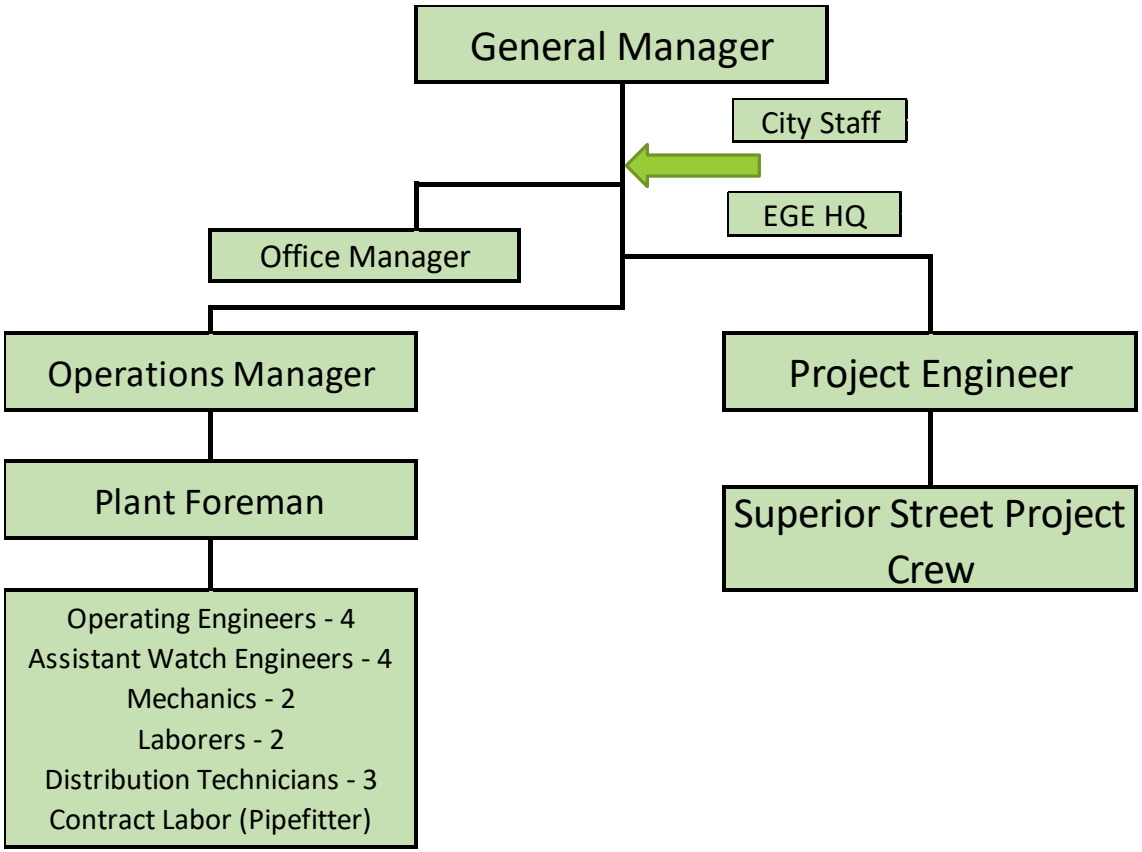
DULUTH ENERGY SYSTEMS

Proposed 2023 Budget & Rates

EVER-GREEN ENERGY™

THE CITY OF DULUTH MINNESOTA

Duluth Energy Systems Org Chart



Staffing 2023 & 2022

Onsite FTE

FTE	2023 Budget	2022 Budget	Net Change
Office and Supervisory	4	4	0
Bargaining Unit	16.75	16	0.75

Duluth Energy Systems Revenue

$ in thousands	2023 Budget	2022 Budget	(23B-22B)	2022 Forecast	(23B-22F)
REVENUE					
Capacity, Consumption and Energy					
Steam & HW Capacity Related Charges	$ 5,190	$ 4,428	$ 762	$ 4,577	$ 613
Steam & HW Consumption Charges	$ 6,580	$ 3,419	$ 3,161	$ 5,639	$ 941
Canal Park & DECC Hot Water Charges	$ 464	$ 422	$ 42	$ 510	$ (46)
Chilled Water Charges	$ 299	$ 300	$ (1)	$ 397	$ (98)
Subtotal Capacity, Consumption & Energy Rev	**$ 12,533**	**$ 8,569**	**$ 3,964**	**$ 11,122**	**$ 1,411**
Non-Energy Revenue			**0**		**0**
Customer Finance Charges	$ 12	$ 18	$ (6)	$ 9	$ 3
Pass Through Grants	$ -	$ 2,550	$ (2,550)	$ 3,866	$ (3,866)
Miscellaneous	$ 10	$ 10	$ -	$ 10	$ (0)
Subtotal Non-Energy Revenue	$ 22	$ 2,578	$ (2,556)	$ 3,885	$ (3,863)
TOTAL REVENUE	**$ 12,555**	**$ 11,147**	**$ 1,408**	**$ 15,007**	**$ (2,453)**

Duluth Energy Systems Expenses and Net Margin

$ in thousands	2023 Budget	2022 Budget	(23B-22B)	2022 Forecast	(23B-22F)
OPERATING EXPENSES					
Energy Operating Expenses					
Steam & HW	$ 6,580	$ 3,419	$ 3,161	$ 5,639	$ 941
Canal Park Hot Water	$ 266	$ 128	$ 138	$ 302	$ (36)
Chilled Water	$ 111	$ 102	$ 9	$ 282	$ (170)
Subtotal Energy Op Expenses	**$ 6,957**	**$ 3,649**	**$ 3,309**	**$ 6,222**	**$ 735**
Non-Energy Operating Expenses					
Maintenance Costs	$ 630	$ 438	$ 192	$ 603	$ 27
Labor Costs	$ 2,786	$ 2,671	$ 115	$ 2,705	$ 81
General & Administrative Costs	$ 436	$ 363	$ 74	$ 453	$ (17)
Management Fee	$ 298	$ 287	$ 11	$ 287	$ 11
Subtotal Non-Energy Op Expenses	**$ 4,150**	**$ 3,758**	**$ 393**	**$ 4,048**	**$ 102**
TOTAL OPERATING EXPENSES	**$ 11,108**	**$ 7,406**	**$ 3,701**	**$ 10,270**	**$ 837**
NET BEFORE INT & D	**$ 1,447**	**$ 3,741**	**$ (2,294)**	**$ 4,737**	**$ (3,290)**
Non-Energy Operating Expenses					
Depreciation	$ 1,800	$ 1,619	$ 181	$ 1,631	$ 169
In Lieu of Tax	$ 223	$ 153	$ 70	$ 165	$ 59
Interest Expenses	$ 297	$ 326	$ (29)	$ 326	$ (29)
Bond Expense, Agent Fee & Other	$ (17)	$ (57)	$ 39	$ (51)	$ 34
Subtotal Non-Operating Expenses	**$ 2,303**	**$ 2,041**	**$ 262**	**$ 2,071**	**$ 232**
NET MARGIN	**$ (856)**	**$ 1,700**	**$ (2,556)**	**$ 2,666**	**$ (3,522)**
NET MARGIN LESS PASS THROUGH GRANTS	**$ (856)**	**$ (850)**	**$ (6)**	**$ (1,201)**	**$ 345**

Duluth Energy Systems Budget Appropriation

$ in thousands	2023 Budget	2022 Budget	(23B-22B)	2022 Forecast	(23B-22F)
BUDGET APPROPRIATION					
Expenses					
Operating Expenses	$ 11,108	$ 7,404	$ 3,704	$ 10,270	$ 837
Non-Operating Expenses	$ 224	$ 155	$ 69	$ 166	$ 59
Depreciation & Amortization	$ 1,782	$ 1,600	$ 181	$ 1,571	$ 211
Subtotal Expenses	**$ 13,113**	**$ 9,160**	**$ 3,954**	**$ 12,006**	**$ 1,107**
Debt Service					
Principal	$ 1,130	$ 1,060	$ 70	$ 1,060	$ 70
Interest	$ 297	$ 336	$ (39)	$ 326	$ (29)
Subtotal Debt Service	**$ 1,427**	**$ 1,396**	**$ 31**	**$ 1,386**	**$ 41**
Subtotal Capital Improvements	$ 1,700	$ 250	$ 1,450	$ 644	$ 1,056
Capital Improvements Funded	$ 845	$ 4,350	$ (3,505)	$ 4,449	$ (3,604)
TOTAL BUDGET APPROPRIATION	**$ 17,086**	**$ 15,156**	**$ 1,930**	**$ 18,485**	**$ (1,399)**

Duluth Energy Systems Rates

Energy Source	Component 2023-22 Increase	Percent of Total Rate	Net 2022-23 Increase
Steam & HW Consumption Rate	8.5%	51.0%	4.3%
Steam & HW Capacity Rate	5.0%	49.0%	2.5%
Total Steam HW Rate Increase			6.8%
Canal Park HW Rate	12.7%	100%	12.7%
Total Canal Park Hot Water Rate Increase			12.7%
Chilled Water Capacity Rate			
Total Chilled Water Capacity Rate Increase			0%

2022 Successes

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Regulatory and Safety

No lost time accidents!

No environmental incidents!

Lowest coal use year in history!

10% Carbon reduction from 2021

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Fuel Transition

Natural gas is primary fuel

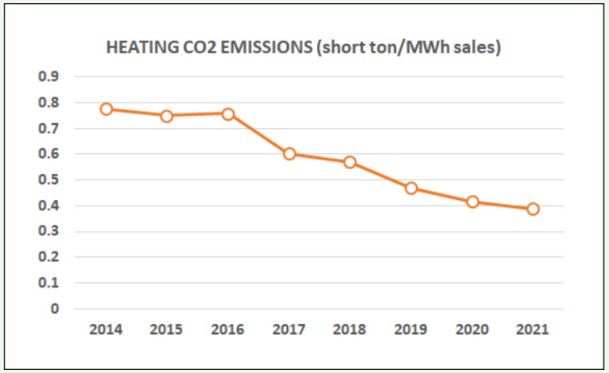
Coal use currently unavoidable

- Necessary for maintenance and redundancy
- Required during severe cold snaps
- Consumed a record low 1,348 Tons (YTD)
  - 938T in January during gas-line strike
- Stockpile balance = 5,631 tons

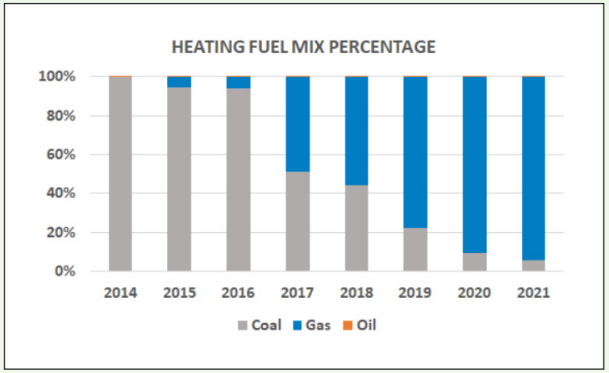
Climate Action Work

- Coal usage reduced by 92.4% since 2010
- Greenhouse gas emissions reduced by 20%
- Identify clean energy resources to replace fossil fuel inputs; eliminate coal in the next 5 years
- Encourage a transition to more efficient hot-water loop for new and existing customer of Duluth Energy Systems

Duluth Energy Systems Heating CO2 Emissions



Duluth Energy Systems Heating Fuel Mix Percentage



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Superior Street

Hot Water Benefits:

- Hot water customers energy saving 26% on average
- Conserve 20 million gallons of Lake Superior water every year
- Position the system for integration of renewables
- Improved temperature control within building (setback schedule)

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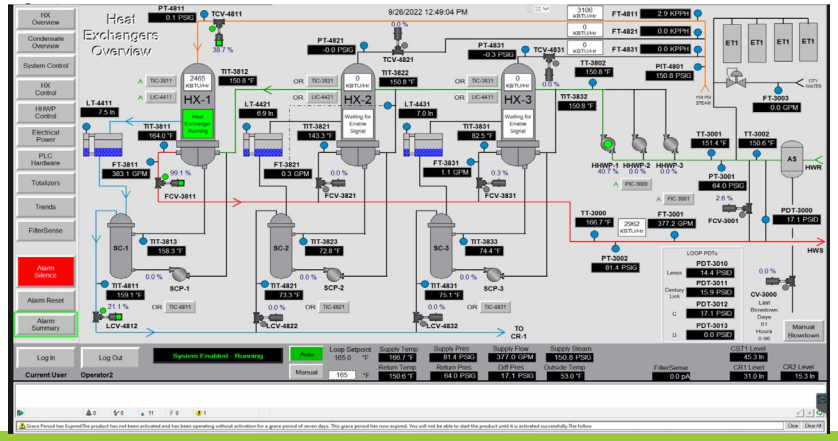
Plant Conversion

- 29% of energy transmitted now in the form of hot water
- Installed capacity more than sufficient to satisfy hospital expansion and future developments
- System performing as expected and startup was uneventful



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Duluth Medical District

Medical District HW Update:

- Vision Northland Connected
- Assisting with start-up and commissioning of Essentia Boiler Plant

- Future Connections
  - St. Lukes Bldg A
  - Essentia Duluth Clinic and Miller Dwan

Source: City of Duluth

JIM FOSTER • Star Tribune

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2022 Capital Projects

7 Manholes were reconditioned in 2022

Completed (1) new HW customer connection and commissioning

Connected HW to Essentia Duluth Clinic

Future Capital Projects

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Future Capital Projects

- HW Customer Connections
- Energy Meter “real time” Data Acquisition
- Install gas burners on Boilers 1 and 4
- Economizers on Boilers to capture stack waste heat

2023 Goals

- Commence hot water delivery to St. Luke's Bldg A
- Complete 1st Ave East HW system expansion
- Complete (3) HW conversions
- Start engineering for gas burners
- Building Energy Audits
- System Optimization
- Continued development of carbon reduction strategies
- Identify IRA opportunities to fund decarbonization plans

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Questions?