



# City of Helena

## ADMINISTRATIVE MEETING

April 17, 2024 - 4:00 PM

City - County Building Room 326 / Zoom Online Meeting; <https://us06web.zoom.us/j/83654201704>

## AGENDA

1. **Call to Work Session, introductions**
2. **Commission comments, questions**
3. **Board Appointment Review**
  - a. Board Appointments: Board of Adjustment, Helena Tourism Business Improvement District, Helena Public Art Committee
4. **Recommendations from the Helena Citizens Council**
5. **City Manager's Report**
6. **Presentations**
  - a. Kay McKenna Youth Foundation Board - Thank You
7. **Department Reports**
  - a. FY25 Budget Presentations-Gen Govt Departments
  - b. Sustainability Report/Audit Findings and Current Implementation
8. **Public Comment**
9. **Commission discussion and direction to the City Manager**
10. **Adjourn**

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Phone: (406) 447- 8490

TTY Relay Service 1-800-253-4091 or 711

Email: [citycommunitydevelopment@helenamt.gov](mailto:citycommunitydevelopment@helenamt.gov)

Mailing Address & Physical Location: 316 North Park Avenue, Room 445, Helena, MT 59623.

April 22, 2024

TO: City Commissioners  
FROM: Mayor Wilmot Collins  
SUBJECT: Board Appointments

I am recommending the following board appointments:

<b>Board of Adjustment</b>	Appointment of Carissa Beckwith to an interim term on the Board of Adjustment as a Citizen Member. Interim term will expire October 1, 2026.
<b>Helena Tourism Business Improvement District</b>	Reappointment of John Lytle to a second term on the Helena Tourism Business Improvement District. Term will expire June 30, 2027.
<b>Helena Public Art Committee</b>	Appointment of Renee Kelly to a first term on the Helena Public Art Committee. Term will expire December 31, 2026.

\*Appointees can reapply for full terms following the completion of the Interim Appointment.

# Fiscal Year 2025 Budget Discussion



Prepared by  
Sheila Danielson, Finance Director

April 17, 2024

# A G E N D A



## General Fund Overview

Reserves

Revenue

Expenditures

General  
Capital

Community  
Program  
Funding

Balanced  
Budget

## Compensation Overview

Health  
Insurance

Cola





## Reserves

Projected FY24 ending  
cash balance:  
\$5.65 million

Operating Reserve:  
60 days of operations  
FY24 projected - \$4.7 million

Recommended FY25 Capital:  
Funding from FY24 cash reserves  
\$1 million

Contingency Reserve:  
Est. \$2.57 million in FY24  
No additional funding projected at end of FY24



## General Capital FY25

FY25 General Capital &  
Facility Improvement  
requests:  
\$1.6 million

Proposed Funding with Cash  
Reserves:  
\$ 1 million

440 Cash Reserves Funding:  
\$388,250

\$30,000 Funded by  
Donation



## General Capital Proposed FY25

Facility Improvements:  
\$700,500

Police Capital:  
\$ 378,500

Parks Maintenance:  
\$459,250

Industrial Facilities  
\$68,960  
(Funded by Enterprise Funds)





## FY25 Estimated Revenues \$28.8 million

Taxes: 38.44%

Permissive Health Levy: 9.35%

State Shared Revenue: 18.02%

Charges for Services: 2.40%

Cost Recovery: 15.64%

Other: 16.15%

General Fund

FY25 Estimated  
Revenues  
\$28.8 million

Property Taxes: 38.44%

Fire Levy Transfer into  
General Fund:  
\$675,000

Supports 6 fire fighters

Projected General Levy  
Property Taxes for FY 2025:  
\$11.1 million

Estimated Values for FY25:  
\$106 million  
(4% increase)



**FY25 Estimated  
Revenues  
\$28.8 million**

**Permissive Health Levy: 9.35%**

**Employer Contribution  
savings of 4%**

**Projected Permissive Health  
Levy Property Taxes for FY 2025:  
\$2.7 million**

**FY25 Estimated Mills:  
25.2 mills  
FY24 Mills:  
27.51**

**Each mill generates approximately  
\$106,000 based on estimated taxable  
values**





**FY25 Estimated  
Revenues  
\$28.8 million**

**State Shared Revenue: 18.02%**

**HB124 State Shared Revenue  
passed in 2001**  
*(Entitlement share payments for  
alcohol, vehicle, gambling taxes and  
district court fees)*

**Calculated by the State**  
*(2025 not yet available)*

**Estimated FY25 growth of 3.4%  
over FY24 of \$171,000**

**Estimated FY25 State Shared  
Revenue = \$5.2 million**



**FY25 Estimated  
Revenues  
\$28.8 million**

**Charges for Services: 2.4%**

**Cost Recovery: 15.64%**

**Other: 16.15%**

Charges for Services:

**\$692,000**

Parks & Rec Fees  
Fire Service contracts  
Police Service contracts

Cost Recovery:

**\$4.5 million**

Overhead allocations:  
General Government, Public Works  
Admin, Industrial Facilities, &  
Engineering cost recovery

Other: \$4.66 million

Licenses & permits  
Inter-government revenue  
Fines  
Investment Interest  
Misc. Other  
Transfers





## FY25 Proposed Expenses \$28.6 million

**FY25 Estimated Revenue: \$28,875,774**

**FY25 Proposed Expenditures: \$28,623,994**

**General Fund Revenue Over Expenditure: \$251,773**

**Included:**

**Base operating costs, Police Contract Changes, Health Insurance Decrease, operating transfers to other funds**

**Not included:**

**COLA, Solar Loan Program, Sidewalk Program, Community program grants**

**Personnel: \$21.5 million**  
(2.40% increase over FY24)

**Operating Supplies: \$828,446**  
(18.57% increase over FY24)

**Purchased Services: \$2.7 million**  
(4.73% increase over FY24)

**Intra-city & Internal Charges: \$1.3 million**  
(0.4% increase over FY24)

**Fixed Charges: \$1.2 million**  
(37.78% decrease from FY24)

**Transfers Out: \$1.01 million**  
(-62.65 decrease from FY24)



# FY25 Balanced Budget

Model:  
Base Operating  
Budget

Review new  
funding requests

Prioritize &  
budget for  
approved  
funding requests



# FY25 Balanced Budget

**FY25 General Fund Revenue Over Expenditure: \$251,773**



## General Fund Unfunded Requests:

- \$110,000: Risk Manager Position
- \$60,000: Leadership training
- \$48,500: Operating Costs - Fire
- \$20,000: Operating Costs - Police
- \$180,000: Clerk Record Scanning Project & .5 FTE
- \$100,000 misc. other

## General Fund Savings:

- (\$142,000): Health Insurance: 4% decrease
- (\$130,000): Project Manager transfer to MPO Program





## FY25 COLA

### Estimated Cost of COLA by Percentage

1% \$90,000 – General Fund  
\$129,000 – Other Funds

2% \$180,000 – General Fund  
\$258,000 – Other Funds

3% \$268,000 – General Fund  
\$388,000 – Other Funds

4% \$406,000 – General Fund\*  
\$533,000 – Other Funds

5% \$544,000 – General Fund\*\*  
\$679,000 – Other Funds

\*4% COLA/add 1% for Police, \*\*5% COLA/add 2% for Police



## FY25 COLA

Temporary Staff

Proposal:  
Implement Cola offered to Permanent  
Employees to Temporary Wage Matrix  
Effective Jan. 1<sup>st</sup>  
Minimal impact to FY25 Budget

## Community Program Grants to Consider:

Helena Area Community Foundation  
Montana Business Assistance Connection  
Symphony  
Capital Band  
Other?

Contribution to community grants:  
– funded by Contingency Cash Reserves





# Questions?



# Fiscal Year 2025 Budget Discussion



Prepared by  
Dannai Clayborn, Clerk of the  
Commission

April 17, 2024

Office of the Commission / Clerk





## Office of Commission / Clerk

Supplies & Materials

Purchased Services

Internal Charges

### Considerations/Changes

- The FY25 Operating Budget includes increases in the areas of computer equipment and software supply. These costs are a continued effort to modernize the public's access to the Commission and the City's records.
- The Commission budget absorbed software cost transfers from other departments, as well as costs associated with required software system upgrades. This is reflected as a significant increase in this fund from FY24. These changes do support the City in its effort to modernize fundamental processes and creates efficiencies in licensing fees and renewals.
- The Election budget reflects the Commission decisions regarding the direct funding method for the Local Government Review which will be on the June primary ballot, and the proposed funding for the General Election costs in November should the election prove necessary. The costs within this budget are variable and can be reabsorbed into Cash Reserves.



## Office of Commission / Clerk

Supplies & Materials

Purchased Services

Internal Charges

**FY24 Adopted  
\$39,494**

**FY25 Preliminary  
\$96,201**

### Notable FY24 Expenditures/Changes

- The expenditures in staff training internally in FY24 resulted in the Commission Staff's ability to offer software support and development internally, resulting in a reduced expenditure in Professional Service hour support from \$7500 in FY23 to a proposed \$1500 in FY24.

### FY25 Expenditures Changes

- Technical upgrades include laptop purchases for Commission members, creating transparency in process and significantly reducing Cyber Security concerns.
- OneMeeting Agenda & Meeting Management Software will replace Novus Agenda software but will increase this cost by 75% in FY25. This is a necessary cost, and will stabilize to a less substantial increase beginning in FY26 (following implementation.)



## Office of Commission / Clerk

Supplies & Materials

Purchased Services

Internal Charges

**FY24 Adopted  
\$143,929**

**FY25 Preliminary  
\$206,590**

### Notable FY24 Expenditures

- Included charges for recruitment and professional services associated with City Manager recruitment. These costs are no longer reflected in FY25 due to stabilization in the Manager position.

### FY25 Expenditures / Changes

- Continued focus on expenses for training and certifications, expanding on internal support for various projects.
- Significant increases in costs are reflected in various Member / Organization Dues for the City.
- The costs associated with the Local Government review ballot measure are also reflected within this budget. These costs are not guaranteed and can be reabsorbed into cash reserves if the June ballot does not pass.



## Office of Commission / Clerk

Supplies & Materials

Purchased Services

Fixed /Internal Charges

**FY24 Adopted**  
**\$24,307**

**FY25 Preliminary**  
**\$24,314**

### **Notable FY24 Expenditures**

- Building fees and rentals were adjusted slightly due to the additional Clerk office space created for the Records room and new staff workspace.

### **FY25 Expenditures / Changes**

- No significant charges are reflected in FY25.

# Questions?





General Government								
Fund: 011			FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
					Adopted	Amended	Projected	
Fund 011 General Government								
Dept 1101 Commission								
Activity 411 Legislative Services								
Personnel Services								
Salaries & Wages			161,064	206,780	254,107	254,107	251,712	268,336
Overtime - Misc			-	-	713	713	-	786
F.I.C.A. (Soc. Sec.)			9,553	12,233	15,804	15,804	14,967	16,690
P.E.R.S. Retirement			13,995	18,561	22,861	22,861	23,200	24,682
Health & Vision Insurance			84,464	67,896	84,928	84,928	89,365	76,940
Workers Comp. Ins.			1,015	998	1,210	1,210	1,216	1,326
Unemployment Ins.			386	532	599	599	492	524
Dental Insurance			3,906	3,510	3,498	3,498	3,526	3,498
F.I.C.A. Medicare			2,235	2,861	3,700	3,700	3,448	3,907
Vacancy Adjustment					(13,560)	(13,560)		
Total Personnel Services			276,618	313,371	373,860	373,860	387,926	396,689
Supplies & Materials								
Paper & Forms			-	453				250
Office Supplies & Equip			1,504	1,071	1,500	1,500	1,500	1,500
Telephone Equipment								800
800 Commission Cell Phone Purchase (4 phones) - New request								
800								
Computr Equip/Sftwr/Spplly			3,570	42,525	36,794	36,794	36,794	92,451
1,500 Software support - misc.								
20,484 OneMeeting Agenda & Meeting Management Software (Replace Novus)								
6,895 Commissioner's City laptops (new request)								
3,500 Adobe E-signature (M-Files Integration)								
800 Adobe license upgrade (3 licenses)								
37,056 Digital Signature & Form Procesing software (includes 12 concurrent & 2 names user M-Files licenses) - replaces individual dept. budgets for Mfiles								
2,000 OCR Digital Document Enhancement Software								
1,500 Professional Service hour support M Files (60 hrs)								
8,072 Frevvo HTML form software (City wide use)								
9,694 Clerks M-Files Licensing Costs (3 licences / 1 Public)								
950 IT&S Port Charges for Laptop								
92,451								
Furniture & Fixtures-Misc			1,386	650	1,200	1,200	1,200	1,200
1,200 Records Fire Safe Storage								
1,200								
Total Supplies & Materials			6,459	44,699	39,494	39,494	39,494	96,201
Purchased Services								
IT&S Computer Maint/Spprt			18,513	20,747	25,233	25,233	25,233	25,514
IT&S Telephone Service			2,844	2,133	1,659	1,659	1,659	1,659
Election Expenses			50,921	-	24,000	24,000	24,000	77,000
20,000 Regular - General								
Regular - Primary								
57,000 Special Ballot Measure - Local Govt Review June 24								
77,000								
City-Co Bldg Postage Adm			128	137	145	145	145	145
Postage			29	142	-	-	-	-
Cellular Services			499	498	550	550	499	2,520
Printing & Duplicating			241	-	-	-	-	-
Dues, Subscriptn, License			15,627	17,346	17,357	17,357	17,357	41,790
34,900 MT League of Cities & Towns (increase in dues)								
350 IIMC Dues Clerk/Deputy Clerk								
200 MMCFOA Clerk/Deputy Clerk								
4,000 National League of Cities & Towns								
1,100 Rotary Club-Mayor Collins								
1,000 Helena Area Chamber of Commerce								
240 REV Closed Captioning Software (Online meeting)								
41,790								

# General Government

Fund: 011

Fund: 011		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Advertising		254	973				
Parking Permits		-	-				812
812	Mayor Parking Permit CCAB						
812							
Travel & Meeting Expense		3,925	7,781	8,600	8,600	8,600	9,350
3,750	Board Member Gift (Rodeo Tickets)						
350	Mason's manuals (Commission copies)						
1,500	Honorary gifts						
2,500	Mayor/Commission Travel						
750	Meeting Expenses						
9,350							
Required Training		110	379	12,000	12,000	12,000	12,000
2,000	Leadership Training						
1,500	Mfiles academy						
1,500	Frevvo Workflow training (3 students)						
1,000	Records Management Training						
2,000	Board Training (Members/Staff/Commission)						
2,500	Municipal Clerks Institute - Clayborn/Montiel						
1,500	Commission Training/Orientation						
12,000							
Conferences		1,101	3,441	10,800	10,800	10,800	10,800
1,000	MT League of Cities & Towns						
4,800	Mayor/Comm Conference						
5,000	National Mayors Conference						
10,800							
Other Contracted Services		1,614	47,842	43,585	50,585	50,585	25,000
15,000	Codification Cost						
30,000	Contracted Facilitation/Legal Services						
150,000	Scanning/Document Retention Services						
(170,000)	Budget Adjustment						
25,000							
Total	Purchased Services	95,807	101,420	143,929	150,929	150,878	206,590
Intra-City Charges							
Copier Revolving Program		1,738	1,738	1,738	1,738	1,738	1,825
Shop Gas & Fuel Charges		-	91	-	-	-	-
Total	Intra-City Charges	1,738	1,829	1,738	1,738	1,738	1,825
Fixed Charges							
Rent of Bldgs & Offices		17,580	15,542	16,163	16,163	16,163	16,163
Total	Fixed Charges	17,580	15,542	16,163	16,163	16,163	16,163
Internal Charges							
Liability Insurance		4,256	6,048	7,290	7,290	7,290	8,087
Fidelity Insurance		56	64	64	64	64	64
Total	Internal Charges	4,312	6,112	7,354	7,354	7,354	8,151
Total	Commission	402,515	482,973	582,538	589,538	603,554	725,619

# Fiscal Year 2025 Budget Discussion

Office of the City Manager



Prepared by  
Stefani Reinhardt – Office of the City  
Manager

April 17, 2024



## City Manager's Office

Administration

Public Information

Grants Administration



Fund: General Gov't. 011

## City Manager's Office

### Operational Considerations/Changes

- No New Personnel Requests for FY25

**FY24 Adopted  
\$714,774**

**FY24 Projected  
\$741,527\***

**FY25 Preliminary  
\$743,490**

### Notable Expenditures

- Citywide Software
  - Public Engagement – Be Heard Helena
  - Archive Social – Website Archiving
- PC Upgrades with Docking Station for City Manager, Ex. Assistant, & Grants Admin
- MT League of Cities and Towns Conference Dues Increased

\*Carryover \$21k budgeted vacancy savings removed due to no vacancies this year.



# Questions?



General Government								
Fund: 011			FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
					Adopted	Amended	Projected	
Fund	011 General Government							
Dept	1201 City Manager							
Activity	412 Executive Services							
Personnel Services								
	Salaries & Wages		390,612	389,789	414,079	414,079	418,459	422,683
	F.I.C.A. (Soc. Sec.)		22,670	24,218	26,564	26,564	26,564	27,098
	P.E.R.S. Retirement		34,223	34,602	37,146	37,146	37,146	38,763
	Health & Vision Insurance		34,247	45,558	81,736	81,736	81,736	75,375
	Workers Comp. Ins.		2,617	2,491	2,675	2,675	2,675	2,811
	Unemployment Ins.		1,378	1,375	1,330	1,330	1,330	1,139
	Employer Contribution 457		-	4,448	11,232	11,232	14,976	14,976
	Dental Insurance	(includes life ins)	3,080	1,809	11,272	11,272	11,272	11,272
	F.I.C.A. Medicare		5,556	5,664	6,215	6,215	6,215	6,339
	Salaries & Wages				(20,729)	(20,729)		
	Total	Personnel Services	494,381	509,954	571,520	571,520	600,373	600,456
Supplies & Materials								
	Office Supplies & Equip		4,903	2,816	1,400	1,400	500	1,400
	1,400	Outreach & Office Supplies						
	Computr Equip/Sftwr/Sppl		38,325	32,882	24,862	24,862	24,862	22,079
	500	Computer Supplies, Printer Ink, etc						
	2,700	CM Upgrade from Desktop to PC w/docking station, laptop for Ex Assist. & Grant Admin						
	1,133	Adobe Creative Cloud (PIO)						
	600	Adobe Pro						
	240	Vimeo Account						
	120	Canva						
	331	Social Media Management Subscription						
	3,774	Archive Social subscription						
	10,593	Be Heard Helena (Public Engagement Platform)						
	2,088	M-Files Rotating License						
	22,079							
	Total	Supplies & Materials	51,189	35,698	26,262	26,262	25,362	23,479
Purchased Services								
	IT&S Computer Maint/Spprt		11,960	13,540	13,597	13,597	13,597	13,426
	IT&S Telephone Service		2,844	1,896	1,896	1,896	1,896	1,896
	City-Co Bldg Postage Adm		128	137	145	145	145	145
	Postage		14	9			10	10
	Cellular Services		2,128	2,524	2,400	2,400	1,995	2,055
	Dues, Subscriptn, License		5,828	2,214	1,981	1,981	1,981	1,982
	1,200	ICMA - \$1200 Mgr, \$600 Three Affiliate						
	582	Independent Record Subscription (PIO)						
	200	GOSMA Membership						
	1,982							
	Advertising		17,438	6,876	9,650	9,650	9,650	9,650
	1,900	Stock Music/Photos for Videos/Social/etc.						
	1,250	Utility Inserts (2)						
	5,000	General Advertising Placement						
	1,500	Marketing Collateral						
	9,650							
	Employee Auto Allowance		3,950	3,150	5,400	5,400	5,400	5,400
	Meal Reimb-Taxable		66	205	250	250	250	250
	Meals for Confereces - MGR							
	Travel & Meeting Expense		4,238	3,077	2,000	2,000	2,000	4,000
	1,500	Lodging/Travel -MGR National League Conference.						
	2,000	Lodging/Travel - CMO 4x Staff MT League Conference						
	500	Meeting Expenses (\$500 Admin., \$500 Other)						
	4,000							
	Required Training		1,687	1,015	-	-	-	

General Government							
Fund: 011		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Conferences		608	1,148	1,800	210	995	2,000
1,000	National League Conference Registration - Mgr						
1,000	MLC&T Conference Registration- 4 staff						
2,000							
Other Contracted Services		109,304	31,566	30,000	30,000	30,000	30,000
30,000	Contingency						
30,000							
Total	Purchased Services	160,193	67,356	69,119	67,529	67,920	70,813
Intra-City Charges							
Copier Revolving Program		607	607	607	607	607	625
Total	Intra-City Charges	607	607	607	607	607	625
Fixed Charges							
Rent of Bldgs & Offices		34,028	34,028	35,389	35,389	35,389	35,389
Total	Fixed Charges	34,028	34,028	35,389	35,389	35,389	35,389
Internal Charges							
Property Insurance		150	-	-	-	-	-
Liability Insurance		11,703	10,815	11,845	11,845	11,845	12,696
Fidelity Insurance		48	32	32	32	32	32
Liability Deductible		-	11,251	-	-	-	-
Total	Internal Charges	11,901	22,098	11,877	11,877	11,877	12,728
Total	Capital Outlay	-	-	-	-	-	-
Total	City Manager	752,299	669,740	714,774	713,184	741,527	743,490

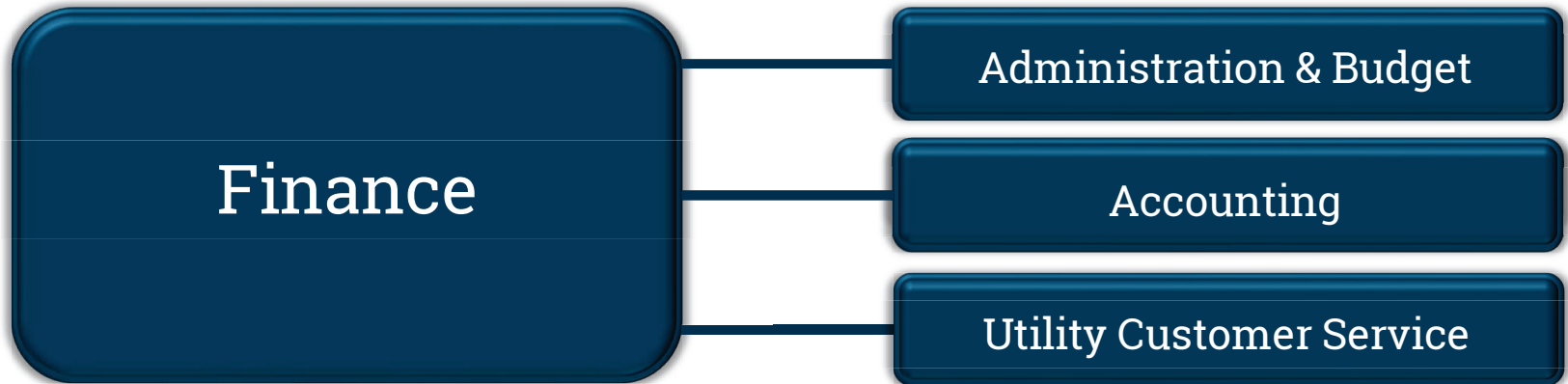
# Fiscal Year 2025 Budget Discussion

FINANCE DEPARTMENT



Presented by:  
Sheila Danielson – Director

April 17, 2024



### **FY24 Appropriations Recap:**

**FY24 Adopted  
\$1,780,938**

**FY24 Projected  
\$1,737,467**

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**FY25 Preliminary  
\$1,725,874**  
(3.1% decrease from FY24 budget)

### **Notable Expenditures for FY2025:**

- Project Manager position transitioned to Transportation services
- \$14,000 Continued Education for staff (12)
  - Required Certifications; Accounting, Budget and leadership training; CPFO training for Controller
- \$5,000 Computer upgrades to laptop to support mobile work
- \$112,000 Utility Billing Distribution charges (printed utility bills)
- \$80,000 Audit and Actuary Fees
- \$110,000 Credit Card Fees (Utility billing)





# Finance Accomplishments for FY 2024

## ERP Software Upgrade:

- Went live on April 1<sup>st</sup> with General Ledger, Accounts Payable, Accounts Receivable, Budget, Grant accounting and project modules
- 70% complete with Payroll
- 90% complete with Licensing

## Accounting:

- Successful audit
- Filed Annual Report on-time with MT State, Gov't Finance Officers Association, Federal Audit Clearing House, and Municipal Securities Rulemaking Board
- Onboarded a new Controller / Treasurer
- Training for departments on new accounts payable and cash receipting procedures

## Budget:

- Onboarded two new budget analysts
- Developed working procedures with departments
- Training with departments on Project Software

## Utility Customer Service:

- Configured new licensing software
- Distribute over 13,000 utility bills each month
- Professionally troubleshoot over a hundred customer service calls each day





# Finance Priorities for Fiscal Year 2025

## **ERP Software Upgrade:**

- Refine procedures and continue to support departments with Core Financial Suite: General Ledger, Purchasing, Project Management, Budgeting, Accounts Receivable, Payments
- Configuration and testing of Payroll Suite: Go Live - July 2024
- Configuration and testing of Licensing Suite: Go Live - June 2024

## **Accounting:**

- Meet filing deadlines
- Implement new banking initiatives and controls
- Recruit and retain an Accounting Specialist
- Training for Controller / Treasurer and Accounting Staff
- Develop efficient reporting and procedures using new technology

## **Budget:**

- Continue outreach assistance to departments - financial forecasting and rate setting
- Implement new tool for budget book preparation
- Train departments on new budgeting and reporting software

## **Utility Customer Service:**

- Implement new licensing software
- Implement new payment technology
- Begin configuration of Utility Billing Suite

## **Administration:**

- Investment Policy proposal
- Formalize a Procurement Policy
- Update Credit Card Policy and implement training for end users

# Questions?



Finance Services						
Fund: 015						
		FY 2022 Actual	FY 2023 Actual	FY 2024		
				Adopted	Amended	Projected
						Preliminary FY 2025 Budget
<b>Dedicated Revenues</b>						
Other Financing Sources / (Uses)		-	5,000	5,200	5,200	10,000
<b>Other Operating Revenues</b>		-	5,000	5,200	5,200	10,000
Internal Service Revenues		1,037,072	981,802	1,028,175	1,028,175	1,028,175
Interfund Transfers In		-	-	-	-	-
<b>Internal Transactions</b>		1,037,072	981,802	1,028,175	1,028,175	1,028,175
<b>Total Dedicated Revenue</b>		<b>1,037,072</b>	<b>986,802</b>	<b>1,033,375</b>	<b>1,033,375</b>	<b>1,038,175</b>
<b>Expenditures</b>						
<b>Personnel Services</b>		966,771	1,090,012	1,174,188	1,174,188	1,139,093
Supplies & Materials		57,478	39,739	69,900	69,900	67,175
Purchased Services		269,481	255,761	286,583	297,383	310,363
Intra-City Charges		5,516	5,516	5,516	5,516	5,516
Fixed Charges		185,546	181,470	219,684	219,684	190,253
<b>Maintenance &amp; Operating</b>		518,021	482,486	581,683	592,483	573,307
Internal Charges		20,106	22,316	25,067	25,067	25,067
<b>Internal Transactions</b>		20,106	22,316	25,067	25,067	25,067
<b>Total Expenditures</b>		<b>1,504,898</b>	<b>1,594,815</b>	<b>1,780,938</b>	<b>1,791,738</b>	<b>1,737,467</b>
<b>Expenditures by Division</b>						
1501	414 Finance & Budget	378,087	448,757	497,657	497,657	474,261
1506	415 Accounting	584,364	605,687	654,639	665,439	675,009
1507	415 Utility Customer Service	542,446	540,370	628,642	628,642	588,198
<b>Total Expenditures</b>		<b>1,504,898</b>	<b>1,594,815</b>	<b>1,780,938</b>	<b>1,791,738</b>	<b>1,737,467</b>
<b>DEDICATED REVENUES</b>						
<b>Internal Service Revenues</b>						
Budget & Accounting Charges		540,754	514,732	552,332	552,332	552,332
Utility Customer Service Charges		496,318	467,070	475,843	475,843	475,843
<b>Total</b>	<b>Internal Service Revenues</b>	<b>1,037,072</b>	<b>981,802</b>	<b>1,028,175</b>	<b>1,028,175</b>	<b>1,028,175</b>
<b>Other Financing Sources / (Uses)</b>						
<b>Other Revenues</b>						
Audit Fees - BID		-	2,500	2,600	2,600	5,000
Audit Fees - TBID		-	2,500	2,600	2,600	5,000
<b>Total</b>	<b>Other Financing Sources / (Uses)</b>	<b>-</b>	<b>5,000</b>	<b>5,200</b>	<b>5,200</b>	<b>10,000</b>
<b>SUBTOTAL - OPERATING REVENUE</b>		<b>1,037,072</b>	<b>986,802</b>	<b>1,033,375</b>	<b>1,033,375</b>	<b>1,038,175</b>
<b>TOTAL</b>	<b>DEDICATED REVENUES</b>	<b>1,037,072</b>	<b>986,802</b>	<b>1,033,375</b>	<b>1,033,375</b>	<b>1,038,175</b>

# Finance Services

Fund: 015

		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Fund	<b>015 Finance Services</b>						
Dept	<b>1501 Finance &amp; Budget</b>						
Activity	<b>414 Administrative Services</b>						
<b>Personnel Services</b>							
	Salaries & Wages	241,776	283,240	325,620	325,620	301,500	252,350
	F.I.C.A. (Soc. Sec.)	14,732	16,903	20,190	20,190	18,050	15,647
	P.E.R.S. Retirement	21,056	25,407	29,209	29,209	27,500	23,142
	Health & Vision Insurance	29,008	66,657	70,280	70,280	62,500	47,595
	Workers Comp. Ins.	1,516	1,543	2,033	2,033	1,900	1,623
	Unemployment Ins.	846	991	1,012	1,012	850	657
	Dental Insurance	1,286	1,747	2,187	2,187	2,000	1,749
	F.I.C.A. Medicare	3,445	3,953	4,724	4,724	4,600	3,661
	Vacancy Adjustment			(15,934)	(15,934)		
<b>Total</b>	<b>Personnel Services</b>	<b>313,666</b>	<b>400,441</b>	<b>439,321</b>	<b>439,321</b>	<b>418,900</b>	<b>346,424</b>
<b>Supplies &amp; Materials</b>							
	Office Supplies & Equip	1,900	195	750	750	250	250
	Computr Equip/Sftwr/Sppl	6,263	1,751	2,920	2,920	2,500	2,350
	250 Printer Cartridges						
	900 Adobe Pro (Fin Dir + Budget Analysts x2 @ \$300 ea)						
	1,200 laptop upgrade for budget analyst						
	2,350						
	Furniture & Fixtures-Misc	530	-	750	750	700	750
	750 Office Chairs (1) @\$750 ea - Budget analyst						
<b>Total</b>	<b>Supplies &amp; Materials</b>	<b>8,693</b>	<b>1,946</b>	<b>4,420</b>	<b>4,420</b>	<b>3,450</b>	<b>3,350</b>
<b>Purchased Services</b>							
	IT&S Computer Maint/Spprt	10,718	11,339	9,782	9,782	9,782	11,572
	IT&S Telephone Service	1,896	1,896	1,422	1,422	1,422	1,422
	City-Co Bldg Postage Adm	128	137	145	145	145	145
	Postage	1	143	40	40	110	40
	Cellular Services	757	498	525	525	500	525
	Printing & Publishing - Misc	1,586	-	-	-	-	-
	Dues, Subscriptn, License	1,389	1,811	3,250	3,250	2,000	1,908
	750 GFOA & CPFO Membership (Fin Dir)						
	708 Mfiles ( 1 named user)						
	300 Budget Analysts (GFOA) @ \$150 ea						
	150 Montana Municipal Treasurers (Fin Dir & 2 Budget analysts) @ \$50 ea						
	1,908						
	Advertising	580	1,351	1,500	1,500	1,400	1,420
	1,420 Budget Resolutions Public Hearing Ads ( \$90 ea) + Budget Insert in Utility Bills (\$700)						
	1,420						
	Travel & Meeting Expense	-	-	-	-	1,220	-
	Required Training	3,894	135	1,700	1,700	1,000	2,425
	175 Annual GFOA GAAP Update Webinar						
	500 Annual Webinars (GFOA-WPFA) -2 @ \$250 each						
	1,100 GFOA Annual Conf Reg Fees - Fin Dir & 1 Budget analyst @ \$600 ea						
	400 Mt League Conference Registration Fees (Fin Dir & 1 Budget Analyst)						
	250 Municipal Finance/Clerks Conference (1 pp)						
	2,425						
	Conferences	482	-	3,200	3,200	1,980	7,500
	6,000 GFOA Conference (Fin Dir & (1) Budget Analyst) - Wash. DC - Required for CPFO - Hotel, Airfare, Transportation						
	1,500 Mt League; Municipal Finance (1 pp - W Yellowstone)						
	7,500						
<b>Total</b>	<b>Purchased Services</b>	<b>21,433</b>	<b>17,310</b>	<b>21,564</b>	<b>21,564</b>	<b>19,559</b>	<b>26,957</b>

Finance Services							
Fund: 015		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Intra-City Charges							
	Copier Revolving Program	1,520	1,520	1,520	1,520	1,520	1,581
Total	Intra-City Charges	1,520	1,520	1,520	1,520	1,520	1,581
Fixed Charges							
	Rent of Bldgs & Offices	25,633	19,695	21,478	21,478	21,478	21,478
Total	Fixed Charges	25,633	19,695	21,478	21,478	21,478	21,478
Internal Charges							
	Property Insurance	950	-	-	-	-	-
	Liability Insurance	6,168	7,821	9,314	9,314	9,314	7,580
	Fidelity Insurance	24	24	40	40	40	24
Total	Internal Charges	7,142	7,845	9,354	9,354	9,354	7,604
Total	Finance & Budget	378,087	448,757	497,657	497,657	474,261	407,394
Fund	015 Finance Services						
Dept	1506 Accounting						
Activity	415 Financial Services						
Personnel Services							
	Salaries & Wages	298,157	316,659	340,204	340,204	315,055	333,267
	Overtime - Misc	668	1,081	-	-	10,000	-
	F.I.C.A. (Soc. Sec.)	18,110	19,054	21,094	21,094	20,190	20,665
	P.E.R.S. Retirement	25,853	28,501	30,518	30,518	29,209	30,564
	Health & Vision Insurance	60,371	49,654	54,776	54,776	63,800	92,087
	Workers Comp. Ins.	1,785	1,381	1,711	1,711	1,400	1,717
	Unemployment Ins.	1,046	1,112	1,056	1,056	847	869
	Dental Insurance	2,814	2,717	2,915	2,915	2,530	2,915
	F.I.C.A. Medicare	4,235	4,456	4,936	4,936	4,735	4,834
	Vacancy Adjustment			(16,002)	(16,002)		
Total	Personnel Services	413,038	424,615	441,208	441,208	447,766	486,918
Supplies & Materials							
	Paper & Forms	2,566	5,110	7,000	7,000	7,000	7,000
	4,100 Business License Forms & Inserts						
	500 W-2 Forms & Envelopes						
	1,800 Check & Acctg Envelopes						
	600 Direct Deposit Payroll Forms						
	7,000						
	Office Supplies & Equip	1,699	319	1,300	1,300	1,600	1,500
	1,500 Misc. Office supplies						
	1,500						
	Computr Equip/Sftwr/Spply	14,780	6,140	17,880	17,880	17,880	12,575
	1,500 Toner						
	1,200 Check Printer MICR Toner						
	1,200 Docking Station and 1 lap top conversion (Accounting Specialist)						
	500 Leased Laptop for Audit						
	5,000 GIS License/Maintenance						
	500 Desk Printer for Controller						
	75 Lease Crunch Software for GASB 87 & 96						
	2,000 Wide Screen Monitors for Controller						
	600 Adobe Pro (2 pp)						
	12,575						

# Finance Services

Fund: 015

		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Furniture & Fixtures-Misc		-	-	750	750	495	1,650
750	Office Chair for Controller						
900	Deposit Safe - Safe for secure payment drop in Finance office on 3rd floor						
<u>1,650</u>							
<b>Total</b>	<b>Supplies &amp; Materials</b>	<b>19,045</b>	<b>11,569</b>	<b>26,930</b>	<b>26,930</b>	<b>26,975</b>	<b>22,725</b>
<b>Purchased Services</b>							
IT&S Computer Maint/Spprt		10,831	15,717	16,160	16,160	16,160	18,008
IT&S Telephone Service		1,896	2,844	2,844	2,844	2,844	2,844
City-Co Bldg Postage Adm		1,833	1,794	2,111	2,111	2,111	2,111
Postage		5,406	5,406	5,000	5,000	5,000	5,000
Printing & Publishing - Misc		195	-	500	500	-	-
Dues, Subscriptn, License		728	1,462	2,550	2,550	2,100	650
150	GFOA-Controller and Accountant (\$150 Ea)						
100	Montana Municipal Treasurers membership (Accountant/Controller)						
400	Payroll Specialist (APA and APA Source Online)						
<u>650</u>							
Advertising	Special (Light) District Ads / Assessments / Tax	120	555	500	500	100	225
Accntng & Auditing Svcs		97,165	97,165	83,900	94,700	94,700	86,300
76,000	Audit Contract - & Single Audit (MD)						
3,200	State filing fee						
500	Legal ads						
3,000	Actuary Fees						
600	GFOA Certificate fee						
500	US Bank Audit Confirms						
2,500	MD - Additional ACFR assistance						
<u>86,300</u>							
Penalties	Internal Revenue Service	-	71	-	-	16,835	-
Required Training		3,205	350	1,500	1,500	1,500	2,000
1,000	Accounting classes for Accounting Staff (GFOA or Tuition Reimb)		-				
1,000	CPFO Training classes for Controller (Tuition Reimb)		-				
<u>2,000</u>			-				
Conferences		-	490	4,000	4,000	-	-
Other Contracted Services		2,850	2,153	4,000	4,000	2,500	2,500
2,500	Armored Car Security Pickup of Bank Deposits						
<u>2,500</u>							
<b>Total</b>	<b>Purchased Services</b>	<b>124,228</b>	<b>112,690</b>	<b>123,065</b>	<b>133,865</b>	<b>143,850</b>	<b>119,638</b>
<b>Intra-City Charges</b>							
Copier Revolving Program		2,128	2,128	2,128	2,128	2,128	2,192
<b>Total</b>	<b>Intra-City Charges</b>	<b>2,128</b>	<b>2,128</b>	<b>2,128</b>	<b>2,128</b>	<b>2,128</b>	<b>2,192</b>
<b>Fixed Charges</b>							
Rent of Bldgs & Offices		17,063	25,038	27,336	27,336	27,336	27,336
Bank Analysis Fees		-	19,385	23,000	23,000	16,200	18,000
Credit Card Fees	Business & Animal Licensing	963	1,015	1,200	1,200	1,000	1,200
Cash (Over)/Short		(5)	(30)	-	-	(18)	-
<b>Total</b>	<b>Fixed Charges</b>	<b>18,020</b>	<b>45,408</b>	<b>51,536</b>	<b>51,536</b>	<b>44,517</b>	<b>46,536</b>
<b>Internal Charges</b>							
Liability Insurance		7,865	9,238	9,732	9,732	9,732	10,011
Fidelity Insurance		40	40	40	40	40	40
<b>Total</b>	<b>Internal Charges</b>	<b>7,905</b>	<b>9,278</b>	<b>9,772</b>	<b>9,772</b>	<b>9,772</b>	<b>10,051</b>
<b>Total</b>	<b>Accounting</b>	<b>584,364</b>	<b>605,687</b>	<b>654,639</b>	<b>665,439</b>	<b>675,009</b>	<b>688,060</b>

Finance Services							
Fund: 015		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				FY 2024			
				Adopted	Amended	Projected	
Fund	015 Finance Services						
Dept	1507 Utility Customer Service						
Activity	415 Financial Services						
Personnel Services							
	Salaries & Wages	160,904	179,591	205,208	205,208	180,000	216,433
	Temporary Salaries	6,912	-	-	-	-	-
	Overtime - Misc	831	-	1,324	1,324	500	1,390
	F.I.C.A. (Soc. Sec.)	10,123	10,791	12,808	12,808	10,500	13,507
	P.E.R.S. Retirement	14,032	16,109	18,528	18,528	15,800	19,976
	Health & Vision Insurance	41,427	52,404	59,680	59,680	59,680	57,306
	Workers Comp. Ins.	964	703	789	789	665	856
	Unemployment Ins.	590	628	643	643	450	570
	Dental Insurance	1,917	2,208	2,332	2,332	2,332	2,332
	F.I.C.A. Medicare	2,367	2,367	2,998	2,998	2,500	3,162
	Vacancy Adjustment			(10,651)	(10,651)		
	Total Personnel Services	240,066	264,957	293,659	293,659	272,427	315,532
Supplies & Materials							
	Paper & Forms	2,899	574	3,000	3,000	1,200	1,200
	Office Supplies & Equip	1,315	1,121	1,200	1,200	1,200	3,400
	1,200 Standard office supplies						
	2,200 Electric Letter Opener (current one at end of life)						
	3,400						
	Computr Equip/Sftwr/Spply	25,083	24,529	34,350	34,350	34,350	28,450
	26,000 Central Square Utility Billing Package						
	1,650 Navaline Cash Receipts Lock Box						
	800 Phone License Maint						
	28,450						
	Furniture & Fixtures-Misc	443	-	-	-	-	-
	Total Supplies & Materials	29,740	26,224	38,550	38,550	36,750	33,050
Purchased Services							
	IT&S Computer Maint/Spprt	14,699	15,530	15,920	15,920	15,920	15,498
	IT&S Telephone Service	2,844	2,844	2,844	2,844	2,844	2,844
	City-Co Bldg Postage Adm	1,627	1,911	2,375	2,375	2,375	2,375
	Postage	4,282	4,022	4,500	4,500	4,000	4,000
	Printing & Publishing - Misc	2,648	1,070	4,500	4,500	4,500	2,500
	3,300 Delinquent Tags,Pymt Receipts,Finals						
	600 Window Envelopes						
	600 Non Window Envelopes						
	2,500						
	Dues, Subscripnt, License	263	1,336	1,500	1,500	1,050	350
	350 Alarm Monitoring fee						
	350						
	Advertising	-	24	100	100	-	-
	Required Training	551	551	1,200	1,200	1,200	3,500
	2,000 Supervisory Training - MSU - Supervisor						
	1,500 Training for Utility Staff						
	3,500						
	Other Contracted Services	96,907	99,024	109,015	109,015	115,065	115,600
	111,600 Utility Billing Statement Printing - (\$9300/month)						
	4,000 Business License Mailings						
	115,600						
	Total Purchased Services	123,821	125,761	141,954	141,954	146,954	146,667



Finance Services							
Fund: 015		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Intra-City Charges							
	Copier Revolving Program	1,868	1,868	1,868	1,868	1,868	1,924
Total	Intra-City Charges	1,868	1,868	1,868	1,868	1,868	1,924
Fixed Charges							
	Rent of Bldgs & Offices	16,029	16,029	16,670	16,670	16,670	16,670
	Credit Card Fees	125,863	100,348	130,000	130,000	107,588	110,000
	Cash (Over)/Short	-	(10)				
Total	Fixed Charges	141,892	116,367	146,670	146,670	124,258	126,670
Internal Charges							
	Liability Insurance	5,027	5,161	5,909	5,909	5,909	6,544
	Fidelity Insurance	32	32	32	32	32	32
Total	Internal Charges	5,059	5,193	5,941	5,941	5,941	6,576
Total	Utility Customer Service	542,446	540,370	628,642	628,642	588,198	630,419

**2017 GO Bond-08 Park Ref**
**Fund: 308**

Fund: 308		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Revenues							
Taxes		561,139	550,573	551,750	551,750	547,955	547,750
Taxes & Assessments		561,139	550,573	551,750	551,750	547,955	547,750
Investment Earnings		1,289	16,046	8,000	8,000	31,848	10,000
Other Operating Revenues		1,289	16,046	8,000	8,000	31,848	10,000
Total Revenues		562,428	566,619	559,750	559,750	579,803	557,750
Expenditures							
Debt Service		552,000	552,950	560,250	560,250	560,250	565,850
Capital Outlay		-	-	-	-	-	-
Debt & Capital		552,000	552,950	560,250	560,250	560,250	565,850
Total Expenditures		552,000	552,950	560,250	560,250	560,250	565,850
Revenues Over (Under) Expenditures		10,428	13,669	(500)	(500)	19,553	(8,100)
Beginning Cash Balance - July 1		561,731	572,158	585,828	585,828	585,828	605,381
Ending Cash Balance - June 30		572,158	585,828	585,328	585,328	605,381	597,281
Revenues							
Taxes							
Current Taxes - Debt Service		555,356	529,718	531,000	531,000	525,000	525,000
Personal Property Taxes - All Years		5,002	20,066	20,000	20,000	22,205	22,000
Pnlty & Intrst on Del Tax		781	790	750	750	750	750
Total	Taxes	561,139	550,573	551,750	551,750	547,955	547,750
Investment Earnings							
Interest Earnings		1,289	16,046	8,000	8,000	31,848	10,000
Total	Interest Earnings	1,289	16,046	8,000	8,000	31,848	10,000
TOTAL REVENUE		562,428	566,619	559,750	559,750	579,803	557,750
Fund	308 2017 GO Bond-08 Park Ref						
Dept	1516 Debt Services						
Activity	491 General Obligation Bonds						
Debt Service							
Principal (Through FY 2028)		445,000	460,000	480,000	480,000	480,000	500,000
Interest		105,900	92,550	78,750	78,750	78,750	64,350
Paying Agent Fees		350	400	500	500	500	500
Debt Issuance Costs		-	-				
Arbitrage Fees/Costs		750	-	1,000	1,000	1,000	1,000
Refunded Escrow Account							
Total	Debt Service	552,000	552,950	560,250	560,250	560,250	565,850

Lighting Districts - All							
Fund: 029		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Revenues							
Special Assessments		949,266	907,082	1,061,285	1,061,285	1,241,704	1,452,794
Taxes & Assessments		949,266	907,082	1,061,285	1,061,285	1,241,704	1,452,794
Total Revenues		949,266	907,082	1,061,285	1,061,285	1,241,704	1,452,794
Expenditures							
Purchased Services		727,155	889,216	1,067,060	1,067,060	1,280,472	1,408,519
Maintenance & Operating		727,155	889,216	1,067,060	1,067,060	1,280,472	1,408,519
Internal Charges		74,358	75,271	47,926	47,926	47,926	36,953
Transfers Out		-	-	-	-	-	-
Internal Transactions		74,358	75,271	47,926	47,926	47,926	36,953
Total Expenditures		801,513	964,487	1,114,986	1,114,986	1,328,398	1,445,472
Revenues Over (Under) Expenditures		147,754	(57,406)	(53,700)	(53,700)	(86,694)	7,322
Beginning Cash Balance - July 1		642,354	740,992	683,586	683,586	683,586	596,892
Other Cash Sources / (Uses)		(49,116)	-	-	-	-	-
Ending Cash Balance - June 30		740,992	683,586	629,885	629,885	596,892	604,214

**S I D Revolving**  
Fund: 340

Fund: 340		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Revenues							
	Special Assessments	164	2	-	-	-	-
	Taxes & Assessments	164	2	-	-	-	-
	Investment Earnings	-	-	-	-	-	-
	Other Operating Revenues	-	-	-	-	-	-
	Interfund Transfers In	-	-	-	-	-	-
	Internal Transactions	-	-	-	-	-	-
Total Revenues		164	2	-	-	-	-
Expenditures							
	Internal Charges	175	102	56	56	56	12
	Transfers Out	-	-	-	-	-	40,872
	Internal Transactions	175	102	56	56	56	40,884
	Debt Service	-	-	-	-	-	-
	Capital Outlay	-	-	-	-	-	-
	Debt & Capital	-	-	-	-	-	-
Total Expenditures		175	102	56	56	56	40,884
Revenues Over (Under) Expenditures		(11)	(100)	(56)	(56)	(56)	(40,884)
Beginning Cash Balance - July 1		40,994	40,982	40,940	40,940	40,940	40,884
Other Cash Sources / (Uses)		-	58	-	-	-	-
Ending Cash Balance - June 30		40,982	40,940	40,884	40,884	40,884	0

**Copier Revolving**  
Fund: 643

Fund: 643		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Revenues							
	Intra-City Revenues	32,331	25,400	20,459	20,459	20,459	21,569
	Investment Earnings	238	3,025	1,000	1,000	4,651	3,000
	Other Operating Revenues	32,569	28,425	21,459	21,459	25,110	24,569
Total Revenues		32,569	28,425	21,459	21,459	25,110	24,569
Expenditures							
	Supplies & Materials	1,680	1,115	1,500	1,500	1,500	2,500
	Purchased Services	6,031	11,498	13,000	13,000	11,615	15,000
	Intra-City Charges	-	-	-	-	-	-
	Fixed Charges	4,837	-	-	-	-	-
	Maintenance & Operating	12,548	12,614	14,500	14,500	13,115	17,500
	Capital Outlay	-	-	30,000	30,000	13,742	15,000
	Debt & Capital	-	-	30,000	30,000	13,742	15,000
Total Expenditures		12,548	12,614	44,500	44,500	26,857	32,500
Revenues Over (Under) Expenditures		20,021	15,811	(23,041)	(23,041)	(1,747)	(7,931)
Beginning Cash Balance - July 1		51,060	70,917	86,728	86,728	86,728	84,981
Other Cash Sources / (Uses)		(165)	-	-	-	-	-
Ending Cash Balance - June 30		70,917	86,728	63,687	63,687	84,981	77,050
Revenues							
Intra-City Revenues							
	Copier Charges	32,331	25,400	20,459	20,459	20,459	21,569
Total	Intra-City Revenues	32,331	25,400	20,459	20,459	20,459	21,569
Investment Earnings		238	3,025	1,000	1,000	4,651	3,000
Total	Interest Earnings	238	3,025	1,000	1,000	4,651	3,000
SUBTOTAL - OPERATING REVENUE		32,569	28,425	21,459	21,459	25,110	24,569
TOTAL REVENUE		32,569	28,425	21,459	21,459	25,110	24,569



Copier Revolving Fund: 643		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Fund	643 Copier Revolving						
Dept	1553 Copier Revolving						
Activity	415 Financial Services						
Supplies & Materials							
	Paper & Forms	1,680	1,115	1,500	1,500	1,500	2,500
	Office Supplies & Equip	-	-	-	-	-	-
	Adding Muni Court to Copier Pool						
Total	Supplies & Materials	1,680	1,115	1,500	1,500	1,500	2,500
Purchased Services							
	Equipment Repairs	6,031	11,498	13,000	13,000	11,615	15,000
	Contract Coverage charges						
Total	Purchased Services	6,031	11,498	13,000	13,000	11,615	15,000
Fixed Charges							
	Rent of Bldgs & Offices	4,837		-	-	-	-
Total	Fixed Charges	4,837	-	-	-	-	-
Capital Outlay							
	Equipment						
	10,000			30,000	30,000	13,742	15,000
	10,000						
	Muni - Court Copier Replacement						
Total	Capital Outlay	-	-	30,000	30,000	13,742	15,000
Total	Copier Revolving	12,548	12,614	44,500	44,500	26,857	32,500

# Property & Liab Insurance

Fund: 645

Fund: 645	FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
			Adopted	Amended	Projected	
Revenues						
Charges For Services	1,224	2,082	2,082	2,082	2,082	2,082
Intra-City Revenues	100	-	-	-	-	-
Investment Earnings	2,595	24,735	10,000	10,000	5,000	10,000
Other Financing Sources / (Uses)	-	-	-	-	-	-
Other Operating Revenues	3,919	26,817	12,082	12,082	7,082	12,082
Internal Service Revenues	987,408	1,232,114	1,273,465	1,273,465	1,273,465	1,425,624
Interfund Transfers In	-	-	-	-	-	-
Internal Transactions	987,408	1,232,114	1,273,465	1,273,465	1,273,465	1,425,624
Total Revenues	991,327	1,258,931	1,285,547	1,285,547	1,280,547	1,437,706
Expenditures						
Fixed Charges	1,053,401	1,003,915	1,318,739	1,318,739	1,318,739	1,445,067
Maintenance & Operating	1,053,401	1,003,915	1,318,739	1,318,739	1,318,739	1,445,067
Transfers Out	199,522	79,945	46,677	46,677	46,677	46,673
Internal Transactions	199,522	79,945	46,677	46,677	46,677	46,673
Total Expenditures	1,252,923	1,083,860	1,365,416	1,365,416	1,365,416	1,491,740
Revenues Over (Under) Expenditures	(261,596)	175,072	(79,869)	(79,869)	(84,869)	(54,034)
Beginning Cash Balance - July 1	661,877	400,281	575,353	575,353	575,353	490,483
Ending Cash Balance - June 30	400,281	575,353	495,483	495,483	490,483	436,450

Property & Liab Insurance Fund: 645		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Revenues							
Charges For Services							
	Insurance Chrgs-External	1,224	2,082	2,082	2,082	2,082	2,082
	Grandstreet Prop Insurance						
Total	Charges For Services	1,224	2,082	2,082	2,082	2,082	2,082
Other Revenues							
		100	-				
Total	Other Revenues	100	-	-	-	-	-
Investment Earnings							
		2,595	24,735	10,000	10,000	5,000	10,000
Total	Interest Earnings	2,595	24,735	10,000	10,000	5,000	10,000
Internal Service Revenues							
	Bldg/Prop Insur Charges	222,938	313,194	363,837	363,837	363,837	425,588
	Veh/Movabl Equip Charges	41,008	50,396	52,696	52,696	52,696	111,398
	Liability Insur Charges	645,467	752,606	798,671	798,671	798,671	857,480
	Fidelity Insur Charges	4,233	4,388	4,437	4,437	4,437	4,471
	Liab Deductible Charges	73,762	111,530	53,824	53,824	53,824	26,688
Total	Internal Service Revenues	987,408	1,232,114	1,273,465	1,273,465	1,273,465	1,425,624
SUBTOTAL - OPERATING REVENUE		991,327	1,258,931	1,285,547	1,285,547	1,280,547	1,437,706
TOTAL REVENUE		991,327	1,258,931	1,285,547	1,285,547	1,280,547	1,437,706
Fund 645 Property & Liab Insurance Dept 1505 Risk Management Activity 505 Insurance							
Fixed Charges							
	Insur Prem: Bldgs/Prop	248,320	316,380	370,076	370,076	370,076	425,588
	Insur Prem: Veh/Movabl Eq	43,824	45,666	96,812	96,812	96,812	111,398
	Insur Prem: Liability	703,168	612,001	798,671	798,671	798,671	853,618
	Insur Prem: Fidelity	3,180	3,180	3,180	3,180	3,180	4,463
	Ins Deductbl: Liability	54,909	26,688	50,000	50,000	50,000	50,000
Total	Fixed Charges	1,053,401	1,003,915	1,318,739	1,318,739	1,318,739	1,445,067
Transfers Out							
	T/out - Other Funds	199,522	79,945	46,677	46,677	46,677	46,673
Total	Transfers Out	199,522	79,945	46,677	46,677	46,677	46,673
Total	Risk Management	1,252,923	1,083,860	1,365,416	1,365,416	1,365,416	1,491,740

Health & Safety Program							
Fund: 650			FY 2022 Actual	FY 2023 Actual	FY 2024		Preliminary FY 2025 Budget
					Adopted	Amended	Projected
Revenues							
Investment Earnings			467	(3,576)	-	-	(10,000)
Other Financing Sources / (Uses)			5,209,011	5,833,397	7,085,185	7,085,185	6,424,360
Other Operating Revenues			5,209,479	5,829,821	7,085,185	7,085,185	6,414,360
Total Revenues			5,209,479	5,829,821	7,085,185	7,085,185	6,414,360
Expenditures							
Purchased Services			6,676	8,555	13,000	13,000	5,995
Fixed Charges			5,221,431	5,867,772	6,610,000	6,610,000	6,480,000
Maintenance & Operating			5,228,107	5,876,327	6,623,000	6,623,000	6,485,995
Transfers Out			-	200,000	-	-	-
Internal Transactions			-	200,000	-	-	-
Total Expenditures			5,228,107	6,076,327	6,623,000	6,623,000	6,485,995
Revenues Over (Under) Expenditures			(18,628)	(246,506)	462,185	462,185	(71,635)
Beginning Cash Balance - July 1			472,627	453,999	207,493	207,493	207,493
Ending Cash Balance - June 30			453,999	207,493	669,678	669,678	135,858
Revenues							
Investment Earnings							
Interest Earnings			467	(3,576)	-	-	(10,000)
Total Interest Earnings			467	(3,576)	-	-	(10,000)
Other Financing Sources / (Uses)							
City Contributions			3,699,795	4,413,783	5,759,185	5,759,185	5,078,313
Employee Contributions			473,392	428,476	426,000	426,000	445,869
Retiree Contributions			412,326	376,152	300,000	300,000	225,000
Other Group Contributions			623,498	614,986	600,000	600,000	675,177
Total Other Financing Sources / (Uses)			5,209,011	5,833,397	7,085,185	7,085,185	6,424,360
TOTAL REVENUE			5,209,479	5,829,821	7,085,185	7,085,185	6,414,360
Fund	650 Health & Safety Program						
Dept	1841 Medical Insurance						
Activity	505 Insurance						
Purchased Services							
EAP (Employee Assist Prog)			1,906	1,430	3,000	3,000	3,000
Non-City Admin Fees			3,255	3,580	5,000	5,000	2,995
Other Contracted Services			1,515	3,545	5,000	5,000	-
Total Purchased Services			6,676	8,555	13,000	13,000	5,995
Fixed Charges							
Insur Prem: MMIA 13 payments in FY25			5,219,761	5,862,699	6,600,000	6,600,000	6,475,000
Empl Awrds/Incentive Prgms			-	5,074	10,000	10,000	5,000
Refunds & Reimbursements			1,670	-	-	-	-
Total Fixed Charges			5,221,431	5,867,772	6,610,000	6,610,000	6,480,000
Transfers Out							
T/out - Other Funds			-	200,000	-	-	-
Transfer to General Fund to Offset Health Levy Limit							
Total Transfers Out			-	200,000	-	-	-
Total Medical Insurance			5,228,107	6,076,327	6,623,000	6,623,000	6,485,995

Dental Program							
Fund: 651		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Revenues							
Investment Earnings		450	5,895	3,000	3,000	6,000	3,000
Other Financing Sources / (Uses)		353,215	362,514	382,042	382,042	373,250	399,357
Other Operating Revenues		353,665	368,409	385,042	385,042	379,250	402,357
Total Revenues		353,665	368,409	385,042	385,042	379,250	402,357
Expenditures							
Purchased Services		39,004	39,402	40,000	40,000	40,000	42,000
Fixed Charges		301,259	346,528	350,000	350,000	350,000	360,000
Maintenance & Operating		340,263	385,929	390,000	390,000	390,000	402,000
Total Expenditures		340,263	385,929	390,000	390,000	390,000	402,000
Revenues Over (Under) Expenditures		13,402	(17,520)	(4,958)	(4,958)	(10,750)	357
Beginning Cash Balance - July 1		155,459	168,861	151,341	151,341	151,341	140,591
Ending Cash Balance - June 30		168,861	151,341	146,383	146,383	140,591	140,948
Ending Cash Balance - June 30		168,861	151,341	146,383	146,383	140,591	140,948
Revenues							
Investment Earnings							
Interest Earnings		450	5,895	3,000	3,000	6,000	3,000
Total	Interest Earnings	450	5,895	3,000	3,000	6,000	3,000
Other Financing Sources / (Uses)							
Other Revenues		-	-				
City Contributions		199,229	195,445	226,042	226,042	200,000	226,857
Employee Contributions		58,812	75,852	76,000	76,000	78,000	78,000
Retiree Contributions		63,456	57,500	50,000	50,000	58,500	58,500
Other Group Contributions		31,718	33,717	30,000	30,000	36,750	36,000
Total	Other Financing Sources / (Uses)	353,215	362,514	382,042	382,042	373,250	399,357
TOTAL REVENUE		353,665	368,409	385,042	385,042	379,250	402,357
Fund 651 Dental Program							
Dept 1842 Dental Insurance							
Activity 505 Insurance							
Purchased Services							
Non-City Admin Fees		39,004	39,402	40,000	40,000	40,000	42,000
Total	Purchased Services	39,004	39,402	40,000	40,000	40,000	42,000
Fixed Charges							
Medical Claims		301,259	346,528	350,000	350,000	350,000	360,000
Total	Fixed Charges	301,259	346,528	350,000	350,000	350,000	360,000
Total	Dental Insurance	340,263	385,929	390,000	390,000	390,000	402,000



Vision Program							
Fund: 652		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Revenues							
	Investment Earnings	256	3,837	2,000	2,000	4,500	2,000
	Other Financing Sources / (Uses)	66,389	73,837	78,886	78,886	75,178	82,386
	Other Operating Revenues	66,645	77,674	80,886	80,886	79,678	84,386
Total Revenues		66,645	77,674	80,886	80,886	79,678	84,386
Expenditures							
	Purchased Services	12,960	13,499	15,000	15,000	12,525	15,000
	Fixed Charges	41,601	49,411	60,000	60,000	58,500	65,000
	Maintenance & Operating	54,561	62,910	75,000	75,000	71,025	80,000
Total Expenditures		54,561	62,910	75,000	75,000	71,025	80,000
Revenues Over (Under) Expenditures		12,084	14,764	5,886	5,886	8,653	4,386
Beginning Cash Balance - July 1		82,039	94,123	108,887	108,887	108,887	117,540
Ending Cash Balance - June 30		94,123	108,887	114,773	114,773	117,540	121,926
Revenues							
Investment Earnings							
	Interest Earnings	256	3,837	2,000	2,000	4,500	2,000
Total	Interest Earnings	256	3,837	2,000	2,000	4,500	2,000
Other Financing Sources / (Uses)							
	City Contributions	29,485	27,416	34,886	34,886	28,133	34,886
	Employee Contributions	15,021	20,071	20,000	20,000	20,720	21,000
	Retiree Contributions	16,106	20,240	18,000	18,000	19,875	20,000
	Other Group Contributions	5,776	6,110	6,000	6,000	6,450	6,500
Total	Other Financing Sources / (Uses)	66,389	73,837	78,886	78,886	75,178	82,386
TOTAL REVENUE		66,645	77,674	80,886	80,886	79,678	84,386
Fund	652 Vision Program						
Dept	1843 Vision Insurance						
Activity	505 Insurance						
Purchased Services							
	Non-City Admin Fees	12,960	13,499	15,000	15,000	12,525	15,000
Total	Purchased Services	12,960	13,499	15,000	15,000	12,525	15,000
Fixed Charges							
	Medical Claims	41,601	49,411	60,000	60,000	58,500	65,000
Total	Fixed Charges	41,601	49,411	60,000	60,000	58,500	65,000
Total	Vision Insurance	54,561	62,910	75,000	75,000	71,025	80,000

# Fiscal Year 2025 Budget Discussion

City Attorney Office



Prepared by:

Becky Dockter – City Attorney  
Aimee Hawkaluk – Assistant City  
Attorney

April 17, 2024

# AGENDA

Civil Division

Criminal Division

Prosecution of  
Misdemeanor  
Offenses

Victim Services



# City Attorney

## Budgeted Expenditures

**FY 2024: \$1,086,945**

**FY 2025: \$1,099,013**

**Overall increase of  
3.41%**

## Notable Expenditures

- Office expansion resulting in \$8,112 increase in rent
- Reduced Karpel software expenditure



# Victim Services

## Budgeted Expenditures

**FY 2024: \$109,693**

**FY 2025: \$122,191**

**Overall increase of  
12%**

## Notable Expenditures

- **Reclassification of Victims Services position resulting in \$12,144 increase in personnel services**





## Civil and Criminal Divisions

### Outside of base budget requests:

- Office expansion into space currently occupied by the County
- Upgrade computer program for trial evidence

## Victim Services (Partially Grant Funded)

### Outside of Base budget requests:

- Separate budget for satisfying requirements of federal grant
- Reclassify Victim Services position to reflect duties evolved since position creation



## Civil Division

- Represent the City/City Commission in litigation, arbitration, and admin proceedings, collective bargaining negotiations
- Prepare, review, amend ordinances and resolutions
- Prepare and review agreements, deeds, easements, and other legal docs
- Provide ongoing, daily advice to City Manager and Department Directors
- Provide training for city departments on open records, supervising, etc.



## Civil Division

### Accomplishments/Goals

***Accomplishments:*** CAO consolidated computer needs for our office, upgrade safety measures for our office, amended several code provisions, implement many old/outdated/not used process policies, hired a deputy city attorney that has built capacity for both the civil and criminal division

***Goals:*** -CAO is hoping to occupy better office spaces to increase security for our office

- Create policy for responding to public information requests – coordinate with HPD and County Attorney
- Develop more knowledge/expertise in-house





## Criminal/Misdemeanor Prosecution Division

- Prosecutes misdemeanors and city code violations committed in city limits (e.g. Partner/Family Member Assault, DUIs, assault, etc.)
- Prepares court orders, petitions, affidavits, and briefs
- Appearances in hundreds of cases per year
- Provides training to HPD as witnesses in trial, assists in charging decisions

## Criminal/Prosecution Division

### Accomplishments/Goals

***Accomplishments:*** -Transitioned to entirely paperless case files at the same time reduced annual budget for Karpel case management system  
-Built capacity by creating a more cohesive team and schedule  
- Received grant funding for prosecution of DUIs through the Lewis and Clark County DUI Task Force

***Goals:*** - Work as part of a community wide team to implement further risk assessment systems to identify and triage dangerous cases and situations involving violence and threats.

-Continue to apply for and receive funding opportunities to enhance our work



## Victim Services Division

- Outreach, support, information, and advocacy services to victims of violent crime
- Guides victim through the legal justice system
- Prepares victims and witnesses for court proceedings
- Manages Victims of Crime Act grant
- Creates space for other victim services that aren't just through the court system
- Reduced our dismissal rate from 50% dismissals to 15% just by providing services to victims that serve as witnesses in our trials



## Victim Services Division

### Accomplishments/Goals

***Accomplishments:*** -Apply for another two-year grant to fund Victim Services position (match required by City)  
 -Expanded reach of the victim services advocacy beyond the cases we prosecute to victims in our community (funded by City match for grant)  
 -Provides trauma informed care training for other victim services offices through the Montana Board of Crime Control

***Goals:*** -Reclassify Nicole's position to reflect her work; evolved from a new position 5 years ago

- Receive training on forensic interviews for children





# Questions?



General Government								
Fund: 011			FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
					Adopted	Amended	Projected	
Fund	011 General Government							
Dept	1301 City Attorney							
Activity	412 Executive Services							
Personnel Services								
	Salaries & Wages		576,485	567,462	672,708	672,708	672,708	688,628
	Overtime - Misc		-	42	-	-	-	-
	F.I.C.A. (Soc. Sec.)		34,798	34,106	41,713	41,713	41,713	42,699
	P.E.R.S. Retirement		50,352	50,758	60,346	60,346	60,346	63,150
	Health & Vision Insurance		75,816	92,858	135,632	135,632	129,118	122,630
	Workers Comp. Ins.		3,847	3,290	3,768	3,768	3,768	3,983
	Unemployment Ins.		2,018	1,981	2,090	2,090	2,090	1,794
	Dental Insurance		3,324	3,930	4,664	4,664	4,664	4,664
	F.I.C.A. Medicare		8,138	7,976	9,759	9,759	9,759	9,990
	Vacancy Adjustment				(32,574)	(32,574)		
	Total	Personnel Services	754,779	762,403	898,106	898,106	924,166	937,538
Supplies & Materials								
	Office Supplies & Equip		3,319	3,476	4,500	4,500	3,600	4,000
	2,000 Supplies							
	900 Copier Contract Billing							
	100 Quarterly Print Charges							
	1,000 Contract Shredding Service - Records Destruction							
	4,000							
	Computr Equip/Sftwr/Sppl		19,253	42,466	17,240	17,240	17,240	8,756
	500 Adobe Premium							
	1,100 Adobe Cloud							
	3,540 MFILES Named User Licenses (5) @ \$708 each							
	3,616 Karpel Prosecutor Software, Support & Training							
	8,756							
	Furniture		7,389	0	2,000	2,000	2,000	-
	Total	Supplies & Materials	29,961	45,942	23,740	23,740	22,840	12,756
Purchased Services								
	IT&S Computer Maint/Spprt		21,424	25,348	26,564	26,564	26,564	25,893
	IT&S Telephone Service		3,792	4,266	4,266	4,266	4,266	4,266
	City-Co Bldg Postage Adm		510	823	917	917	917	917
	Postage		1,494	1,405	1,800	1,800	1,800	1,800
	Cellular Services		1,575	1,290	1,630	1,630	630	-
	Legal Notices & Fees		302	36	300	300	300	300
	175 Public Hearing Notices							
	25 MT Driving Records							
	100 Out of State Driving Records							
	Professional Dues		2,495	1,610	2,600	2,600	2,575	2,600
	2,600 State Bar Attorney Dues (5)							
	2,600							
	Professional Subscriptions		4,046	2,780	6,860	6,860	6,860	6,860
	100 MT Lawyers Desk book + Update							
	400 MCA 2023							
	60 MCA Title 7 (3)							
	300 MCA Digital Access 2 Years (5)							
	6,000 Lexis Research Subscr. (4)							
	6,860							
	Legal Services		96,823	52,158	34,526	34,526	34,526	35,000
	35,000 Outside Legal/ Professional Services							
	Travel & Meeting Expense		4,117	3,754	4,100	4,100	4,100	4,100
	400 Travel							
	1,500 Tillotson Conference motel/meals/transp (4)							
	700 Co. Attorney Conf Motel/Meals/Transp. (2)							
	1,500 Additional Costs for 1 new attorney							
	4,100							

General Government							
Fund: 011		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				FY 2024			
				Adopted	Amended	Projected	
Continued Prof Education		1,047	590	1,800	1,800	1,800	1,800
<u>1,800</u>	CLE (6 employees)						
<u>1,800</u>							
Conferences		1,460	598	2,150	2,150	2,150	2,150
1,000	MLC&T Conf. - Registration (5)						
550	Co. Atty Conf. Registration (2)						
<u>600</u>	Dallas Caw Registration (1)						
<u>2,150</u>							
Other Contracted Services		2,000	2,000	-	-	-	-
Total	Purchased Services	141,085	96,658	87,513	87,513	86,487	85,686
Intra-City Charges							
Copier Revolving Program		1,047	1,047	1,047	1,047	1,047	1,078
Total	Intra-City Charges	1,047	1,047	1,047	1,047	1,047	1,078
Fixed Charges							
Rent of Bldgs & Offices		31,553	31,823	33,095	33,095	33,095	41,207
30,724	CCAB - Attorney Offices						
8,112	Additional Sq Ft in CCAB						
<u>2,371</u>	Crt Hse - Prosecutor Office						
<u>41,207</u>							
Total	Fixed Charges	31,553	31,823	33,095	33,095	33,095	41,207
Internal Charges							
Liability Insurance		16,817	18,449	19,245	19,245	19,245	20,683
Fidelity Insurance		64	64	64	64	64	64
Liability Deductible		8,314	-	-	-	-	-
Total	Internal Charges	25,195	18,513	19,309	19,309	19,309	20,747
Total	City Attorney	983,620	956,385	1,062,810	1,062,810	1,086,945	1,099,013

General Government								
Fund: 011			FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
					Adopted	Amended	Projected	
Fund	011 General Government							
Dept	1302 Victim Services							
Activity	412 Executive Services							
Personnel Services								
	Salaries & Wages		53,887	60,109	62,090	62,090	62,090	70,280
	F.I.C.A. (Soc. Sec.)		3,161	3,624	3,850	3,850	3,850	4,358
	P.E.R.S. Retirement		4,649	5,392	5,570	5,570	5,570	6,445
	Health & Vision Insurance		12,780	17,115	18,760	18,760	18,756	17,926
	Workers Comp. Ins.		364	382	388	388	388	452
	Unemployment Ins.		189	211	193	193	193	183
	Dental Insurance		582	582	583	583	583	583
	F.I.C.A. Medicare		739	848	901	901	901	1,020
	Vacancy Adjustment				(3,232)	(3,232)		
	Total	Personnel Services	76,350	88,262	89,103	89,103	92,331	101,247
Supplies & Materials								
	Office Supplies & Equip		564	375	1,500	1,500	500	1,000
	1,000 Misc							
	1,000							
	Computr Equip/Sftwr/Sppl		750	750	2,072	2,072	750	1,412
	750 Full Case Annual Maintenance/Support							
	662 Karpel Prosecutor Software, Support & Training							
	1,412							
	Furniture		-	-	-	-	163	-
	Total	Supplies & Materials	1,314	1,125	3,572	3,572	1,413	2,412
Purchased Services								
	IT&S Computer Maint/Spprt		2,967	3,177	3,281	3,281	3,281	3,206
	IT&S Telephone Service		474	474	474	474	474	474
	City-Co Bldg Postage Adm		-	-	145	145	145	145
	Postage		4	3	-	-	10	-
	Cellular Services		581	628	630	630	630	649
	Professional Dues		250	250	250	250	250	250
	250 MCADSV Membership Dues							
	250							
	Travel & Meeting Expense		1,863	3,015	2,261	2,261	2,261	3,611
	2,261 Dallas CAW motel/meals/transp							
	1,350 St of MT Prof Leadership Training & Budget Training							
	3,611							
	Continued Prof Education						50	
	Conferences		100	595	600	600	600	600
	600 Dallas Crimes Against Women Conference							
	600							
	Other Contracted Services		-	507	1,000	1,000	250	1,000
	1,000 Interpretor services							
	1,000							
	Total	Purchased Services	6,238	8,649	8,641	8,641	7,951	9,935
Fixed Charges								
	Rent of Bldgs & Offices		5,748	5,975	6,214	6,214	6,214	6,478
	4,482 ccab							
	1,996 office at LJC							
	6,478							
	Total	Fixed Charges	5,748	5,975	6,214	6,214	6,214	6,478
Internal Charges								
	Liability Insurance		1,388	1,664	1,776	1,776	1,776	2,111
	Fidelity Insurance		8	8	8	8	8	8
	Liability Deductible		-	-	-	-	-	-
	Total	Internal Charges	1,396	1,672	1,784	1,784	1,784	2,119
Total	Victim Services		91,046	105,683	109,314	109,314	109,693	122,191

# Fiscal Year 2025 Budget Discussion

HUMAN RESOURCES



Prepared by  
Renee McMahon – Director

April 17, 2024



# Human Resources

General Fund: HR

## Human Resources

**FY24 Adopted**  
**\$572,333**

**FY24 Projected**  
**\$573,281**

**FY25 Preliminary**  
**\$571,165**

## Notable Expenditures

- **FY24 and FY25 : Continued work on market-based pay plan; contracted services with CMS.**
- **Sunsetting legacy recruitment module. Onboarding Tyler Technology recruitment module which will integrate with Tyler Tech HR module.**
- **Status quo budget.**





# Human Resources

## FY 24 Accomplishments

### Human Resources Employer of Choice

- **Compensation:** Provided 4% COLA and sustained competitive insurance and benefits
- Conducted a market wage analysis to offer competitive, market-based pay
- Stabilized the workforce – turnover and vacancy rates reduced in most departments
- Implemented online safety training platform
- In partnership with the police department, records department and 9-1-1- Dispatch Center, successfully negotiated Collective Bargaining Agreements.
- In partnership with the Public Information Officer, launched new City Intranet.
- Continuous planning for implementation of the ERP HR module.
- Updated, developed and implemented many city personnel policies.



# Human Resources

## FY 25 Goals

### Human Resources Employer of Choice

- **Compensation:** Offer competitive pay and benefits
- **Implement ERP HR module** to include Employee Access, greatly improving the technological interface and efficiencies for employees
- **Implement market-based pay plan**
- **Develop initiatives to provide a sustainable, stable workforce**
  - Develop succession planning to provide promotional opportunities in anticipation of retirements and turnover
  - Develop mentorship and internship opportunities
  - Offer professional development and training opportunities
- **Implement REAL Institute principles** in recruitment, hiring, and promotion opportunities
- **Support a safe, healthy workplace** for all employees

# Questions?



General Government								
Fund: 011			FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
					Adopted	Amended	Projected	
Fund	011 General Government							
Dept	1801 Human Resources							
Activity	417 Human Resources							
Personnel Services								
	Salaries & Wages		284,874	298,962	320,460	320,460	315,000	316,161
	Temporary Salaries		3,083	6,146	-	-	2,750	-
	Overtime - Misc		441	-	750	750	750	750
	F.I.C.A. (Soc. Sec.)		17,327	18,518	19,964	19,964	19,964	19,652
	P.E.R.S. Retirement		24,788	26,817	28,882	28,882	28,882	29,063
	Health & Vision Insurance		50,256	46,106	51,688	51,688	40,000	43,658
	Workers Comp. Ins.		1,785	1,327	1,551	1,551	1,551	1,538
	Unemployment Ins.		1,006	1,068	1,001	1,001	1,001	826
	Dental Insurance		2,329	2,232	2,332	2,332	2,332	2,332
	F.I.C.A. Medicare		4,052	4,331	4,670	4,670	4,670	4,598
	Vacancy Adjustment				(15,095)	(15,095)		
	Total	Personnel Services	389,939	405,508	416,203	416,203	416,900	418,578
Supplies & Materials								
	Paper & Forms		683	215	1,300	1,300	500	1,300
	Office Supplies & Equip		2,261	1,847	1,500	1,500	1,500	1,500
	Small Tools & Equip-Misc		-	-				
	Computr Equip/Sftwr/Sppl		3,039	3,191	8,691	8,691	8,691	3,625
	1,300 Toner for all printers & fax							
	360 Laptop upgrade for HR Generalist							
	170 Docking Station							
	61 Additional network costs for laptop							
	1,026 Adobe Subscriptions (4 @ \$256.62)							
	708 M Files Subscription (1)							
	3,625							
	Furniture & Fixtures-Misc		-	220				
	Total	Supplies & Materials	5,983	5,473	11,491	11,491	10,691	6,425
Purchased Services								
	IT&S Computer Maint/Spprt		11,692	13,183	12,880	12,880	12,880	12,802
	IT&S Telephone Service		2,370	2,370	2,370	2,370	2,370	2,370
	City-Co Bldg Postage Adm		535	575	383	383	383	383
	Postage		435	520	1,200	1,200	500	1,200
	Cellular Services		499	498	600	600	499	514
	Printing & Duplicating		-	101	150	150	172	150
	150 Envelopes							
	150							
	Dues, Subscriptn, License		3,359	1,075	7,200	7,200	7,200	5,200
	4,000 Natl. SHRM Dues-ck							
	620 NPELRA Membership (3)							
	80 SHRM Dues (2)							
	500 Additional Licenses							
	5,200							
	Advertising		8,616	22,463	10,000	10,000	10,000	10,000
	Meal Reimb-Taxable		785	-				
	Travel & Meeting Expense		9,733	5,555	3,000	3,000	3,000	3,000
	Required Training		-	1,518	2,000	2,000	2,000	3,200
	1,700 Misc. Training or Tuition Reimb.							
	1,500 Drug Training/Supervisor							
	3,200							
	Conferences		894	1,054	5,000	6,590	6,590	5,000
	2,000 SHRM/MLC&T/Arbitration/Misc Conferences							
	3,000 Risk Conference - National Risk Association (1pp)							
	5,000							

General Government							
Fund: 011		FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
				Adopted	Amended	Projected	
Other Contracted Services		22,000	64,691	55,110	55,110	55,110	57,110
550	Shredder						
3,000	Legal Union Fee						
2,000	Back Ground Checks						
360	Bottled Water						
51,200	HR Service Agreement (CMS) & legal Fees (Equal Opp Audits)						
57,110							
Total	Purchased Services	60,918	113,603	99,893	101,483	100,704	100,929
Intra-City Charges							
Copier Revolving Program		2,221	2,221	2,221	2,221	2,221	2,288
Total	Intra-City Charges	2,221	2,221	2,221	2,221	2,221	2,288
Fixed Charges							
Rent of Bldgs & Offices		28,178	28,178	29,305	29,305	29,305	29,305
Empl Awrds/Incentive Prgms		5,509	2,677	4,000	4,000	4,240	4,000
Total	Fixed Charges	33,687	30,855	33,305	33,305	33,545	33,305
Internal Charges							
Liability Insurance		7,590	8,534	9,189	9,189	9,189	9,520
Fidelity Insurance		32	32	32	32	32	32
Liability Deductible		-	22,765	-	-	-	88
Total	Internal Charges	7,622	31,331	9,221	9,221	9,221	9,640
Total	Human Resources	500,370	588,990	572,333	573,923	573,281	571,165

# Fiscal Year 2025 Budget Discussion

Helena Municipal Court



Prepared by  
Nikki Johnson – Municipal Court  
Manager

April, 2024



# Helena Municipal Court

## Budgeted Expenditures

**FY 2024: \$738,724**

**FY 2025: \$753,304**

**Overall increase of  
4%**

## Notable Expenditures

- **Salaries and Benefits**
  - **\$28,251 increase from FY2024**
- **Maintenance and Operations status quo from prior year**



# Helena Municipal Court

## Work in Progress:

- **June 2024**
  - **Launch of EFiling (electronic filing)**
- **Continue to review Courtroom security upgrades for the safety of the public and employees.**



# Questions?



Police & Court								
Fund: 012			FY 2022 Actual	FY 2023 Actual	FY 2024			Preliminary FY 2025 Budget
					Adopted	Amended	Projected	
Fund	012 Police & Court							
Dept	1401 Court Administration							
Activity	413 Judicial Services							
Personnel Services								
	Salaries & Wages		383,030	426,772	435,357	435,357	435,357	440,288
	Temporary Salaries		2,000	1,500	5,000	5,000	3,000	5,000
	F.I.C.A. (Soc. Sec.)		22,662	25,500	27,306	27,306	27,306	27,611
	P.E.R.S. Retirement		33,293	38,227	39,054	39,054	39,054	40,378
	Health & Vision Insurance		75,837	92,479	101,196	101,196	96,979	101,196
	Workers Comp. Ins.		2,196	1,563	1,536	1,536	1,536	1,595
	Unemployment Ins.		991	1,110	1,021	1,021	1,021	869
	Dental Insurance		3,469	3,493	3,498	3,498	3,498	3,498
	F.I.C.A. Medicare		5,300	5,964	6,388	6,388	6,388	6,460
	Vacancy Adjustment				(21,712)	(21,712)		
	Total	Personnel Services	528,777	596,607	598,644	598,644	614,139	626,895
Supplies & Materials								
	Paper & Forms		947	912	1,000	1,000	1,000	1,000
	Office Supplies & Equip		2,087	2,613	2,500	2,500	2,000	2,500
	Computr Equip/Sftwr/Sppl		1,288	1,501	1,000	1,000	1,000	1,000
	Furniture & Fixtures-Misc		210	567	-	-	-	1,200
	1,200 Chair x2							
	1,200							
	Total	Supplies & Materials	4,532	5,593	4,500	4,500	4,000	5,700
Purchased Services								
	IT&S Computer Maint/Spprt		17,984	19,201	19,528	19,528	19,528	19,435
	IT&S Telephone Service		3,555	3,792	3,792	3,792	3,792	3,792
	Jury & Witness Fees		1,997	2,093	4,000	4,000	4,000	4,000
	City-Co Bldg Postage Adm		1,904	1,776	2,055	2,055	2,055	2,055
	Postage		5,253	5,832	4,500	4,500	4,800	4,600
	4,600 Jury Mailings							
	4,600							
	Cellular Services		-	-	1,000	1,000	1,000	1,000
	1,000 Judge Cell Phone							
	1,000							
	Printing & Duplicating		3,266	3,324	3,000	3,000	3,000	3,000
	3,000 General Printing							
	3,000							
	Professional Dues		450	275	450	450	450	450
	450 Clerk Dues MMA Annual Dues							
	450							
	Dues, Subscriptn, License		475	325	-	-	-	-
	Required Training		1,729	1,730	2,000	2,000	2,000	2,250
	1,750 Conf Location Billings-Travel/Food/Lodging							
	500 Registration							
	2,250							
	Certification Training		-	-	300	300	300	300
	300 Judge & Clerk training costs							
	Conferences	Conference Registration & Travel Costs	-	1,628	-	-	-	-
	Other Contracted Services		23,457	7,712	7,919	7,919	9,000	7,680
	795 "For the Record" recording system contract maint.							
	1,000 Lexis Nexis Contract							
	5,285 Digiticket-Costs increased for FY24							
	200 Record Management (Shredding Fees)							
	400 Language Link							
	7,680							
	Total	Purchased Services	60,071	47,688	48,544	48,544	49,925	48,562

Police & Court								
Fund: 012			FY 2022 Actual	FY 2023 Actual				Preliminary FY 2025 Budget
					FY 2024			
					Adopted	Amended	Projected	
Fixed Charges								
	Rent of Bldgs & Offices	Court room / offices / jury room	48,961	55,537	57,758	57,758	57,758	57,758
	Copier Revolving Program							675
	Total	Fixed Charges	48,961	55,537	57,758	57,758	57,758	58,433
Internal Charges								
	Property Insurance		64	88	227	227	227	260
	Liability Insurance		9,236	11,901	12,597	12,597	12,597	13,376
	Fidelity Insurance		78	79	78	78	78	78
	Total	Internal Charges	9,378	12,068	12,902	12,902	12,902	13,714
Total	Court Administration		651,719	717,492	722,348	722,348	738,724	753,304

***City of Helena, Montana***

**04/09/2024**

**To:** Tim Burton, City Manager

**From:** Ryan Leland, Public Works Director  
Miranda Griffis, Sustainability and Recycling Coordinator

**Subject:** Sustainability Report/Audit Findings and Current Implementation

**Present Situation:** Public Works would like to provide an update/inform the Mayor and Commission on the results of the Sustainability Plan/Audit and provide a brief City sustainability update.

**Background Information:** In June of 2023, the City's Public Works Department released an RFP for a qualified consultant to perform a sustainability audit on municipal facilities to identify opportunities for energy efficiency, electrification, water conservation, renewable energy, and Electric Vehicle Charging Station installation. Iconergy was selected as the consultant for the project. In November 2023, on-site energy audits were conducted at the City's five facilities with the largest energy use: Wastewater Treatment Facility, Tenmile Treatment Facility, City and County Admin Building, and the Civic Center. The team toured the interior and exterior of each facility, including the roof, as appropriate. Major building systems were analyzed including industrial equipment, heating, ventilating, and air-conditioning, lighting, domestic hot water, envelope systems, and process equipment. Energy savings opportunities were assessed and compiled to provide the City with a potential roadmap towards increased sustainability. A feasibility study of solar photovoltaic potential was also performed for ten facilities. The results of all the findings and recommendations were compiled into the City of Helena Sustainability Energy Audits report.

**Current implementation of the report:**

At the Wastewater Treatment Plant, the two largest energy saving recommendations were the replacement of the bioreactor mixers and the replacement of the blower motor. These two projects are already underway and have a combined annual energy saving of approximately \$60,000.

The solar analysis identified Bill Robert's Golf Course as the top location for the City's next solar project. Using the designs and analysis contained in the report and the funding set aside by the City Commission, the City has started the process to have 50kw solar project installed at Bill Roberts Golf Course.

**New sustainability grants applied for:**

Solar For All- Residential solar for all Montana, \$41 million, selection of awardees July 2024.

Climate Pollution Reduction Implementation Grant, City of Helena compost improvements, \$2.1 million, selection of awardees in the winter of 2024.

**Proposal/Objective:** Provide information and answer any questions

**Advantage:** N/A

<b><u>Notable Energy Impact:</u></b>	N/A
<b><u>Disadvantage:</u></b>	N/A
<b><u>Quasi-Judicial Item:</u></b>	False
<b><u>Notice of Public Hearing:</u></b>	False
<b><u>Staff Recommendation/ Recommended Motion:</u></b>	No recommendation at this time. Informational only.





# City of Helena Sustainability Energy Audits - Level II Energy Audits

Helena, MT  
March 20, 2024

## Submitted by Iconergy, LTD

1905 Sherman St. Suite 1040,  
Denver, CO 80203  
[Iconergy.com](http://Iconergy.com)

# Contents

## TABLE OF CONTENTS

Summary Page.....	3
Executive Summary .....	4
Project Description.....	5
Energy Conservation Measures.....	7
Solar PV Analysis .....	18
Appendix A: Facility Descriptions .....	19
Historical Utility Data .....	22
Equipment Inventory .....	24
Historical Utility Data .....	26
Equipment Inventory .....	28
Historical Utility Data .....	30
Equipment Inventory .....	32
Historical Utility Data .....	33
HVAC Equipment Inventory .....	35
Historical Utility Data .....	37
Appendix B: Solar PV Designs.....	39
Appendix C: Glossary.....	41

## Summary Page

Client Name:	City of Helena
Client/Site Contact:	Miranda Griffis
Title:	Sustainability & Recycling Coordinator
Phone:	406-447-8094
E-mail:	mgriffis@helenamt.gov
Iconergy Contact	Grace Butler, Erik Jeannette, Natan Simhai
Title	Iconergy, Ltd.
Phone	303-715-8335
Email	<a href="mailto:nsimhai@iconergy.com">nsimhai@iconergy.com</a>
Site Visit Date(s):	November 27-30, 2023

## Executive Summary

The City of Helena has established the goal of increased sustainability for all municipal facilities. Iconergy has been selected to perform energy audits at select facilities to determine current energy use and provide recommendations to facility assets to achieve increased sustainability goals. In support of these goals, ASHRAE Level II audits were performed to evaluate energy users, equipment, and building operations. Energy savings opportunities were then assessed and have been compiled in this report to provide the City of Helena with a potential roadmap towards increased sustainability.

These opportunities are described as energy conservation measures (ECMs) to further reduce energy consumption at each location. The recommendations are unique to each building, though some measures apply to several of the surveyed buildings. Energy savings calculations were performed either through spreadsheet calculations or whole building energy modeling with a goal of providing a realistic view of the costs and benefits of these upgrades. Below is a list and brief summary of the findings. The City of Helena can then use these results in the development of an informed roadmap towards sustainability.

A feasibility study of solar photovoltaic (PV) potential was also performed for ten buildings, including those that received energy audits. From this analysis, three potential systems were designed at two sites – Bill Roberts Golf Course and Wastewater Treatment Facility (WWTF).

Table 1: Savings and Cost Summary

	Baseline EUI (kBtu/sf)	Total Energy Savings (%)	Total Utility Cost Savings (\$/yr)	Utility Cost Reduction (%)	GHG emissions savings <sup>1</sup> (%)	Implement ation Cost <sup>2</sup> (\$)	SPB (yrs)
City and County Admin	80.7	84%	\$73,863	62%	80%	\$2,622,350	35
Civic Center	91.2	96%	\$64,783	75%	90%	\$3,445,970	71
Law and Justice Center	95.2	63%	\$42,727	35%	56%	\$1,130,850	26
Tenmile Treatment Facility <sup>3</sup>	54.6	58%	\$59,383	60%	58%	\$211,410	3.0
Wastewater Treatment Facility	418.7	19%	\$96,804	23%	22%	\$496,690	8.0

Notes:

<sup>1</sup> The calculations may not consider the interactive effects of several ECMs acting together, and estimates for each measure assume the same baseline condition. As such, the savings represent a combined total of all measures, that is higher than actually achievable.

<sup>2</sup> Not including utility incentives.

<sup>3</sup> Savings include measures at Missouri River plant and pumphouses.

## Project Description

The city of Helena has the goal of creating a sustainability roadmap to reduce energy use at municipal facilities. The goal of this project is to analyze the data collected during the site audits and present ECM opportunities to reduce energy consumption within the selected facilities. Additionally, this project will detail the current state of the selected facilities.

To establish these data, Iconergy conducted energy audits at five municipal buildings throughout the City. The purpose of an energy audit is to determine where, when, why, and how energy is used in a facility, and to identify opportunities to improve efficiency. The energy auditor leads the audit process but works closely with building owners, staff and other key participants throughout to ensure accuracy of data collection and appropriateness of energy efficiency, and renewable energy.

Energy Audits Identify:

- Action plans for capital measures that significantly improve the facility through utility savings, greenhouse gas (GHG) emission reductions, improved comfort, reduced maintenance costs, or some combination of these factors
- No-cost operational or maintenance adjustments that will save energy or reduce emissions
- Short-term, low-cost energy efficiency retrofit recommendations, as well as long-term capital improvements
- Opportunities for better adherence to lighting and comfort standards
- Comfort and code issues that should be addressed

The results of this audit will lay the foundation for establishing a sustainability roadmap within the City of Helena.

Table 2 Building List

Building Name	Address	Area (Square Foot)	Building Uses
City County Admin Building	316 North Park	92,702	Office and meeting rooms for city functions
Helena Civic Center	340 Neil Avenue	69,407	Event center
Law and Justice Center	406 Fuller Avenue	66,892	Office, Police Services, Courtroom
Ten Mile Water Treatment Plant	1115 Rimini Road	50,622	Water Treatment plant
Wastewater Treatment Facility	2108 Custer Avenue	200,346	Wastewater Treatment

## On-site Auditing

On-site efforts were conducted between November 27-30, 2023 and met the requirements of an ASHRAE Level II audit. The team toured the interior and exterior of each facility, including the roof, as appropriate. Major building systems were analyzed including heating, ventilating, and air-conditioning (HVAC), lighting, domestic hot water (DHW), envelope systems, and process equipment where applicable. Building personnel were also interviewed, when possible, to gather information on typical building operations and any recurring issues.

## Data Analysis

Energy audit efforts continued post site visit with a detailed review of all information provided to Iconergy. In this study, utility bills were provided for each building for all electric, water, and natural gas meters. Other information was requested including a list of existing equipment, as-built drawings, and operations and maintenance plans. All data were compiled and analyzed to provide a full picture of each facility and its individual energy consumption. This information and the data gathered on site are used to inform the energy efficiency recommendations found in this report.

## Energy Savings Calculations

As noted above, energy savings calculations were performed through either spreadsheet calculations or whole building energy modeling. There are advantages and disadvantages to both methods which were weighed when deciding which approach to use. Spreadsheet calculations are simpler and less labor-intensive and are best used when one or few variables are changing, such as with an upgrade to a more efficient unit or a lighting replacement. Energy modeling is time consuming and often relies on a number of assumptions, though it can more accurately evaluate more complicated measures such as whole system replacements or changes to system operations.

## Cost Estimating

Economic evaluation will be shown for each energy conservation measure (ECM) in the form of a simple payback (SPB). The SPB describes the estimated amount of time it will require for that ECM to begin surpassing the costs of the initial investment. These values are estimates and may include the cost of equipment and installation, but are based on the experience Iconergy has as a retrofitter of commercial and industrial facilities. Savings values will also be estimated based on utility rates determined from provided utility bills, potential maintenance savings, and rebate savings if possible.

## Energy Conservation Measures

ECMs have been identified at each building and are presented in this section. These ECMs aim to encompass all potential pathways for achieving energy reductions and sustainability. The sections below describe each of the ECMs in detail with building-specific details and information. A summary table is also provided to highlight the key energy, GHG, and cost metrics for each of the ECMs and each of the buildings.

The sections below add additional detail to the ECMs recommended for each building. General summaries are provided for most ECMs, as the systems in question are similar in each of the buildings included in the project. Where necessary, additional detail has been provided for a building-specific situation or system that requires further explanation. Some of the same opportunities were found at multiple buildings. In a few cases, the ECMs proposed at a single building present an “either-or” scenario where the recommendations cannot be installed together. An example would be existing HVAC system upgrades to different system types such as heat pumps or traditional roof top units (RTUs). Implementation costs are rough-order-of-magnitude estimates, based on industry data or past projects. ECMs range from low-cost (controls programming or in-house labor) to long-term capital projects. Utility incentives from Northwestern Energy are included where applicable.

### City & County Administration Building ECMs

#	Measure Description	Electrical Energy Savings (kWh/yr)	Electrical Demand Savings (kW/yr)*	Gas Energy Savings (therm/yr)	Water Savings (kgal/yr)	GHG Savings Scope 1 MTCO <sub>2</sub> e	GHG Savings Scope 2 MTCO <sub>2</sub> e	Utility Cost Savings (\$/yr)	Implementation Costs (\$)	Incentives (\$)	Simple Payback (yr)
ECM-1	Steam to HHW Conversion	(9,861)	(39)	26,570	-	141.0	(2.7)	\$ 18,728	\$ 2,246,000	\$ -	119.9
ECM-2	MZ AHU to VAV AHU Upgrade	83,645	375	1,968	-	10.4	22.8	\$ 13,508	\$ 168,000	\$ -	12.4
ECM-3	MZ AHU Schedule Implementation	22,044	-	8,299	-	44.0	6.0	\$ 8,187	\$ 1,000	\$ -	0.1
ECM-4	Economizer for MZ and Chambers AHU	32,065	146	(2,545)	-	(13.5)	8.7	\$ 2,716	\$ 3,000	\$ -	1.1
ECM-5	Zone Setbacks	15,880	26	8,408	-	44.6	4.3	\$ 8,068	\$ 1,000	\$ -	0.1
ECM-6	Air Sealing for Leaky Windows	52,331	115	12,550	-	66.6	14.2	\$ 15,492	\$ 132,000	\$ -	8.5
ECM-7	LED Lighting Upgrade	51,573	176	(578)	-	(3.1)	14.0	\$ 6,272	\$ 70,350	\$ 7,035	10.1
ECM-8	Low-flow Bathroom Fixtures	-	-	-	76	-	-	\$ 890	\$ 1,000	\$ -	1.1
<b>Total</b>		<b>247,677</b>	<b>799</b>	<b>54,671</b>	<b>76</b>	<b>290</b>	<b>67</b>	<b>\$ 73,863</b>	<b>2,622,350</b>	<b>7,035</b>	<b>35</b>
<b>Baseline Utility Bills</b>		<b>523,493</b>	<b>1,460.0</b>	<b>56,924</b>	<b>NA</b>	<b>302</b>	<b>142</b>	<b>\$ 119,073</b>			
<b>Percent Savings</b>		<b>47%</b>	<b>55%</b>	<b>96%</b>	<b>0%</b>	<b>96%</b>	<b>47%</b>	<b>62%</b>			

Notes:

\*Sum of the monthly peak electrical demand savings for the full year expressed in units of kW/yr.

1 MMBtu = 1,000,000 Btu, 1 kWh = 3,412 Btu, 1 therm = 100,000 Btu

### Steam to Hot Water Conversion

It was found at the City and County Admin building that steam boilers were in use for heating purposes. It was also found that these boilers were beyond their useful life. It is recommended that these steam boilers be replaced with gas-fired condensing hot water boilers. Hot water boilers have



better efficiencies than steam boilers, and this is likely compounded by the age of the existing steam boilers. Upgrading to hot water boilers would also require the installation of pumps to circulate the hot water as well as new distribution piping. Air handling unit coils would need to be converted to hot water coils, and steam radiators would need to be replaced with hot water baseboard radiators or cabinet unit heaters. Currently, Northwestern Energy offers rebates on variable frequency drives (VFDs), which can be installed with the new hot water pumps.

#### **Multizone AHU Upgrade to VAV**

The City and County Admin building was found to use a multi-zone (MZ) AHU for the first floor. These systems can result in significant simultaneous heating and cooling, which is inefficient. It is recommended that these units be replaced with variable air volume (VAV) units so that either heating or cooling can be prioritized and airflow to spaces can be modulated as needed. Savings for this measure are based on reduced fan energy, and eliminating simultaneous heating and cooling.

#### **MZ AHU Scheduling**

The MZ AHU was observed to be running continuously, including when spaces such as offices and meeting areas are unoccupied. This is causing unnecessary energy use; it is recommended that the AHU schedule be programmed to operate on a schedule according to their expected occupancy or operating hours. This measure assumed a Monday to Friday schedule of 6am to 6pm to cover a morning warmup, business hours, and custodial activities. Outside of these times the unit's fan should shut off, and if there is a call for heating or cooling, the outdoor air damper should remain closed.

#### **Economizer on MZ and Chambers AHU**

The MZ and chambers AHU appeared to have non-functioning economizers – the outdoor air damper was commanded to 20% at all times, and did not modulate. Economizers function to bring in outside air for free cooling when conditions allow. During the site visit it was found that the old pneumatic systems controlling the economizers had failed. It is recommended that these economizer functions be repaired and use differential dry bulb sequence be programmed so that outside air can be used optimally for energy use reduction.

#### **Zone Temperature Setbacks**

The City and County Admin building uses pneumatic thermostats and controllers for temperature control throughout the building. However, these controls are overridden and set to maintain a constant temperature in their spaces, rather than setting back during unoccupied times. This leads to excess energy use, as spaces are being heated or cooled when no one is in them. It is recommended that the override on the pneumatic controller be fixed, so the zone temperatures are automatically setback. The heating and cooling setpoints should be set back to 68°F and 80°F, respectively.



Figure 1 - Pneumatic Zone Setback Controller

### Air Seal or Replace Leaky Windows

The windows on the first floor are single-pane wood-frame, and believed to be original to the building. Large amounts of outdoor air was observed to be infiltrating into the interior through gaps and openings in the windows. This results in extra energy use by the HVAC systems to combat the more additional heating and cooling loads introduced from these leaks. At the City and County building it is recommended to weatherize and air-seal the existing windows, and possibly also install a secondary window. Products are available which cost less than full window replacement, but add insulation and seal gaps for existing windows. One option is offered by Alpen Windows:

<https://thinkalpen.com/products/winsert-window-inserts/>.

### LED Lighting Upgrade

During the audit of this building the existing lighting was observed to be a mix of LEDs primarily on the first floor, with T5 and T8 fluorescent lighting in most other locations. Fluorescent lights consume a significantly higher amount of energy than LED alternatives. It is recommended that all older lighting be replaced with LED lamps. The costs for this measure assume that the fixtures will be completely replaced with a new equivalent LED fixture, as city staff has already identified a proper replacement. The local utility company, Northwestern Energy offers lighting rebates for energy-efficient LED lighting, which were factored into the simple payback. The rebate amount varies depending on the LED wattage.

### Bathroom Sink Aerators

The faucets at the bathroom sinks in the City and County Admin building use separate taps for hot and cold water, and are not low-flow fixtures. This will lead to excess water consumption while the sinks are in use. It is recommended that these sinks be converted to use a single low-flow faucet, ideally rated to 0.5 gallons per minute (GPM).

### Civic Center ECMs

#	Measure Description	Electrical Energy Savings (kWh/yr)	Electrical Demand Savings (kW/yr)*	Gas Energy Savings (therm/yr)	GHG Savings Scope 1 MTCO <sub>2</sub> e	GHG Savings Scope 2 MTCO <sub>2</sub> e	Utility Cost Savings (\$/yr)	Implementation Costs (\$)	Incentives (\$)	Simple Payback (yr)
ECM-1	Ballroom RTU with ERV	16,377	1	6,494	34.5	4.5	\$ 6,342	\$ 176,000	\$ -	27.8
ECM-2	Auditorium RTU and Mini-splits	23,442	60	3,277	17.4	6.4	\$ 5,276	\$ 157,000	\$ -	29.8
ECM-3	Auditorium Heat Pump RTU	15,147	13	4,140	22.0	4.1	\$ 4,604	\$ 140,000	\$ -	30.4
ECM-4	Steam to HHW Conversion	(7,383)	(29)	20,792	110.3	(2.0)	\$ 14,702	\$ 1,388,140	\$ -	94.4
ECM-5	HHW Conversion + Ballroom & Auditorium WSHP	(22,745)	(115)	24,979	132.5	(6.2)	\$ 15,439	\$ 1,579,140	\$ -	102.3
ECM-6	Lighting Upgrade	14,789	75	(166)	(0.9)	4.0	\$ 2,115	\$ 15,690	\$ 7,845	3.7
<b>Total</b>		<b>39,626</b>	<b>5</b>	<b>59,517</b>	<b>316</b>	<b>11</b>	<b>\$ 48,478</b>	<b>\$ 3,455,970</b>	<b>\$ 7,845</b>	<b>71</b>
<b>Baseline Utility Bills</b>		<b>295,280</b>	<b>1,176.0</b>	<b>53,190</b>	<b>282</b>	<b>80</b>	<b>\$ 64,783</b>			
<b>Percent Savings</b>		<b>13%</b>	<b>0%</b>	<b>112%</b>	<b>112%</b>	<b>13%</b>	<b>75%</b>			

Notes:

\*Sum of the monthly peak electrical demand savings for the full year expressed in units of kW/yr.

1 MMBtu = 1,000,000 Btu, 1 kWh = 3,412 Btu, 1 therm = 100,000 Btu

### Ballroom RTU with Energy Recovery Ventilator (ERV)

The HVAC system for the ballroom and auditorium is unique. Rather than traditional AHUs or roof top units (RTUs), the civic center uses a large supply fan and doors that act as dampers to move air through the channels of the basement and into the ballroom and auditorium. This system is original to the building and uses inefficient equipment well past their useful life. This ECM proposes to replace this system with a traditional RTU for the auditorium. This would allow for more efficient fan motors, gas furnace heating, and more automated controls. It should be noted that energy savings will be reduced for this and any other design that replaces the basement fan system, by the fact that RTUs will be required to bring in outdoor air for ventilation. To mitigate this, it is recommended that the RTU also be equipped with an ERV, further reducing energy by allowing ventilation air to the space to be pre-heated or pre-cooled by the exhaust air.

### Auditorium RTU and Mini-splits

Similarly, it is recommended that a gas-fired RTU replace the basement system to heat and cool the auditorium. This ECM is based on a potential design provided to the City, and also includes the addition of cooling through mini-split heat pumps.

### Auditorium Heat Pump RTU

An alternative to the gas-fired RTU for the auditorium would be a heat pump RTU for both heating and cooling. This would have increased implementation costs, but would lower heating energy and GHG emissions. A backup gas furnace can be included in the heat pumps, which may be necessary for the coldest days in Helena's climate. Northwestern Energy offers rebates of \$100 per ton for high-efficiency air-source heat pumps. To qualify, for the rebate the heat pumps must have a seasonal energy

efficiency ratio (SEER) of 15.0 or greater and a heating seasonal performance factor (HSPF) of 8.5 or greater.

### **Steam to HHW Conversion**

The Civic Center uses steam boilers for heating purposes, which are likely beyond their useful life. It is recommended that these steam boilers be replaced with gas-fired condensing hot water boilers. Hot water boilers have better efficiencies than steam boilers, and this is likely compounded by the age of the existing steam boilers. Upgrading to hot water boilers would also require the installation of a pump to circulate the hot water as well as new distribution piping, and air handling unit coils would need to be converted to hot water coils, and steam radiators would need to be replaced with hot water baseboard radiators or cabinet unit heaters. Currently, Northwestern Energy offers rebates on VFDs which can be installed with the new hot water pumps.

### **Steam to HHW Conversion + Water-source Heat Pumps**

The civic center utilizes steam radiators for perimeter heating with steam boilers to provide space heating in the ballroom and auditorium. The site is also experiencing an increased demand for cooling as summer temperatures rise and the size and frequency of events increase. This recommendation investigates replacing the perimeter radiators with hydronic hot water heating (baseboards, radiators, cabinet heaters), installing WSHPs, and adding a cooling loop. All of the existing piping infrastructure will require replacement, and a cooling tower would need to be installed to support the cooling loop. The high efficiency of the WSHPs would result in reduced energy use and provide additional cooling to these spaces. This measure expands on the previous boiler replacement, so its savings include that, and additional savings for completely replacing the basement loop. It is intended to provide a “best-of” option.

### **LED Lighting Upgrade**

The majority of the lighting at the civic center is already LED. However, there are still incandescent lamps in both ballroom and auditorium chandeliers. These are relatively small, but there are a considerable number of them. It is recommended that these older inefficient bulbs be replaced with LED lamps. The costs for this project assume that only the lamps would be replaced, not the entire fixture. Northwestern Energy offers lighting rebates for energy-efficient LED lighting. The rebate amount varies depending on the LED size and rated power consumption.

## Law and Justice Center ECMs

#	Measure Description	Electrical Energy Savings (kWh/yr)	Electrical Demand Savings (kW/yr)*	Gas Energy Savings (therm/yr)	GHG Savings Scope 1 MTCO <sub>2</sub> e	GHG Savings Scope 2 MTCO <sub>2</sub> e	Total Cost Savings (\$/yr)	Implementation Costs (\$)	Incentives (\$)	Simple Payback (yr)
ECM-1	LED Lighting Upgrade	80,062	85	(694)	(3.7)	21.8	\$ 7,519	\$ 19,850	\$ 3,861	2.1
ECM-2	AHU-1 Economizer Repair	1,392	10	2,437	12.9	0.4	\$ 2,087	\$ 1,500	\$ -	0.7
ECM-3	AHU-2 Supply Fan VFD	18,329	21	-	-	5.0	\$ 1,861	\$ 11,000	\$ 563	5.6
ECM-4	MZ to VAV Conversion and DDC Upgrade	74,996	37	14,455	76.7	20.4	\$ 17,913	\$ 420,000	\$ 1,125	23.4
ECM-5	Boiler Upgrade	-	-	13,414	71.2	-	\$ 10,136	\$ 671,000	\$ 1,125	66.1
ECM-6	Air Sealing and Weatherization	245	-	4,222	22.4	0.1	\$ 3,211	\$ 7,500	\$ -	2.3
<b>Total</b>		<b>175,023</b>	<b>153</b>	<b>33,834</b>	<b>179</b>	<b>48</b>	<b>\$ 42,727</b>	<b>\$ 1,130,850</b>	<b>\$ 6,674</b>	<b>26</b>
<b>Baseline Utility Bills</b>		<b>741,040</b>	<b>1,689.6</b>	<b>38,405</b>	<b>204</b>	<b>202</b>	<b>\$ 121,939</b>			
<b>Percent Savings</b>		<b>24%</b>	<b>9%</b>	<b>88%</b>	<b>88%</b>	<b>24%</b>	<b>35%</b>			

Notes:

\*Sum of the monthly peak electrical demand savings for the full year expressed in units of kW/yr.

1 MMBtu = 1,000,000 Btu, 1 kWh = 3,412 Btu, 1 therm = 100,000 Btu

### LED Lighting Upgrade

Four-foot T8 linear fluorescents were the primary lighting observed at the Law and Justice Center. These consume more energy than equivalent LED alternatives. It is recommended that all older lighting be replaced with LED lighting. The costs for this project assume that only the fluorescent tubes will be replaced with “plug-and-play” LED tubes, as opposed to replacement of the whole fixture.

Many of the spaces visited during the audit have manual switch controls, and lights were observed to be on in several areas that were unoccupied. Thus, this measure also recommends installing occupancy sensors, particularly in any spaces that do not have regular occupancy, such as the basement. Northwestern Energy offers lighting rebates for energy-efficient LED lighting and \$15 rebates for switch-mounted occupancy sensors.

### AHU-1 Economizer Repair

AHU-1 at the Law and Justice building has a faulty economizer system due to a broken damper leakage and the return and outside air dampers have been set to fully open. Economizers function to bring in outside air for free cooling when conditions allow. During the site visit it was found that the old pneumatic systems controlling the economizers had failed. It is recommended that the damper be repaired and use a differential dry bulb sequence programmed, so that outside air can be used optimally for energy use reduction.



Figure 2 - Broken Damper Linkage

### AHU-2 Supply Fan VFD

The supply fan on AHU-2 is beyond its useful life and uses inlet guide vanes, an outdated technology for VAV control. It is recommended that this supply fan be replaced and provided with a VFD to more efficiently modulate VAV air flow. This will result in more efficient energy use from this supply fan. Northwestern Energy offers a rebate on VFDs at a rate of \$75 per motor horsepower. The estimated rebate amount would be \$562.50.

### MZ to VAV Conversion and DDC Controls Upgrade

There are three multi-zone (MZ) AHUs at the Law and Justice Center. These systems can result in significant simultaneous heating and cooling, which is inefficient. It is recommended that these units be replaced with variable air volume (VAV) units so that either heating or cooling can be prioritized and airflow to spaces can be modulated as needed. Additionally, the pneumatic controls should be replaced with DDC.

All three AHUs were observed to be running 24/7. One of the AHUs serves police spaces and it is expected to run constantly, but it is recommended that the others be programmed to operate on a schedule that matches the rest of the building's occupancy. This was assumed to be Monday to Friday, 8am to 5pm. A pneumatic to DDC conversion would include a full building automation system (BAS) that would make programming schedules very easy.

The McQuay RTU was observed to not be connected to the DDC system. This makes the unit unable to be monitored and controlled directly. Additionally, the VAV terminal units served by this RTU are also not on a DDC system. Bringing the RTU and terminal units onto the DDC system would allow for better control and monitoring of the system and their served spaces.

Savings and costs for this measure include all the above recommendations, and are based on reduced fan runtime, eliminating simultaneous heating and cooling, and increased unoccupied operation.



### Boiler Upgrade

The Law and Justice Center uses steam boilers for heating which are scheduled to be replaced with high-efficiency condensing boilers in 2024. The design is complete, and includes four 850 MBH boilers and three new hot water pumps. Iconergy has analyzed the potential savings and payback for this project based on the city's available budget and permit drawings.

### Air Sealing and Weatherization

Large gaps in exterior doors and windows were observed on site. This leads to unnecessary infiltration of outdoor air, resulting in extra heating and cooling loads on the HVAC systems. It is recommended that these gaps be sealed to reduce infiltration, by adding door seals or sweeps, and repairing operable windows.

## Ten Mile Water Treatment Plant

#	Measure Description	Electrical Energy Savings (kWh/yr)	Electrical Demand Savings (kW/yr)*	GHG Savings Scope 2 MTCO <sub>2</sub> e	Utility Cost Savings (\$/yr)	Implementation Costs (\$)	Incentives (\$)	Simple Payback (yr)
ECM-1	Backwash Pump VFDs	84,793	77	23.1	\$ 8,342	\$ 46,410	\$ 15,000	3.8
ECM-2	MO River High Zone Pump Control	325,735	904	88.6	\$ 39,772	\$ 5,000	\$ -	0.1
ECM-3	Distribution Pump House VFDs	62,680	459	17.1	\$ 11,269	\$ 160,000	\$ 19,125	12.5
<b>Total</b>		<b>473,208</b>	<b>1,440</b>	<b>129</b>	<b>\$ 59,383</b>	<b>\$ 211,410</b>	<b>\$ 34,125</b>	<b>3.0</b>
<b>Baseline Utility Bills</b>		<b>822,128</b>	<b>1,912.3</b>	<b>224</b>	<b>\$ 98,396</b>			
<b>Percent Savings</b>		<b>58%</b>	<b>75%</b>	<b>58%</b>	<b>60%</b>			

Notes:

\*Sum of the monthly peak electrical demand savings for the full year expressed in units of kW/yr.

1 MMBtu = 1,000,000 Btu, 1 kWh = 3,412 Btu, 1 therm = 100,000 Btu

Savings are shown for equipment at Tenmile, MO River, and pump houses. Baseline utility data is only shown for Tenmile electrical meter.

### Backwash Pump VFDs

The backflush pumps at Tenmile were observed to be constant speed, using a control valve for variable demand, preventing the pumps from reducing speed when demand is reduced. Installing VFDs and opening the control valve would allow for the pump speed to vary with demand and reduce the amount of energy consumed by pumping water. Northwestern Energy offers rebates on VFDs at a rate of \$75 per motor horsepower.

### Missouri River High Zone Pump Control

The 600 HP high zone pumps have VFDs but do not have trending data, which makes it difficult to determine if the pumps are running optimally. It was found that the pumps are being staged instead of operating multiple pumps in parallel, potentially causing excess energy use. It is recommended that these pumps be run in parallel at slower speeds instead of being staged in series. It is also recommended that these pumps be trended and monitored for retro-commissioning to better determine their performance. Collecting trends for retro-commissioning would also assist in making future recommendations to adjust pump functionality for energy savings.



### Distribution Pump House VFDs

It was also found that the pumps in the Tenmile plant's distribution pump houses were at constant speed with only one pump running. Adding VFDs and changing the pumping strategy to run both pumps at slower speeds will reduce the amount of energy consumed for pumping water. This measure includes costs and savings at Dahlhausen and Eureka stations, as utility data was available for those meters, and Eureka is already scheduled for a pump and VFD upgrade. There may be potential savings at other sites.

## Wastewater Treatment Facility

#	Measure Description	Electrical Energy Savings (kWh/yr)	Electrical Demand Savings (kW/yr)*	Gas Energy Savings (therm/yr)	GHG Savings Scope 1 MTCO <sub>2</sub> e	GHG Savings Scope 2 MTCO <sub>2</sub> e	Utility Cost Savings (\$/yr)	Implementation Costs (\$)	Incentives (\$)	Simple Payback (yr)
ECM-1	Lighting Upgrade	58,178	67	(652)	(3.5)	15.8	\$ 5,001	\$ 22,579	\$ 1,690	4.2
ECM-2	Modulating UV Disinfection system	45,377	5	-	-	12.3	\$ 3,935	\$ 25,000	\$ -	6.4
ECM-3	Secondary pump control	46,113	63	-	-	12.5	\$ 4,426	\$ 1,000	\$ -	0.2
ECM-4	Mixer motor upgrades	372,889	492	-	-	101.5	\$ 35,663	\$ 385,000	\$ 75,000	8.7
ECM-5	Blower motor VFDs	504,800	500	-	-	137.4	\$ 47,050	\$ 840,000	\$ 420,000	8.9
<b>Total</b>		<b>1,027,357</b>	<b>1,127</b>	<b>(652)</b>	<b>(3)</b>	<b>280</b>	<b>\$ 96,075</b>	<b>\$1,273,579</b>	<b>\$496,690</b>	<b>8.1</b>
<b>Baseline Utility Bills</b>		<b>3,358,000</b>	<b>5,388.0</b>	<b>70,928</b>	<b>376</b>	<b>914</b>	<b>\$ 424,345</b>			
<b>Percent Savings</b>		<b>31%</b>	<b>21%</b>	<b>-1%</b>	<b>-1%</b>	<b>31%</b>	<b>23%</b>			

Notes:

\*Sum of the monthly peak electrical demand savings for the full year expressed in units of kW/yr.

1 MMBtu = 1,000,000 Btu, 1 kWh = 3,412 Btu, 1 therm = 100,000 Btu

### LED Lighting Upgrade

The majority of the lighting at the WWTF 4-foot linear fluorescent T8s. These consume more energy than equivalent LED alternatives. It is recommended that all older lighting be replaced with LED lighting. The facility indicated that lighting is currently replaced with LED on burnout. The costs for this project assume that only the fluorescent tubes will be replaced with "plug-and-play" LED tubes, as opposed to replacement of the whole fixture. Northwestern Energy offers lighting rebates for energy-efficient LED lighting.

### Modulating UV Disinfection System

The UV disinfection system currently runs the 65W lamps on/off whenever there is wastewater running through the facility. The facility is considering replacing this with a system that modulates the lamp power based on the flow of wastewater so that less power is used during lower flows, reducing energy consumption. This measure was evaluated using trend data on influent/effluent flows, and assumes the new system would run lamps at 50% power, on average.

### Secondary Pump Control

There are four secondary pumps in the IMP building that operate with VFDs at constant speed. However, only three of the pumps are currently being used. For this process it is necessary to keep the pumps operating at a constant speed, but it is recommended that all four pumps operate in parallel, at a decreased speed.

**Mixer Motor Upgrade**

The current mixer motors are operating at 4 horsepower. It has been determined that new VFD-equipped mixers operating at 1.3 horsepower could be used instead. The facility has plans to perform this upgrade. The reduction in power and use of VFDs will allow for less energy consumption at the mixers. Northwestern Energy offers rebates on VFDs. The estimated rebate amount would be \$75,000, per facility staff.

**Blower Motor VFDs**

The older 200 horsepower motors and blowers run at full speed and use throttle valves to maintain a specific flow and pressure. They have been identified to be beyond their useful life and cannot modulate their speed. It is recommended that the motors be replaced with new VFDs and VFD compatible motors. This will reduce energy consumption by allowing the motors to operate at a lower speed. The facility has already replaced one blower motor, the cost and rebates for that were used as the basis for this measure. The estimated rebate amount would be \$140,000, per facility staff.

## Summary of Facility Improvement Measures and Other Measures Considered

Facility Improvement Measures (FIMs) are recommended actions that aim to improve the operations, functions or comfort quality of the facility or its systems. These measures may result in energy reductions or performance improvement, but these values are believed to be small and therefore have not been analyzed for any potential energy or financial savings. Other Measures Considered (OMC) includes measures that may save energy, but were not fully evaluated – either because they are not fully recommended, or there is not currently enough information to analyze them fully. The FIMs and OMCs identified during the auditing process are described below.

**FIM-1 AHU Damper Modulating**

**Buildings evaluated:** City and County Admin

The damper on the AHU serving the Chambers space has been found to modulate while the unit is off. This occurs often as the unit only operates when there is a call for heating and is enabled by a condensate temperature less than 80°F. It is recommended that the damper motor on this unit be re-wired or controlled in a manner that allows for it to only be enabled when the unit is also enabled as to avoid any trace power use towards modulating the damper when not needed.

**FIM-2 Methane Boiler Flaring**

**Buildings evaluated:** Wastewater Treatment Facility

The methane boiler will occasionally flare of excess gas at times. This causes excess greenhouse gas emissions. The facility will be replacing it with a dual-fuel boiler that will reduce, but not eliminate, the pressure issues that require flaring.

**OMC-1 MO River Transfer Pumps**

**Buildings evaluated:** Ten Mile Treatment Plant

The transfer pumps at Missouri water treatment plant were observed to be constant speed. Installing VFDs on all transfer pumps would allow for multiple pumps to run together at low speed and the pump speed to vary with demand which reduces the amount of energy consumed by pumping water. This measure was not evaluated, as there was not sufficient information on pump size or operation to produce a savings estimate. Energy savings are likely to be similar to the other VFD measures.

#### **OMC-2 RAS Pump Control**

**Buildings evaluated:** Ten Mile Treatment Plant

There are four return activated sludge (RAS) pumps equipped with VFDs. Three of these pumps are on a single circuit in which only two pumps are active at any given time. It was initially recommended that the control scheme be changed to run all three at a lower speed, however further investigation showed that this was not feasible. The pumps share a common header, which pulls from two separate clarifiers. Currently, each clarifier uses one RAS pump at a time, and they are likely to have different flows based on the volume in each, which would make it difficult to run all three in parallel. There is the possibility to program a sequence which automatically rotates the pumps, but due to their smaller size (15 HP), it is not likely to be cost-effective.

## Solar PV Analysis

Ten sites were visited and analyzed for the potential of rooftop or ground-mount PV installations. They were evaluated for roof condition, meter location, panel size, ground area, and other considerations that would impact installation cost and energy generation of the panels. These sites were then narrowed down to two potential candidates, for which conceptual designs were created. The detailed designs can be found in Appendix B.

1	Bill Roberts Golf Course
2	Wastewater Treatment Facility
3	Capital Transit Office Building
4	Centennial/Bausch/Memorial Park and Pool
5	City County Admin Building
6	Helena Civic Center
7	Law and Justice Center
8	Solid Waste Transfer Station
9	Missouri River Water Treatment Plant
10	Ten Mile Water Treatment Plant

WWTF has large amounts of open space with easy access to electrical infrastructure, and thus large generation potential for ground-mount systems. The design for the northwest field (north of clarifier #1) has good access to the meter, and is under the limit for net metering, although it would offset only a small portion of the facility's total usage, which is very high.

In order to increase the offset, two additional designs were provided for the large field to the east of the main facility. These would exceed the net metering limit, meaning that the city would not get paid for any excess generation beyond the facility's usage – although this is unlikely to occur, given the very high energy usage there. Two system sizes were evaluated, and as shown in the table below, there are diminishing returns on the investment for simply increasing the number of panels – the savings does not increase linearly with installation cost.

There are two options for the Golf Course, and both are different from the earlier tentative design plans which targeted the open field north of the cart building. The two meters which had substantial energy consumption (i.e. Well #2 and the New Pro Shop), were not located near the open field north of the cart building. The Well #2 meter is located in the southeast region of the property, leaving the New Pro Shop meter as the best option. Therefore, two designs were provided to interconnect to the Pro Shop meter - one rooftop design, and one ground mount design (which would require the golf course to relocate the tee boxes for the driving range).

	Bill Roberts Golf Course (Roof Mount)	Bill Roberts Golf Course (Ground Mount)
Capacity (DC)	18.4 kW	60.0 kW
Capacity (AC)	15.3 kW	49.8 kW
Production (kWh)	22,879 kWh	83,199 kWh
Energy use offset (%)	80%	80%
Installed Cost Estimate (\$)	\$51,313	\$176,086
\$/W	\$2.78	\$2.93
Investment Tax Credit (\$)	\$15,394	\$52,826
Payback (years)	16.4 years	15.5 years

	Wastewater Treatment Plant (NW Field)	Wastewater Treatment Plant (East Field Full)	Wastewater Treatment Plant (East Field Partial)
Capacity (DC)	60.0 kW	1,780 kW	900 kW
Capacity (AC)	49.8 kW	1,483 kW	750 kW
Production (kWh)	82,217 kWh	2,462,724 kWh	1,252,214 kWh
Energy use offset (%)	7%	73%	37%
Installed Cost Estimate (\$)	\$173,800	\$4,013,786	\$2,068,222
\$/W	\$2.90	\$2.25	\$2.30
Investment Tax Credit (\$)	\$52,140	\$1,204,136	\$620,467
Payback (years)	15.5 years	24.9 years	18.2 years

## **Appendix A: Facility Descriptions**

## City and County Admin Building

### Building Use

The City and County Admin Building is a 92,702 sq ft facility constructed in 1901. It was renovated in 1931, 2007, and 2009. It is used primarily as office space for the city and county government.

### Occupancy

The building is open Monday through Friday 7:00 am – 5:00 pm. The number of occupants varies, but there are 140 full time employees that work in the offices, and with additional occupants as residents come in to use the government services.



### Building Envelope

The exterior walls are comprised of concrete integral with concrete masonry units (CMU) and brick finish. The roof construction primarily consists of gable construction with clay/concrete tiles. The roof also has sections that consist of a flat construction with a modified bituminous finish and sections that consist of a flat construction with single-ply thermoplastic polyolefin (TPO)/polyvinyl chloride (PVC) membrane. Windows on floors 2, 3, and 4 are double paned vinyl windows, with single-pane wood frame windows on the first floor.

### Lighting

Interior lighting is made up of a mix of light emitting diode (LED) lamps on the first floor, with linear fluorescent and compact fluorescent lamps (CFL) elsewhere. The fluorescent lighting is a mix of T5 and T8 lamps. Lighting is controlled primarily through manual wall switches. Exterior lighting is made up of incandescent bulbs that are either pole-mounted or building-mounted.

### Domestic Hot Water

Domestic hot water (DHW) is produced by a gas water heater with integral tanks. There is also a gas glycol boiler for the existing snowmelt system.

### Mechanical Systems & Controls

The City and County Admin building uses steam boilers, a chiller, AHUs, steam radiators, and mini-splits to supply HVAC to the spaces. Two natural gas steam boilers are used to provide heat to radiators and coils within the AHUs. These boilers are believed to be beyond their useful life and very inefficient. It was also found that these boilers may be oversized as it was reported that the building generally only uses one of the boilers at a time at an 11% fire rate. This is likely due to the HVAC heating systems being able to keep the building at a steady state. The boiler controller automates a 24 hour lead-lag pattern between the two boilers.



The air-cooled chiller provides chilled water to coils in the AHUs to support cooling. The chiller is nearing the end of its useful life and should be considered for replacement in the next 5 years if chilled water is still being used at the facility. A 55°F lockout is used to enable the chiller.

There are two AHUs at this site. One serves the chambers meeting room. This AHU only runs when there is a call for heating based on the zone temperature and the condensate temperature is above 80°F. This space, and its AHU, are estimated to only be in use for a few hours a day or less. The other AHU is a multizone unit and serves four zones on the first floor. This multizone unit operates based on a hot-deck cold-deck scheme to be able to provide heating and cooling to different zones as needed. It is likely that this is causing inefficient simultaneous heating and cooling scenarios. It was found that the economizer function on both of these units was not working correctly, as they are both stuck at a 20% outside air position.

Steam radiators and ductless split systems are used in the remainder of the buildings spaces for heating and cooling, respectively. The radiators are considered to be inefficient due to their use of steam generated by the boilers.

Exhaust fans located in the attic, boiler room, and roof are used to maintain building pressures and ventilation air flows.

## Historical Utility Data

### Electricity

There are 2 electric meters located at this building. One is for the parking lot, and one is for the building itself. Data was provided for all meters from May 2022 through April 2023. The total electric consumption for the 12 months of data was 523,493 kilowatt-hours (kWh) with a total cost of \$63,102. The combined monthly peak demand was 144 kilowatts (kW). The data provided did not separate electricity and demand costs.

The figure below shows the electric usage over this period. The building data shows a steady load year-round with slight peaks during the summer. The summer peak is likely due to the increased demand for space cooling during the summer months.

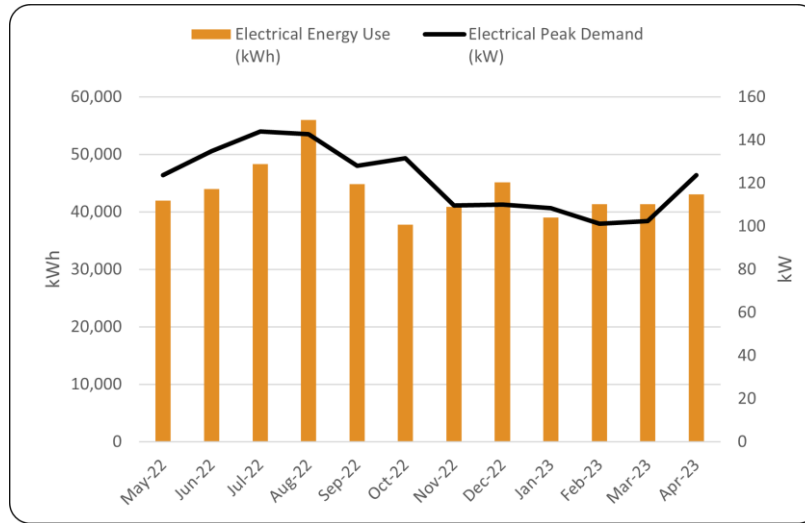


Figure 3 Monthly Electric Consumption

### Natural Gas

One natural gas meter serves the facility. Data from May 2022 through April 2023 was used in this analysis. Annual gas usage for the entire facility over the 12 months of data was determined to be 56,924 therms. The annual cost of natural gas is \$55,972.

The figure below compares the natural gas usage to the heating degree days (HDD) for Helena. There is a strong correlation between natural gas usage and HDD, which is expected as natural gas is used for space heating during colder months. There is a very small base load observed in the summer months that can be attributed to the DHW loads of the facility.

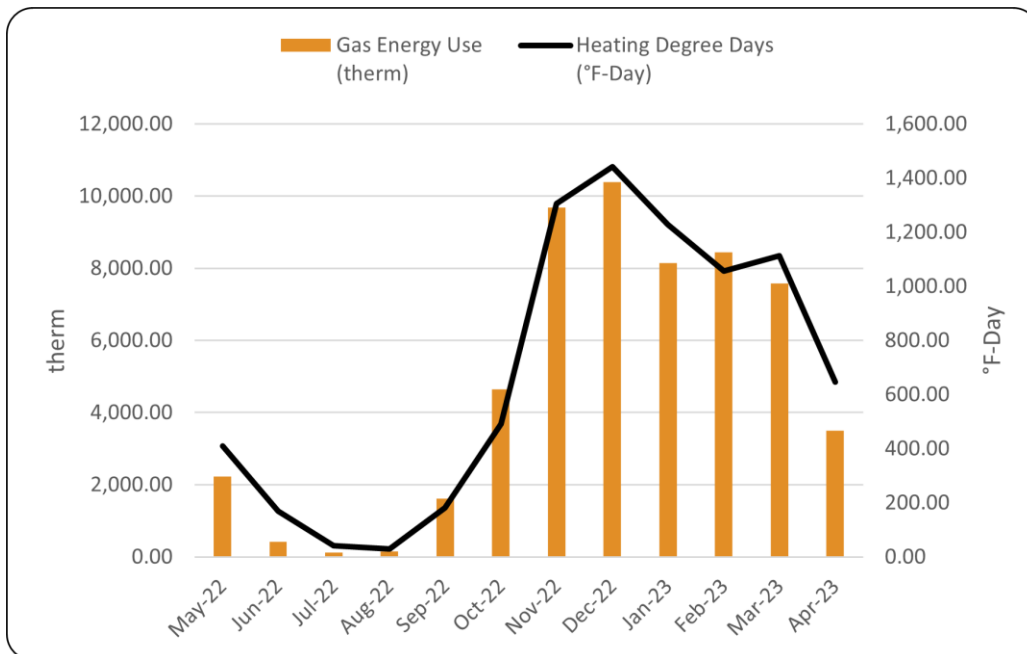


Figure 4 Monthly Natural Gas Consumption &amp; HDD

### Total Annual Energy Expense

The total utility costs for all electric and gas meters are shown in the figures below shown in thousand British thermal units (kBtu). On average, gas accounts for 47% of the overall energy utility cost, but 76% of the usage. Conversely, electricity on average accounts for 53% of energy utility costs, but only 24% of the usage. This highlights the discrepancy in per-unit utility costs for electric versus natural gas. These are important metrics when considering site decarbonization and electrification.

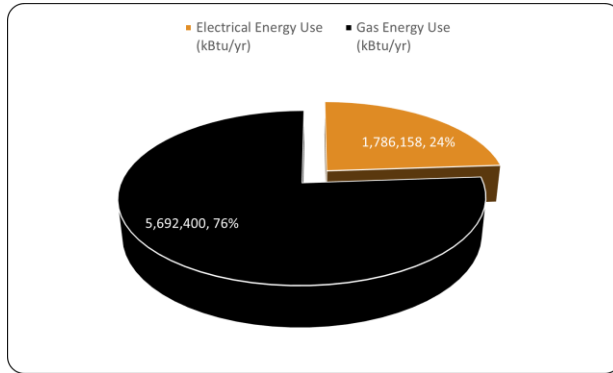


Figure 3 Annual Energy Usage

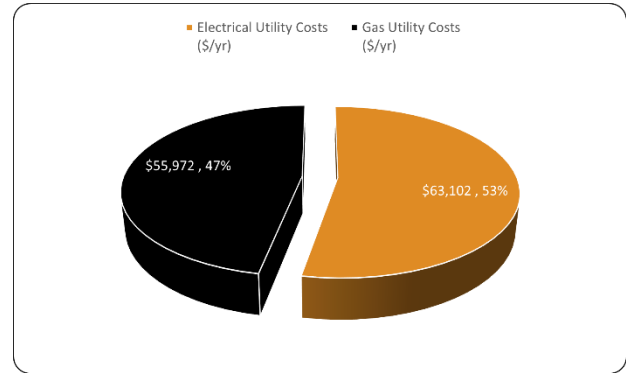


Figure 4 Annual Energy Cost

## Equipment Inventory

Component Description	Manufacturer	Model	Serial	Qty	Location Detail	Capacity	Attributes	Dataplate Yr
Boiler [B-1]	Weil-McLain	H-1794SF	Illegible		Boiler room	17800 MBH	Dual Fuel, HVAC	
Boiler [B-2]	Weil-McLain	Illegible	Illegible		Boiler room	17800 MBH	Dual Fuel, HVAC	
Radiator				92	Throughout building		Hydronic, Column/CabinetStyle (per EA)	
Chiller	McQuay	AGZ0700HSNN-ER10	STNU080600183		Roof	70 TON	Air-Cooled	2008
Split System Ductless	Daikin Industries	4MXS36RMVJU	G000616		Site	3 TON	Single Zone	2018
Split System Ductless	Daikin Industries	RMXS48LVJU	E003202		Site	4 TON	Single Zone	2016
Split System Ductless	Daikin Industries	4MXS36RMVJU	G010237		Lower roof	3 TON	Single Zone	2018
Split System Ductless	Daikin Industries	4MXS36RMVJU	G001199		Site	3 TON	Single Zone	2018
Split System Ductless	Daikin Industries	RXYMQ48PVJU	E002573		Lower roof	4 TON	Single Zone	2012
Split System Ductless	Daikin Industries	3MXS24RMVJU	G000737		Lower roof	2 TON	Single Zone	2018
Fan Coil Unit	Inaccessible	Inaccessible	Inaccessible	98	Throughout building	550 CFM	Hydronic Terminal, 401 to 800CFM	
Pump [CWP1]	Grundfos	Illegible	Illegible		Attic	7.5 HP	Distribution, HVAC Chilled orCondenser Water	
Pump [CWP2]	Grundfus	Illegible	Illegible		Attic	7.5 HP	Distribution, HVAC Chilled orCondenser Water	
Air Handler	Inaccessible	Inaccessible	Inaccessible		First floor	400 CFM	Exterior AHU	
Air Handler	MUNTER	EZA0970	68116		East attic	100 CFM	Interior AHU, Easy/ModerateAccess	2010
Air Handler	Trane	10	M2325		East attic	1000 CFM	Interior AHU, Easy/ModerateAccess	2012
Axial Flow Fan	Ruskin	No tag/plate found	No tag/plate found		Attic	25000 CFM	In-Line, 7.5 HP Motor	
Exhaust Fan	Greenheck	CSP-A1410	Illegible		East attic	1400 CFM	Centrifugal, 16" Damper	1997
Exhaust Fan	Greenheck	CSP-A1410	11977969		East attic	1400 CFM	Centrifugal, 16" Damper	1997
Exhaust Fan	Cook	Illegible	Illegible		Boiler room	15000 CFM	Centrifugal, 36" Damper	
Exhaust Fan	No tag/plate found	No tag/plate found	No tag/plate found		East attic	20000 CFM	Centrifugal, 42" Damper	
Exhaust Fan	No tag/plate found	No tag/plate found	No tag/plate found		Roof	500 CFM	Roof or Wall-Mounted, 10" Damper	

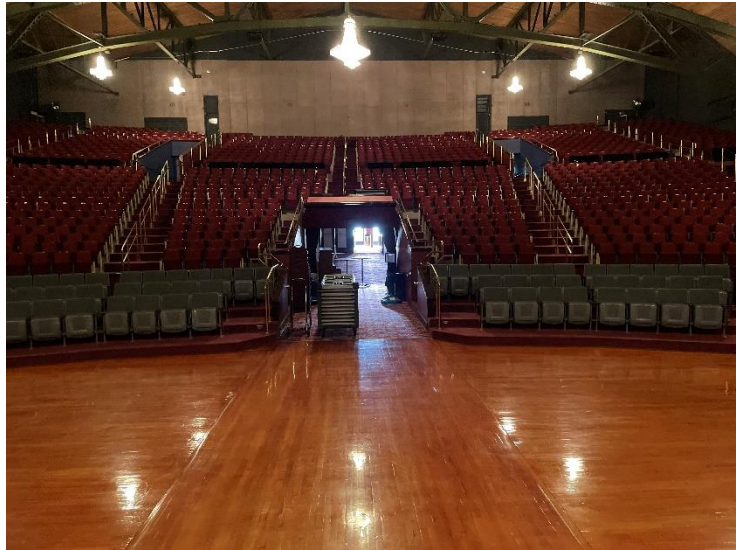
## Helena Civic Center

### Building Use

The Civic Center is a 70,517 sqft facility built in 1920. The building has three stories and serves as an event center for Helena. Events such as weddings, industry events, plays, and sporting events occur in the two main spaces of this building, the ballroom and auditorium.

### Occupancy

This building's occupancy varies, depending on what events are occurring at the time. There are typically several events per week in both the auditorium and ballroom, that may extend throughout the daytime and evening hours.



### Building Envelope

The building is a masonry wall construction with brick façade on the exterior. The roof is primarily a barrel construction with a modified bituminous finish. The roof also has sections that are a flat construction with single-ply thermoplastic polyolefin (TPO)/polyvinyl chloride (PVC) membrane. The windows are aluminum frame windows.

### Lighting

The lighting in the Civic Center is primarily LED except for the lighting in the ballroom and auditorium chandeliers, which use 25W incandescent lamps.

### Domestic Hot Water

Domestic hot water (DHW) is produced by natural gas water heaters with integral tanks.

### Mechanical Systems & Controls

The Civic Center uses two steam boilers, steam radiators, and a unique AHU system to provide heating to the facility. These boilers are considered to be inefficient and beyond their useful life. The building would likely benefit from a conversion to use hot water boilers rather than steam boilers. There is also a fire department attached to this facility. This space uses an RTU system equipped with mechanical cooling and gas fired heat.

The air-side system for this facility is located in the basement, and consists of a series of tunnels made of the basement corridors themselves. This design is original to the buildings construction and uses heat derived from the steam boilers to provide heated air to the Auditorium and Ballroom. Currently, the basement system does not provide mechanical cooling to these spaces. Facility personnel also demonstrated that airflow is adjusted by opening and closing doors in the basement, which act like dampers to manipulate airflow to the spaces. These doors are powered by actuators which can be controlled from a panel near the fans. It was also found that much of the equipment used to operate

this system is beyond its useful life, including some fans and motors found to be part of the original construction. The facility would likely benefit from a conversion to new AHU systems that utilize modern efficient technologies such as heat pumps, energy recovery ventilators, airflow dampers and full DDC controls.

## Historical Utility Data

### Electricity

The building is served by a single electric meter. Utility data used in this analysis is based on monthly electric data from May 2022 through April 2023. Annual electric consumption for the entire facility over the 12 months of data was determined to be 221,460 kilowatt-hours (kWh) with a combined monthly peak demand of 119 kilowatts (kW). The annual cost of electricity is \$29,638. The data provided did not separate electricity and demand costs.

The figure below shows the usage and demand graph. Electricity use is very steady and does not follow seasonal trends. This shows that the building energy load is consistent year-round.

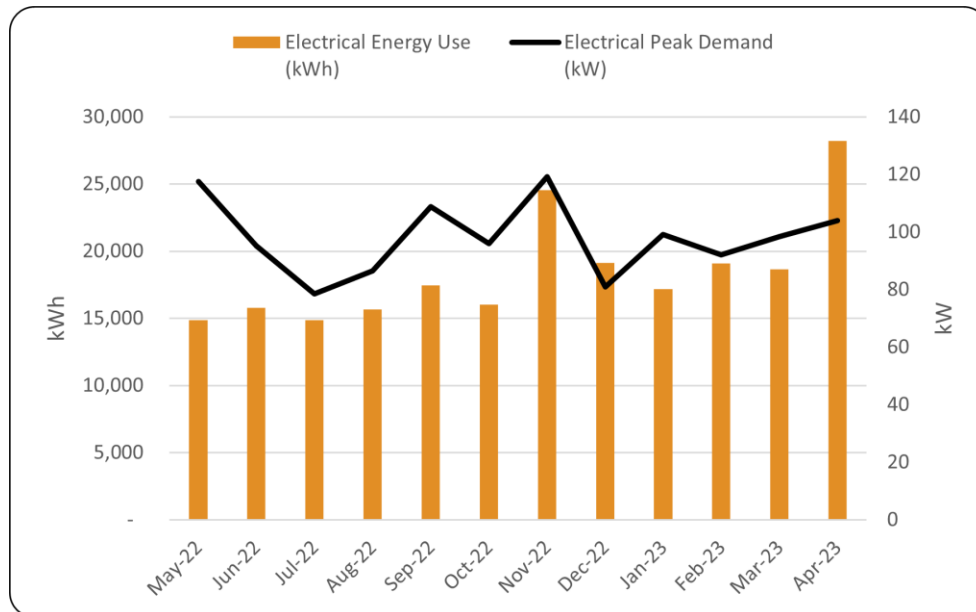


Figure 1: Monthly Electric Consumption

### Natural Gas

One natural gas meter serves the facility. Data from November 2022 through October 2023 was used in this analysis. Annual gas usage for the entire facility over the 12 months of data was determined to be 53,190 therms. The annual cost of natural gas is \$35,146.

The figure below compares the natural gas usage to the HDD for Helena. There is a strong correlation between natural gas usage and heating degree days (HDD), which is expected, reflecting the boiler usage for space heating. The summer baseload reflects the DHW usage year-round.

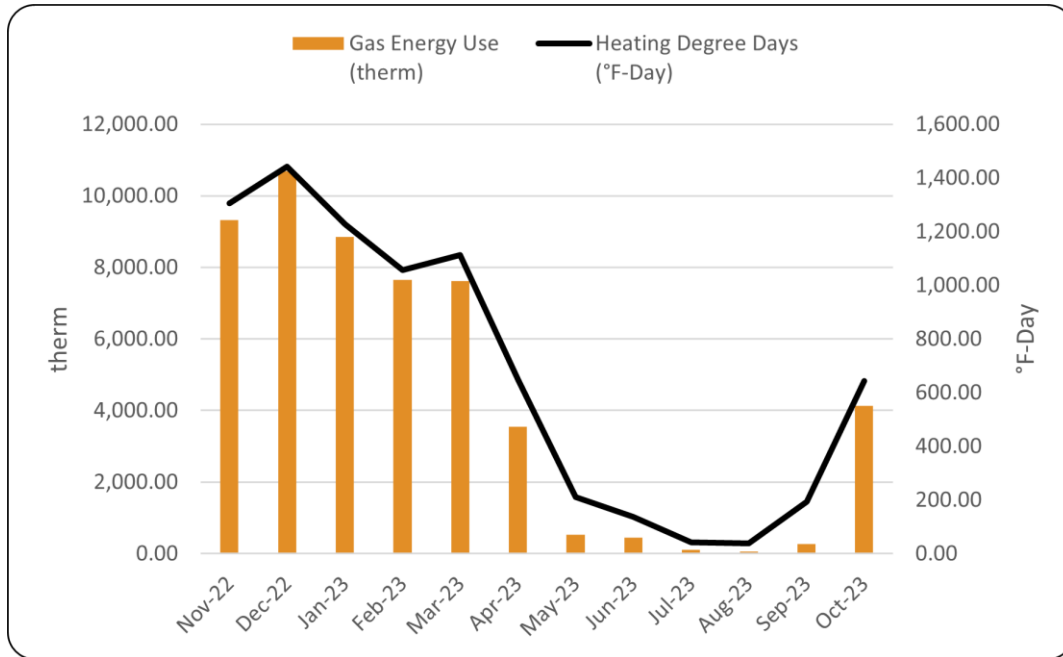


Figure 2: Monthly Natural Gas Consumption &amp; HDD

### Total Annual Energy Expense

The total utility costs for all electric and gas meters is shown in the figures below shown in thousand British thermal units (kBtu). On average gas accounts for 54% of the overall energy utility cost, but 88% of the usage. Conversely electricity on average accounts for 46% of energy utility costs, but only 12% of the usage. This highlights the discrepancy in per-unit utility costs for electric versus natural gas. These are important metrics when considering site decarbonization and electrification.

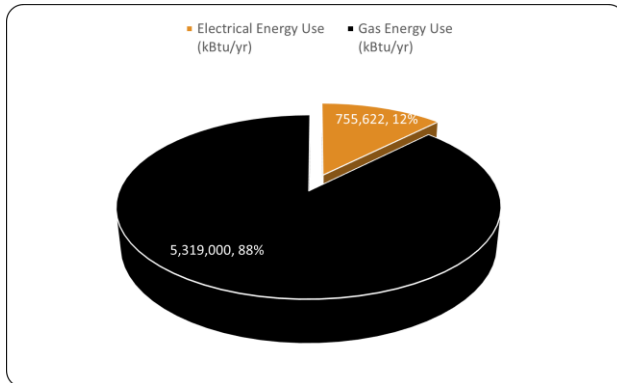


Figure 3 Annual Energy Usage

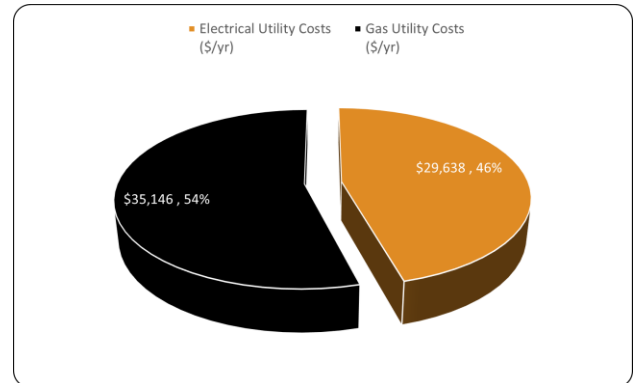


Figure 4 Annual Energy Cost



## Equipment Inventory

Component Description	Manufacturer	Model	Serial	Qty	Location Detail	Capacity	Attributes	Dataplate Yr
Boiler	Hurst	LPE-G-80-15	LPE33615-20		Mechanical room	3300 MBH	Gas, HVAC	1998
Boiler	Hurst	LPE-G-80-15	LP ES336-15-19		Mechanical room	3360 MBH	Gas, HVAC	1998
Radiator				112	Throughout building		Hydronic, Baseboard (per LF) 1	
Unit Heater	Inaccessible	Inaccessible	Inaccessible		Throughout building	37 - 85 MBH	Hydronic	
Unit Heater	No tag/plate found	No tag/plate found	No tag/plate found	8	Mechanical room	401 - 800 MBH	Hydronic	
Unit Heater	Sterling	HS-120	B1801579321001001		Garage	13 - 36 MBH	Hydronic	
Unit Heater	Modine Manufacturing	446	111645		Theater	37 - 85 MBH	Hydronic	
Unit Heater	Modine Manufacturing	446	111644		Theater	13 - 36 MBH	Hydronic	
Split System Ductless	Mitsubishi Electric	MXZ-2A20NA-2	No tag/plate found		Site	2 TON	Single Zone	
Air Handler [CAP-1]	Pace	A 11 FC DWDI	94-75557-0		Mechanical room	3410 CFM	Interior AHU, Easy/Moderate Access	1994
Packaged Unit	Carrier	50DA003300	D022466		Site	2.5 TON	Duct-Mounted, 2.5 TON	
Axial Flow Fan	Airking	No tag/plate found	No tag/plate found		Throughout building	5000 CFM	In-Line, up to 1 HP Motor, 1000 to 3000 CFM	

## Law and Justice Center

### Building Use

The Law and Justice Center is a 4-story 66,892 sf building built in 1928 and renovated from 1972-1980. It serves as the municipal court for Helena, office space, and the police/sheriff department.

### Occupancy

The court and office spaces are open Monday through Friday 8:00 am – 5:00 pm. The sections of the building used by law enforcement are occupied at all times.

### Building Envelope

The building is masonry bearing walls and a metal roof deck with open-web steel joists. The primary wall façade is concrete masonry units (CMU), and the secondary wall façade is Stucco. The roof is primarily flat construction with a single-ply membrane and stone ballast. There are also sections that are flat construction with single-ply thermoplastic polyolefin (TPO)/polyvinyl chloride (PVC) membrane. The windows are aluminum frame double-pane windows.



### Lighting

Most of the interior lighting at this facility is T8 fluorescent lighting with some compact fluorescent lighting (CFL). Both linear and U-shape variants are present in the spaces. Lighting is controlled by manual switching. Exterior lighting is a mix of building-mounted halogen and building-mounted incandescent bulbs with pole-mounted high-pressure sodium (HPS) bulbs.

### Domestic Hot Water

The domestic hot water (DHW) is produced by electric water heaters in tandem with integral tanks for storage.

### Mechanical Systems & Controls

The Law and Justice Center uses natural gas boilers, MZ AHUs, newer VAV RTUs, and radiators. The “Pillar” building uses steam from the boiler, the rest of the facility uses hot water from heat exchangers fed by the steam. The steam/hot water serves radiators and coils within the AHUs and VAVs. Boiler replacements are planned for this spring which will convert everything to hot water.

There are three air-cooled chillers that provide chilled water to coils in the AHUs in order to support space cooling. The chillers have an outdoor air temperature lockout set by an analog thermostat.

There are three AHUs at this site. The “Pillar” AHU serves the pillar section of the building, AHU-1 serves all floors on one third of the building, AHU-2 serves all floors on a different third of the building. There are also three RTUs. Two were being installed at the time of the audit to serve a newly renovated area. The McQuay RTU serves the third floor of the building, but was found to be off during the site

visit. Currently all AHUs run 24 hours per day regardless of whether the building is occupied or not. Furthermore, the economizer on AHU-1 is broken resulting in both the outside air and return air dampers being fully open. The MZ AHUs are past their useful lifetime and should be considered for replacement.

The rest of the space cooling is performed by the CRAC, PTAC, FCUs, and window air conditioning units. Exhaust fans are located around the building to maintain building pressure and ventilation air flow.

## Historical Utility Data

### Electricity

The Law & Justice Center is served by two electric meters. Utility data used in this analysis is based on monthly electric data from May 2022 through April 2023, which was the data provided to Iconergy. The bills provided did not include information on demand costs. Electric consumption in the past 12 months for the entire facility was determined to be 741 thousand kilowatt-hours (kWh) with a cost of \$84,385, or 69% of overall utility costs. The combined monthly peak demand was 185 kilowatts (kW). The data used did not separate electricity costs and demand costs.

The figure below shows the electrical data provided. The building load is very stable, with slight peaks during the summer months. This is to be expected given the building's current operation. The summer peak can be explained by increased space cooling demands.

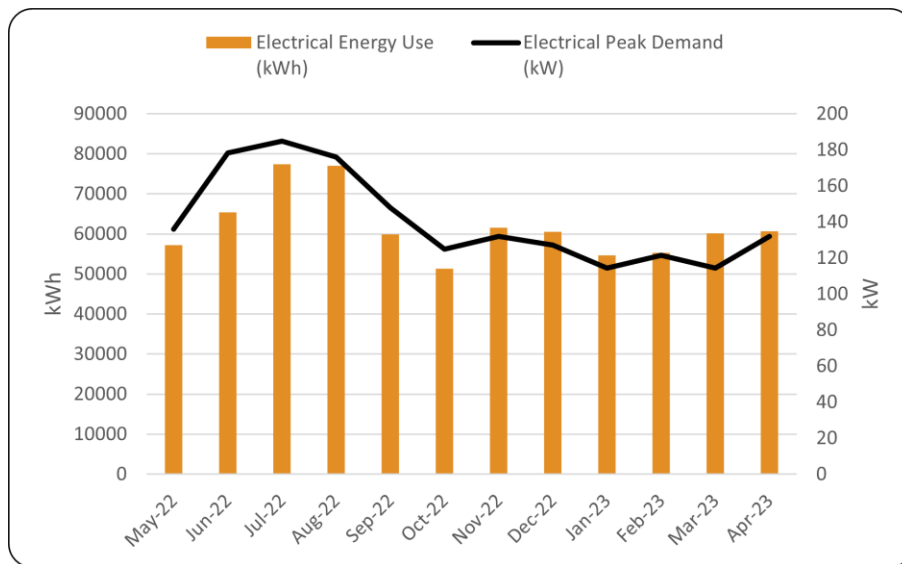


Figure 1: Monthly Electric Consumption

### Natural Gas

One natural gas meter serves the facility. Data from May 2023 through April 2023 was used in this analysis. The natural gas usage over the 12 months of data was 38,405 therms with a cost of \$37,553 or 31% of the total utility charges.

The figure below compares the natural gas usage to the heating degree days (HDD) for Helena. There is a strong correlation between natural gas usage and HDD, which is expected. The figure also shows that gas use peaks in the winter. This is expected as gas is used for space heating.

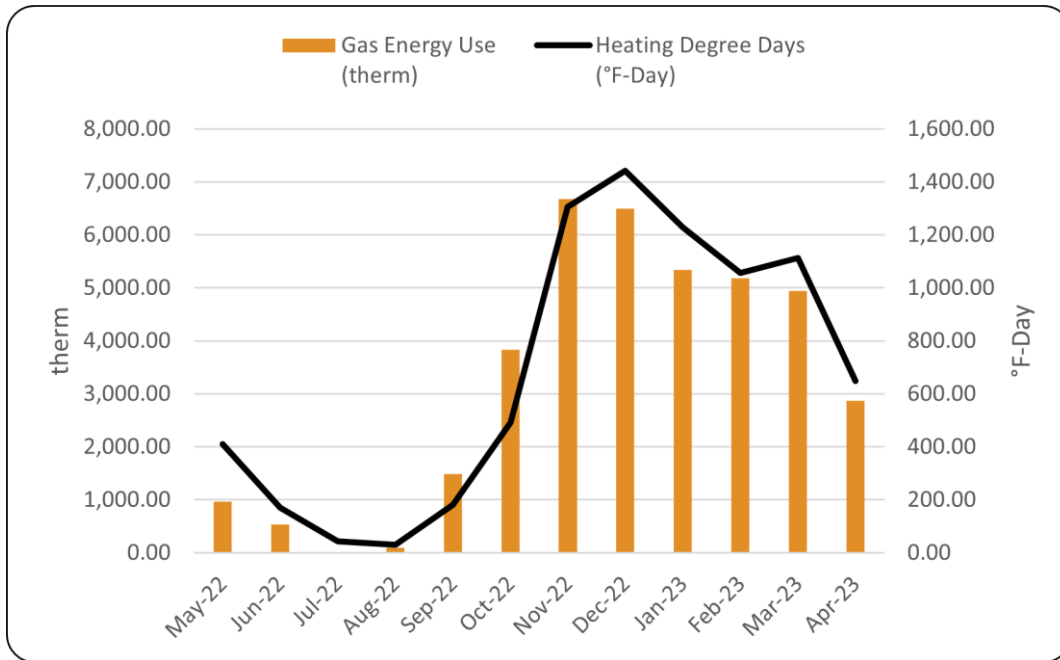


Figure 2: Monthly Natural Gas Consumption & HDD

### Total Annual Energy Expense

The total utility costs for all electric and gas meters is shown in the figures below shown in thousand British thermal units (kBtu). On average gas accounts for 31% of the overall energy utility cost, but 60% of the usage. Conversely electricity on average accounts for 69% of energy utility costs, but only 40% of the usage. This highlights the discrepancy in per-unit utility costs for electric versus natural gas. These are important metrics when considering site decarbonization and electrification.

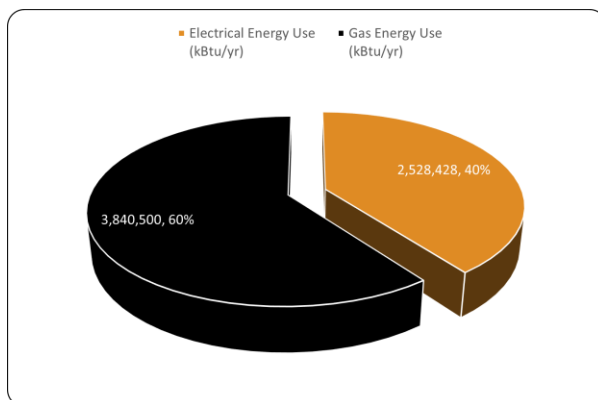


Figure 3 Annual Energy Usage

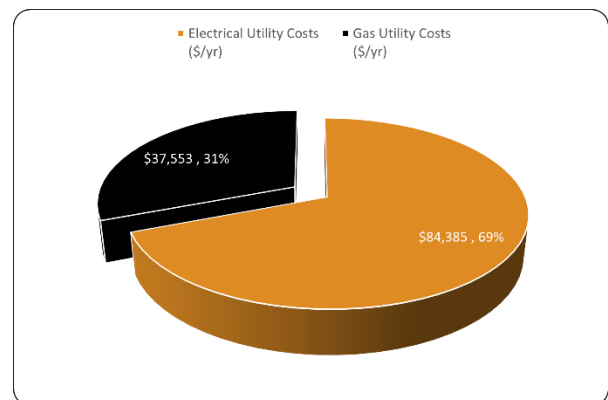


Figure 4 Annual Energy Cost

## Equipment Inventory

Component Description	Manufacturer	Model	Serial	Qty	Location Detail	Capacity	Attributes	Date Plate Year
Storage Tank	No tag/plate found	No tag/plate found	No tag/plate found		Site	276 - 500 GAL	Fuel, Interior	
Boiler [1]		421275	0-315 8		Mechanical room-S. Building American Standard Inc.	1938 MBH	Gas, HVAC	
Boiler [2]		421273	0-3155		Mechanical room-S. Building American Standard Inc.	1938 MBH	Gas, HVAC	
Heat Exchanger		No tag/plate found	No tag/plate found		Mechanical room-S. Building No tag/plate found	131 - 260 GPM	Shell & Tube, HVAC	
Heat Exchanger		No tag/plate found	No tag/plate found		Mechanical room-S. Building No tag/plate found	261 - 380 GPM	Shell & Tube, HVAC	
Radiator				74	Throughout-S. Building		Hydronic, Baseboard (per LF)	
Radiator				66	Throughout-N. Building		Hydronic, Column/Cabinet Style (per EA)	
Chiller	Trane	RAUCC20EBU0300D000019	C01D47501		South roof	20 TON	Air-Cooled	2001
Chiller	York	YCAL0050EB17XCBBXTXX	RDSM018448		North roof	50 TON	Air-Cooled	2007
Chiller	Carrier	38 -054 - - - 501DA	4303F61108		Site	50 TON	Air-Cooled, 50 TON	2003
Computer Room AC Unit	Liebert	No tag/plate found	No tag/plate found		IT room-basement -N. Building	7.5 TON	Air-Cooled, CRAC Cabinet, 6to 10 TON	
Packaged Terminal AirConditioner [AC1]	Carrier	50BT006500	0565006492		Basement -S. Building	5 TON	PTAC	1985
Packaged Terminal AirConditioner [AC4]	Carrier	50BT006500	4784690 821.		Basement -S. Building	5 TON	PTAC	1985
Split System	Electro-Air	No tag/plate found	No tag/plate found		Basement-S. Building	7.5 TON	Air Ceaner	2002
Split System	Rheem	RAWE-090CAZ949	6680F370211409		Site	7.5 TON	Condensing Unit/Heat Pump	2002
Fan Coil Unit				4	Throughout-S. Building	1350 CFM	Hydronic Terminal	
Fan Coil Unit				3	Throughout-S. Building	450 CFM	Hydronic Terminal	
Pump		215-11702-17	No tag/plate found		Mechanical room-S. Building Wagner	5 HP	Distribution, HVAC Chilled or Condenser Water	
HVAC Steam Components	Paco	LBD LRU	S2DEP11B8		Electrical room-S. Building	1 HP	Pump, Condensate Water Return	
Air Handler	No tag/plate found	No tag/plate found	No tag/plate found		Mechanical room-basement-N. Building	4000 CFM	Interior AHU, Easy/Moderate Access	
Air Handler [2-P]	McQuay	RPS018CSY	38J00453 00		Roof-S. Building	8001 - 10000 CFM	Exterior AHU	1998
Air Handler		Inaccessible	Inaccessible		Mechanical room-S. Building Inaccessible	1201 - 2400 CFM	Interior AHU, Easy/Moderate Access	
Air Handler		No tag/plate found	No tag/plate found		Mechanical room-S. Building No tag/plate found	10001 - 15000 CFM	Interior AHU, Easy/Moderate Access	1978
Air Handler	McQuay	LHD103CH	3KA00329		Basement-S. Building	1201 - 2400 CFM	Interior AHU, Easy/Moderate Access	
Air Handler [S-1]		CF-33-4-2-SW-3-GW-TAU-S-H	K81-D22674		Mechanical room-N. Building Trane	4000 CFM	Interior AHU, Easy/Moderate Access	
Exhaust Fan	Trane	GRB16	170975		Roof-S. Building	2001 - 5000 CFM	Centrifugal, 24" Damper	
Exhaust Fan	No tag/plate found	No tag/plate found	No tag/plate found		Middle roof	1000 CFM	Roof or Wall-Mounted, 12" Damper	
Exhaust Fan	Greenheck	CBE104	606445		North roof	1000 CFM	Roof or Wall-Mounted, 12" Damper	

## Ten Mile Water Treatment Plant

### Building Use

The Ten Mile plant is a 2-story building built in 1991. The plant occupies 50,622 sqft. and is used to treat water used in the city's water system.

### Operation

The plant operates 24/7 year-round. The volume of treated water is determined by the demand for water in the city. In May-September, the Missouri River treatment plant is also brought online to meet the increased demand due to irrigation.

### Building Envelope

The walls are masonry bearing walls with a metal roof deck supported by open-web steel joists. The wall façade is primarily exterior insulation finishing systems (EIFS) with sections that are concrete integral. The roof is a flat construction with ballasted ethylene propylene diene terpolymer (EPDT) single-ply membrane. The windows are aluminum frame windows.

### Lighting

Interior lighting is provided by a mix of linear fluorescent, compact fluorescent lamps (CFL), and LEDs. The lighting is controlled manually through switches. Exterior lighting is a mix of building-mounted and pole-mounted high pressure sodium (HPS) and metal halide bulbs. There is also accent lighting on pedestrian walkways and landscaping.

### Mechanical Systems & Controls

The treatment process takes place in several stages using different pumps and blowers, including pretreatment, clarification, backwash, and filtration. The equipment is controlled by an industrial PLC control system. The overall power usage at Tenmile itself is relatively low, although when Missouri River is brought online, both plants push into the town's water system, increasing load on the pumps. Due to the size of the pumps and the system's head pressure, Missouri River uses significantly more energy in the short period it is operational.

There are large pumps at several pumphouses and reservoirs located in the city. The distribution system is split into a "high zone" and "low zone", which are controlled to flow and pressure, respectively. Motors at the two plants and in the system range from 30 to 600 HP, with the larger ones on VFDs.



## Historical Utility Data

### Electricity

The Ten Mile facility is served by one electric meter. Utility data used in this analysis is based on monthly electric data from June 2022 through May 2023. Electric consumption for the entire facility

over the 12 months of data was determined to be 822 thousand kilowatt-hours (kWh), with a combined peak demand of 217 kilowatts (kW). The annual cost of electricity for the 12 months of data was \$98,396. The figure below shows the electrical data provided. There is lower electrical use during the summer months, likely due to the MO River plant coming online.

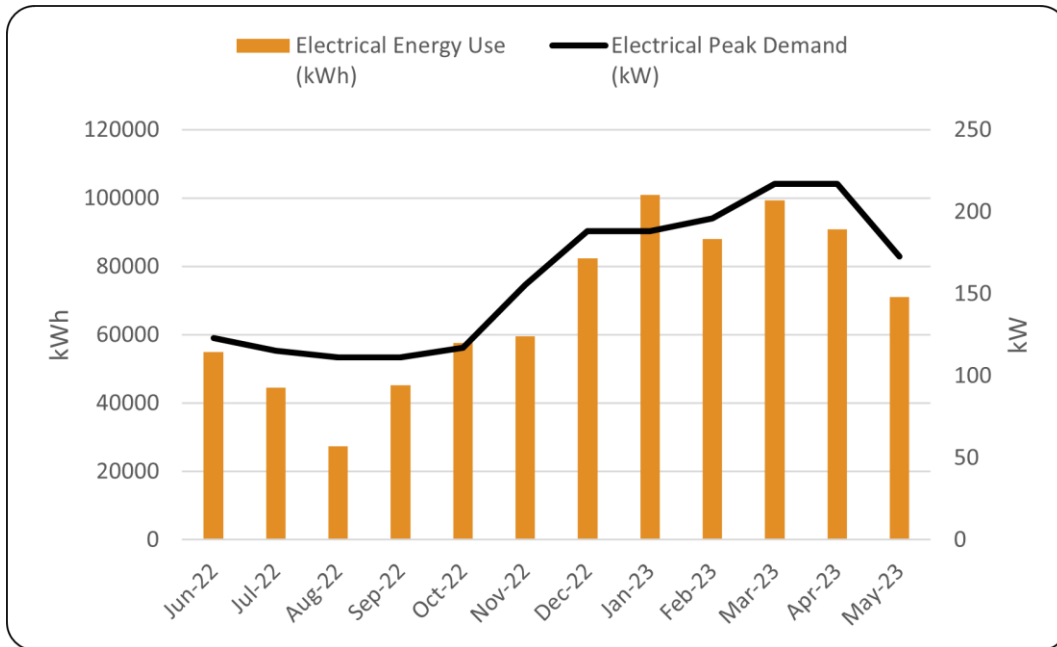


Figure 1: Monthly Electric Consumption

### Natural Gas

This facility does not use natural gas.

### Total Annual Energy Expense

The total annual energy use is solely made up of electricity usage because this facility does not use natural gas. The energy use for the facility in thousand British thermal units (kBtu) is 2,805,101. As mentioned above, this costs \$98,396 annually.



## HVAC Equipment Inventory

Component Description	Manufacturer	Model	Serial	Qty	Location Detail	Capacity	Attributes	Dataplate Yr
Unit Heater	Chromalox	LUH-D-04-43-32-00	004-303374-265		GARAGE-COLD STORAGE BLDG.	4 KW	Electric	
Storage Tank	Wilray	No tag/plate found	No tag/plate found		Site	1000 GAL	Fuel, Interior	
Baseboard Heater [CUH-1]					TEN MILE WATER TRTMNTPLANT	1 KW	Electric, 4 LF	
Baseboard Heater [CUH-2]				3	Electrical room	1 KW	Electric, 3 LF	
Unit Heater	Trane	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	3 KW	Electric	
Unit Heater	Inaccessible	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	6 - 10 KW	Electric	
Unit Heater [UH-1]	Trane	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	10 KW	Electric	
Unit Heater [UH-10]	Trane	UEC-055D080	No tag/plate found		TEN MILE WATER TRTMNTPLANT	5 KW	Electric	
Unit Heater [UH-11]	Trane	UHEC-10300B0	No tag/plate found		TEN MILE WATER TRTMNTPLANT	10 KW	Electric	
Unit Heater [UH-12]	Trane	UHEC-10300B0	No tag/plate found		TEN MILE WATER TRTMNTPLANT	10 KW	Electric	
Unit Heater [UH-13]	Trane	Illegible	No tag/plate found		TEN MILE WATER TRTMNTPLANT	15 KW	Electric	
Unit Heater [UH-14]	Trane	UHEC-1030080	No tag/plate found		TEN MILE WATER TRTMNTPLANT	10 KW	Electric	
Unit Heater [UH-19]	Trane	U11EC 033D080	No tag/plate found		TEN MILE WATER TRTMNTPLANT	3.3 KW	Electric	
Unit Heater [UH-2]	Trane	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	10 KW	Electric	
Unit Heater [UH-3]	Trane	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	10 KW	Electric	
Unit Heater [UH-4]	Trane	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	10 KW	Electric	
Unit Heater [UH-5]	Trane	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	10 KW	Electric	
Unit Heater [UH-6]	Trane	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	10 KW	Electric	1991
Unit Heater [UH-7]	Trane	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	6 - 10 KW	Electric	
Unit Heater [UH-8]	Trane	UEC-1030080	No tag/plate found		TEN MILE WATER TRTMNTPLANT	10 KW	Electric	
Unit Heater [UH-9]	Trane	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	5 KW	Electric	
Hydronic [HP-01]	FHP Manufacturing	EC042 - 4HZC	3540 -012-000001-T111M38863		TEN MILE WATER TRTMNTPLANT	3.5 TON	Heat Pump	
Hydronic [HP-02]	FHP Manufacturing	EC120-4HZC	3540 -012-000002-T111M38755		TEN MILE WATER TRTMNTPLANT	10 TON	Heat Pump	
Hydronic [HP-03]	FHP Manufacturing	EC 120- 4HZC	3540 -012-000001-T111M33755		TEN MILE WATER TRTMNTPLANT	10 TON	Heat Pump	
Hydronic [HP-03]	FHP Manufacturing	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	12.5 TON	Heat Pump	
Hydronic [HP-04]	FHP Manufacturing	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	6 TON	Heat Pump	
Hydronic [HP-05]	FHP Manufacturing	EC070-4HZC	3540 -012- 000001 -T111M38894		TEN MILE WATER TRTMNTPLANT	6 TON	Heat Pump	
Hydronic [HP-06]	FHP Manufacturing	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	6 TON	Heat Pump	
Hydronic [HP-07]	FHP Manufacturing	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	6 TON	Heat Pump	
Hydronic [HP-08]	FHP Manufacturing	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	12.5 TON	Heat Pump	
Hydronic [HP-10]	FHP Manufacturing	EC 150 - 4HZC	3540 -012000001 -T111M38800		TEN MILE WATER TRTMNTPLANT	12.5 TON	Heat Pump	
Hydronic [HP-11]	FHP Manufacturing	EC036	3540-012-000001-T111M38862		TEN MILE WATER TRTMNTPLANT	3 TON	Heat Pump	
Axial Flow Fan	Inaccessible	Inaccessible	Inaccessible		TEN MILE WATER TRTMNTPLANT	1000 - 3000 CFM	In-Line, up to 1 HP Motor	
Exhaust Fan [EF-10]	Greenheck	TAB-18-7	89I06847		TEN MILE WATER TRTMNTPLANT	8501 - 15000 CFM	Centrifugal, 36" Damper	

## Wastewater Treatment Facility

### Building Use

The Wastewater Treatment Facility is a multi-building plant occupying 44,302 sf. It serves as the only wastewater treatment plant for the city of Helena.

### Operation

The facility runs 24/7 to treat the wastewater. The load on the plant is determined the flow influent from the city.

### Building Envelope

The building envelope varies from building to building. Due to the limited data available for the buildings only two of them have known envelope characteristics. These are the Administration Building and the Interpretive Center. The other buildings at the plant are primarily CMU wall construction.

The Administration Building walls are masonry bearing walls with a wood roof deck supported by wood joists. The façade is primarily brick finish, with some metal siding finish. The windows are aluminum frame windows.

The Interpretive Center walls are masonry bearing walls with a metal roof deck supported by open-web steel joists. The façade is primarily concrete masonry units (CMU) with some metal siding. The windows are aluminum frame windows.

### Lighting

Interior lighting is primarily T8 linear fluorescent lighting. In some buildings the fluorescent lighting is being replaced with LEDs once burnout of the original bulbs occurs. Lighting is primarily controlled by manual wall switches. Exterior lighting consists of building-mounted and pole-mounted LED and compact fluorescent lighting (CFL).

### Mechanical Systems & Controls

The treatment process takes place in several stages using different pumps and blowers, including pretreatment, clarification, UV filtration, aeration, activated sludge, and mixers. The equipment is controlled by an industrial PLC control system. Motors range in size from 5 to 200 horse power (HP), and some are on VFDs. A UV filtration system is used for disinfection, and uses four modules with (40) 65 Watt (W) lamps.

A methane boiler burns methane gas produced by the wastewater. The boiler often trips on low pressure, causing it to flare gas.



## Historical Utility Data

### Electricity

The WWTF is served by two electric meters. Utility data used in this analysis is based on monthly electric data from May 2022 through April 2023. Electric consumption for the facility over the 12 months of data was determined to be 3.36 million kilowatt-hours (kWh). The combined monthly peak demand was 469 kilowatts (kW). The annual cost of electricity for the 12 months is \$356,018 or 84% of the annual utility charges. The data did not differentiate between electricity costs and demand cost.

The figure below shows the electrical data provided. The facility operates year-round and the electricity consumption reflects this, with no noticeable seasonal trends present.

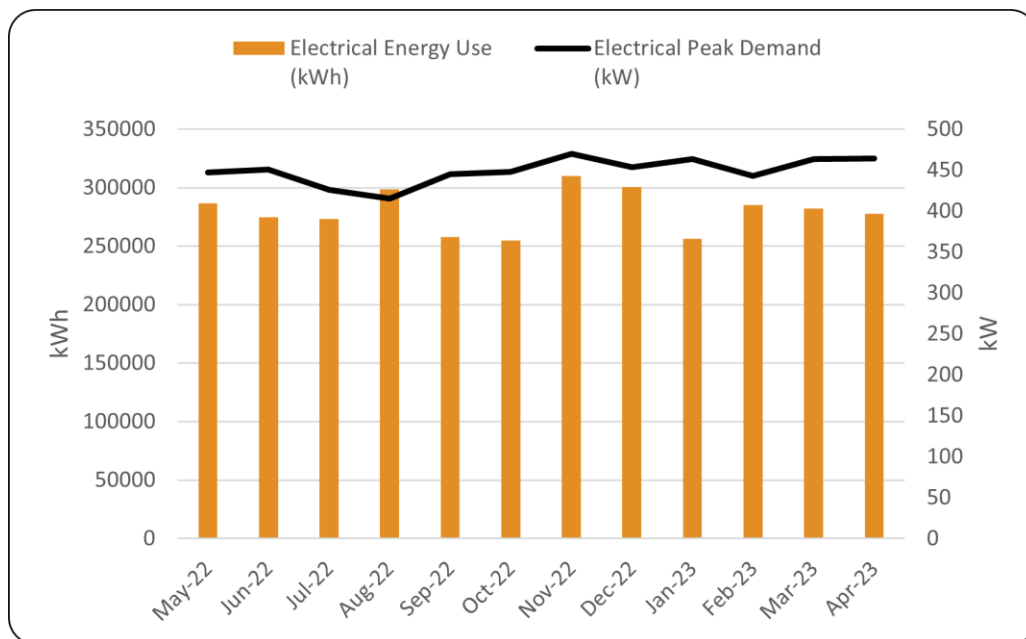


Figure 1 Monthly Electric Consumption

### Natural Gas

One natural gas meter serves the facility. Data from May 2022 through April 2023 was used in this analysis. The annual natural gas for the 12 months of data was 70,928 therms with a cost of \$68,327.

The figure below compares the natural gas usage to the heating degree days (HDD) for Helena. There is some correlation between natural gas usage and HDD, although some gas usage is expected to be process-related. There is a large spike in usage during March 2023 which does not have an obvious cause.

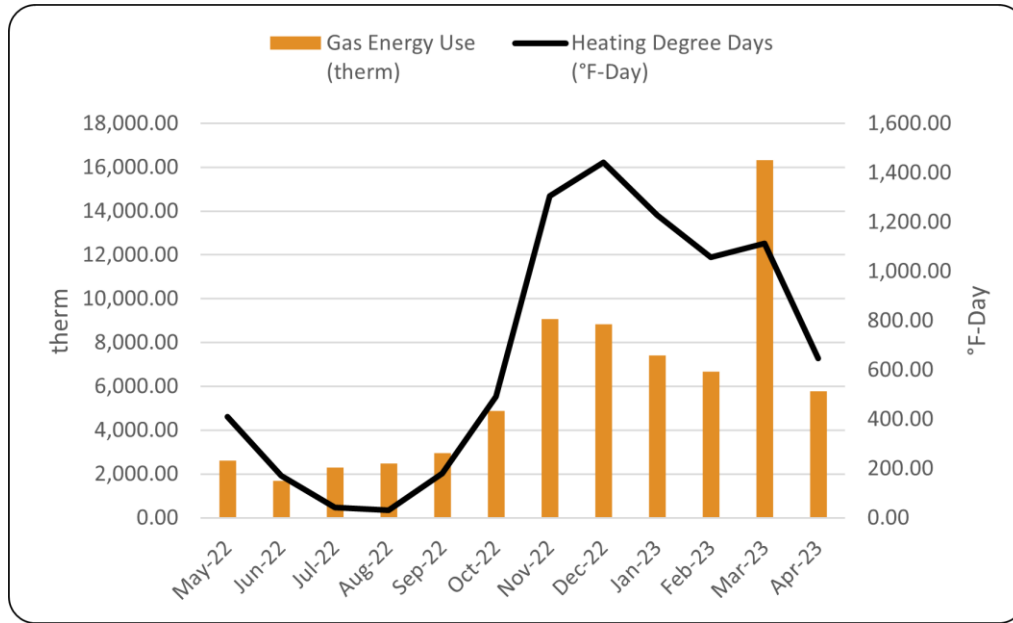


Figure 2 Monthly Natural Gas Consumption &amp; HDD

### Total Annual Energy Expense

The total utility costs for all electric and gas meters are shown in the figures below in thousand British thermal units (kBtu). On average, gas accounts for 16% of the overall energy utility cost, but 38% of the usage. Conversely electricity on average accounts for 84% of energy utility costs, but only 62% of the usage. This highlights the discrepancy in per-unit utility costs for electric versus natural gas. These are important metrics when considering site decarbonization and electrification.

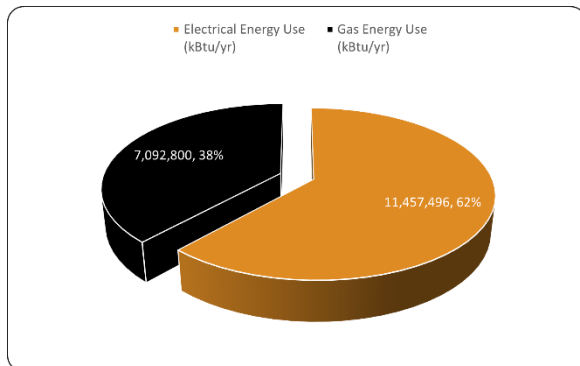


Figure 3 Annual Energy Usage

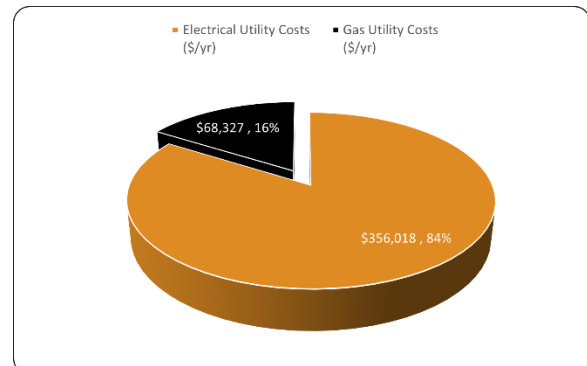


Figure 4 Annual Energy Cost

## Appendix B: Solar PV Designs

Bill Roberts Golf Course  
North -Ground Mount  
2201 N Benton Ave  
Helena, MT 59602



Andy Pohren  
500 Locust Street  
Des Moines, IA, 50309

System



Equipment	
System type	Grid-tied
Racking installation	Ground Mount
Module type	Monocrystalline
Module size	500 W; e.g., VSUN500 - 132BMH
Number of Module (Panels)	120
Inverters	String Inverter

Performance	
Installed DC potential capacity	60 kW_DC
Installed AC potential capacity	49.8 kW_AC
Annual energy consumption	102,385 kWh
Est. annual solar energy production	83,119 kWh
Est. energy consumption offset	80%

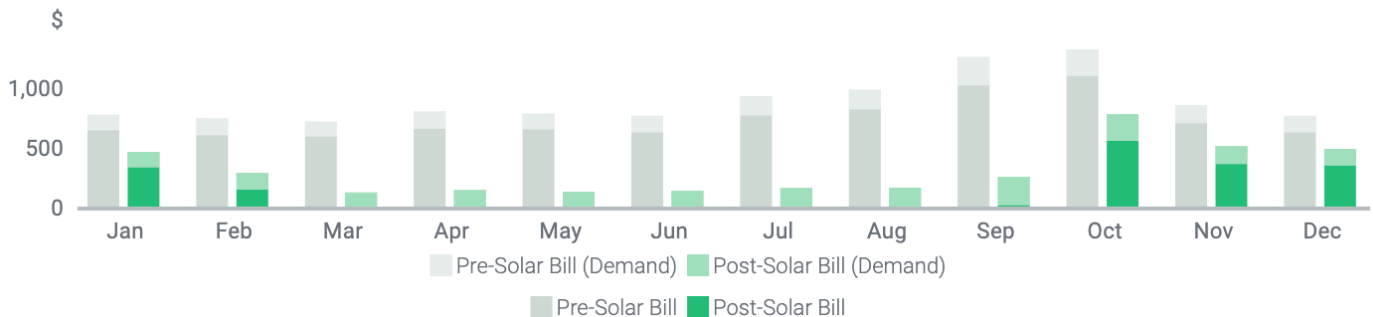
## Financial

Metric	Cash
Est. installed cost (\$)	\$223,303
Est. 30% Investment Tax Credit (ITC)	(\$66,991)
<b>Est. net out of pocket cost</b>	<b>\$156,312</b>
Est. \$/W	\$3.72
Avg. annual energy cost savings	\$10,349
Est. Avg. O&M annual cost	\$1,043
IRR	2.96%
Est. levelized cost of energy (LCOE)	\$0.09/kWh
Est. lifetime savings (\$)	\$80,087
Payback period	18.5 yrs.

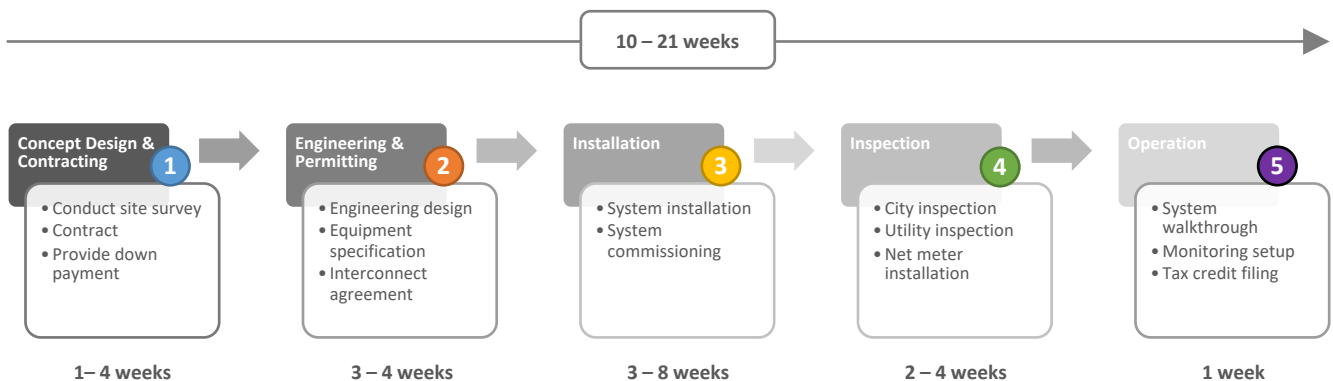
### Key assumptions:

- System life of 25 years
- Performance degradation of 0.5% per year
- Customer receives 30% ITC incentive as direct payment
- Electricity Rate escalation assumption 3.5%
- Discount rate 0%
- These financial numbers do not reflect the Northwestern Energy E+ Renewable Custom Incentive (participant match at least 10%)
- Average O&M price does include potential inverter replacement
- Assumes running electrical 660ft from array to point of interconnection
- Does not include costs to repair ground from trenching

## Bill Savings



## Estimated Schedule





ASSUMPTIONS:  
Financing Option  
Project Life (years)  
Discount Rate  
System Size (kW) (DC, STC)  
System Size (kW) (DC, PTC)  
System Size (kW) (AC)  
Electricity Rate Escalation  
Degradation  
National Tax Rate  
Local Tax Rate

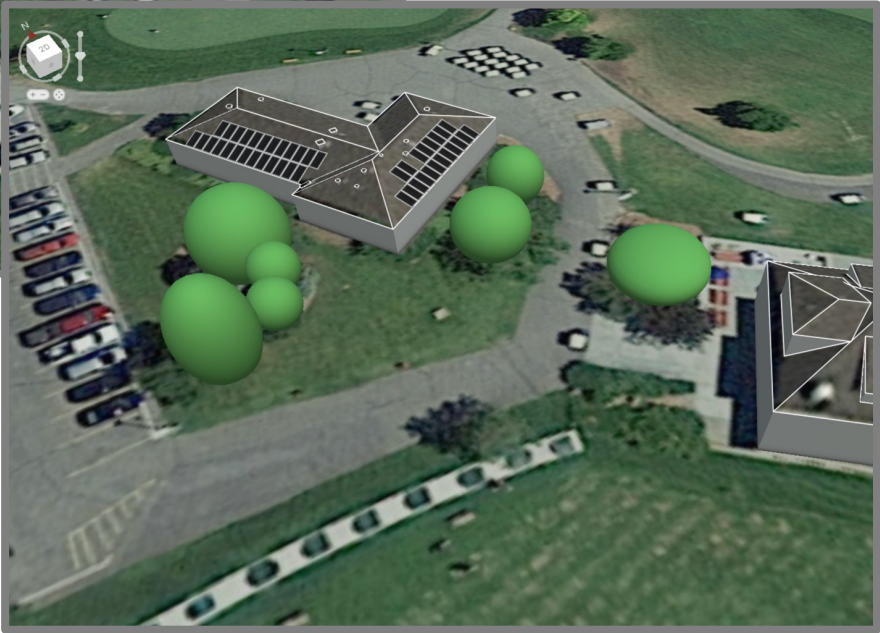
Cash 25  
0.00%  
60  
0  
3.50%  
99.50%  
0.00%  
0.00%

PRO-FORMA CASH FLOW

Years	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Funding Structure																										
Debt Funds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equity Funds	223,303.00																									
Total Grants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Capital Investments	223,303.00																									
Electric Output (kWh)	83,405.79	82,988.76	82,573.81	82,160.94	81,750.14	81,341.39	80,934.68	80,530.01	80,127.36	79,726.72	79,328.09	78,931.45	78,536.79	78,144.11	77,753.39	77,364.62	76,977.80	76,592.91	76,209.94	75,828.89	75,449.75	75,072.50	74,697.14	74,323.65	73,952.03	
Solar Energy Production Price (\$/kWh)	0.087	0.090	0.093	0.096	0.099	0.103	0.106	0.110	0.114	0.118	0.122	0.126	0.131	0.135	0.140	0.145	0.150	0.155	0.161	0.166	0.172	0.178	0.184	0.191	0.198	
Utility Bill Analysis																										
Utility Bill Without Solar	10,858.91	11,235.31	11,624.90	12,028.11	12,445.44	12,877.38	13,324.43	13,787.14	14,266.03	14,761.69	15,274.69	15,805.65	16,355.20	16,923.98	17,512.66	18,121.95	18,752.56	19,405.25	20,080.78	20,779.95	21,503.60	22,252.57	23,027.75	23,830.07	24,660.47	
Utility Bill With Solar	3,643.22	3,804.42	3,972.38	4,147.36	4,329.64	4,519.53	4,717.31	4,923.30	5,137.83	5,361.24	5,593.88	5,836.11	6,088.31	6,350.88	6,624.22	6,908.76	7,204.94	7,513.22	7,834.07	8,167.99	8,515.48	8,877.08	9,253.34	9,644.84	10,052.16	
Avoided Cost of Energy	7,215.68	7,430.89	7,652.52	7,880.76	8,115.80	8,357.85	8,607.13	8,863.83	9,128.20	9,400.45	9,680.81	9,969.54	10,266.89	10,573.10	10,888.44	11,213.19	11,547.62	11,892.03	12,246.71	12,611.96	12,988.12	13,375.49	13,774.41	14,185.23	14,608.31	
Incentives																										
Local PBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National PBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local CBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National CBI	66,990.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Financing Payments																										
PPA/Lease Payments	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Principal Pre-Payment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Debt Payment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operating Expenses																										
Fixed O&M Costs	600.00	618.00	636.54	655.64	675.31	695.56	716.43	737.92	760.06	782.86	806.35	830.54	855.46	881.12	907.55	934.78	962.82	991.71	1,021.46	1,052.10	1,083.67	1,116.18	1,149.66	1,184.15	1,219.68	
Variable O&M Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment Replacement Costs (Inverter Replacement Only)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total O&M Costs	600.00	618.00	636.54	655.64	675.31	695.56	716.43	737.92	760.06	782.86	806.35	830.54	855.46	881.12	907.55	934.78	962.82	991.71	1,021.46	1,052.10	1,083.67	1,116.18	1,149.66	1,184.15	1,219.68	
Revenues	0.00	7,215.68	7,430.89	7,652.52	7,880.76	8,115.80	8,357.85	8,607.13	8,863.83	9,128.20	9,400.45	9,680.81	9,969.54	10,266.89	10,573.10	10,888.44	11,213.19	11,547.62	11,892.03	12,246.71	12,611.96	12,988.12	13,375.49	13,774.41	14,185.23	14,608.31
EBITDA	0.00	6,615.68	6,812.89	7,015.98	7,225.12	7,440.49	7,662.29	7,890.69	8,125.91	8,368.13	8,617.58	8,874.46	9,139.00	9,400.45	9,680.81	9,969.54	10,266.89	10,573.10	10,888.44	11,213.19	11,547.62	11,892.03	12,246.71	12,611.96	12,988.12	13,375.49
Local Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Tax Cashflow to Equity	0.00	6,615.68	6,812.89	7,015.98	7,225.12	7,440.49	7,662.29	7,890.69	8,125.91	8,368.13	8,617.58	8,874.46	9,139.00	9,400.45	9,680.81	9,969.54	10,266.89	10,573.10	10,888.44	11,213.19	11,547.62	11,892.03	12,246.71	12,611.96	12,988.12	13,375.49
Equity Investment	-223,303.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Pre-Tax Cashflow to Equity	-223,303.00	6,615.68	6,812.89	7,015.98	7,225.12	7,440.49	7,662.29	7,890.69	8,125.91	8,368.13	8,617.58	8,874.46	9,139.00	9,400.45	9,680.81	9,969.54	10,266.89	10,573.10	10,888.44	11,213.19	11,547.62	11,892.03	12,246.71	12,611.96	12,988.12	13,375.49
Local Taxable Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Taxable Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
After Tax Cash Flow	-223,303.00	73,606.58	6,812.89	7,015.98	7,225.12	7,440.49	7,662.29	7,890.69	8,125.91	8,368.13	8,617.58	8,874.46	9,139.00	9,400.45	9,680.81	9,969.54	10,266.89	10,573.10	10,888.44	11,213.19	11,547.62	11,892.03	12,246.71	12,611.96	12,988.12	13,375.49
Discounted After Tax Cash Flow	-223,303.00	73,606.58	6,812.89	7,015.98	7,225.12	7,440.49	7,662.29	7,890.69	8,125.91	8,368.13	8,617.58	8,874.46	9,139.00	9,400.45	9,680.81	9,969.54	10,266.89	10,573.10	10,888.44	11,213.19	11,547.62	11,892.03	12,246.71	12,611.96	12,988.12	13,375.49
NPV	\$80,067.28																									
IRR	2.956%																									
LCOE (\$/kWh)	0.09																									
Payback Period (years)	18.52																									
Price per Watt (\$/W)	3.72																									



System



Equipment	
System type	Grid-tied
Racking installation	Flush Mount
Module type	Monocrystalline
Module size	410 W; e.g., VSUN410 – 132BMH
Number of Module (Panels)	45
Inverters	String Inverter w/power optimizers

Performance	
Installed DC potential capacity	18.4 kW_DC
Installed AC potential capacity	15.3 kW_AC
Annual energy consumption	102,385 kWh
Est. annual solar energy production	22,879 kWh
Est. energy consumption offset	22%

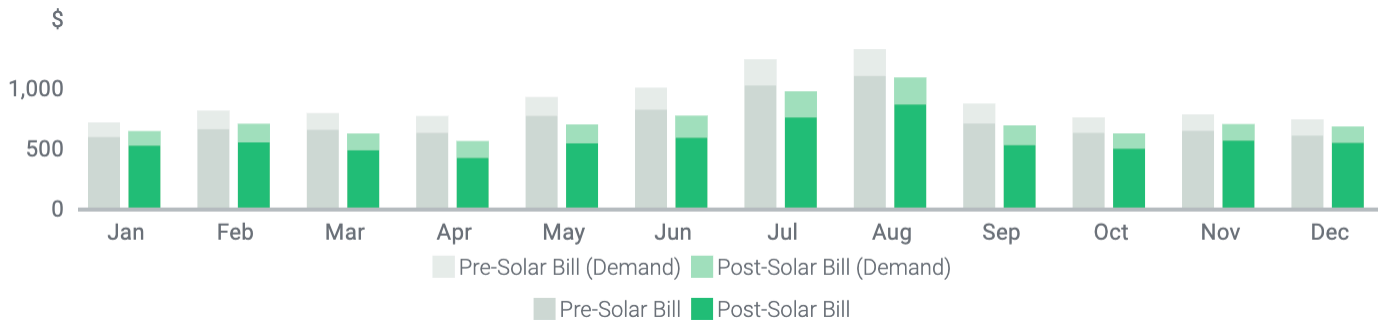
## Financial

Metric	Cash
Est. installed cost (\$)	\$51,313
Est. 30% Investment Tax Credit (ITC)	(\$15,394)
<b>Est. net out of pocket cost</b>	<b>\$35,919</b>
Est. \$/W	\$2.78
Avg. annual energy cost savings	\$2,880
Est. Avg. O&M annual cost	\$321
IRR	4.25%
Est. levelized cost of energy (LCOE)	\$0.08/kWh
Est. lifetime savings (\$)	\$28,063
Payback period	16.38 yrs.

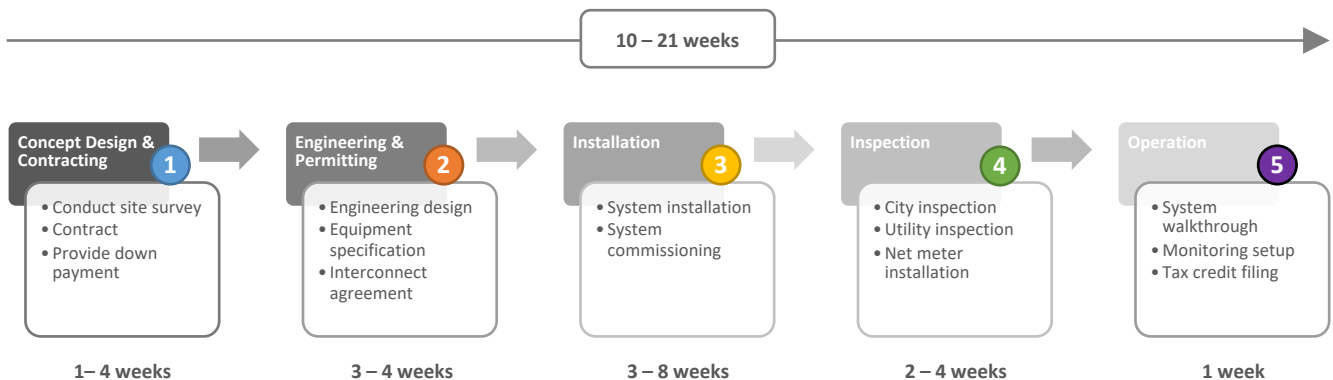
### Key assumptions:

- System life of 25 years
- Performance degradation of 0.5% per year
- Customer receives 30% ITC incentive as direct payment
- Electricity Rate escalation assumption 3.5%
- Discount rate 0%
- These financial numbers do not reflect the Northwestern Energy E+ Renewable Custom Incentive (Participant match at least 10%)
- Average O&M price does include potential inverter replacement

## Bill Savings



## Estimated Schedule



ASSUMPTIONS:

Financing Option	Cash
Project Life (years)	25
Discount Rate	0.00%
System Size (kW) (DC, STC)	18.45
System Size (kW) (DC, PTC)	
System Size (kW) (AC)	0
Electricity Rate Escalation	3.50%
Degradation	99.50%
National Tax Rate	0.00%
Local Tax Rate	0.00%

PRO-FORMA CASH FLOW

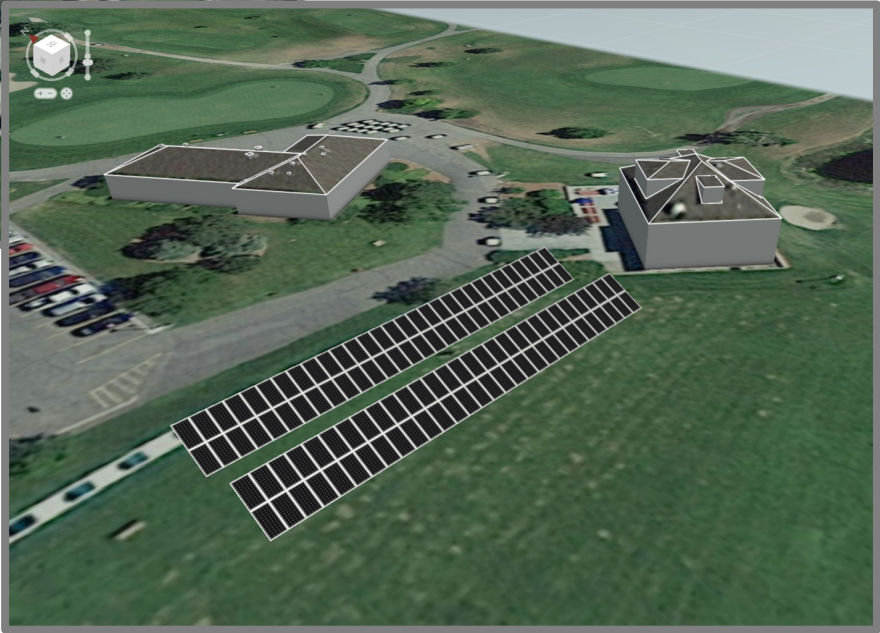
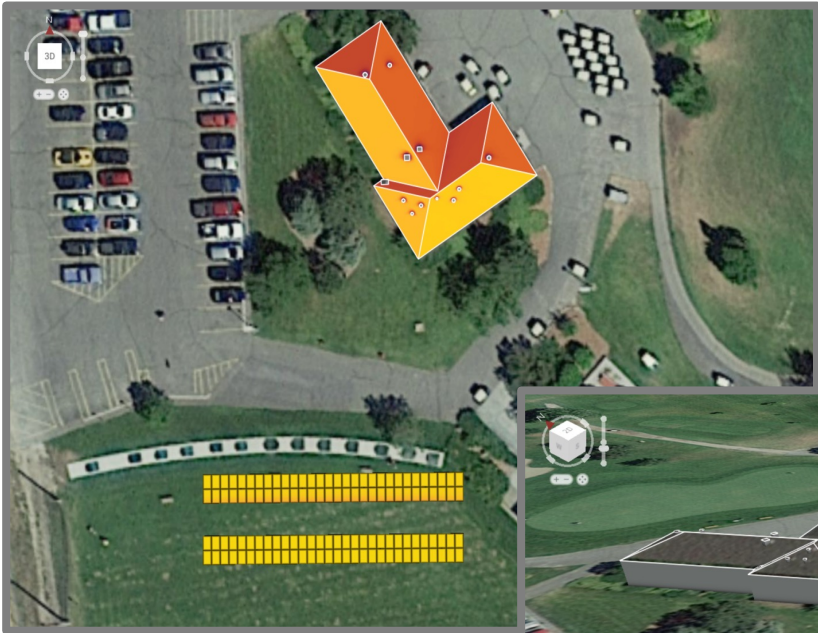
Years	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Funding Structure																										
Debt Funds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equity Funds	51,313.00																									
Total Grants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Capital Investments	51,313.00																									
Electric Output (kWh)	22,879.36	22,764.97	22,651.14	22,537.88	22,425.20	22,313.07	22,201.50	22,090.50	21,980.04	21,870.14	21,760.79	21,651.99	21,543.73	21,436.01	21,328.83	21,222.19	21,116.08	21,010.50	20,905.44	20,800.92	20,696.91	20,593.43	20,490.46	20,388.01	20,286.07	20,184.07
Solar Energy Production Price (\$/kWh)	0.087	0.090	0.093	0.096	0.099	0.103	0.106	0.110	0.114	0.118	0.122	0.126	0.131	0.135	0.140	0.145	0.150	0.155	0.161	0.166	0.172	0.178	0.184	0.191	0.198	0.205
Utility Bill Analysis																										
Utility Bill Without Solar	10,861.90	11,238.42	11,628.11	12,031.44	12,448.88	12,880.94	13,328.12	13,790.95	14,269.98	14,765.77	15,278.92	15,810.03	16,359.73	16,928.66	17,517.51	18,126.97	18,757.76	19,410.63	20,086.35	20,785.71	21,509.56	22,258.74	23,034.14	23,836.68	24,667.31	25,528.05
Utility Bill With Solar	8,882.54	9,200.02	9,528.91	9,869.64	10,222.61	10,588.27	10,967.06	11,359.48	11,765.99	12,187.10	12,623.34	13,075.25	13,543.38	14,028.32	14,530.66	15,051.04	15,590.09	16,148.48	16,726.91	17,326.08	17,946.74	18,589.66	19,255.63	19,945.48	20,660.05	21,400.05
Avoided Cost of Energy	1,979.36	2,038.40	2,099.19	2,161.80	2,226.28	2,292.67	2,361.05	2,431.47	2,503.99	2,578.67	2,655.58	2,734.78	2,816.35	2,900.35	2,986.85	3,075.93	3,167.67	3,262.15	3,359.44	3,459.64	3,562.82	3,669.08	3,778.51	3,891.21	4,007.26	4,126.71
Incentives																										
Local PBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National PBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local CBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National CBI	15,393.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Financing Payments																										
PPA/Lease Payments	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Principal Pre-Payment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Debt Payment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operating Expenses																										
Fixed O&M Costs	184.50	190.04	195.74	201.61	207.66	213.89	220.30	226.91	233.72	240.73	247.95	255.39	263.05	270.94	279.07	287.44	296.07	304.95	314.10	323.52	333.23	343.22	353.52	364.13	375.05	386.18
Variable O&M Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment Replacement Costs (Inverter Replacement Only)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,291.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total O&M Costs	184.50	190.04	195.74	201.61	207.66	213.89	220.30	226.91	233.72	240.73	247.95	255.39	1,554.55	270.94	279.07	287.44	296.07	304.95	314.10	323.52	333.23	343.22	353.52	364.13	375.05	386.18
Revenues	0.00	1,979.36	2,038.40	2,099.19	2,161.80	2,226.28	2,292.67	2,361.05	2,431.47	2,503.99	2,578.67	2,655.58	2,734.78	2,816.35	2,900.35	2,986.85	3,075.93	3,167.67	3,262.15	3,359.44	3,459.64	3,562.82	3,669.08	3,778.51	3,891.21	4,007.26
EBITDA	0.00	1,794.86	1,848.36	1,903.46	1,960.19	2,018.62	2,078.79	2,140.75	2,204.56	2,270.27	2,337.94	2,407.63	2,479.39	2,553.05	2,629.40	2,707.78	2,788.49	2,871.60	2,957.20	3,045.34	3,136.11	3,229.59	3,325.86	3,424.99	3,527.08	3,632.21
Local Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Tax Cashflow to Equity	0.00	1,794.86	1,848.36	1,903.46	1,960.19	2,018.62	2,078.79	2,140.75	2,204.56	2,270.27	2,337.94	2,407.63	2,479.39	2,553.05	2,629.40	2,707.78	2,788.49	2,871.60	2,957.20	3,045.34	3,136.11	3,229.59	3,325.86	3,424.99	3,527.08	3,632.21
Equity Investment	-51,313.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Pre-Tax Cashflow to Equity	-51,313.00	1,794.86	1,848.36	1,903.46	1,960.19	2,018.62	2,078.79	2,140.75	2,204.56	2,270.27	2,337.94	2,407.63	2,479.39	2,553.05	2,629.40	2,707.78	2,788.49	2,871.60	2,957.20	3,045.34	3,136.11	3,229.59	3,325.86	3,424.99	3,527.08	3,632.21
Local Taxable Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Taxable Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
After Tax Cash Flow	-51,313.00	17,188.76	1,848.36	1,903.46	1,960.19	2,018.62	2,078.79	2,140.75	2,204.56	2,270.27	2,337.94	2,407.63	2,479.39	2,553.05	2,629.40	2,707.78	2,788.49	2,871.60	2,957.20	3,045.34	3,136.11	3,229.59	3,325.86	3,424.99	3,527.08	3,632.21
Discounted After Tax Cash Flow	-51,313.00	17,188.76	1,848.36	1,903.46	1,960.19	2,018.62	2,078.79	2,140.75	2,204.56	2,270.27	2,337.94	2,407.63	2,479.39	2,553.05	2,629.40	2,707.78	2,788.49	2,871.60	2,957.20	3,045.34	3,136.11	3,229.59	3,325.86	3,424.99	3,527.08	3,632.21
NPV	\$28,063.17																									
IRR	4.251%																									
LCDE (\$/kWh)	0.08																									
Payback Period (years)	16.38																									
Price per Watt (\$/W)	2.78																									

Bill Roberts Golf Course  
Ground Mount  
2201 N Benton Ave  
Helena, MT 59602



Andy Pohren  
500 Locust Street  
Des Moines, IA, 50309

System



Equipment	
System type	Grid-tied
Racking installation	Ground Mount
Module type	Monocrystalline
Module size	500 W; e.g., VSUN500 - 132BMH
Number of Module (Panels)	120
Inverters	String Inverter

Performance	
Installed DC potential capacity	60 kW_DC
Installed AC potential capacity	49.8 kW_AC
Annual energy consumption	102,385 kWh
Est. annual solar energy production	83,119 kWh
Est. energy consumption offset	80%

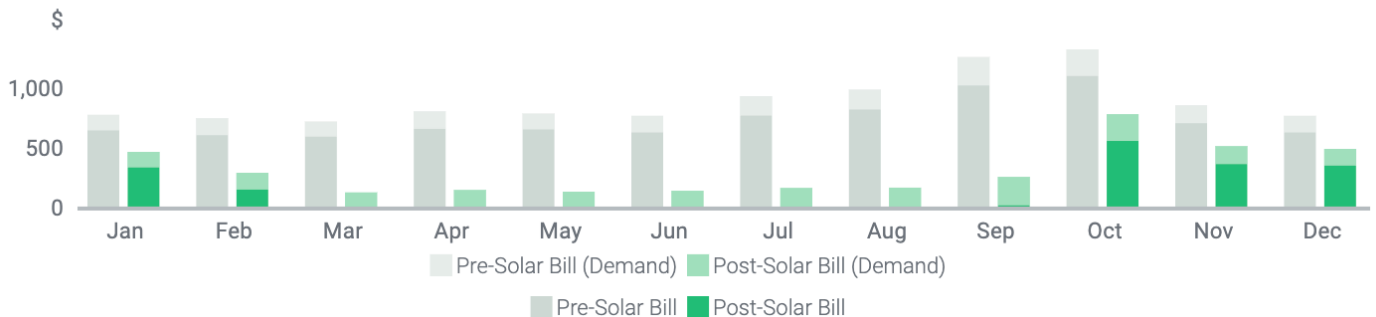
## Financial

Metric	Cash
Est. installed cost (\$)	\$176,086
Est. 30% Investment Tax Credit (ITC)	(\$52,826)
<b>Est. net out of pocket cost</b>	<b>\$123,260</b>
Est. \$/W	\$2.93
Avg. annual energy cost savings	\$10,349
Est. Avg. O&M annual cost	\$1,043
IRR	4.84%
Est. levelized cost of energy (LCOE)	\$0.08/kWh
Est. lifetime savings (\$)	\$110,998
Payback period	15.5 yrs.

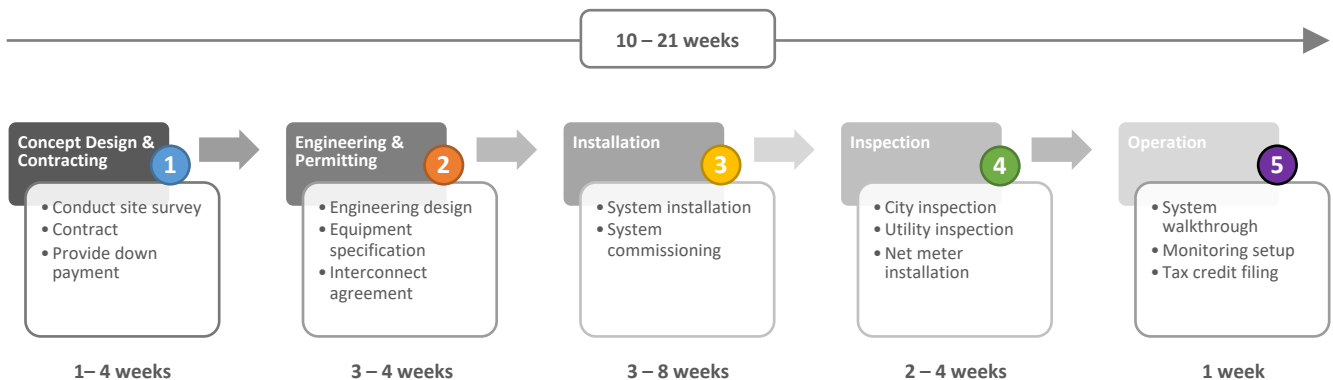
### Key assumptions:

- System life of 25 years
- Performance degradation of 0.5% per year
- Customer receives 30% ITC incentive as direct payment
- Electricity Rate escalation assumption 3.5%
- Discount rate 0%
- These financial numbers do not reflect the Northwestern Energy E+ Renewable Custom Incentive (participant match at least 10%)
- Average O&M price does include potential inverter replacement

## Bill Savings



## Estimated Schedule



**ASSUMPTIONS:**

Financing Option	Cash
Project Life (years)	25
Discount Rate	0.00%
System Size (kW) (DC, STC)	60
System Size (kW) (DC, PTC)	
System Size (kW) (AC)	0
Electricity Rate Escalation	3.50%
Degradation	99.50%
National Tax Rate	0.00%
Local Tax Rate	0.00%

**PRO-FORMA CASH FLOW:**

Years	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Funding Structure																										
Debt Funds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equity Funds	176,086.00																									
Total Grants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Capital Investments	176,086.00																									
Electric Output (kWh)	83,199.38	82,783.38	82,369.46	81,957.62	81,547.83	81,140.09	80,734.39	80,330.72	79,929.06	79,529.42	79,131.77	78,736.11	78,342.43	77,950.72	77,560.96	77,173.16	76,787.29	76,403.36	76,021.34	75,641.23	75,263.03	74,886.71	74,512.28	74,139.72	73,769.02	
Solar Energy Production Price (\$/kWh)	0.087	0.090	0.093	0.096	0.099	0.103	0.106	0.110	0.114	0.118	0.122	0.126	0.131	0.135	0.140	0.145	0.150	0.155	0.161	0.166	0.172	0.178	0.184	0.191	0.198	
Utility Bill Analysis																										
Utility Bill Without Solar	10,861.90	11,238.42	11,628.11	12,031.44	12,448.88	12,880.94	13,328.12	13,790.95	14,269.98	14,765.77	15,278.92	15,810.03	16,359.73	16,928.66	17,517.51	18,126.97	18,757.76	19,410.63	20,086.35	20,785.71	21,509.56	22,258.74	23,034.14	23,836.68	24,667.31	
Utility Bill With Solar	3,664.08	3,825.91	3,994.53	4,170.18	4,353.17	4,543.77	4,742.29	4,949.05	5,164.37	5,388.59	5,622.07	5,865.16	6,118.25	6,381.73	6,656.02	6,941.54	7,238.72	7,548.03	7,869.95	8,204.96	8,553.59	8,916.36	9,293.82	9,686.56	10,095.16	
Avoided Cost of Energy	7,197.83	7,412.50	7,633.58	7,861.25	8,095.71	8,337.17	8,585.82	8,841.90	9,105.61	9,377.18	9,656.86	9,944.87	10,241.48	10,546.93	10,861.49	11,185.44	11,519.04	11,862.60	12,216.40	12,580.75	12,955.97	13,342.39	13,740.32	14,150.13	14,572.15	
Incentives																										
Local PBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National PBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local CBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National CBI	52,825.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Financing Payments																										
PPA/Lease Payments	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Principal Pre-Payment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Debt Payment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operating Expenses																										
Fixed O&M Costs	600.00	618.00	636.54	655.64	675.31	695.56	716.43	737.92	760.06	782.86	806.35	830.54	855.46	881.12	907.55	934.78	962.82	991.71	1,021.46	1,052.10	1,083.67	1,116.18	1,149.66	1,184.15	1,219.68	
Variable O&M Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment Replacement Costs (Inverter Replacement Only)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total O&M Costs	600.00	618.00	636.54	655.64	675.31	695.56	716.43	737.92	760.06	782.86	806.35	830.54	5,055.46	881.12	907.55	934.78	962.82	991.71	1,021.46	1,052.10	1,083.67	1,116.18	1,149.66	1,184.15	1,219.68	
Revenues	0.00	7,197.83	7,412.50	7,633.58	7,861.25	8,095.71	8,337.17	8,585.82	8,841.90	9,105.61	9,377.18	9,656.86	9,944.87	10,241.48	10,546.93	10,861.49	11,185.44	11,519.04	11,862.60	12,216.40	12,580.75	12,955.97	13,342.39	13,740.32	14,150.13	14,572.15
EBITDA	0.00	6,597.83	6,794.50	6,997.04	7,205.62	7,420.41	7,641.60	7,869.39	8,103.97	8,345.54	8,594.32	8,850.51	9,114.33	5,186.02	9,665.81	9,953.94	10,250.66	10,556.22	10,870.89	11,194.94	11,528.65	11,872.31	12,226.21	12,590.66	12,965.98	13,352.48
Local Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Tax Cashflow to Equity	0.00	6,597.83	6,794.50	6,997.04	7,205.62	7,420.41	7,641.60	7,869.39	8,103.97	8,345.54	8,594.32	8,850.51	9,114.33	5,186.02	9,665.81	9,953.94	10,250.66	10,556.22	10,870.89	11,194.94	11,528.65	11,872.31	12,226.21	12,590.66	12,965.98	13,352.48
Equity Investment	-176,086.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Pre-Tax Cashflow to Equity	-176,086.00	6,597.83	6,794.50	6,997.04	7,205.62	7,420.41	7,641.60	7,869.39	8,103.97	8,345.54	8,594.32	8,850.51	9,114.33	5,186.02	9,665.81	9,953.94	10,250.66	10,556.22	10,870.89	11,194.94	11,528.65	11,872.31	12,226.21	12,590.66	12,965.98	13,352.48
Local Taxable Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Taxable Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
After Tax Cash Flow	-176,086.00	59,423.63	6,794.50	6,997.04	7,205.62	7,420.41	7,641.60	7,869.39	8,103.97	8,345.54	8,594.32	8,850.51	9,114.33	5,186.02	9,665.81	9,953.94	10,250.66	10,556.22	10,870.89	11,194.94	11,528.65	11,872.31	12,226.21	12,590.66	12,965.98	13,352.48
Discounted After Tax Cash Flow	-176,086.00	59,423.63	6,794.50	6,997.04	7,205.62	7,420.41	7,641.60	7,869.39	8,103.97	8,345.54	8,594.32	8,850.51	9,114.33	5,186.02	9,665.81	9,953.94	10,250.66	10,556.22	10,870.89	11,194.94	11,528.65	11,872.31	12,226.21	12,590.66	12,965.98	13,352.48
NPV	\$112,489.61																									
IRR	4.8413%																									
LCOE (\$/kWh)	0.08																									
Payback Period (years)	15.48																									
Price per Watt (\$/W)	2.93																									

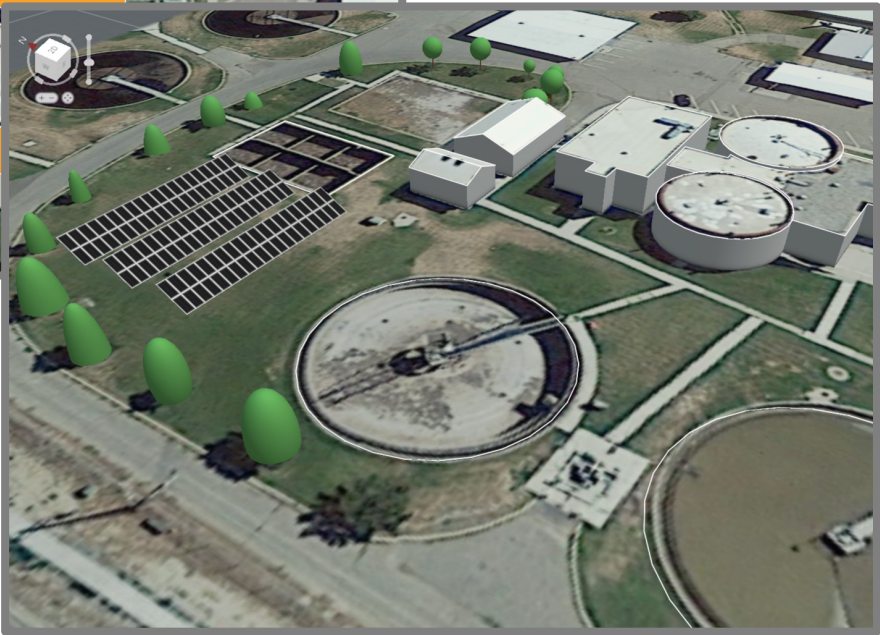
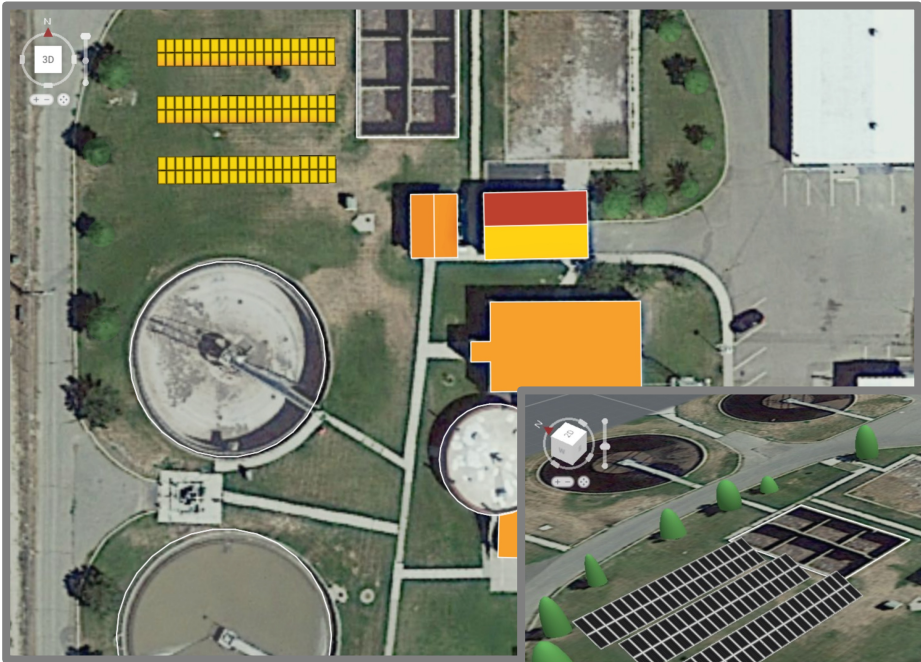


Helena Wastewater Treatment  
Plant  
2108 E Custer Ave  
Helena, MT 59602



Andy Pohren  
500 Locust Street  
Des Moines, IA, 50309

System



Equipment	
System type	Grid-tied
Racking installation	Ground Mount
Modules type	Monocrystalline
Module Size	500 W; e.g., VSUN500 - 132BMH
Number of Module (Panels)	120
Inverters	String Inverter

Performance	
Installed DC potential capacity	60 kW_DC
Installed AC potential capacity	49.8 kW_AC
Annual energy consumption	1,117,040 kWh
Est. annual solar energy production	82,217 kWh
Est. energy consumption offset	7%

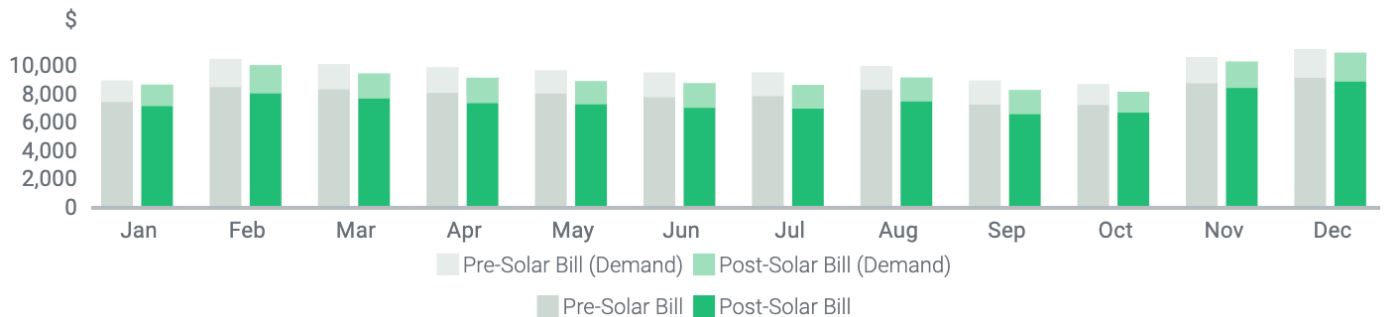
## Financial

Metric	Cash
Est. installed cost (\$)	\$173,800
Est. 30% Investment Tax Credit (ITC)	(\$52,140)
<b>Est. net out of pocket cost</b>	<b>\$121,660</b>
Est. \$/W	\$2.90
Avg. annual energy cost savings	\$10,349
Est. Avg. O&M annual cost	\$1,043
IRR	4.84%
Est. levelized cost of energy (LCOE)	\$0.08/kWh
Est. lifetime savings (\$)	\$110,998
Payback period	15.5 yrs.

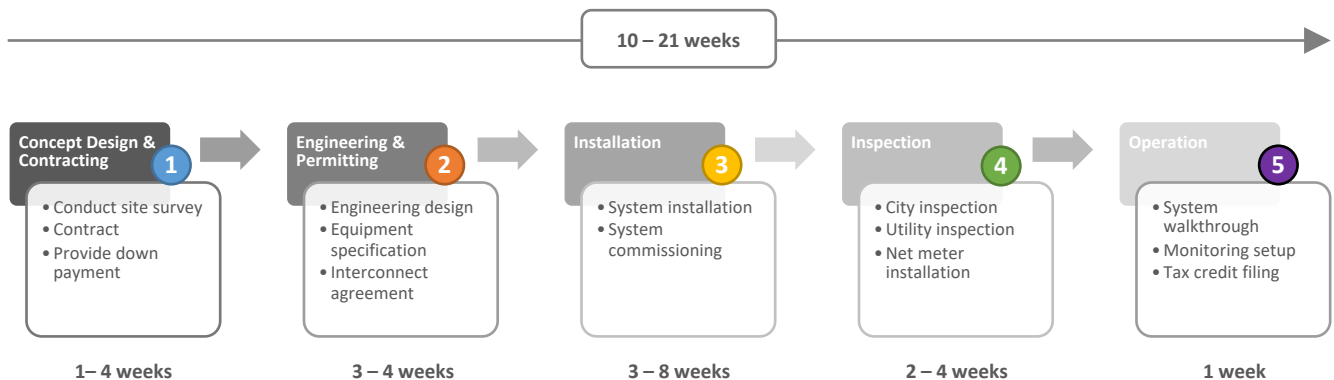
### Key assumptions:

- System life of 25 years
- Performance degradation of 0.5% per year
- Customer receives 30% ITC incentive as direct payment
- Electricity Rate escalation assumption 3.5%
- Discount rate 0%
- These financial numbers do not reflect the Northwestern Energy E+ Renewable Custom Incentive (participant match at least 10%)
- This design would require removal of one tree
- Average O&M price does include potential inverter replacement

## Bill Savings



## Estimated Schedule



**ASSUMPTIONS:**

Financing Option	Cash
Project Life (years)	25
Discount Rate	0.00%
System Size (kW) (DC, STC)	60
System Size (kW) (DC, PTC)	
System Size (kW) (AC)	0
Electricity Rate Escalation	3.50%
Degradation	99.50%
National Tax Rate	0.00%
Local Tax Rate	0.00%

**PRO-FORMA CASH FLOW:**

Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Funding Structure																										
Debt Funds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equity Funds	173,800.00																									
Total Grants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Capital Investments	173,800.00																									
Electric Output (kWh)	82,216.81	81,805.73	81,396.70	80,989.71	80,584.77	80,181.84	79,780.93	79,382.03	78,985.12	78,590.19	78,197.24	77,806.25	77,417.22	77,030.14	76,644.99	76,261.76	75,880.45	75,501.05	75,123.55	74,747.93	74,374.19	74,002.32	73,632.31	73,264.14	72,897.82	72,532.00
Solar Energy Production Price (\$/kWh)	0.087	0.090	0.093	0.096	0.099	0.103	0.106	0.110	0.114	0.118	0.122	0.126	0.131	0.135	0.140	0.145	0.150	0.155	0.161	0.166	0.172	0.178	0.184	0.191	0.198	0.205
Utility Bill Analysis																										
Utility Bill Without Solar	117,506.97	121,616.06	125,868.97	130,270.73	134,826.55	139,541.83	144,422.14	149,473.26	154,701.17	160,112.06	165,712.32	171,508.60	177,507.75	183,716.87	190,143.30	196,794.66	203,678.82	210,803.93	218,178.41	225,811.00	233,710.73	241,886.95	250,349.34	259,107.92	268,173.04	277,552.98
Utility Bill With Solar	110,394.15	114,291.10	118,325.54	122,502.32	126,826.45	131,303.12	135,937.71	140,735.78	145,703.10	150,845.62	156,169.51	161,681.18	167,387.22	173,294.49	179,410.08	185,741.33	192,295.82	199,081.43	206,106.28	213,378.82	220,907.77	228,702.14	236,771.29	245,124.90	253,772.98	262,722.98
Avoided Cost of Energy	7,112.82	7,324.96	7,543.43	7,768.41	8,000.11	8,238.71	8,484.43	8,737.48	8,998.07	9,266.44	9,542.81	9,827.42	10,120.53	10,422.37	10,733.22	11,053.34	11,383.00	11,722.50	12,072.13	12,432.18	12,802.97	13,184.81	13,578.05	13,983.02	14,400.06	14,830.06
Incentives																										
Local PBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National PBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local CBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National CBI	52,140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Financing Payments																										
PPA/Lease Payments	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Principal Pre-Payment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Debt Payment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operating Expenses																										
Fixed O&M Costs	600.00	618.00	636.54	655.64	675.31	695.56	716.43	737.92	760.06	782.86	806.35	830.54	855.46	881.12	907.55	934.78	962.82	991.71	1,021.46	1,052.10	1,083.67	1,116.18	1,149.66	1,184.15	1,219.68	1,256.38
Variable O&M Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment Replacement Costs (Inverter Replacement Only)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total O&M Costs	600.00	618.00	636.54	655.64	675.31	695.56	716.43	737.92	760.06	782.86	806.35	830.54	855.46	881.12	907.55	934.78	962.82	991.71	1,021.46	1,052.10	1,083.67	1,116.18	1,149.66	1,184.15	1,219.68	1,256.38
Revenues	0.00	7,112.82	7,324.96	7,543.43	7,768.41	8,000.11	8,238.71	8,484.43	8,737.48	8,998.07	9,266.44	9,542.81	9,827.42	10,120.53	10,422.37	10,733.22	11,053.34	11,383.00	11,722.50	12,072.13	12,432.18	12,802.97	13,184.81	13,578.05	13,983.02	14,400.06
EBITDA	0.00	6,512.82	6,706.96	6,906.89	7,112.78	7,324.80	7,543.14	7,768.00	7,999.55	8,238.01	8,483.58	8,736.46	8,996.88	9,266.07	9,541.25	9,825.67	10,118.56	10,420.18	10,730.79	11,050.67	11,380.07	11,719.30	12,068.64	12,428.39	12,798.87	13,180.38
Local Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Tax Cashflow to Equity	0.00	6,512.82	6,706.96	6,906.89	7,112.78	7,324.80	7,543.14	7,768.00	7,999.55	8,238.01	8,483.58	8,736.46	8,996.88	9,266.07	9,541.25	9,825.67	10,118.56	10,420.18	10,730.79	11,050.67	11,380.07	11,719.30	12,068.64	12,428.39	12,798.87	13,180.38
Equity Investment	-173,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Pre-Tax Cashflow to Equity	-173,800.00	6,512.82	6,706.96	6,906.89	7,112.78	7,324.80	7,543.14	7,768.00	7,999.55	8,238.01	8,483.58	8,736.46	8,996.88	9,266.07	9,541.25	9,825.67	10,118.56	10,420.18	10,730.79	11,050.67	11,380.07	11,719.30	12,068.64	12,428.39	12,798.87	13,180.38
Local Taxable Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Taxable Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
National Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
After Tax Cash Flow	-173,800.00	58,652.82	6,706.96	6,906.89	7,112.78	7,324.80	7,543.14	7,768.00	7,999.55	8,238.01	8,483.58	8,736.46	8,996.88	9,266.07	9,541.25	9,825.67	10,118.56	10,420.18	10,730.79	11,050.67	11,380.07	11,719.30	12,068.64	12,428.39	12,798.87	13,180.38
Discounted After Tax Cash Flow	-173,800.00	58,652.82	6,706.96	6,906.89	7,112.78	7,324.80	7,543.14	7,768.00	7,999.55	8,238.01	8,483.58	8,736.46	8,996.88	9,266.07	9,541.25	9,825.67	10,118.56	10,420.18	10,730.79	11,050.67	11,380.07	11,719.30	12,068.64	12,428.39	12,798.87	13,180.38
NPV	\$110,997.71																									
IRR	4.8402%																									
LCOE (\$/kWh)	0.08																									
Payback Period (years)	15.48																									
Price per Watt (\$/W)	2.90																									

Helena Wastewater Treatment  
Plant (25-year payback)  
2108 E Custer Ave  
Helena, MT 59602



Andy Pohren  
500 Locust Street  
Des Moines, IA, 50309

System



Equipment	
System type	Grid-tied
Racking installation	Ground Mount
Modules type	Monocrystalline
Module Size	500 W; e.g., VSUN500 - 132BMH
Number of Module (Panels)	3,560
Inverters	String Inverter

Performance	
Installed DC potential capacity	1,780 kW_DC
Installed AC potential capacity	1,483 kW_AC
Annual energy consumption	3,358,000 kWh
Est. annual solar energy production	2,462,724 kWh
Est. energy consumption offset	73%

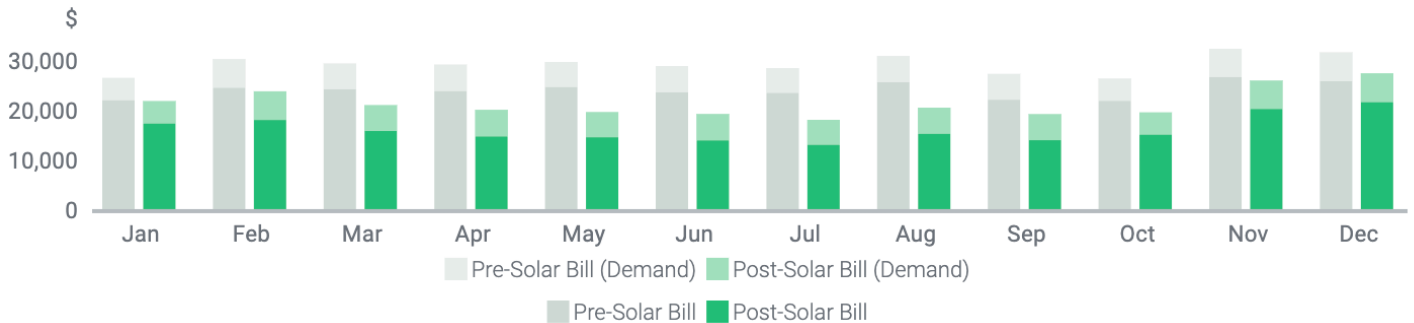
## Financial

Metric	Cash
Est. installed cost (\$)	\$4,013,786
Est. 30% Investment Tax Credit (ITC)	(\$1,204,136)
<b>Est. net out of pocket cost</b>	<b>\$2,809,650</b>
Est. \$/W	\$2.25
Avg. annual energy cost savings	\$143,996
Est. Avg. O&M annual cost	\$30,943
IRR	.04%
Est. levelized cost of energy (LCOE)	\$0.06/kWh
Est. lifetime savings (\$)	\$16,670
Payback period	24.9 yrs.

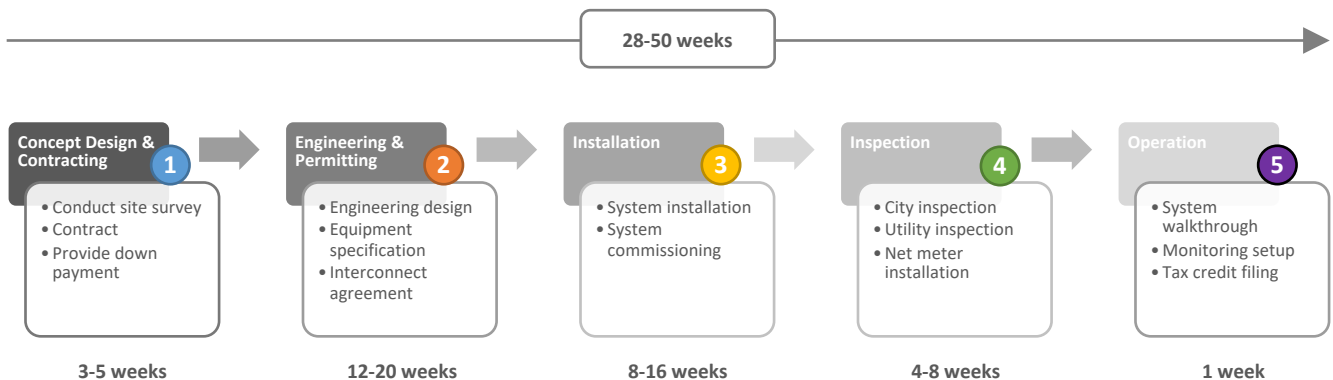
### Key assumptions:

- System life of 25 years
- Performance degradation of 0.5% per year
- Customer receives 30% ITC incentive as direct payment
- Electricity Rate escalation assumption 3.5%
- Discount rate 0%
- Average O&M price does include potential inverter replacement
- Assumed No Net Metering

## Bill Savings



## Estimated Schedule



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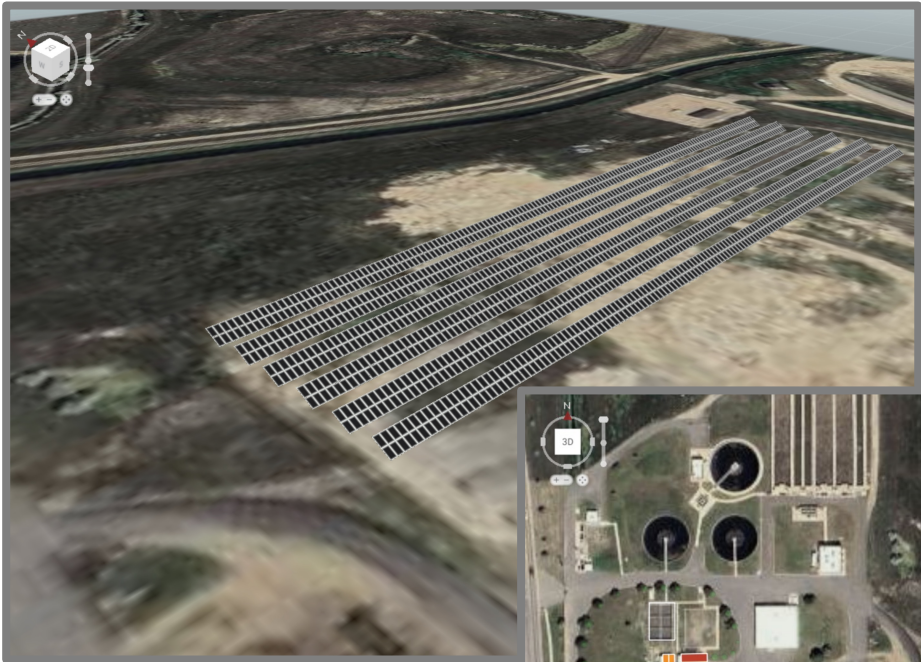


Helena Wastewater Treatment  
Plant (900 kW)  
2108 E Custer Ave  
Helena, MT 59602



Andy Pohren  
500 Locust Street  
Des Moines, IA, 50309

System



Equipment	
System type	Grid-tied
Racking installation	Ground Mount
Modules type	Monocrystalline
Module Size	500 W; e.g., VSUN500 - 132BMH
Number of Module (Panels)	1,800
Inverters	String Inverter

Performance	
Installed DC potential capacity	900 kW_DC
Installed AC potential capacity	750 kW_AC
Annual energy consumption	3,358,000 kWh
Est. annual solar energy production	1,252,214 kWh
Est. energy consumption offset	37%



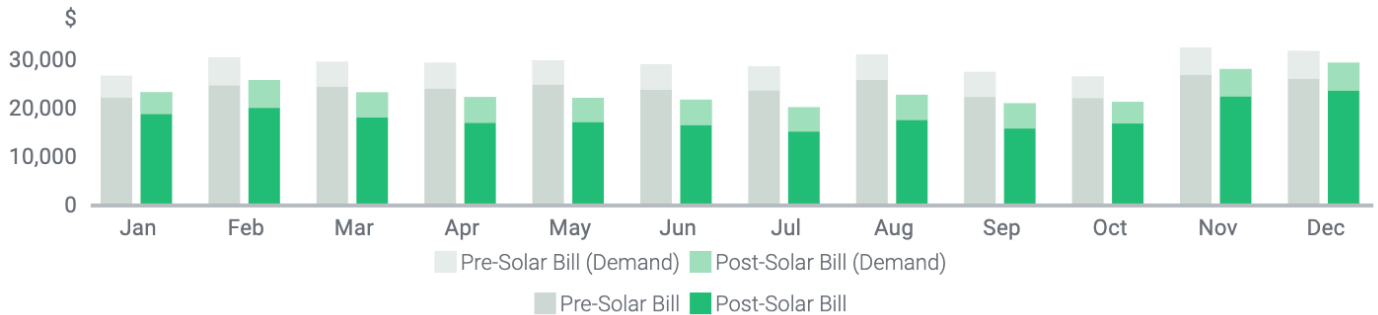
## Financial

Metric	Cash
Est. installed cost (\$)	\$2,068,222
Est. 30% Investment Tax Credit (ITC)	(\$620,467)
<b>Est. net out of pocket cost</b>	<b>\$1,447,755</b>
Est. \$/W	\$2.30
Avg. annual energy cost savings	\$106,941
Est. Avg. O&M annual cost	\$15,645
IRR	3.25%
Est. levelized cost of energy (LCOE)	\$0.06/kWh
Est. lifetime savings (\$)	\$834,629
Payback period	18.2 yrs.

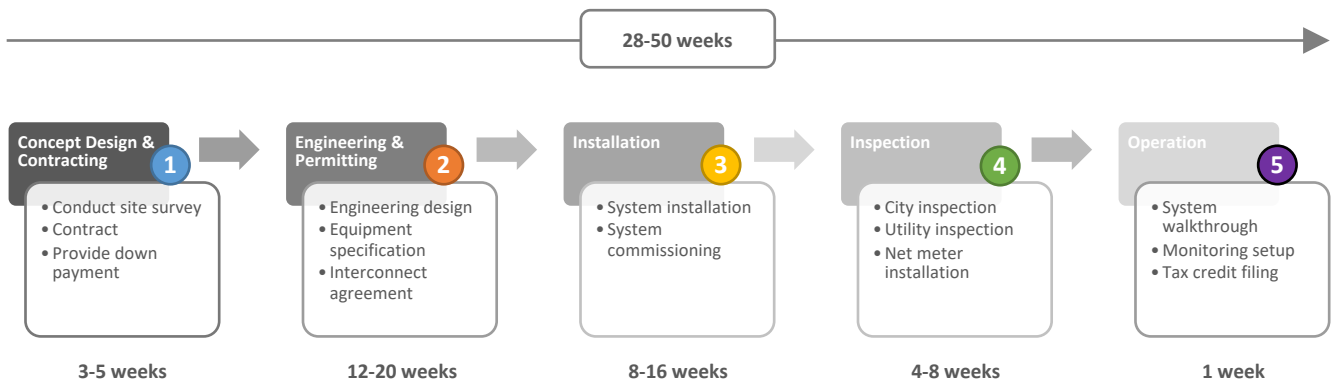
### Key assumptions:

- System life of 25 years
- Performance degradation of 0.5% per year
- Customer receives 30% ITC incentive as direct payment
- Electricity Rate escalation assumption 3.5%
- Discount rate 0%
- Average O&M price does include potential inverter replacement
- Assumed no Net Metering

## Bill Savings



## Estimated Schedule



ASSUMPTIONS:																										
Financing Option	Cash	25																								
Project Life (years)	0.00%	900																								
Discount Rate																										
System Size (kW) (DC, STC)																										
System Size (kW) (DC, PTC)																										
System Size (kW) (AC)	0																									
Electricity Rate Escalation	3.50%																									
Degradation	99.50%																									
National Tax Rate	0.00%																									
Local Tax Rate	0.00%																									
PRO-FORMA CASH FLOW:																										
Years	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Funding Structure																										
Debt Funds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equity Funds	2,068,222.00																									
Total Grants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Capital Investments	2,068,222.00																									
Electric Output (kWh)		1,252,209.21	1,245,948.16	1,239,718.42	1,233,519.83	1,227,352.23	1,221,215.47	1,215,109.39	1,209,033.84	1,202,988.68	1,196,973.73	1,190,988.86	1,185,033.92	1,179,108.75	1,173,213.21	1,167,347.14	1,161,510.40	1,155,702.85	1,149,924.34	1,144,174.72	1,138,453.84	1,132,761.57	1,127,097.77	1,121,462.28	1,115,854.96	1,110,275.69
Solar Energy Production Price (\$/kWh)		0.057	0.059	0.062	0.064	0.066	0.069	0.071	0.074	0.077	0.079	0.082	0.085	0.088	0.092	0.095	0.099	0.102	0.106	0.110	0.114	0.118	0.122	0.127	0.132	0.136
Utility Bill Analysis																										
Utility Bill Without Solar	352,998.56	365,349.86	378,133.45	391,364.47	405,058.57	419,231.97	433,901.43	449,084.33	464,798.62	481,062.92	497,896.47	515,319.19	533,351.71	552,015.37	571,332.25	591,325.23	612,017.95	633,434.93	655,601.50	678,543.90	702,289.28	726,865.75	752,302.40	778,629.33	805,877.70	
Utility Bill With Solar	281,357.67	291,418.70	301,841.39	312,638.35	323,823.32	335,409.36	347,412.40	359,845.05	372,723.40	386,064.46	399,883.28	414,196.15	429,021.65	444,378.02	460,284.72	476,761.84	493,829.30	511,507.67	529,820.33	548,791.45	568,445.42	588,805.06	609,895.63	631,742.66	654,372.13	
Avoided Cost of Energy	71,640.90	73,931.16	76,292.06	78,726.12	81,235.25	83,822.61	86,489.03	89,239.27	92,075.23	94,998.46	98,013.19	101,123.05	104,330.06	107,637.34	111,047.53	114,563.39	118,188.65	121,927.26	125,781.17	129,752.44	133,843.86	138,060.69	142,406.77	146,886.66	151,505.57	
Incentives																										
Local PBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
National PBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Local CBI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
National CBI	620,466.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Financing Payments																										
PPA/Lease Payments	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Principal Pre-Payment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total Debt Payment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operating Expenses																										
Fixed O&M Costs	9,000.00	9,270.00	9,548.10	9,834.54	10,129.58	10,433.47	10,746.47	11,068.86	11,400.93	11,742.96	12,095.25	12,458.10	12,831.85	13,216.80	13,613.31	14,021.71	14,442.36	14,875.63	15,321.90	15,781.55	16,255.00	16,742.65	17,244.93	17,762.28	18,295.15	
Variable O&M Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Equipment Replacement Costs (Inverter Replacement Only)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total O&M Costs	9,000.00	9,270.00	9,548.10	9,834.54	10,129.58	10,433.47	10,746.47	11,068.86	11,400.93	11,742.96	12,095.25	12,458.10	75,831.85	13,216.80	13,613.31	14,021.71	14,442.36	14,875.63	15,321.90	15,781.55	16,255.00	16,742.65	17,244.93	17,762.28	18,295.15	
Revenues	0.00	71,640.90	73,931.16	76,292.06	78,726.12	81,235.25	83,822.61	86,489.03	89,239.27	92,075.23	94,998.46	98,013.19	101,123.05	104,330.06	107,637.34	111,047.53	114,563.39	118,188.65	121,927.26	125,781.17	129,752.44	133,843.86	138,060.69	142,406.77	146,886.66	151,505.57
EBITDA	0.00	62,640.90	64,661.16	66,743.96	68,891.58	71,105.67	73,389.14	75,742.56	78,170.41	80,674.29	83,255.50	85,917.94	88,664.94	28,498.21	94,420.54	97,434.22	100,541.68	103,746.29	107,051.63	110,459.28	113,970.89	117,588.86	121,318.04	125,161.83	129,124.38	133,210.43
Local Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
National Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pre-Tax Cashflow to Equity	0.00	62,640.90	64,661.16	66,743.96	68,891.58	71,105.67	73,389.14	75,742.56	78,170.41	80,674.29	83,255.50	85,917.94	88,664.94	28,498.21	94,420.54	97,434.22	100,541.68	103,746.29	107,051.63	110,459.28	113,970.89	117,588.86	121,318.04	125,161.83	129,124.38	133,210.43
Equity Investment	-2,068,222.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Net Pre-Tax Cashflow to Equity	-2,068,222.00	62,640.90	64,661.16	66,743.96	68,891.58	71,105.67	73,389.14	75,742.56	78,170.41	80,674.29	83,255.50	85,917.94	88,664.94	28,498.21	94,420.54	97,434.22	100,541.68	103,746.29	107,051.63	110,459.28	113,970.89	117,588.86	121,318.04	125,161.83	129,124.38	133,210.43
Local Taxable Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
National Taxable Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Local Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
National Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
After Tax Cash Flow	-2,068,222.00	683,107.50	64,661.16	66,743.96	68,891.58	71,105.67	73,389.14	75,742.56	78,170.41	80,674.29	83,255.50	85,917.94	88,664.94	28,498.21	94,420.54	97,434.22	100,541.68	103,746.29	107,051.63	110,459.28	113,970.89	117,588.86	121,318.04	125,161.83	129,124.38	133,210.43
Discounted After Tax Cash Flow	-2,068,222.00	683,107.50	64,661.16	66,743.96	68,891.58	71,105.67	73,389.14	75,742.56	78,170.41	80,674.29	83,255.50	85,917.94	88,664.94	28,498.21	94,420.54	97,434.22	100,541.68	103,746.29	107,051.63	110,459.28	113,970.89	117,588.86	121,318.04	125,161.83	129,124.38	133,210.43
NPV	\$834,628.94																									
IRR	3.2482%																									
LCOE (\$/kWh)	0.06																									
Payback Period (years)	18.15																									
Price per Watt (\$/W)	2.30																									



## Appendix C: Glossary

AHU – Air Handling Unit

ASHP – Air-Source Heat Pump

ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers

BAS – Building Automation System

BTU – British Thermal Units

CFL – Compact Fluorescent Lamp

CMU – Concrete Masonry Units

CRAC – Computer Room Air Conditioning

DDC – Direct Digital Control

DHW – Domestic Hot Water

ECM – Energy Conservation Measure

EIFS – Exterior Insulation Finishing System

EPDT- Ethylene Propylene Diene Terpolymer

ERV – Energy Recovery Ventilator

EUI – Energy Use Intensity

FCU – Fan Coil Unit

FIM – Facility Improvement Measure

GHG – Greenhouse Gas

HDD – Heating Degree Days

HHW – Heating Hot Water

HP – Horsepower

HPS – High-Pressure Sodium

HVAC – Heating, Ventilating, and Air-Conditioning

HW – Hot Water

Kw – Kilowatt

Kwh – Kilowatt-Hours

LED – Light-Emitting Diode

MZ – Multi-Zone

OMC – Other Measures Considered

PLC – Programmable Logic Controller

PTAC – Packaged Terminal Air Conditioning

PV – Photovoltaic

PVC – Polyvinyl Chloride

RAS – Return Activated Sludge

RTU – Roof Top Unit

SPB – Simple Payback

TPO – Thermoplastic Polyolefin

UV – Ultraviolet

VAV – Variable Air Volume

VFD – Variable Frequency Drive

W - Watt

WSHP – Water-Source Heat Pump

WWTF – Wastewater Treatment Facility