Energy Plan Commission

Meeting Minutes May 18, 2022

Regular Meeting - City Hall Room 155

Attendance: Commissioners: Alison Hoxie, Gary Olson, Cassandra Theisen, Robert Reichert, Scott Wishart
Absent: Brian Hinderliter, Tari Rayala.

City Staff: Mindy Granley, Sustainability Officer; Mike LeBeau, Construction Project Supervisor; Alex Jackson, Energy Coordinator; Jim Filby Williams, Director – Property, Parks, & Libraries; Jennifer Ondrik, Administrative Specialist; Julia Forberg, AmeriCorps VISTA member serving as Energy and Sustainability Assistant.

Call to Order:
The meeting started at 4:06 pm.

Old Business:
None

New Business:
GHG Update – Julia Forberg, Energy and Sustainability Assistant presented the figures and updated numbers on the Greenhouse Gas municipal emissions data. She explained the metrics used to track this data and led a hands activity using the figures from 2018. (See attached report)

Duluth's Energy Plan Approach – Alex Jackson addressed the Commission and shared the strategies the city is currently using to reduce emissions. The original energy plan was developed to help the city achieve 80% reduction of CHG Emission from 2008. The group discussed changes that will likely need to occur to move toward the new commitment of carbon neutral by 2050. Alex explained the three main elements of the plan 20% – Conservation to reduce consumption; 20% - Renewals to off-set consumption; 60% - Reduce Utility CHG emissions.

Other Cities / Presentation invitation discussion- Mindy Granley asked the Commission to make suggestions to her directly on who the Commission would like to hear from in future meetings.

2022 Energy Plan Commission Goals – New appointed chair, Cassie Theisen, shared her vision and goals for the EPC in 2022. The three areas of emphasis are on municipal utilities, electric vehicles, & moving the commissions' scope beyond buildings to include community-wide energy issues.

Local Building Sciences Training – Mike LeBeau shared his concept vision for a mandatory training session / certification course to be offered and required for local contractors, architects, and designers. Offering and requiring this type of course would hopefully increase design and building performance *past* code minimums. The Commission suggested the City consider bringing in an energy modeler on our projects.

Energy Coordinator Update – Alex Jackson updated the commission on the City Hall MEP Project, progress made on building controls and card access, and echelon lighting controls.

Sustainability Update – Mindy provided an extensive update of the work she has been focused on over the last two months (see attached report).

Future Meeting Topics / Announcements:
Commissioner Reichert would like to have microphones available at our next meeting.

Public Comment:
None

Adjournment:
There was a motion to adjourn the meeting at 5:59 PM, M/S/C.

City of Duluth: Greenhouse Gas Inventory Update

Presented by Julia Forberg, Energy and Sustainability Assistant

Spring 2022

ICLEI Local Governments for Sustainability

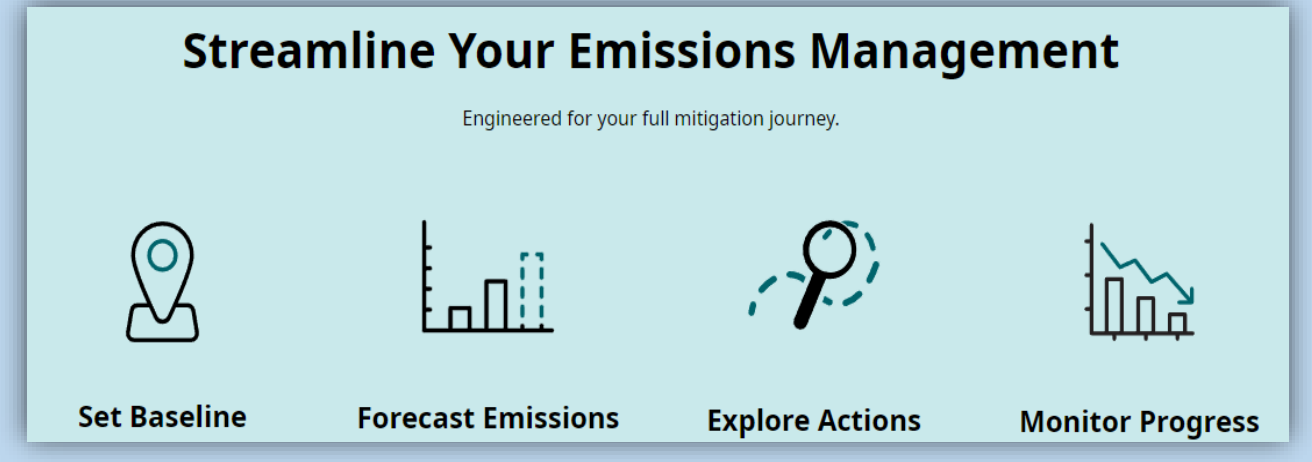
THE CITY OF DULUTH MINNESOTA

Agenda

1. ICLEI – Local Governments for Sustainability; ClearPath tool
2. Data sources
3. Activity – Municipal vs. Community Emissions matching game
4. Current landscape: 2021 emissions breakdown
5. Takeaways & Next Steps
6. Questions?

ICLEI – Local Governments for Sustainability

- ICLEI: First and largest global network of local governments committed to solving sustainability challenges and promoting climate action.
- Clear Path Tool
  - Leading online software platform for greenhouse gas inventories and monitoring government-operations scales.
    - Technical support through in-depth training on each step of ClearPath set up and use



Where does the data come from?

- Energy Manager
  - Can pull certain energy data directly
  - Electricity, natural gas, steam, water used by City Primary Facilities
    - “Primary Facilities” includes: Civic buildings, community centers, fire halls, golf, library, maintenance, parking, parks, police
- Staff inquiry
  - Paul Johnson – Transportation
  - Alex Jackson – Buildings
  - Terry Nanti – Duluth Energy Systems (new contact for next year)

How are GHG emissions calculated?

- Activity Data x Emissions Factor = Emissions Estimate

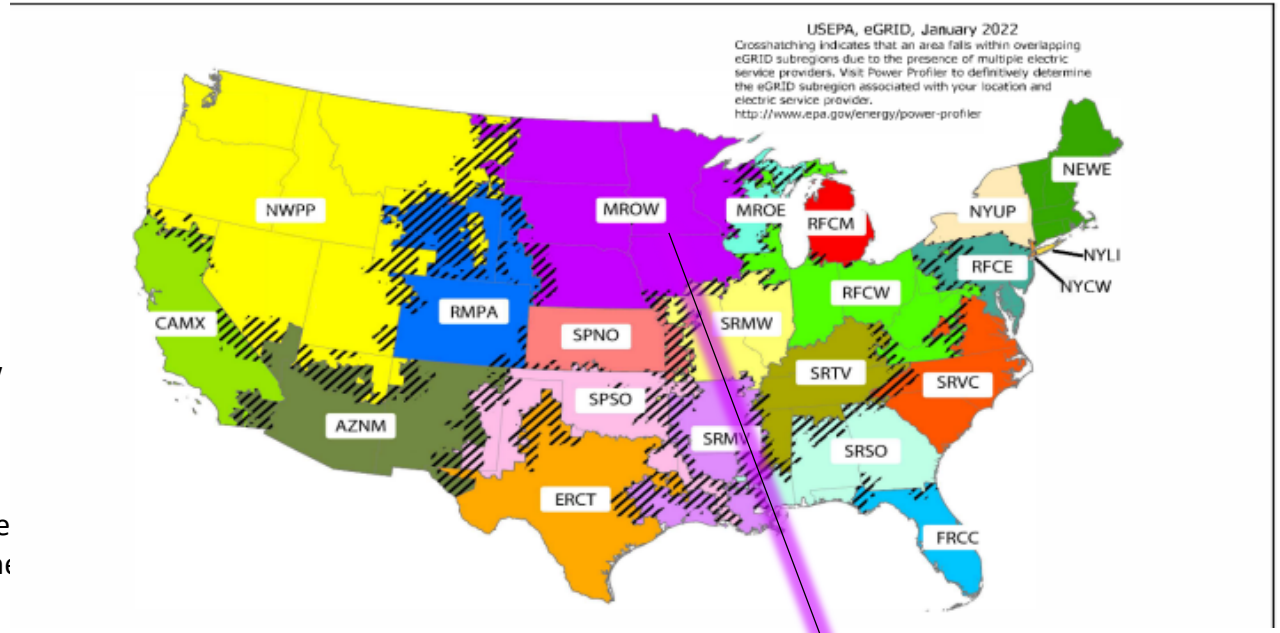
Activity Data	Emissions Factor	Emissions
Electricity Consumption (kilowatt hours)	CO_2 emitted/kWh	CO_2 emitted
Natural Gas Consumption (therms)	CO_2 emitted/therm	CO_2 emitted
Gasoline/Diesel Consumption (gallons)	CO_2 emitted /gallon	CO_2 emitted
Solid Waste Generated (tons)	CH_4 emitted/ton of waste	CH_4 emitted

Factor Sets

* Name	2020 US National Defaults (use for 2021)
Year	2021
Gas Passenger Vehicle Fuel Economy (MPG)	24.37713
Gas Passenger Vehicle g CH4/mi	0.0180
Gas PassengerVehicle g N2O/mi	0.0074
Gas Light Truck Fuel Economy (MPG)	17.86788
Gas Light Truck g CH4/mi	0.0187
Gas Light Truck g N2O/mi	0.0132
Gas Heavy Truck Fuel Economy (MPG)	5.377347
Gas Heavy Truck g CH4/mi	0.0719
Gas Heavy Truck g N2O/mi	0.0611
Gas Transit Bus Fuel Economy (MPG)	17.86788
Gas Transit Bus g CH4/mi	0.0187
Gas Transit Bus g N2O/mi	0.0132

Transportation Emissions Factor: Factor Sets will allow you to specify fuel economy and per-mile CH4 and N2O rates for a variety of vehicle classes. National defaults are used and pre-loaded onto the tool as available.

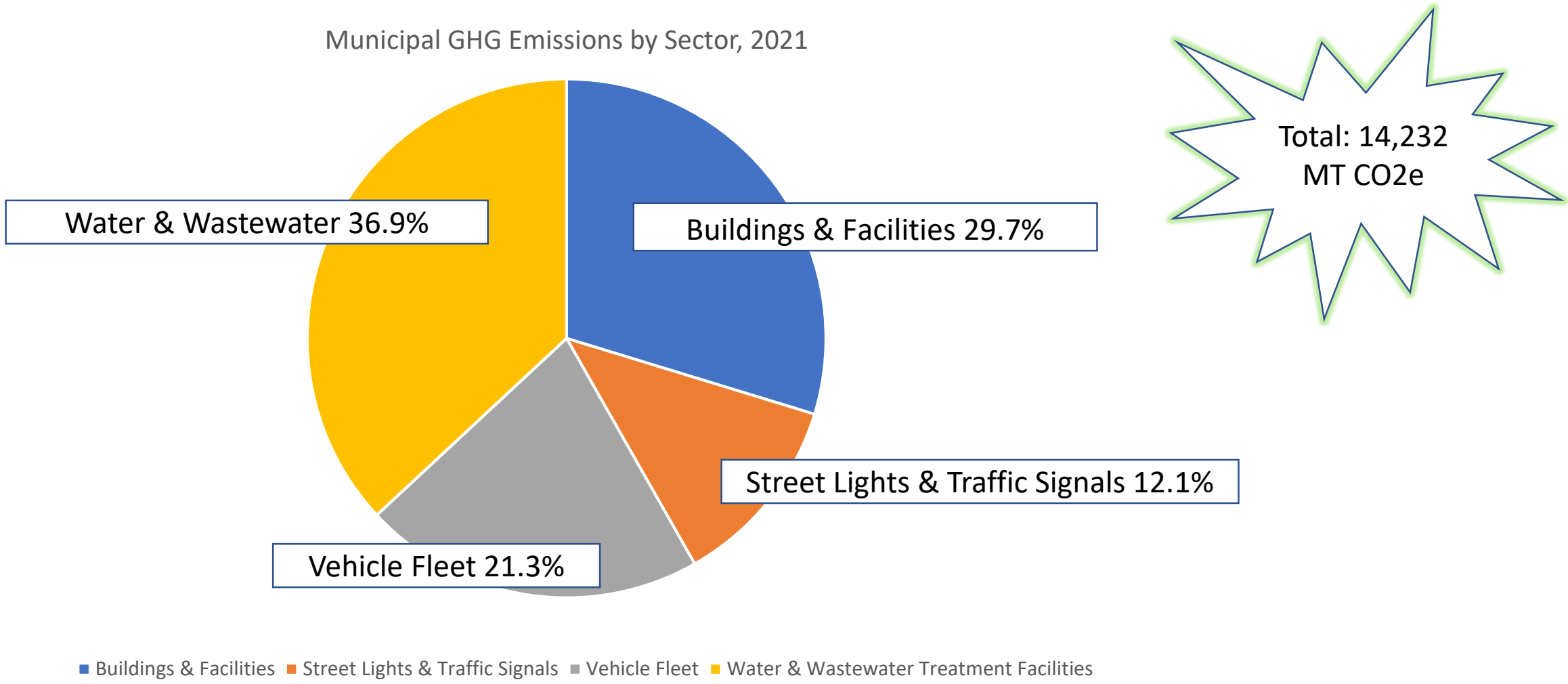
Map of eGRID Subregions



* Name	MRO West (MROW) eGRID 2020 (2021)
Year	2021
CO2 lbs/MWh	979.5
CO2 kg/MWh	
CH4 lbs/GWh	104
CH4 kg/GWh	
N2O lbs/GWh	15
N2O kg/GWh	
Notes	Most recent data is from 2020: https://www.epa.gov/system/files/documents/2022-

Electricity Emissions Factor: Utilizing Regional Emissions Average is standard practice. Updated every 2 years by EPA; we used 2020 data for both 2020 and 2021 inventory.

Municipal Emissions by Sector, 2021

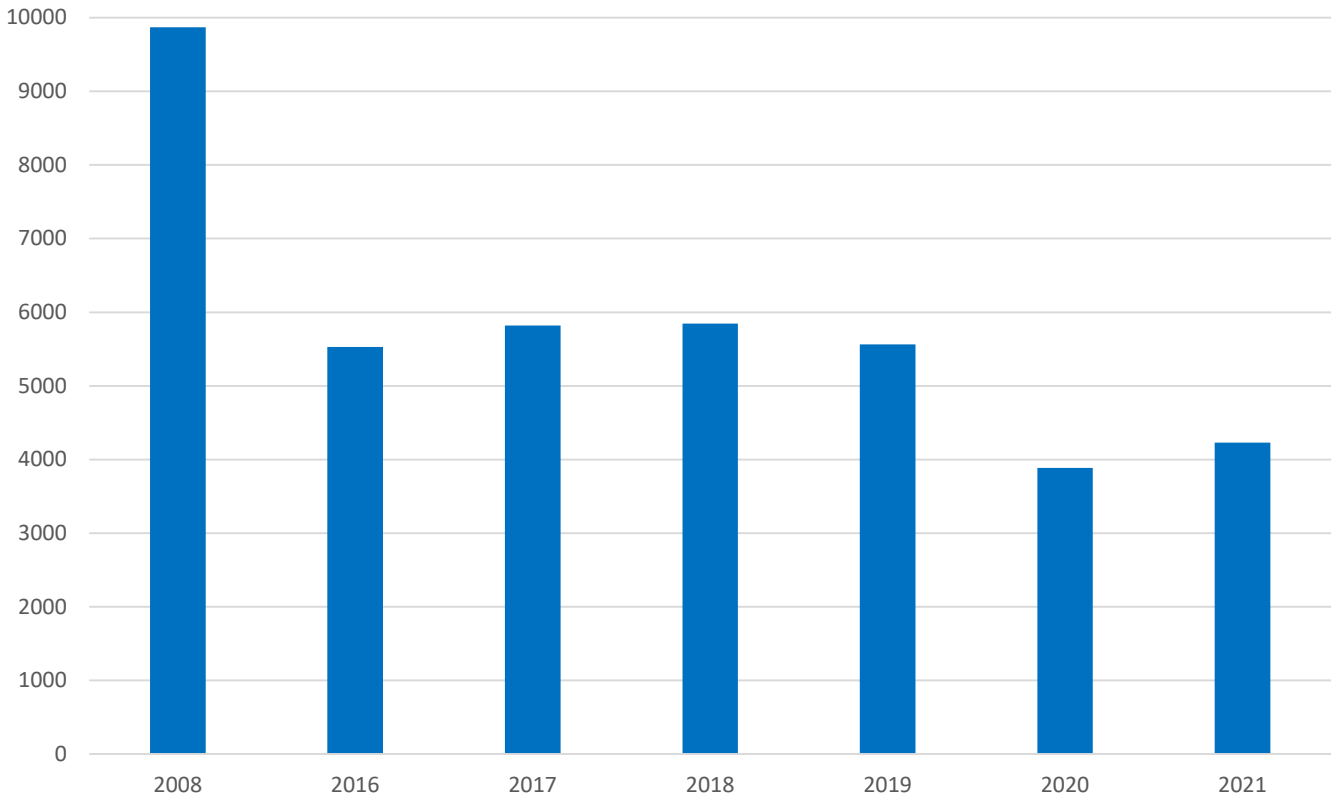


Total: 14,232
MT CO2e

Annual Municipal GHG Emissions: MT CO2e

Breakdown: Buildings & Facilities

29.7%



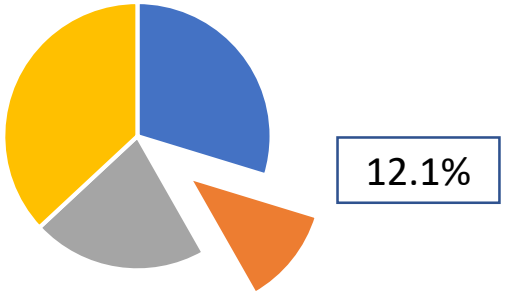
Reductions over time due to:

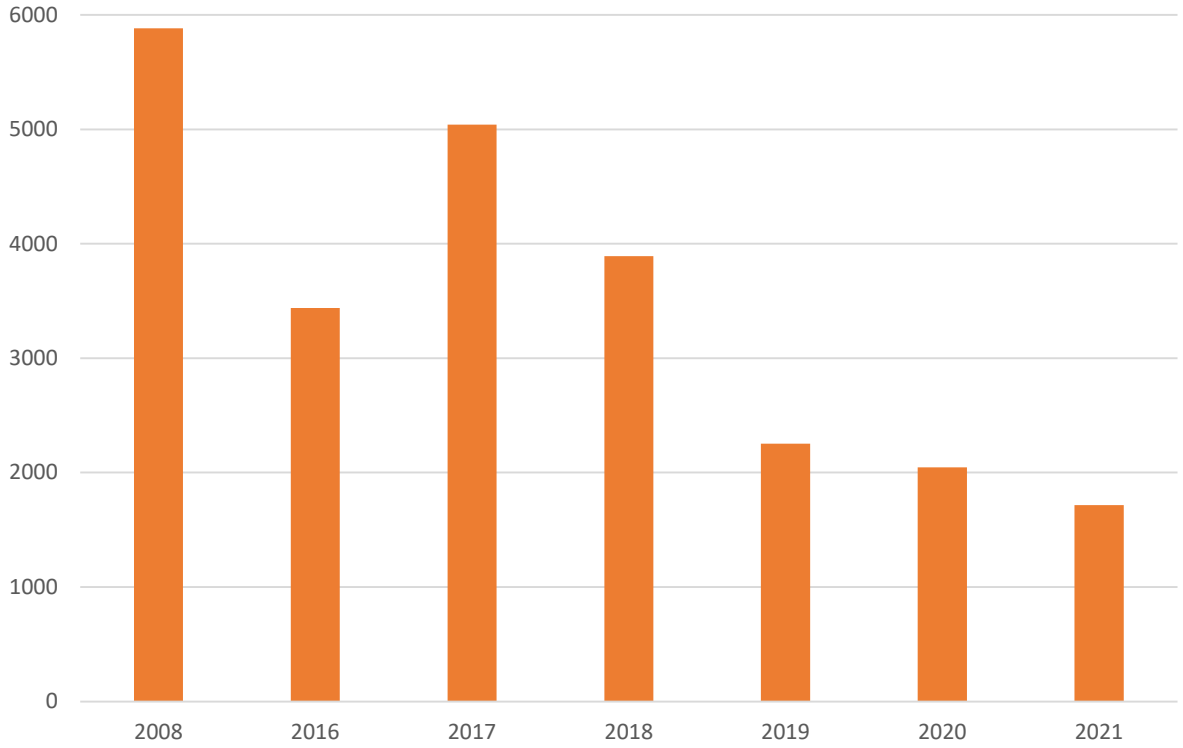
- LED replacements (~60% LEDs in all City bldgs.)
- 2020 may be skewed due to COVID

Opportunity for further reduction, based in Climate Action Work Plan:

- 1.2: Eliminate coal in ~5 years, encourage transition to efficient hot-water loop for DES
- 1.5: Renewable energy projects on City property
- 3.1: Accelerate sustainable building design for new and renovated buildings

Breakdown: Streetlights & Traffic Signals





Reductions over time due to:

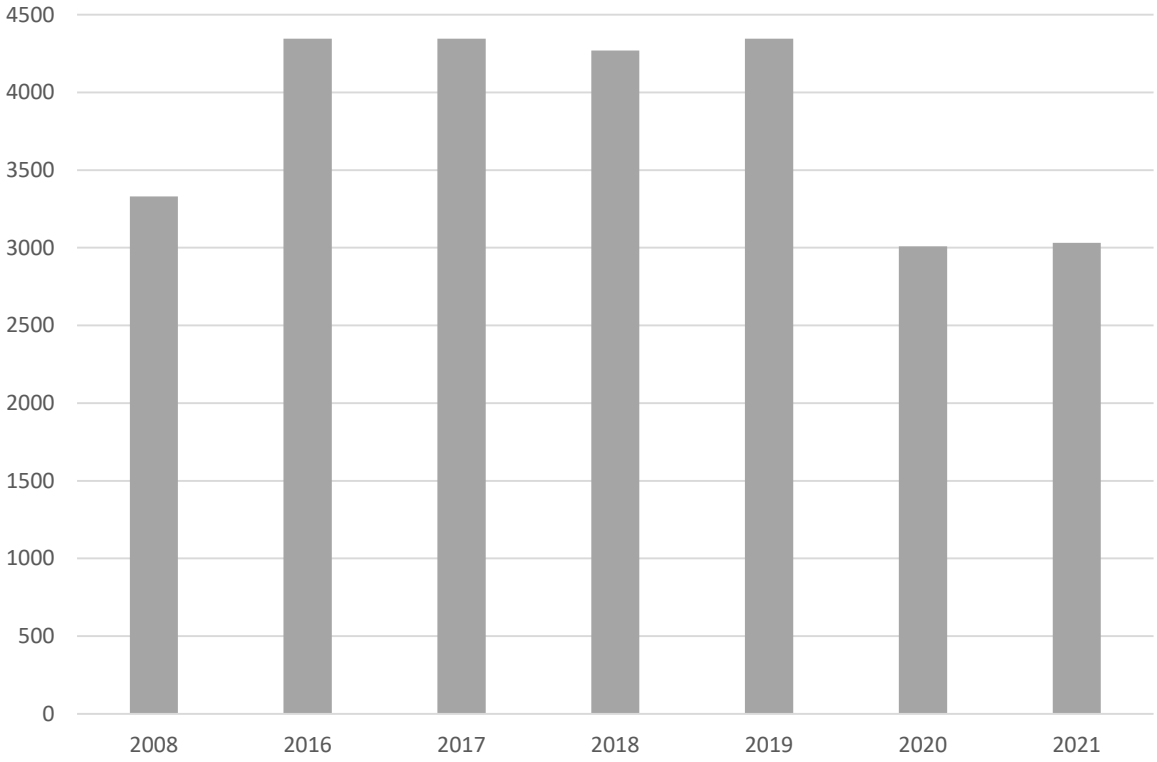
- LED installation (street lights 84%, traffic signals 98%)

Opportunity for further reduction:

- Procurement of clean energy (purchasing or producing solar)

Breakdown: Vehicle Fleet

21.3%



Reductions (or fluctuations) over time due to:

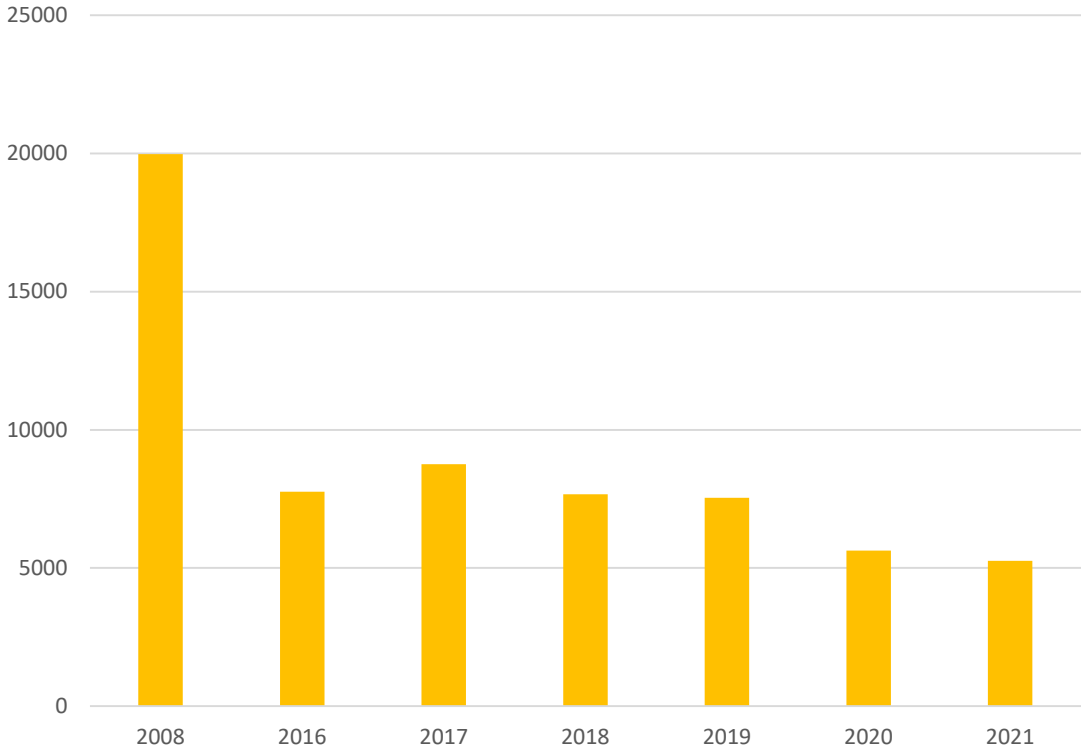
- 2020: less vehicle miles traveled (VMT)
- More winter storms = more fleet travel

Opportunity for further reduction, based in Climate Action Work Plan:

- 1.4: Assessment of City fleet to identify points of electrification and low-emissions vehicles, reinforce anti-idling policy of combustion vehicles
- 3.7: Increase EV charging infrastructure

Breakdown: Water & Wastewater Treatment

36.9%



Reductions over time due to:

- Between 2008 and 2016, huge systems replacements

Opportunity for further reduction, based in Climate Action Work Plan:

- 1.3, 2.1: Improve efficiency and resiliency of water plant and distribution system
- Other: Two more water mains to be replaced in 2022

Takeaways & Next Steps

- 2020 and 2021 showed improvement, however we must take into account the effects of the pandemic
- With the new ambitious, science-based target of net zero by 2050, climate actions must be ramped up
- Climate Action Work Plan provides a menu of GHG-reducing options for every City department
- Local governments can’t do it alone – collaboration with community-based organizations, utilities, residents, etc. is necessary

Questions?

Thank you for listening!

Sustainability Updates

May 2022

Mindy Granley, Sustainability Officer

City of Duluth Sustainability Team

- Sustainability Officer
- City Sustainability Advisory Team

Minnesota GreenStep Cities

ICLEI Local Governments for Sustainability USA

USDN urban sustainability directors network

Energy & Sustainability Assistant

AmeriCorps

Green Infrastructure

Minnesota GreenCorps

Climate Smart Municipalities Intern – Green Infrastructure

5. Shovel-ready projects

Projects ready for funding opportunities

- Stormwater resiliency planning ($100k) – *secured, grant from MPCA*
- Strategic Facilities Plan to prioritize Capital Improvements ($150k) – *secured*
- Gap funding for electric/hybrid fleet vehicles ($200k) - *secured*
- Eliminate coal as a fuel source at Duluth Energy System ($1.5M) – *plan due in June*
- Accelerate Emerald Ash Borer/urban forestry - $150,000 – *applied, in review*
- Resiliency improvements to the city's Water Plant ($7 - 30M) – *applied, in review*
- Energy bundle: 1.5 Megawatts of solar, City building efficiency ($4M) – *applied*
- Consolidated public works and maintenance facility for the City ($50M) –*no action*

Energy Bundle

Solar

Solar @ Water

= significant savings

Pilot Net Zero

for replication

LED Lighting Upgrades

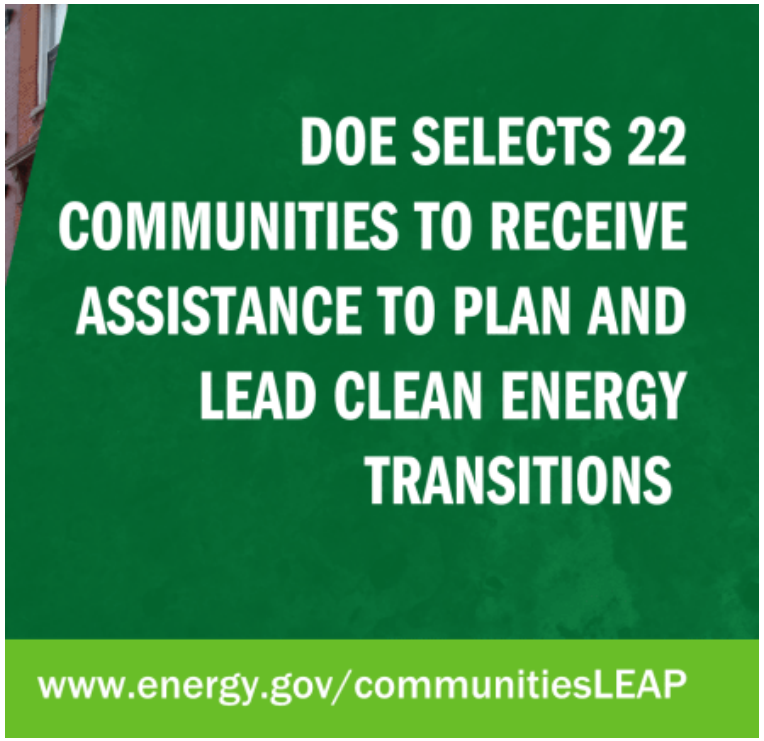
3 City Sites

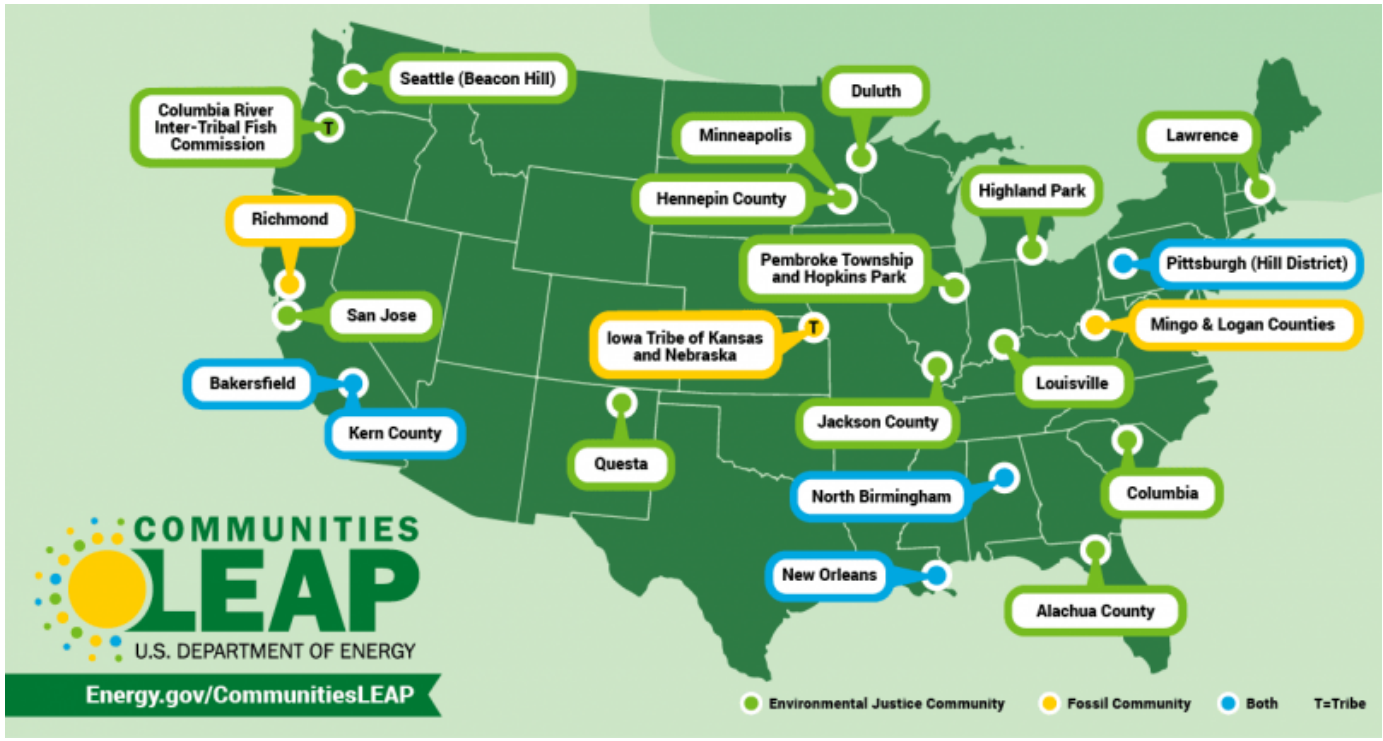
EV Chargers

Infographic credit: Preliminary Energy Evaluation for Funding Opportunities, June 2021, McKinstry report

Department of Energy

Blueprint for a cold climate environmental justice neighborhood





THE PLUM CATALYST LLC

Project Updates

- **Minnesota Power solar construction:** 1.6 megawatt solar array on City Riley Rd property.
  - June
  - July
- **Sustainable Purchasing Grant**
  - Final report delivered to Sustainability, Purchasing
    - Incentive funds ($3k) awarded to Street Maintenance for greener chemical purchases
    - Green chemical funds ($3k) awarded to Property and Facilities Management
    - Ideas Fair reward ($1k) this fall

Grant application updates

- **October 2021**
  - **Love Your Block: community-engaged planning and action to reduce blight and abandoned waste**
  - ~~Clean Energy Resource Teams (submitted: Cold Climate Heat Pump workshop)~~
- **November 2021**
  - FEMA Hazard Mitigation (submitted: water plant resiliency)
  - **Energy Equity for Renters: American Council for an Energy Efficient Economy**
- **December**
  - MPCA Resiliency Planning grant (stormwater management)
  - ~~MnDOT EV funding (Fleet 3-year plan) –~~ Delayed!
- **January 2022**
  - Department of Energy – Weatherization Innovation – led by Ecolibrium3 (*invited to proceed - pending)*
- **February 2022**
  - ~~Regional Sustainable Development Partnership: City Solar Investments (not enough funding avail)~~
- **March 2022**
  - ~~UMD Bureau of Business and Economic Research: commercial solar adoption survey/research, submitted~~
  - UMD faculty (R. Gran, J. Swenson): Lake-source heat pump research, submitted
- **May 2022**
  - Department of Energy Local Energy Action Plan assistance – kickoff 5/20/22

Pending Grant application

- Submitted
  - Great Lakes Sediment and Nutrient Reduction Program - $300,000 for green + gray infrastructure improvements
  - Bipartisan Infrastructure Funding (EV charging, water infrastructure, urban canopy and streets, resiliency and sustainability), Congressionally-directed spending: reboot of May 2021 project (solar, efficiency)
- In preparation
  - Renewables Advancing Community Energy Resilience

ACEEE grant

energy equity
FOR RENTERS
Cut Carbon · Reduce Costs · Save Communities

- Toolkit draft delivered in June
- Review and refining this summer
- Final Toolkit published in September
  - New AmeriCorps Member to help with implementation planning
    - Stipend paid ½ by Sustainability and Comfort Systems

Phase II: Accelerate climate action

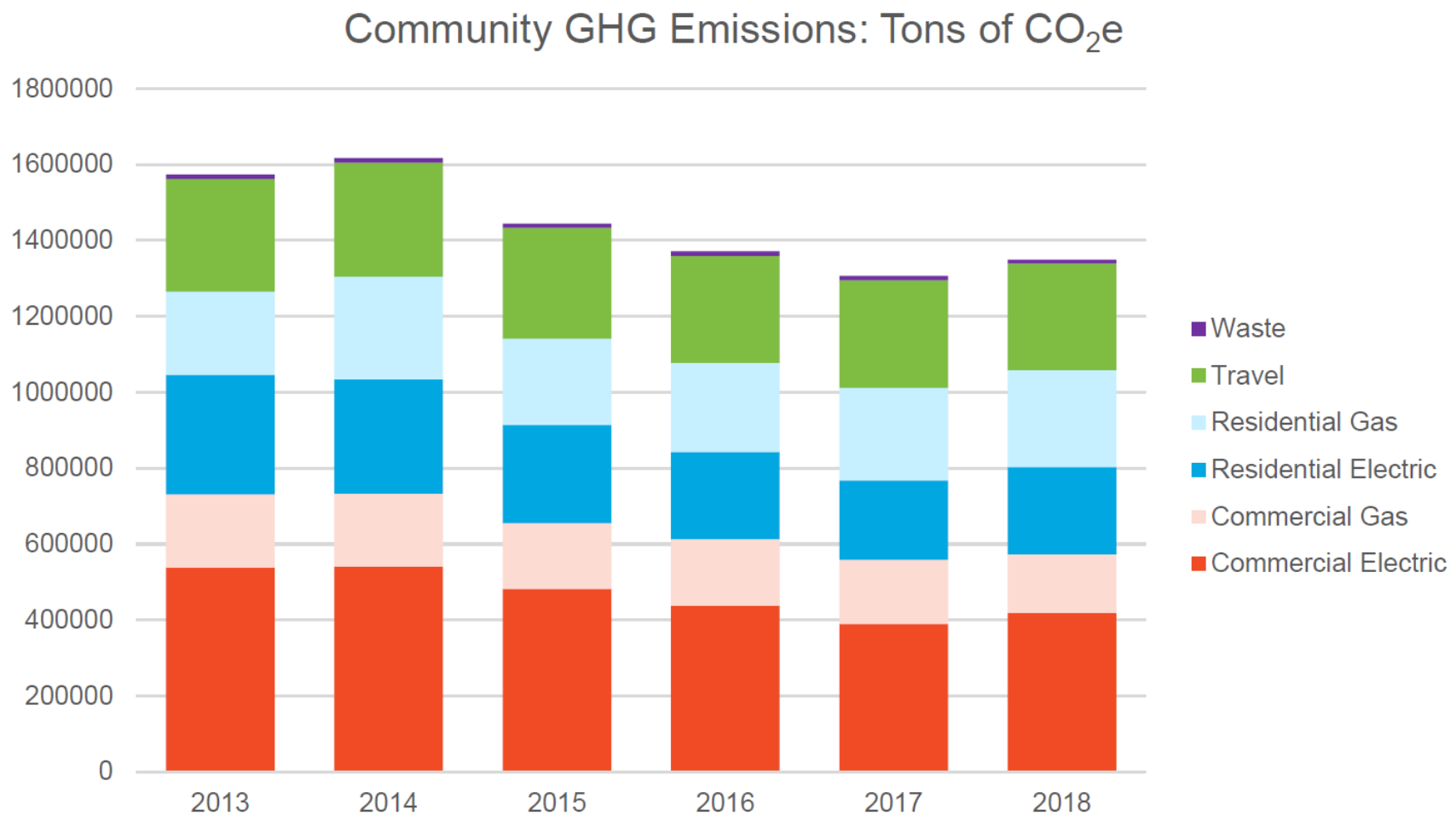


Figure 2 Community GHG emissions in tons of CO_2 equivalent. Source: Regional Indicators Initiative 2013-2018