

# City of Duluth Climate Action Work Plan

## 2024 Progress Report



# Overview

**Incorporating climate action into City of Duluth operations helped improve infrastructure, access external funding, secure partnerships, and implement Departmental projects. Highlights include:**

- Since 2020, approximately \$54 million in external funding awarded to the City for projects that advance our Climate Action Work Plan.
- Efforts to improve green infrastructure for climate resiliency. Including the Woodland Ave repaving/biofiltration project (partnered with St. Louis County) and the West Superior Street RAISE grant.
- Renewable energy plan for solar on City assets. Solar moving into deployment.
- Rebates totaling \$255,067 from Minnesota Power for energy efficient upgrades. \$155,385 was from the renovation of City Hall's HVAC system and implementation of a variant refrigerant flow system for a total of 591,346 kilowatt hours saved (kWh).
- Regional partnership on climate action initiated, through support for a St. Louis County application for Climate Resiliency Planning from NOAA.
- Sustainable Duluth community workshop series led by AmeriCorp VISTA, Ella Stewart, helping 100s of residents learn and take action.
- Finance and Attorney staff supported external funding awards, including contracts, MOUs, and administration.

## Objective 1

# Drive Down Emissions from City Operations

Energy efficiency and conservation efforts focused on City **buildings**, utility **operations**, and the municipal vehicle **fleet**. Internal policies for buildings and fleet continued to prioritize City energy efficiency and climate goals.

- Fleet upgrades, aided by the Sustainability Fund, included now total 6 electric/plug-in **electric vehicles**, 1 **hybrid ladder fire truck**, and 12 **e-bikes** for community policing and rescue response.



- Completion of City Hall's HVAC system renovation to improve air quality, remove asbestos and lead, and increase heating efficiency. Steam radiators and ventilation systems were upgraded to a **variable refrigerant flow (VRF)** system and perimeter hot water, improving heat efficiency by about 30% and earning rebates of \$155,385 from Minnesota Power.



- Heat pump water heaters will replace aging **building equipment** near end-of-life and improve **energy** and **cost savings**. Funding is through Energy Efficiency & Conservation Block Grant (\$144,430) with matching funding from MPCA Local Climate Action grant (\$50,000).

Objective 2 Highlights:

# Strengthen Community Resilience

Sustainability staff engaged with over **650** community members in presentations and meetings, and efforts were featured in **12** media stories related to climate action.



## Sustainability Workshop Series

The series, in partnership with Duluth Folk School, included 8 community workshops, 204 people engaged, 83 survey responses, and 33 organizations involved. Topics included: clean heat, waste, public health, transportation, and funding.

## Planning and Economics Department

The Planning & Economic Department made two site visits to St. Paul/Minneapolis and Rochester to explore affordable housing solutions such as modular and missing middle housing, sustainable transportation solutions, and green infrastructure. The team is pictured here under a heated rapid transit bus stop.



Objective 2 Highlights:

# Strengthen Community Resilience



Progress was made on **water plant resiliency**, **solar planning**, **stormwater** implementation grant projects, along with **lead water line** replacements, and continued partnerships with **community organizations**.

## Brighton Beach Park reopened with climate-resilient infrastructure

- Road reconstruction: new one-way road set away from shoreline to mitigate further destruction and erosion.
- Stormwater management: daylighting of creeks to help control stormwater runoff.
- Accessibility: addition of new accessible cement pathways leading from parking to the shoreline.
- Amenities: installation of permanent recycling and waste bins, pet waste stands, vaulted bathrooms, and seating.



## RACER solar deployment and storage planning

- Two-year planning grant revealed 5 viable City sites suited for over 750 kW of solar
- 2025 deployment will capitalize on over \$900,000 in direct pay incentives
- Saves over \$1.8 million over the lifetime of the arrays
- Reduces Carbon Emissions over 4%



## Objective 3 Highlights:

# Eliminate Institutional Barriers and Better Enable Climate Action

Duluth participated in the pilot Local Energy Action Plan project called **Communities LEAP**. The community received technical assistance that helped to detail:

- 1) future pathways for energy **efficiency**, **electrification**, and **renewable energy** improvements for residential, commercial, and light manufacturing buildings.
- 2) an **electric vehicle infrastructure** study.
- 3) an analysis of **green steel** potential for the region. The project informed critical next steps for community partners and the City, and was led by Ecolibrium3.



## West Superior Street reconstruction design is completed and moving into construction.



- \$24.8M awarded from Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant to redesign 2 miles of W. Superior St. for increased **mobility, safety, sustainability, and economic development** opportunities.
- Green infrastructure elements include: street trees, protected multi-mobility lane, integration of EV charging, LED lighting, and bus rapid transit.

Objective 4 Highlights:

## Create Financial and Workforce Plans to Support Accelerated Climate Action



Having achieved internal alignment on Climate Action Work Plan priorities, access to funding for planning and projects became a high priority in 2023:

- Over **\$54 Million** in external funding for projects benefitting City and community sustainability work have been acquired since 2020, and additional applications are pending for State funds. A grant-approval process developed internally to better coordinate between City Departments.
- Finance staff led several **Elective Pay** rebate submissions for electric vehicles and charging infrastructure for City Fleet. Energy rebates totaled \$255,067 for 2024, including for City Hall renovations, indoor/outdoor lighting, and heat pump installation. Finance staff led a sustainable replacement schedule for City rolling stock, to lower maintenance costs and increase efficiency.
- The Sustainability and Energy Fund continues to provide funding towards projects that leverage external funding.
- The 2018 community solar garden purchase (400 kW) has provided **\$566,400** in avoided electricity costs, so far. The contract is active until 2043.

Action	Summary	Status	Department	Objective
<b>Fleet Investments</b>	The City now owns 6 EVS/PHEVs in use for the Library, Engineering, PFM and Life Safety.	Ongoing	Fleet	1
<b>City Hall Improvements</b>	Project completed in 2024. \$155,385 in rebates earned. Improved efficiency, heating and ventilation systems, removed contaminants	Complete	PPL/PFM	1
<b>Heat Pump Water Heater upgrades for 35 City buildings</b>	Heat pump water heaters will replace building equipment near end-of-life. Funding: Energy Efficiency & Conservation Block Grant (\$144,430) with matching funding from MPCA Local Climate Action grant (\$50,000).	Ongoing	PPL/PFM	1
<b>Electric Vehicle fast-charging in Canal Park</b>	MPCA Volkswagen Grant for \$220,000 to renew Electric Vehicle fast-charging infrastructure, and provide charging redundancy. Construction in 2025.	Ongoing	Sustainability PFM	1
<b>Benchmarking Preparations Grant</b>	Comfort Systems and Duluth Energy Systems received a grant (\$428,000) for upgrades to metering and software needed to comply with State reporting requirements. Department of Commerce issued funding and Sustainability coordinated the application.	Ongoing	Sustainability PWU	1
<b>Facilities Strategic Planning</b>	Facility Strategic Planning funding (\$150,000) was used to study City building energy use and potential energy improvements. The project focused on Morgan Park Community Center for a pilot in-depth modeling effort, and Energy Use Intensity values were determined for 35 City-owned buildings.	Ongoing	PPL/PFM	1
<b>City-led Energy Projects</b>	\$250,000 from the Sustainability fund for various energy efficiency projects, led by Energy Coordinator/PFM: 2 EV fleet chargers and matching for grants to install heat pump water heaters.	Ongoing	PFM	1
<b>GPS Units for Fleet Vehicles</b>	GPS units record accurate vehicle usage and help with idle reduction and CO2 emission reduction initiatives in fleet vehicles.	Ongoing	Fleet	1



Action	Summary	Status	Department	Objective
<b>RACER Solar Planning (Department of Energy)</b>	DOE award to study large-scale solar and storage opportunities, awarded in 2022 (\$977k). 5 City-owned solar projects are moving forward to offset ~4-5% of city GHG emissions. Distributed solar sites identified on undevelopable lands.	Ongoing	Sustainability	2
<b>Stormwater Resiliency Implementation Grants</b>	MPCA awarded two Stormwater Resiliency Implementation grants: \$2.2 million for Lincoln Park storm sewer system upgrades and drainage improvements, and \$5 million for a new stormwater management system at Palm St. to reduce flood risks along Brewery Creek and I-35 tunnels.	Ongoing	PWU Engineering	2
<b>MN Point Erosion (Section 111 study)</b>	Funding from U.S. Army Corps of Engineers to determine the effect of Federal navigation structures on the shoreline, and develop plans for the mitigation of shore damages, results pending	Ongoing. Project partners working on sediment budgets.	PPL/Natural Resources	2
<b>St. Louis River Munger Landing Clean-up and Learning Circle</b>	Clean-up and access work with State, Federal, and non-profit partners. A learning circle was designed with Indigenous Women's Water Sisterhood.	Ongoing	PPL/Parks	2
<b>MN Point Resiliency Planning</b>	City staff participated in a Park Point Resiliency Plan, to be published through American Association of Floodplain Managers. Minnesota Point 2050 (MP50) obtained funding for implementation.	Complete	PED PPL PWU Sustainability	2
<b>Emerald Ash Borer Removal (DNR)</b>	\$150,000 grant project to remove ash trees in response to the Emerald Ash Borer invasion. Finishing up 2 <sup>nd</sup> of 3 EAB-related grants. More trees planted (759) than removed (401).	Ongoing	PPL/Natural Resources	2

Action	Summary	Status	Department	Objective
<b>Strategic Lands Alignment</b>	Multi-year effort to protect and determine developability of tax forfeit lands, funded in part by Great Lakes Restoration Initiative grant funds (EPA).	Complete	PPL/Natural Resources	2
<b>Lead Water Line Replacement Projects</b>	Ongoing lead service line replacement projects, water pitcher program and optimizing corrosion control, education and awareness. Combined funding from Mn Public Facilities Authority and Infrastructure Investment and Jobs Act.	Ongoing	PWU	2
<b>Great Lakes Sediment &amp; Nutrient Reduction Project</b>	\$121k from Great Lakes Commission and \$288k from the United States Army Corps of Engineers to complete green infrastructure project in the Keane Creek watershed, in Irving Park.	Ongoing – Construction complete by September 2025	PWU	2
<b>Natural Resources Management Program</b>	Natural Resources Coordinator works with State and Federal agency and non-profit partners, over 25 projects managing and implementing natural resources protection and restoration projects in 3 designated natural Areas - Hartley, Magney-Snively and St. Louis River and 3 Priority Watersheds - Amity, Tischer and Keene Creeks.	Ongoing	PPL/Natural Resources	2
<b>Brighton Beach Resiliency</b>	A grand opening event celebrated improving ADA accessibility, park amenities, stormwater infrastructure, shoreline enhancements, and damaged roads to ensure the longevity of the park. \$6.4M in FEMA and State funding.	Complete	PPL/Parks	2

Action	Summary	Status	Department	Objective
<b>Woodland Avenue—Green Infrastructure</b>	The repaving of Woodland Ave. from Snively Rd. to Anoka St. will include green infrastructure to protect streams and lakes by using vegetation, soil, and grading to help slow, capture, and filter stormwater runoff.	Ongoing	PWU Engineering	2
<b>St. Louis County-Addressing Coastal Resilience</b>	County awarded \$1.85 million from NOAA. Funding will help county and project partners establish a regional resilience plan while also providing resources and technical support to communities.	Ongoing	Sustainability regional partnership.  County and ARDC.	2
<b>Water Plant Resiliency (FEMA)</b>	\$7.8M FEMA Hazard Mitigation Grant for second transformer, back-up power, new switch gear, and planning for back-up power. The project is being rescoped, to focus on highest priority resiliency needs at the water pumping plant, due to cost increases in equipment and budget constraints.	Ongoing	PWU	2
<b>Sustainable Duluth workshop series</b>	USDN funded a community workshop series partnered with the Duluth Folk School. The series included 8 community workshops, 204 people engaged, 83 survey responses, and 33 organizations involved. Topics included: clean heat, waste, public health, transportation, and funding.	Complete	Sustainability	2, 4
<b>RAISE Grant (West Superior St)</b>	\$24.8M Rebuilding American Infrastructure with Sustainability and Equity to redesign 2 miles of W. Superior St. for increased mobility, safety, and economic development opportunities. Green infrastructure elements include: street trees, protected multi-mobility lane, integration of EV charging, LED lighting, and bus rapid transit.	Design and public input is complete.  Construction beginning summer 2025.	PWU PED	2, 3, 4

Action	Summary	Status	Department	Objective
<b>RAISE Grant (Eastern Lakewalk)</b>	\$8.2 million Rebuilding American Infrastructure with Sustainability and Equity for the coastal infrastructure rehabilitation of the Lakewalk to improve resiliency and connectivity. Design is at 90% and public comment period in 2025.	Ongoing  Construction begins summer 2025.	PPL/Natural Resources	2, 3, 4
<b>Green Infrastructure Code Audit</b> (partnered with MN Sea Grant)	Minnesota Sea Grant and NRRI partnered to receive funding to review City Engineering Guidelines and Chapter 50 Legislative Code to explore barriers to green infrastructure. Suggested improvements include: landscaping and tree preservation standards, stream/wetland buffers verifying installation of site plan features.	Ongoing	PED	3
<b>Geothermal/heat recovery district energy design (Department of Energy)</b>	City and partners developed project design to install a heat recovery district energy heating system (\$700k). 30% design completed; and workforce focus groups and reports compiled.	Complete	Sustainability	3, 4
<b>Sustainability Fund</b>	Fund has provided >\$750,000 towards over \$5 million worth of sustainability projects.	Ongoing	Sustainability	4
<b>Reconnecting Communities and Neighborhoods</b>	U.S. DOT funded \$1.8 million for community-led planning for transportation improvements to better connect neighborhoods areas around the interstate, from West Duluth to downtown.	Ongoing	PED/Transportation	2, 3, 4
<b>State planning on clean economy jobs</b>	Director of Workforce involved in preparing Duluth for clean energy jobs by actively attracting more young adults, women, and people of color to careers in the trades, where many clean energy jobs are. Working with Duluth Public schools to strengthen Career Tech Ed programs.	Ongoing	Workforce Development	4

Action	Summary	Status	Department	Objective
<b>Sustainable funding plan for rolling stock</b>	Plan to replace and renew equipment on time with goal to improve ordering process, lower maintenance costs, and increase fuel efficiency.	Ongoing	Finance Fleet	4
<b>IonE Solar Grant</b>	IonE Impact Goal awards \$10,000 in stipends for high-impact sustainability projects, Investigating the Potential Demand for Distributed Rooftop Solar Energy Production on Commercial Properties in the Greater Duluth, Minnesota Area.	Ongoing	Sustainability	3,4
<b>Planning and Economic Development Sustainability site visits</b>	PED took 2 tours, alternative transportation tour in Rochester and affordable housing tour in St. Paul. Funded by the Sustainability Fund.	Completed	PED Sustainability	3, 4
<b>Energy Futures Grant</b>	DOE funded \$500,000 to study accelerated planning for commercial building and reducing carbon produced in industry.	Starts in January 2025	PED Sustainability	3, 4
<b>Chloride Reduction Plan – MN GreenCorps member</b>	Minnesota Pollution Control Agency GreenCorp member to add capacity for chloride pollution reduction research and planning. Research road salt best practices, chloride reduction education activities, analyzing City road salt use.	Ongoing	PWU Sustainability	3, 4
<b>Energy &amp; Sustainability and Transportation AmeriCorps VISTA members</b>	Funding for two AmeriCorps VISTA members to add capacity to Sustainability and Transportation functions.	Ongoing	Sustainability PED	1, 2, 3, 4

# Next Steps



- Solar: Deploy City-owned projects identified by the RACER grant (submit Interconnection permits and create an RFP for services.) Create and publish the energy resiliency planning toolkit (Department of Energy RACER). Respond to Minnesota Power RFP for Distributed Solar Energy Systems.
- Infrastructure: Increase water plant resiliency through adding a back-up transformer, updating switchgear, and planning for back-up power generation (FEMA grant).
- Continue electrification of equipment and vehicles for Departments.
- Eliminate coal as a fuel source at Duluth Energy Systems (May 2025 coal end date), and continue efficiency upgrades.
- Contribute to Minnesota Power's Integrated Resource Plan process in 2024.
- Support West Superior Street RAISE grant project implementation.
- Design for consolidation of City maintenance facilities for efficiency in operations.

# Contributors to 2024 Activities and Reporting



Department	Members
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