

2012 Greenhouse Gas Emission Inventory

April 21, 2015

Background

Mission: Our mission was to work with the Town of Carrboro to create an updated greenhouse gas inventory, in order to compare it to the previous 2009 inventory.

Using our findings we have recommended mitigation strategies that we think are best suited for the Town of Carrboro, considering and building off of past efforts the Town has made.

Methods

- ICLEI's ClearPath
 - replaced CACP
- Divides emissions into two tracks:
 - local government
 - community
- Requires:
 - direct measures
 - factor set

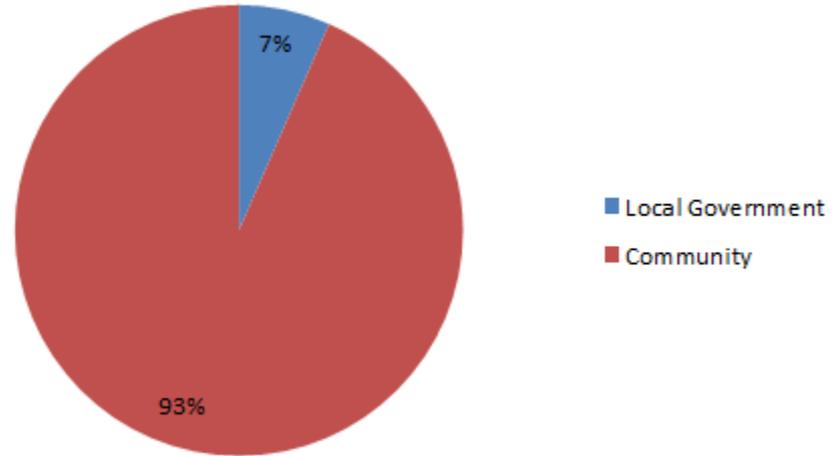


Results



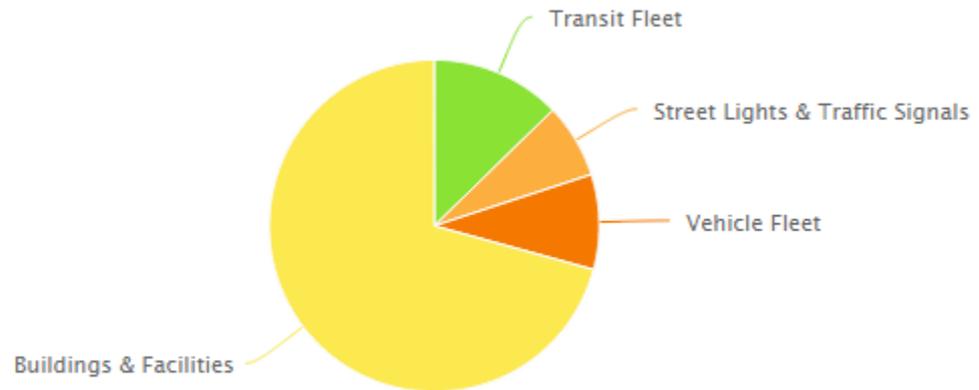
Overview

- For 2012, the Town emitted 111,954 tons of CO₂ equivalent
- 5.5 tons of CO₂e per person
 - Much lower than the state, national, and world average



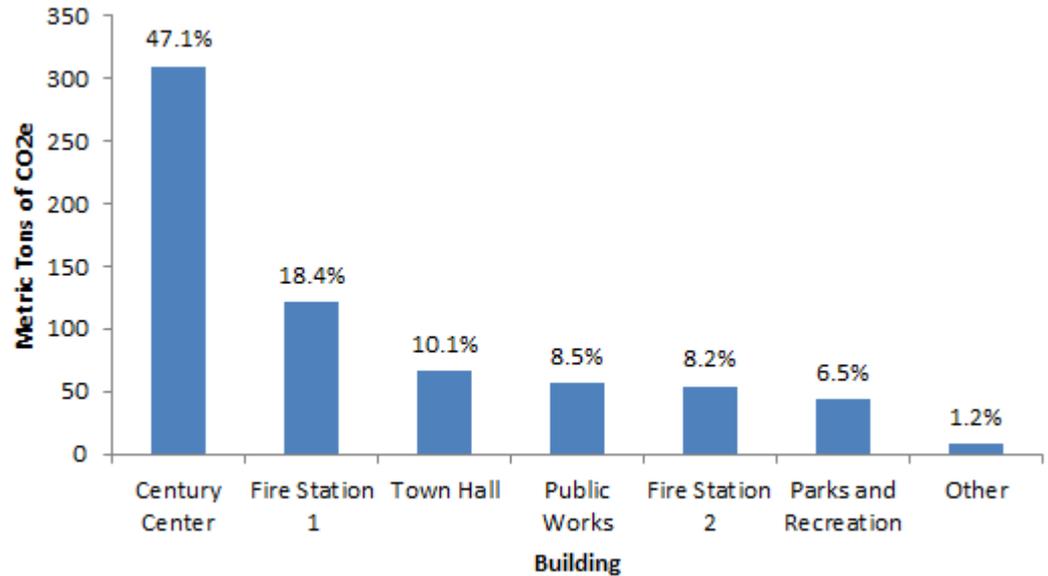
Local Government Sector

Sector	MT of CO ₂ e	% of Total
Schools (in buildings)	4636	61.9%
Transit Fleet	954	12.7%
Vehicle Fleet	693	9.3%
Municipal Buildings	661	8.8%
Lighting	543	7.3%



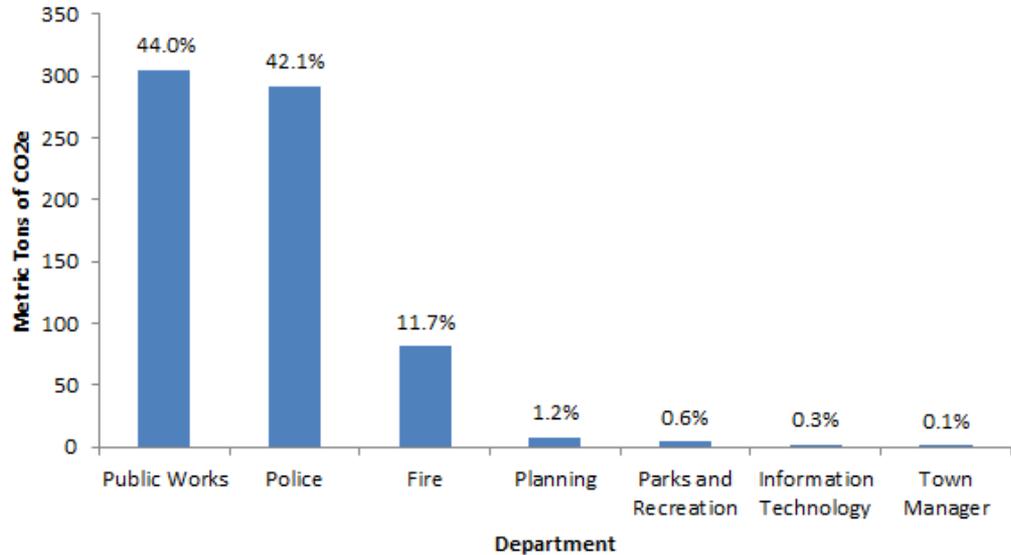
Municipal Buildings

Building	MT of CO ₂ e	%
Century Center	310	47.1%
Fire Station 1	121	18.4%
Town Hall	66	10.1%
Public Works	56	8.5%
Fire Station 2	54	8.2%
Parks and Rec.	43	6.5%
Other	8	1.2%



Vehicle Fleet

Department	MT CO ₂ e	%
Public Works	305	44.0%
Police Dept.	292	42.1%
Fire Dept.	81	11.7%
Planning	8	1.2%
Parks and Rec.	4	0.6%
IT	2	0.3%
Town Manager	1	0.1%

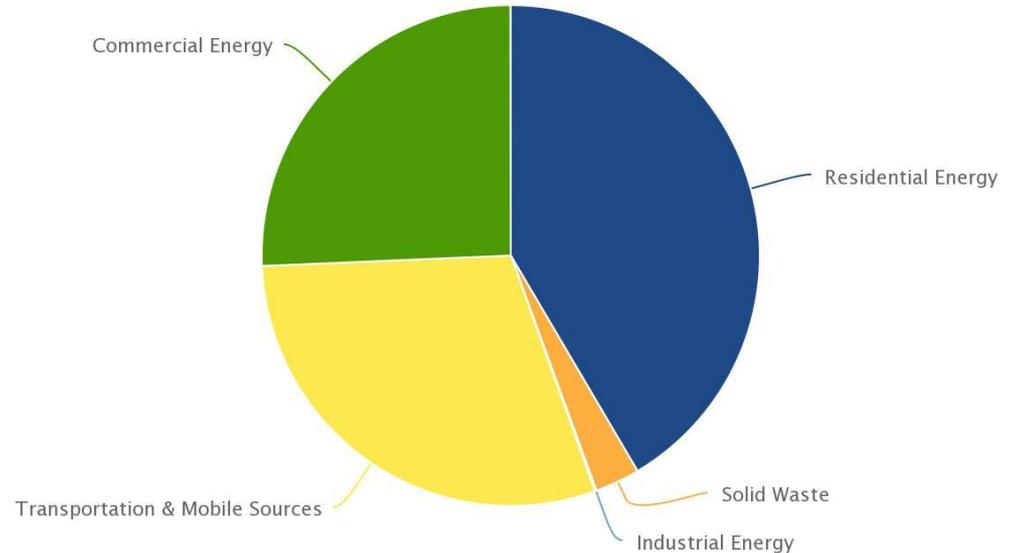


Local Government Comparisons

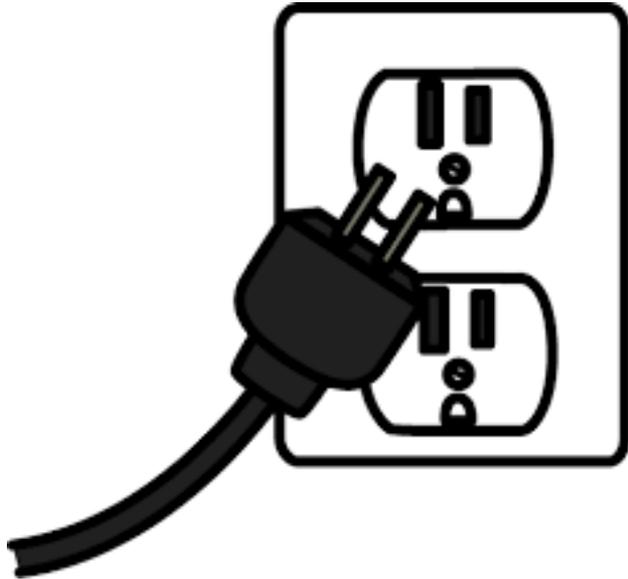
	2009 CO ₂ Emissions (metric tons)	2012 CO ₂ Emissions (metric tons)	Change in CO ₂ Emissions	Percent Change
Buildings	6,527	5,192	-1335	-20.45%
Transit Fleet	960	954	-6	-0.625%
Vehicle Fleet	764	693	-71	-9.29%
Streetlights	467	543	76	16.27%
Total	8718	7382	-1336	-15.32%

Community Sector

Category	CO ₂ e (MT)	Percent
Residential	43,406	41.5%
Transportation	31,183	29.8%
Commercial	26,836	25.7%
Solid Waste	3,034	2.9%
Industrial	113	0.1%



Electricity



Residential Energy

- Decreased from 53,121 to 43,406 MT of CO₂
- Change of -18.25%

Commercial energy

- Increased from 18,469 to 26,836 MT of CO₂
- Change of 45.3%

Comparisons between 2009 and 2012 data were somewhat difficult to assess b/c of changes in data format from Duke Energy

Natural Gas

- Residential CO₂ emissions decreased
 - 6,237 vs. 8,430
- Commercial CO₂ emissions nearly doubled
 - 3,175 vs. 1,782
- Total CO₂ natural gas emissions decreased slightly
 - 815
- One of the hottest years on record

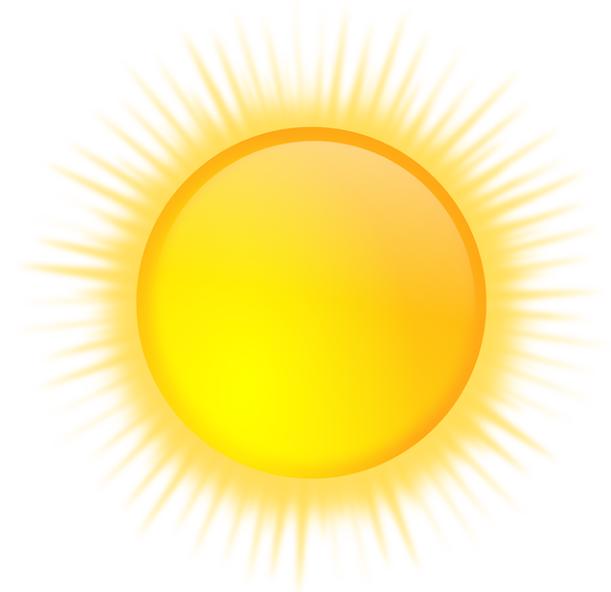


Image: pixabay.com

Solid Waste

- Tons of waste generated decreased slightly
 - 8,047 vs. 8,349
- Emissions almost doubled
 - 3,034 vs. 1,678
- In this category, comparisons between reports is difficult due to factor set differences
- Per capita waste generation is well below national average of 4.38 lbs/day
 - 2.18 lbs/day



Photo: Chapelboro.com

Transportation

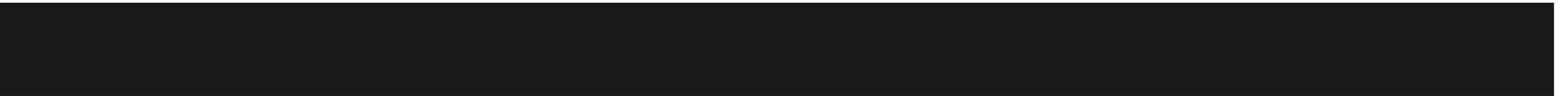


- Boundary of Carrboro's town limits
- Slight decrease from 31,576 to 31,183 tons of CO₂
- Percent change of -1.25%

Major Findings

- Total emissions decreased between 2009 and 2012 from 113,617 to 111,954 tons of CO₂
- Municipal emissions greatly decreased by 15%
 - Mainly due to a reduction in energy use from buildings
- There was a 16% emission increase from streetlights
- The community sector only saw a slight decrease in total emissions, but there was significant decrease residential energy use.
 - Residential energy emissions decreased by 9,715 metric tons of CO₂, which is more than an 18% reduction.

Mitigation Strategies



Energy Performance Ratings

- Required for all homes and residential buildings
- In Carrboro homes: 33% owner occupied vs. 59% renter occupied.
- Allow tenants and owners to know the energy efficiency of the home or building and able to make informed decisions



Commercial Energy Efficiency

- Educate business owners of existing resources
- Outline potential savings
- Hold workshops
 - Financing options
 - Operations and management improvements
- Energy Efficiency Revolving Loan



Image: pixabay.com

Waste Reduction/Composting

- Waste generation is already low
- BUT, Orange County landfill closed
- Emphasize recycling
- Encourage composting
 - Implement a collection program
 - Provide resources



Image: pixabay.com

Transportation



- Improve infrastructure
- Create and expand upon current city events & programs
- Economic incentives
- Carrboro's Transportation Forum of fall 2014

Questions?