Municipal operations

City of Roeland Park, KS – Municipal operations footprint

- The city of Roeland Park, KS quantified the total annual emissions from city-owned assets, such as buildings and vehicles.
- The data included downstream emissions, such as employee commuting, as well as the consumption of both fuels, such as natural gas, gasoline, diesel and electricity.
- Quantification of city-owned assets and their emissions through an inventory is the first step to set targets and create impactful strategies to reduce emissions over time.

Emissions from City-owned buildings

Buildings account for 82% of the total city-owned asset footprint

- The city used 8,216 MCF of natural gas in several of its buildings for the 2019 calendar year, which accounted for 38% of its entire footprint.
- Electricity usage, at 974 MWh, contributed to the remaining 44% of emissions from buildings

Strategies and emissions reductions in city-owned buildings include:

1. New on-site solar projects can reduce emissions by 15.8%
2. Evergy's electric grid, with cleaner feedstock, can reduce by12.9%
3. Building-level efficiency measures and actions result in 8% reduction

Proposals are already being evaluated to install onsite solar energy on city-owned buildings, properties and adjoining premises. With zero-emissions source of energy in solar, the displaced 364 MWh of electricity per year would result in 186 metric tons of reduction. Moreover, according to Evergy's 2018 Sustainability Report (page 3), the carbon content of electricity would have reduced by 13% between the beginning of 2018 and 2020.

Mitigation Opportunities

Almost 37% of city-owned emissions can be reduced

- The 3 major items could collectively meet and exceed a reduction target of 26 – 28%, such as the one suggested under the Paris Accord by target year 2025.
- Most of them are already underway, with the inventory being used to both benchmark emissions in future years while measuring progress over time.

Normalized emissions from city-operations

For every full-time employee (adjusted by aggregating part-time staff members), the City emits around 39.72 metric tons per FTE. Compared to neighboring cities, such as City of Kansas City, Missouri, it is slightly higher (11.6% higher from KCMO 2017 estimates) who emit 35.58 mt CO_2e per FTE.

The economies of scale for operations of larger cities, such as Kansas City, MO, with more staff members, leads to lower per capita contributions to the footprint, through more efficient use of facilities and other assets.

Emissions from Transportation

Transportation accounted for the remaining 18% of emissions from the city's operations. Roeland Park owns 20 fossil-fuel powered vehicles which resulted in 10% of the emissions. In the future, the city could seek opportunities to reduce dependence on petroleum-powered vehicles and transitioning to zero-emissions vehicles, such as electric vehicles.

Additionally, city staff and employee commuting, both through on-road transportation, and air travel accounted for the remaining 8%. Reduction strategies include:

- Transforming the fleet to electric drivetrain vehicles
- Carpooling to work based on route similarity for staff members

*Other, non-transit fuel use, for gasoline or diesel, such as small-engines (lawn-mowers) were disregarded

Dynamhex

City operations (Roeland Park)

1,177 mt CO_2e

39.72 mt CO_2e per capita FTE

Municipal buildings	Units	**2019**	GHG (MT)	GHG (%)	
Natural gas	M MCF	8,216	447.77	38%	82%
Electricity	MWh	974	517.79	44%	
Transportation		**2019**			
Aviation	Miles flown	4,768	1.57	0%	18%
Staff commuting	US gal (gasoline)	11,000	96.91	8%	
Fleet vehicles	US gal (motor gasoline and diesel)	12,424	112.80	10%	

Prelimenary data on city-own greenhouse gas emissions

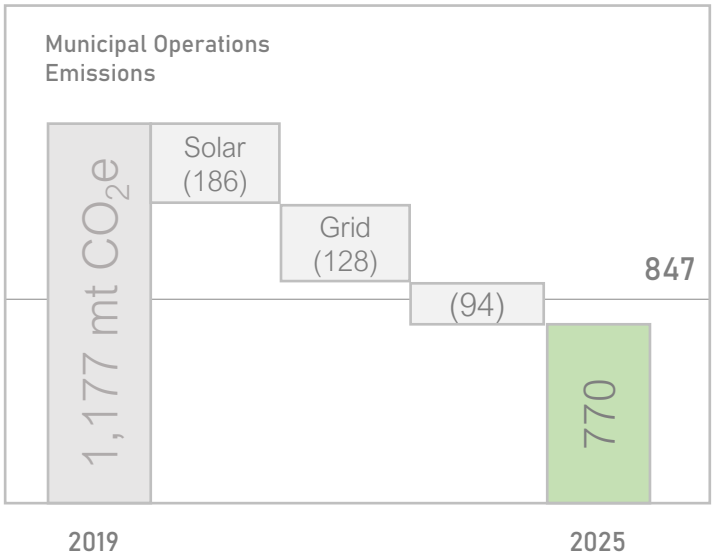
No steam, heat, or chilled water usage was reported in municipal-owned buildings; and N_20 from wastewater was negligible

Electricity emissions factors were assumed to be eGRID subregion SPNO for the energy provider

The Climate Registry, Tier C Method and US EPA emission factors of fuels, such as natural gas, motor gasoline, diesel fuel etc. was used in estimation according to inventory framework

Meet goals

Roeland Park's municipal operations can be streamlined to implement strategies and verifiably meet 2025 goals



If the Paris Accord targets, for 28% are set for a goal by 2025 (770 metric tons), the 3 strategies could collectively deliver over 400 metric tons of reduction.

Roeland Park's partnership with Dynamhex allows continued measurement and evaluation. The city's leadership has ensured the progress to create a health community in the coming years leading up to 2025.