

Truro Greenhouse Gas (GHG) Inventory

1Q 2021

Climate Action Committee

Acknowledgements

Town of Truro

- Assessor's Office
- DPW
- Town Clerk
- Building Department
- Harbormaster's Office

Cape Cod Commission

Wellfleet Energy and Sustainability Committee

Input on data sources

- Town of Wellesley Energy Committee
- Metropolitan Area Planning Commission

Outline

- Motivation
- Framework for evaluation and reporting
- Methodology by sector/source
 - Exclusions
- Results
- Considerations

Why?

- Charge from Select Board
 - Prepare a baseline study of the greenhouse gas emissions of the entire town of Truro, including municipal, residential, institutional, and commercial sectors
- Track decarbonization progress towards MA goal net-zero 2050
- Identify Truro's GHG emissions to inform decision making
 - Building codes, municipal construction/retrofit, EV charging infrastructure
- Just scorekeeping – no recommendations

Framework

- City Inventory Reporting and Information System (CIRIS)
 - Excel based
 - Free!
 - Complies with Global Covenant of Mayors Common Reporting Framework
 - Truro is a member
- Standards based sectors (Global Protocol Community-Scale GHG)
 - Stationary – Building heating fuel and electricity
 - Transportation – Motor vehicles
 - Waste – Solid waste and septic

Residential heating fuel

- Town assessor's data (2019) – property class, fuel type, building area (sq ft)
- Residences – 63% seasonal, 37% year round
- Estimate seasonal usage as 35% of year round – heating degree days
- MA Dept Energy Resources usage data
 - Propane – 0.39 gals / sq ft
 - Heating oil – 0.40 gals / sq ft

	Propane	Heating Oil
Total building area (sq ft)	1,702,044	2,362,824
Year round usage (gals)	244,794	352,067
Seasonal usage (gals)	144,268	207,489

Commercial heating fuel

- Town assessor's data (2019) – property class, fuel type, building area (sq ft)
- Classify property type – office, lodging, restaurant, retail, storage, trade
- Classify seasonal usage by quartile
- Calculated as 40% of year round residential per sq ft

	Propane	Heating Oil
Total building area (sq ft)	125,400	187,780
Usage (gals)	19,997	29,693

Grid supplied electricity

- Mass Save data (2018)
- New England regional emission factor

Residential – 17,102 MWh

Commercial – 6,753 MWh

Motor vehicles

- Town assessor's registration data (2020) – plate type, VIN
- NHTSA Vin lookup API fuel type
- National averages for vehicle miles travelled, MPG

	Gas	Diesel	Electric	Motorcycles
Vehicles #	2,434	121	14	52
MPG (mi/kwh)	24	14	4	44
Miles / year	11,487	11,989	11,487	2,312
Usage (gals) (kwh)	1,155,224	106,298	44,603	2,732

*Reported in grid

Watercraft

- Harbormaster's data (2020) – moorings, daily launches
- Estimate # trips per mooring – 20 trips / year
- Daily launch receipts

4,635 trips / year

10 gals / trip

46,350 gals

Waste

- DPW data for municipal solid waste (2019)
 - Covanta SEMASS waste to energy
1,678 tons

Exclusions

- Misc propane – cooktops, hot water, pool heaters, generators, etc.
 - Difficult to estimate and track – installs but not removals
- Buses – P&B, PeterPan, CCRTA
 - CCC track regionally
- Landscaping eqpt – e.g. lawnmowers
- Off road eqpt – e.g. excavators
- Septic
 - Small (1.5% of total per capita)

Results - Intensity

Emissions CO2	Entire Town	25,786 (in metric tons ¹)
	CO2 per capita (in metric tons)	CO2 per 1000 sq mi (in million metric tons)
Truro (2019)	12.7	1.0
MA (2017)	9.2	8.1
US (2017)	15.8	1.4

Truro seasonal usage skews this

- Number of residents
 - 2,038
- Number of residences
 - 2,912
 - 1,085 year round
 - 1,827 seasonal

¹A metric ton weighs 2205 pounds or 1.1 US tons.

Results - Sector

	US (2019)	Truro
Transportation	29%	45%
Electricity Generation	25%	22%
Industry	23%	-
Agriculture	10%	-
Commercial	7%	2%
Residential	6%	31%

Considerations

- Peer reviewed by CCC rep and neighboring town
 - Indicates variability in approaches
- Excluded sequestration – regional/state level
- Longitudinal consistency/reproducibility
 - Conduct every two years
- Intent for audit by Global Covenant of Mayors
- Results dissemination

The End