

Path to Zero Emissions—Creating a Sustainable Carlisle

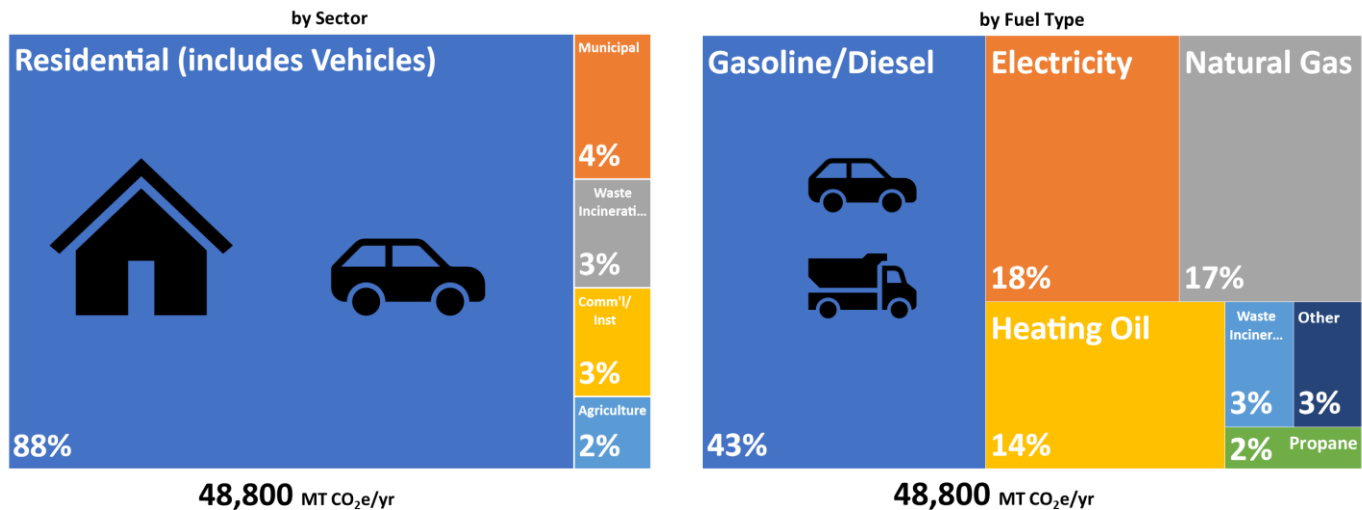
Summary

Purpose: To inform Carlisle’s decision about whether to include in our new master plan community-wide goals to lower greenhouse gas emissions.

Content:

- First assessment of Carlisle’s community-wide greenhouse gas emissions
- Options for goals to reduce greenhouse gas emissions
- Conceptual approach for achieving goals, should Carlisle elect to adopt goals.

2017 Carlisle Direct Greenhouse Gas Emissions, Metric Tons of CO₂ Equivalent/Year



Key Findings:

- Carlisle’s 2017 residential direct emissions (including vehicles) accounted for about 88% of Carlisle’s emissions
- In 2017, transportation fuels accounted for about 43% of overall direct emissions
- Carlisle’s per-capita emissions are **over 40% higher** than U.S. and Massachusetts averages
- In July of 2018, Carlisle entered into a Community Choice Power Supply program that dramatically increased the amount of renewable electricity purchased in Carlisle. This step alone **cut Carlisle’s electricity emissions by 77% and overall direct emissions by 14%**.
- The direct emissions accounted for above represent only about one third of Carlisle’s total emissions. Emissions associated with products and services that Carlisle uses bring total emissions to an estimated 147,000 MTCO₂e/year.
- Accounting for forest/woodlands carbon sequestration either lowers Carlisle’s total emissions by about 7% compared to a denuded (bare-ground) Carlisle, or raises them by about 3% compared to a fully forested Carlisle.
- Should Carlisle choose to adopt emissions-reduction goals, the most effective approach will likely include:
 - Improving the energy efficiency of our homes and buildings
 - Electrifying (i.e., converting from fossil fuels to electricity in our homes, buildings, and vehicles)
 - Continuing to switch to renewable electricity
 - Sequestering carbon and lowering agricultural emissions, where feasible
 - Promoting more sustainable behaviors.
- To successfully implement this approach, Carlisle will want to hire a Sustainability Director.

Full Report: <https://www.carlislema.gov/758/Path-to-Zero-Emissions>