CO2e (MT) ?	12923
MMBtu per Household ?	Infinity
CO2e per Household (MT) ?	Infinity
MMBtu per Person ?	16.628
CO2e per Person (MT) ?	1.4940
GPC Scope ?	Scope 2
GPC Reference Number ?	I.1.2
US-CP Reporting Category	Activity
CO2 Emissions Factor	0.089417
CO2 Emissions Factor Units	MT/MMBtu
CH4 Emissions Factor	6.5122 x10 ⁻⁶
CH4 Emissions Factor Units	MT/MMBtu
N2O Emissions Factor	9.3032 x10 ⁻⁷
N2O Emissions Factor Units	MT/MMBtu
US Community Protocol Reference	BE.2.1

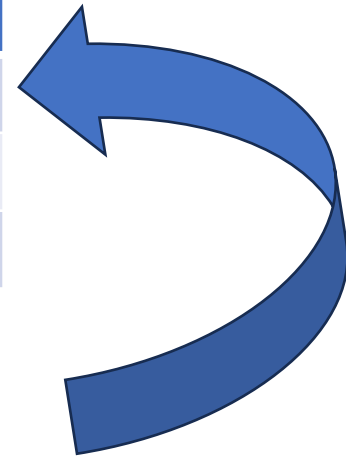
Metric Ton Carbon Dioxide Equivalent (MTCO₂e)

- MT = Metric Tons
- CO₂e = Carbon Dioxide equivalent
 - Common unit of measure
- Greenhouse gases (GHGs):
 - Carbon Dioxide (CO₂)
 - Methane (CH₄)
 - Nitrous Oxide (N₂O)
- Global Warming Potential (GWP) is given to each gas to match CO₂.

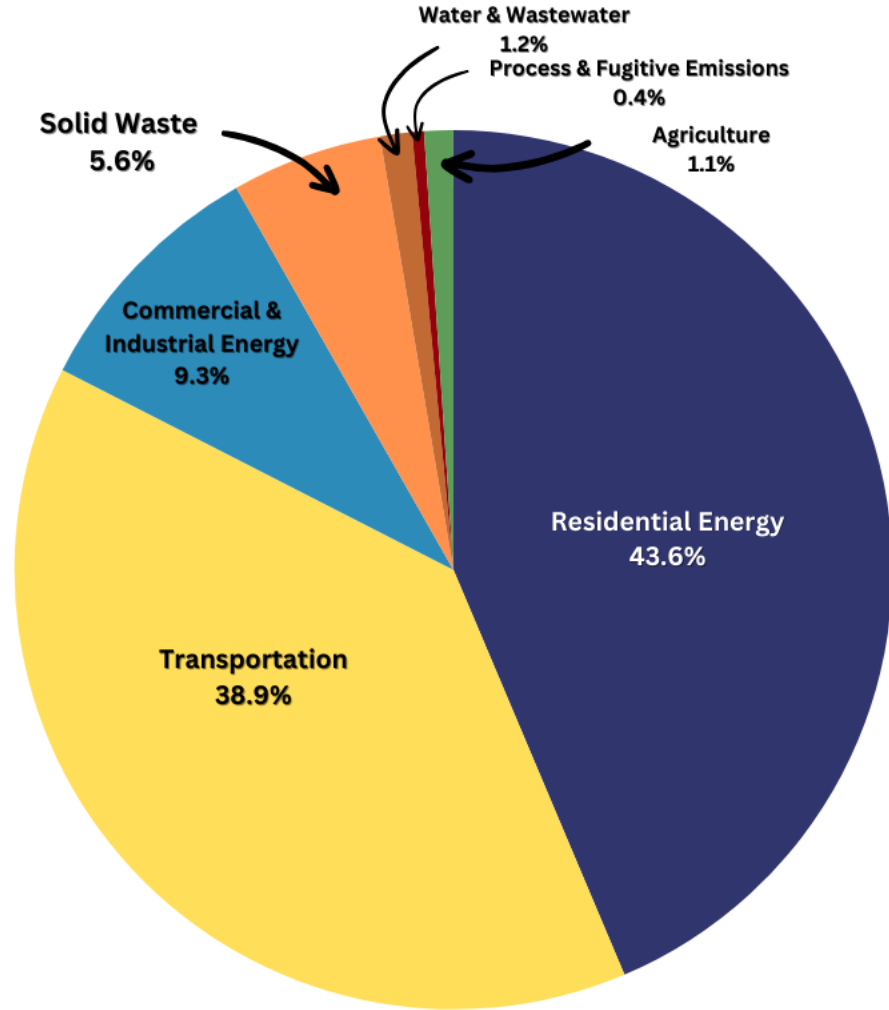
Greenhouse Gas	Global Warming Potential
Carbon dioxide (CO ₂)	1
Methane (CH ₄)	28
Nitrous Oxide (N ₂ O)	265

CH₄ and N₂O Global Warming Potentials reference to CO₂

GWP = how much 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO₂)
(EPA, *Understanding Global Warming Potentials*, 2023)



2022 Baseline Emissions: 59,700 MTCO₂e



Sector	MTCO ₂ e
Residential Energy	26,048
Transportation	23,212
Commercial & Industrial Energy	5,523
Solid Waste	3,318
Agriculture	638
Water & Wastewater	699
Process & Fugitive Emissions	261
Total Emissions	59,699

*Values in metric tons (MT) CO₂e (carbon dioxide equivalent)

Residential Energy

- PECO utility data
 - Electricity and natural gas
 - Chris Nafe at the DEP
- ClearPath calculators
 - Calculated emissions based on electricity and fuel usage
- U.S. Census data
 - Estimated home heating emissions from non-utility fuel sources

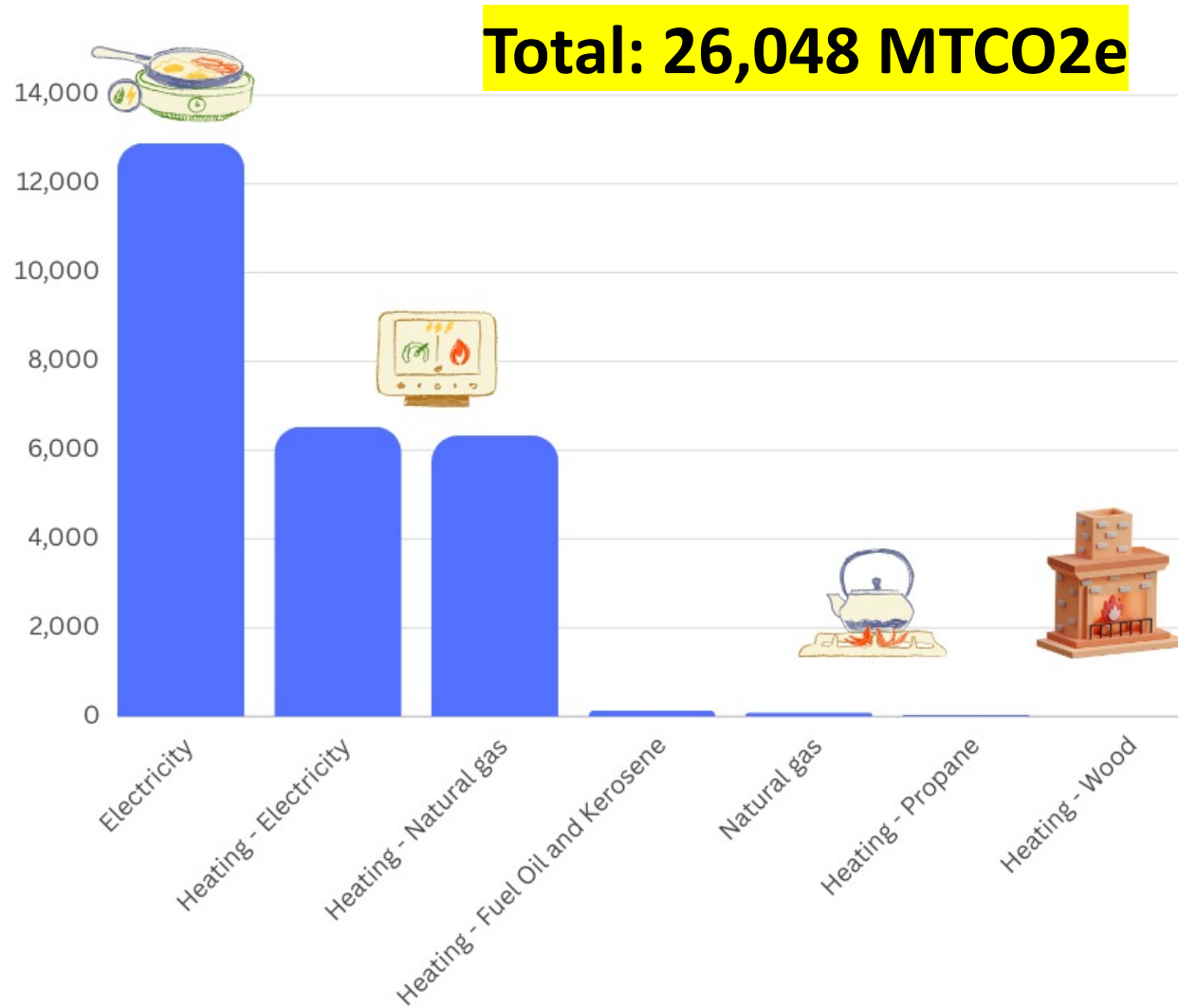
Solebury township, Bucks County, Pennsylvania		
Label	Estimate	Margin of Error
Total:	3,675	±168
Utility gas	1,145	±161
Bottled, tank, or LP gas	361	±115
Electricity	784	±199
Fuel oil, kerosene, etc.	1,287	±195
Coal or coke	0	±16
Wood	27	±23
Solar energy	16	±25
Other fuel	36	±27
No fuel used	19	±23



Note: The table shown may have been modified by user selections. Some information may be missing.

DATA NOTES	
TABLE ID:	B25040
SURVEY/PROGRAM:	American Community Survey
VINTAGE:	2022
DATASET:	ACSDT5Y2022
PRODUCT:	ACS 5-Year Estimates Detailed Tables
UNIVERSE:	Occupied housing units
MLA:	U.S. Census Bureau. "House Heating Fuel." American Community Survey, ACS 5-Year Estimates Detailed Tables, Table B25040, 2022, https://data.census.gov/table/ACSDT5Y2021.B25040?q=B25040:House Heating Fuel&g=060XX00US4201771752 . Accessed on January 17, 2024.

Residential Energy Emissions by Source



Residential Energy	MTCO ₂ e Emissions
Electricity	12,923
Natural gas	90
Heating - Wood	~
Heating - Fuel Oil and Kerosene	141
Heating - Propane	33
Heating - Natural gas	6,330
Heating - Electricity	6,531
Total	26,048

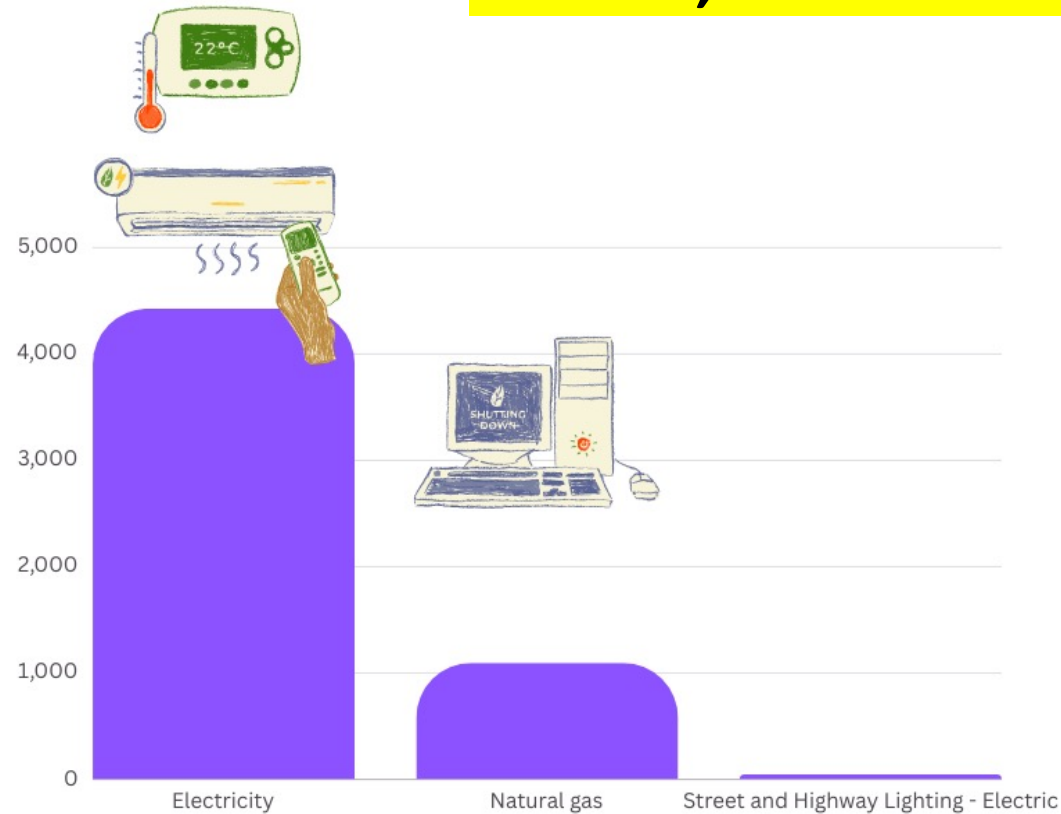
Commercial & Industrial Energy

- PECO utility data
- Combined Commercial & Industrial in ClearPath
 - Street and Highway Lighting was excluded to avoid double-counting

Electric (100)	2022	KWh							
Electric									
Sum of Statistic Qty	Column Labels	RAILROADS & RAILWAYS		RESIDENTIAL	RESIDENTIAL HEATING	SMALL C&I	STREET & HIGHWAY LIGHTING	CODE VALUE SPACE ADJUSTMENTS	TAX AREA TOTAL
County	Row Labels	LARGE C&I	Electric (KWh)	Electric (KWh)	Electric (KWh)	Electric (KWh)	Electric (KWh)	Electric (Kwh)	Electric (KWh)
12 - Bucks	SOLEBURY			(46,972.00)	(15,963.00)				(62,935.00)
12 - Bucks	SOLEBURY TWP	(2,232,269.00)		(42,095,436.00)	(21,282,347.00)	(12,203,921.00)	(154,752.00)		(77,968,725.00)
				Total: 42,142,408	Total: 21,298,310				
		Converted to MWh: 2,232.269		Converted to MWh: 42,142.408	Converted to MWh: 21,298.31	Converted to MWh: 12,203.921	Converted to MWh: 154.752		

Commercial and Industrial Energy Emissions by Source

Total: 5,523 MTCO₂e



Commercial and Industrial Energy Sectors	MTCO ₂ e Emissions
Electricity	4,427
Natural gas	1,096
Street and Highway Lighting - Electric	47
Total	5,523 (excluding Street and Highway Lights)

Process & Fugitive (Natural Gas Leakage)

- PECO utility data
- ICLEI Fugitive Emissions from Natural Gas Distribution calculator
 - Estimation using default 0.3%

Available Calculators

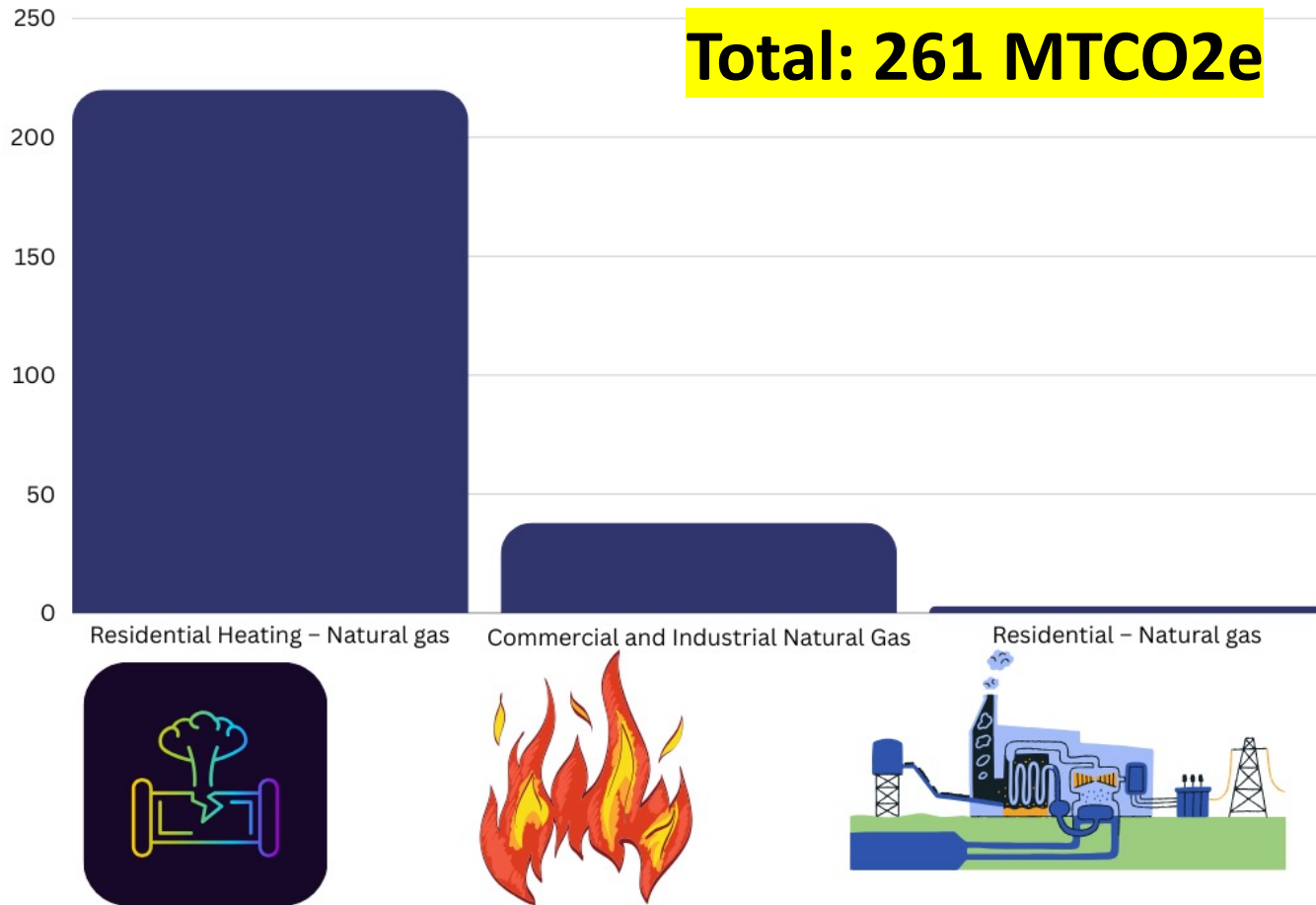
Pick a calculator to enter a new record.

- [Fugitive Emissions from Natural Gas Distribution \(USCP Recommended\)](#) ?
- [Other Process and Fugitive](#) ?
- [Hydrofluorocarbon & Refrigerant Emissions](#) ?
- [Fugitive Emissions from Oil and Gas Production and Processing](#) ?
- [Fugitive Emissions from Mining, Processing, Storage, and Transportation of Coal](#) ?
- [Notation Keys for Fugitive Emissions](#) ?

Inventory Records For Process & Fugitive Emissions

Residential Heating Natural Gas - 2022	Edit Delete
Residential Natural Gas - 2022	Edit Delete
Commercial and Industrial Emissions - Natural Gas (Large & Small) - 2022	Edit Delete

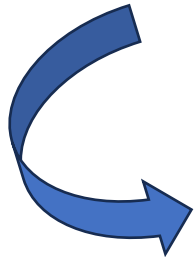
Process & Fugitive (Natural Gas Leakage) Emissions by Source



Source	Total CO ₂ e (metric tons)
Residential Heating – Natural gas	220
Residential – Natural gas	3
Commercial and Industrial Natural Gas	38
Total	261

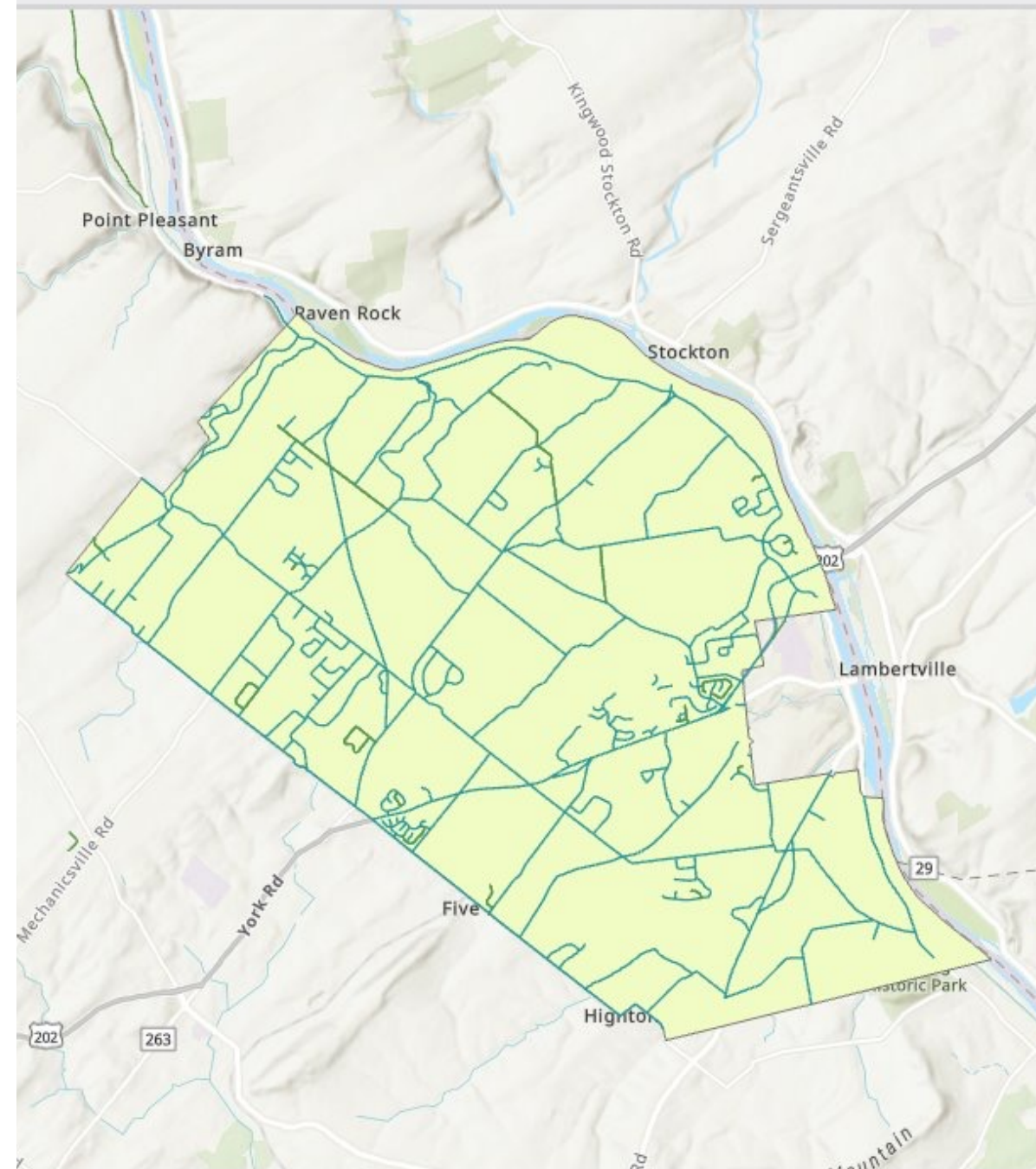
Transportation

- ArcGIS and PennDot data – traffic counts, state roads, and municipality boundary.
- Total Solebury annual VMT = **44,490,546**
- US National Default Vehicle Mix x Total VMT by vehicle type.

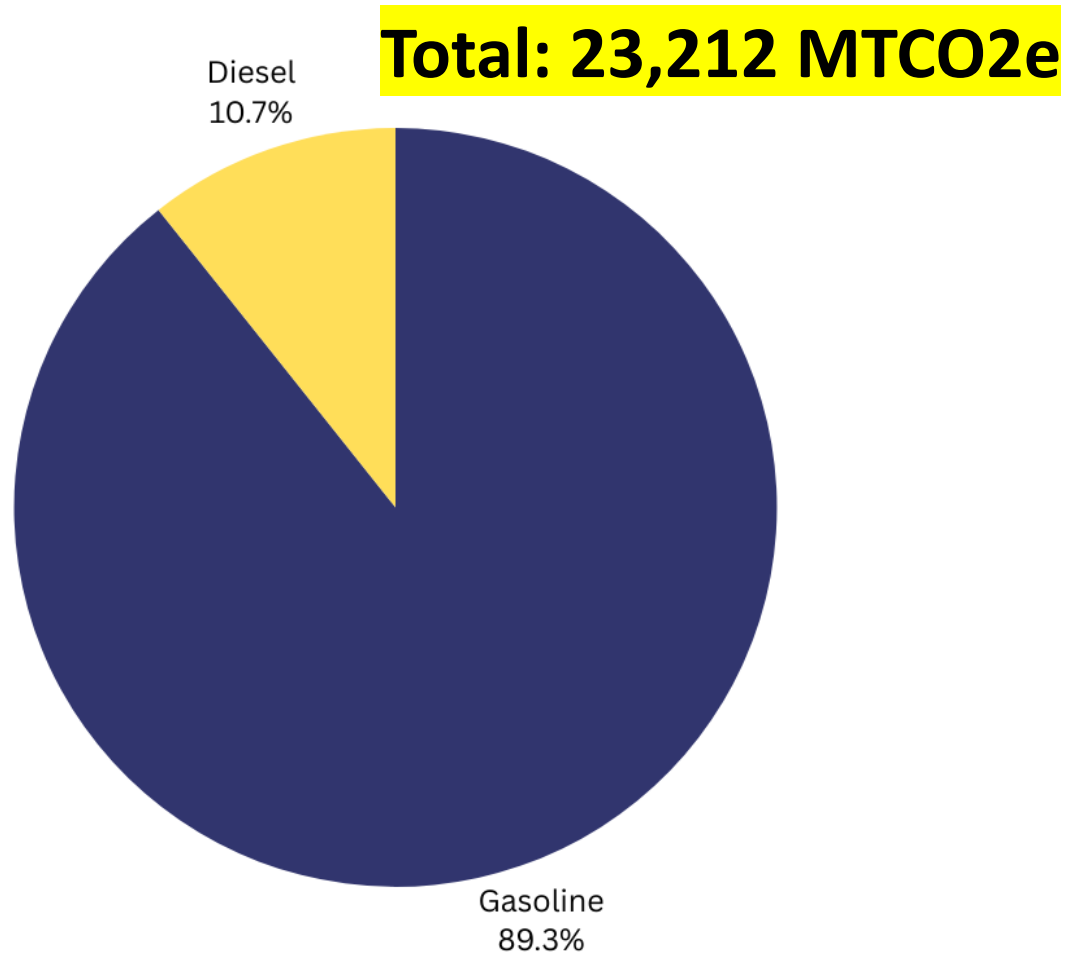


US National Default Vehicle Mix (NDVM)			
Gasoline		Diesel	
% Passenger	72.77	% Passenger	2.93
% Light-Duty	24.92	% Light-Duty	8.38
% Heavy-Duty	1.63	% Heavy-Duty	88.7
% Motorcycle	0.68	% Motorcycle	0
% total VMT	89.33	% total VMT	10.67

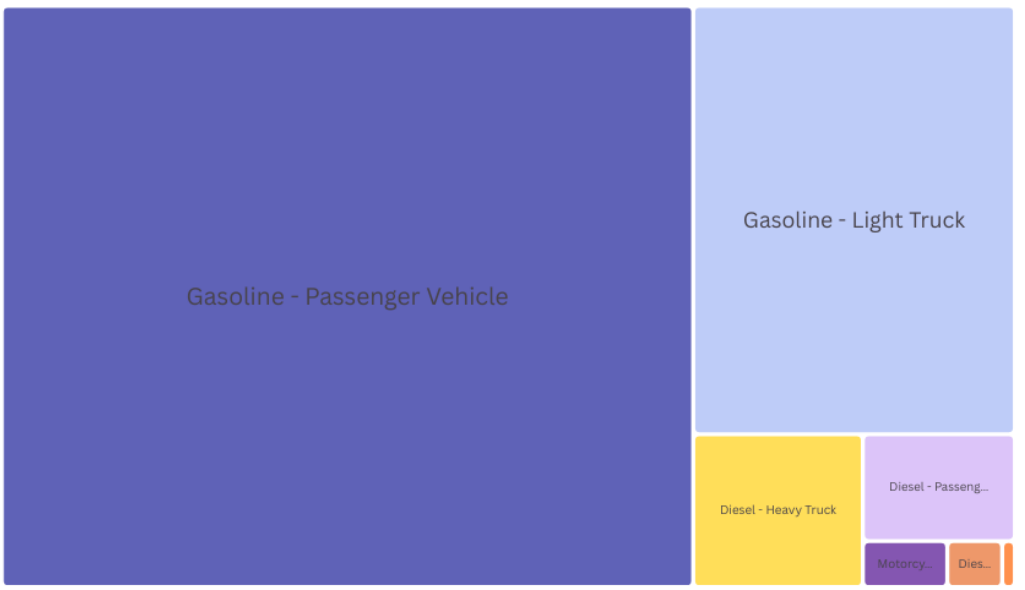
VMT = Vehicle Miles Traveled



Transportation Sector Emissions by Source



Transportation Sector	MTCO2e Emissions	VMT Total
Diesel	7,187	4,747,141
Gasoline	16,025	39,743,405
Total	23,212	44,490,546



Solid Waste

- Bucks County waste: 592,175 tons/ Bucks County population: 645,054 = .918 tons of solid waste per person.
- .918 tons * Solebury population (8650) = **7940.9 wet tons (annually)**

Name	Value
Waste Generated (wet tons) ?	7940.9
Mixed MSW Emissions Factor (MT CH4/wet short ton) ?	0.0648
Newspaper Emissions Factor (MT CH4/wet short ton)	0.042
Office Paper Emissions Factor (MT CH4/wet short ton)	0.1556
Corrugated Cardboard Emissions Factor (MT CH4/wet short ton)	0.1048
Magazines/Third Class Mail Emissions Factor (MT CH4/wet short ton)	0.0476
Food Scraps Emissions Factor (MT CH4/wet short ton)	0.0648
Grass Emissions Factor (MT CH4/wet short ton)	0.0228
Leaves Emissions Factor (MT CH4/wet short ton)	0.026
Branches Emissions Factor (MT CH4/wet short ton)	0.058
Dimensional Lumber Emissions Factor (MT CH4/wet short ton)	0.0068000



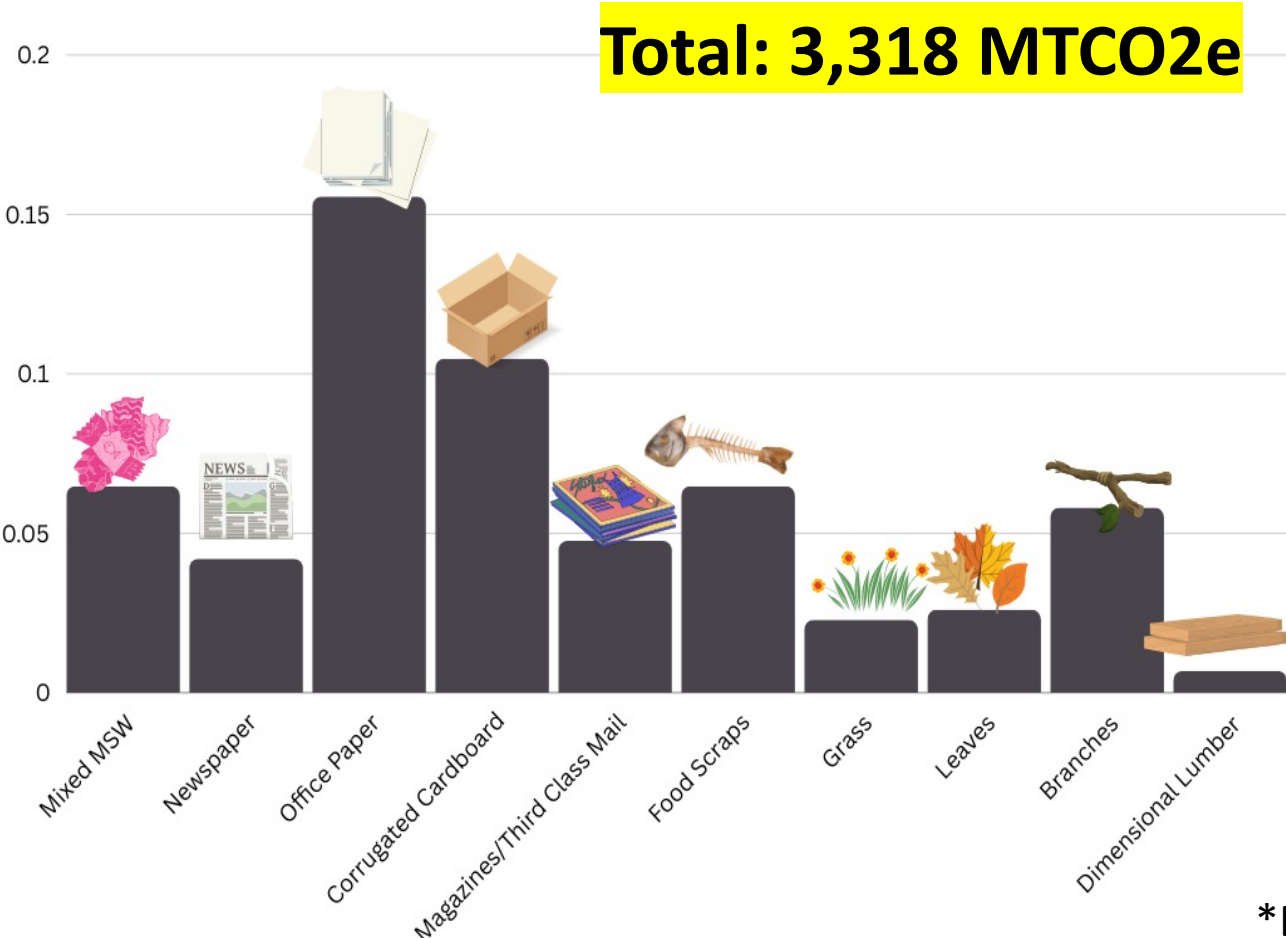
Waste Characterization Study

FINAL REPORT

September 2022



Solid Waste Emissions by Source



Waste Type/Category	*Emissions Factor (Metric ton of Methane per wet short ton)
Mixed MSW	0.06
Newspaper	0.04
Office Paper	0.16
Corrugated Cardboard	0.10
Magazines/Third Class Mail	0.05
Food Scraps	0.06
Grass	0.02
Leaves	0.03
Branches	0.06
Dimensional Lumber	0

*Emissions Factor = Methane pollution produced from 1 wet short ton of the waste type

Wastewater Emissions

Total: 699 MTCO₂e

- Act 537 Sewage Facilities Plan.
- 2,500 lots using septic tanks * 2.37 'person per household' = 5,925.
- ClearPath uses population-based calculations to get the following estimates:

Outputs

Name	Value
Daily Septic System BOD5 Load (kg/day) ⓘ	533.25
CH4 (MT) ⓘ	25.710
CO ₂ e (MT) ⓘ	699.30
CO ₂ e per Capita (MT)	0.11803
GPC Scope	Scope 1
GPC Reference Number	III.4.1
US-CP Reporting Category	Source and Activity
CH4 Emissions Factor	0.048213
CH4 Emissions Factor Units	MT CH4/daily kg BOD5
US Community Protocol Reference	WW.11(alt)

Act 537 Sewage Facilities Plan Official Plan – Update Revision



Solebury Township
Bucks County, Pennsylvania

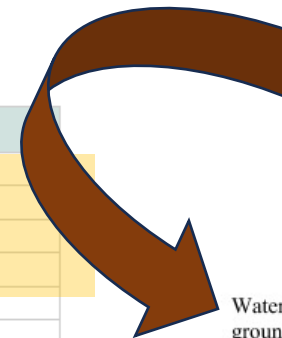
August 2012
Revised June 2013

Solebury Township Office
3092 Sungan Road
Solebury, PA 18963
Ph: (215) 279-5656
Fax: (215) 279-5555

Prepared by:
CET-GHD



Harrisburg, Doylestown, Bloomsburg and Huntingdon, PA
1-800-238-3644
www.ghd.com



Water resources are central to a sustainable community. Solebury Township is completely dependent on groundwater for water supply, and approximately 2,500 lots (70% of the total lots) use onlot septic systems for wastewater disposal.

Agricultural Emissions

- USDA National Agricultural Statistics Service 2017
- Agriculture-Inventory Calculator: 33 metric tons of nitrous oxide (N2O) for Bucks County
- Solebury agricultural land (5477 acres) / Bucks County agricultural land (77,255 acres).
- Total N2O from Solebury's annual crop production: **2.3 MT N2O**

Crop	Production (thousand bush)	Residue Emissions factor (l)	Legume emissions factor (l)	MT N2O
CORN	1861.222	1.9	0	3.54
WHEAT	118.288	2.9	0	0.34
OATS	16.01	1.7	0	0.03
SORGHUM	0	4.9	0	0.00
SOYBEANS	570.186	16.2	34.6	28.97
HAY & HAYLAGE (not included in state inventory total)	--	--		
Total				33



Total and Per Farm Overview, 2017 and change since 2012

	2017	% change since 2012
Number of farms	824	(Z)
Land in farms (acres)	77,255	+21
Average size of farm (acres)	94	+21
Total	(\$)	
Market value of products sold	75,757,000	+21
Government payments	635,000	+10
Farm-related income	11,116,000	-12
Total farm production expenses	70,619,000	+2
Net cash farm income	16,889,000	+166
Per farm average	(\$)	
Market value of products sold	91,938	+22
Government payments		
(average per farm receiving)	7,650	+49
Farm-related income	34,629	-16
Total farm production expenses	85,702	+2
Net cash farm income	20,496	+167

1 Percent of state agriculture sales

Share of Sales by Type (%)

Crops	72
Livestock, poultry, and products	28

Land in Farms by Use (%) *

Cropland	78
Pastureland	7
Woodland	10
Other	5

Acres irrigated: 962

1% of land in farms

Land Use Practices (% of farms)

No till	21
Reduced till	16
Intensive till	13
Cover crop	13

Farms by Value of Sales

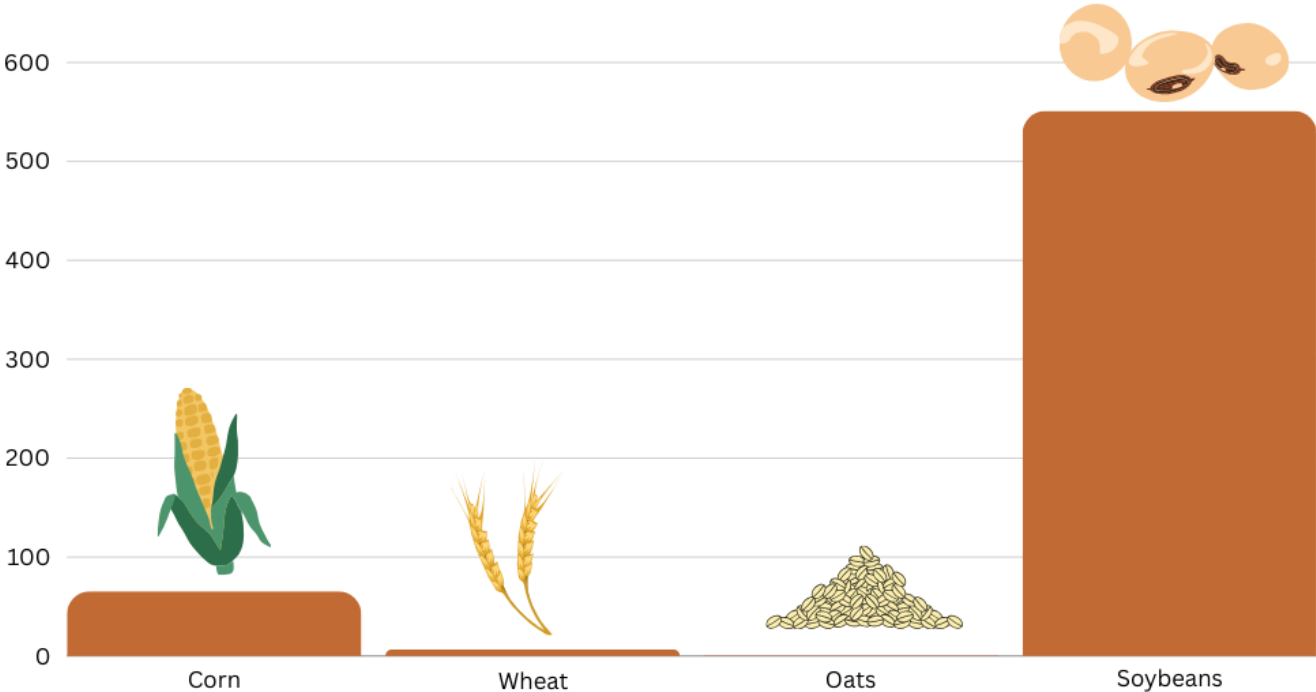
	Number	Percent of Total *
Less than \$2,500	325	39
\$2,500 to \$4,999	74	9
\$5,000 to \$9,999	69	8
\$10,000 to \$24,999	95	12

Farms by Size

	Number	Percent of Total *
1 to 9 acres	203	25
10 to 49 acres	391	47
50 to 179 acres	135	16
180 to 499 acres	67	8
500 to 999 acres	16	2

Agricultural Sector Emissions by Source

Total: 639 MTCO₂e



Crop Type	*MTCO ₂ e
Corn	66
Wheat	7
Oats	0
Soybeans	561

*numbers here are rounded and used for visual representation only

LCAP Spring 2024 Goals



REVIEW ENERGY TRANSITION PLAN



FORECASTING



RECOMMENDATIONS



Questions



EMAIL US:

Nattalie: nbm5363@psu.edu

Lisnormary: lxl5491@psu.edu

