
CITY OF FIFTY LAKES
SPECIAL COUNCIL MEETING
December 20th 10:00 am

❖ **Call to Order / Roll Call**

❖ Pledge of Allegiance

❖ Discuss solar grant opportunities for city hall/bar building

❖ Approving a donation to the Initiative Foundation of \$450

❖ Review city clerk vacation time

❖ **Adjourn**



49.80 kW DC 39.84 kW AC
Roof-mounted
Commercial grid-tied PV system
With Enphase Microinverters

City of Fifty Lakes
40430 Co Rd 3
Fifty Lakes, MN 56448, USA

December 18, 2024

Dear City of Fifty Lakes

Thank you for your interest in solar and in Wolf Track Energy. We are excited about the possibility of working with you. We eagerly anticipate providing a design that suits your needs and is practical for your location. The proposed systems should produce about 65351 kWh/year which is about 46% of your annual estimated energy consumption of 139100 kWhs. In addition to the base energy production numbers in this estimate, the "bi-facial" solar panels 'may' produce additional energy during time of high brightness (like snow reflectivity).

Our local crew has the experience and knowledge necessary to see this project through to completion, and to ensure you're awarded the full grant from the state of Minnesota. We've worked closely with our vendors to provide competitive pricing for this largescale project in which the school and community can take pride. If after reviewing this proposal you would like to consider other options, we would be happy to adjust this bid. We know you'll find this proposal compelling and we're eager to support your clean energy goals!

Within this proposal, you will find:

- System Overview
- Energy Production & Finance Forecast
- Cash Flow Estimate
- Itemized Cost Estimate
- Available Rebates, Incentives, and Environmental Benefits
- Why Wolf Track Energy?

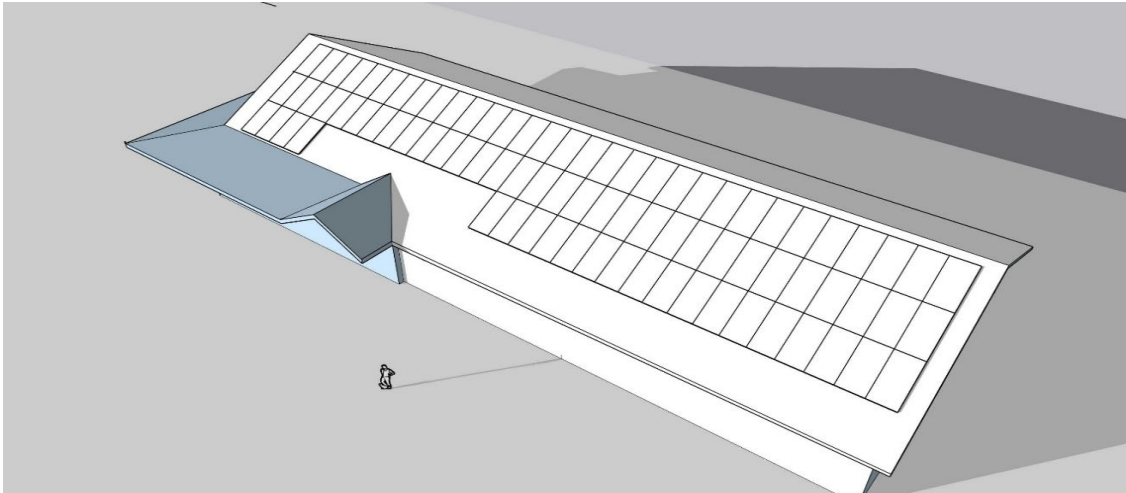
Sincerely,

John Ruvelson

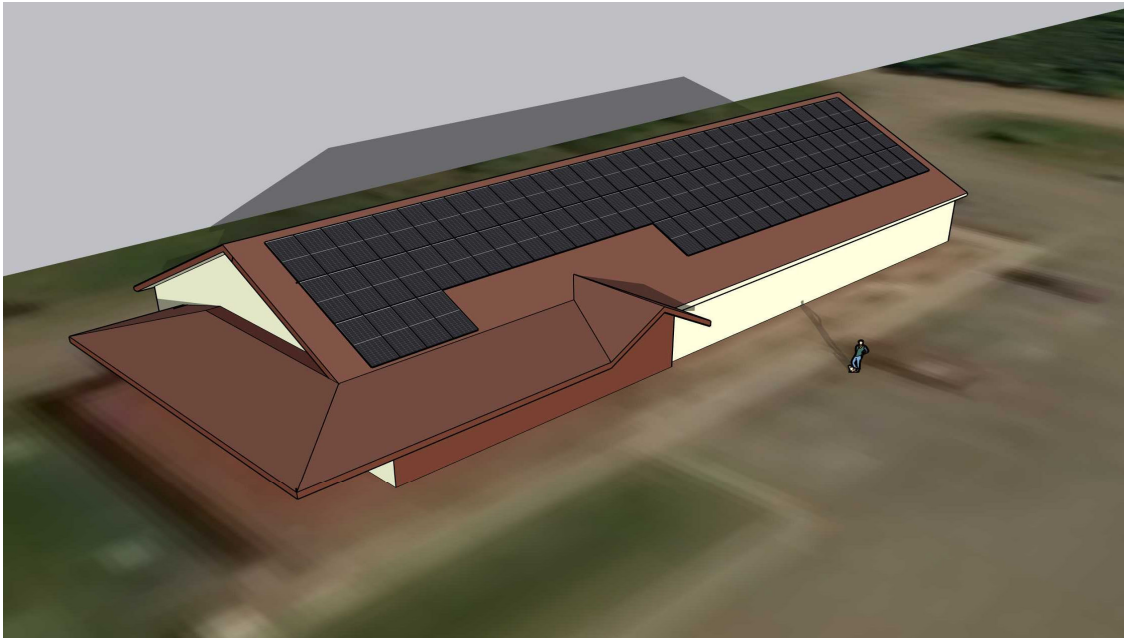
Solar Technical Sales

Direct: (218) 269-2413 jruvelson@wolftrackenergy.com

System Overview



These concept-drawings show the 49.8 kW DC PV system at your location.



System Overview

Location

The location selected for your solar PV array will support an array with a nameplate rating of 49.8 kW DC. The array's orientation to the sun, shading, snow, soiling, and other factors will have an impact on the system's actual production, described in part, below.

Site Shading

Crystalline solar PV modules need un-shaded, direct beam radiation to function optimally. One of the most important siting factors to maximize energy production is a relatively shade-free location. The calculations in this report assumed the site to be about 97 % shade free. Trees to be maintained by system OWNER.

Azimuth and Tilt Angles

Orientation of the array to the sun is important to production. This array is pointed near the optimum at an azimuth of 180°. This array is near the optimum tilt angle at an angle of 28°. The azimuth and tilt angles will enable your array to produce at least 97% of the optimum energy.

Snow and Array Tilt Angle

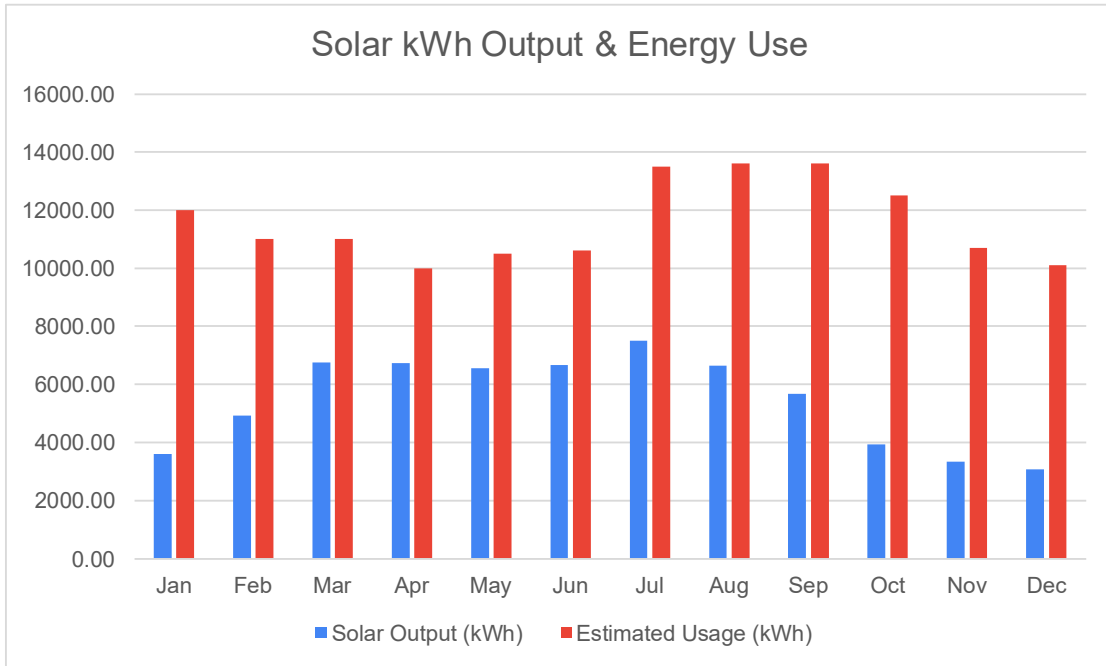
Snow's impact on solar energy production is variable due to its moisture content, texture, amount and frequency. Also, steeper arrays will shed snow easier than arrays at lower tilt angles.

Since the Department of Energy's, National Renewable Energy Laboratory (NREL), estimates snowfall varies by as much as 30% monthly, 10% annually, sometimes reducing annual energy output by up to 20%, they recommend an **average energy production loss of 5% which we have subtracted from our calculations in this report.**

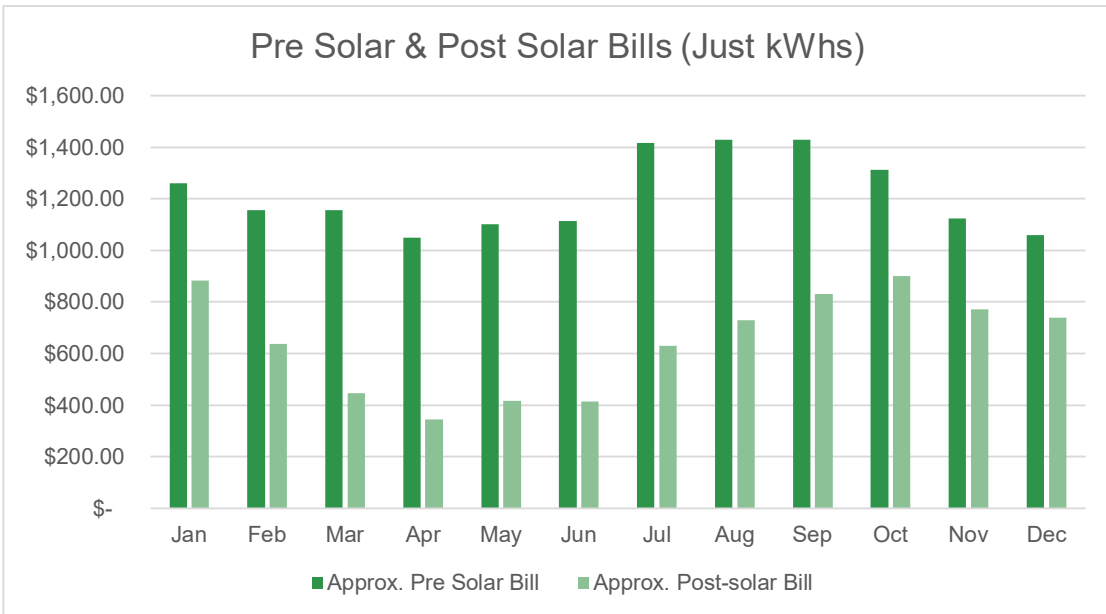
Design Assumptions			
We estimate 1319 average annual kWhs per kW of installed solar panels.			
Solar PV kW DC:	49.8	Module Type:	Tier One
Azimuth:	180	Utility:	Crow Wing Power - Cmerc Rate 25
Tilt Angle:	28	Off-set rate:	\$0.1050
		GPS Coordinates:	46.73, -94.06
		Energy Escalation:	2.50%
		Depreciation %:	0 Fed & 0 State

Using PVWatts Calculator (nrel.gov) we assumed 18.37 % total losses, (which already include 5% losses from snow coverage). The solar array should not require maintenance. You may choose to clean snow from the panels to slightly improve energy production.

Energy Production & Finance Forecast



Current Annual Usage (kWh) 139100	Estim. Annual Solar Production (kWh) 65351
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Estimated Annual Electric Bill \$14,605.50	Estimated Annual Bill Post-Solar \$7,743.63
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Energy Production & Finance Forecast

Estimated Annual Solar Energy Production and Value

Year	1	2	3	4	5
Energy (kWh)	65,351	65,024	64,699	64,376	64,054
Energy Value	\$6,862	\$6,998	\$7,137	\$7,278	\$7,422

Year	6	7	8	9	10
Energy (kWh)	63,734	63,415	63,098	62,782	62,469
Energy Value	\$7,569	\$7,718	\$7,870	\$8,024	\$8,182

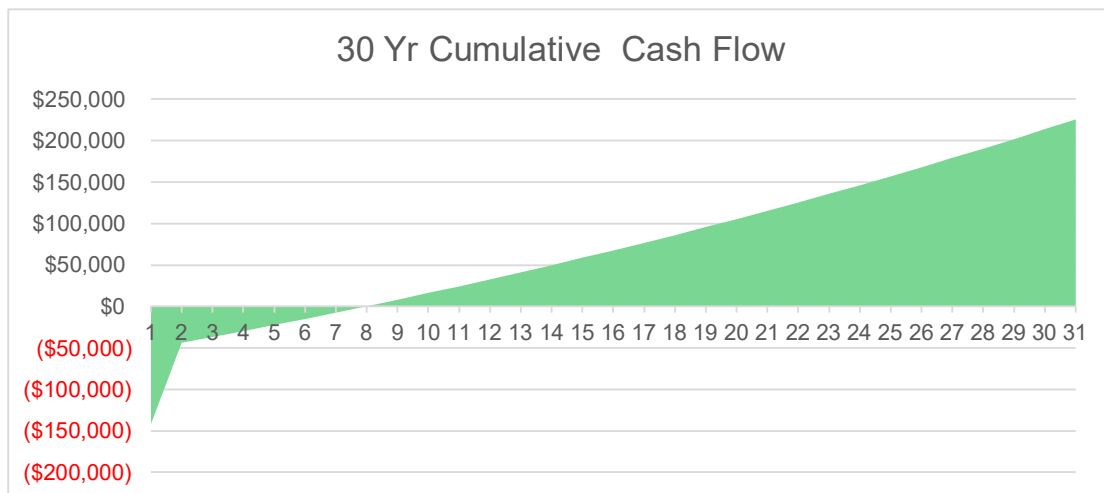
Year	11	12	13	14	15
Energy (kWh)	62,156	61,845	61,536	61,228	60,922
Energy Value	\$8,342	\$8,506	\$8,672	\$8,841	\$9,014

Year	16	17	18	19	20
Energy (kWh)	60,618	60,315	60,013	59,713	59,414
Energy Value	\$9,189	\$9,367	\$9,549	\$9,734	\$9,922

Year	21	22	23	24	25
Energy (kWh)	59,117	58,822	58,528	58,235	57,944
Energy Value	\$10,114	\$10,309	\$10,507	\$10,709	\$10,914

Year	26	27	28	29	30
Energy (kWh)	57,654	57,366	57,079	56,794	56,510
Energy Value	\$11,123	\$11,336	\$11,552	\$11,772	\$11,996

TOTAL YEARS	1 Year	10 years	20 years	25 years	30 years
Produced (kWh)	65,351	638,734	1,244,628	1,535,260	1,817,682
Estim. Total Value	\$6,862	\$75,059	\$553,058	\$218,750	\$276,529



Itemized Cost Estimate

Wolf Track Energy, LLC

Pro Forma Estimate

818 6th Ave.
Two Harbors, MN 55616
Phone: (218) 302-5601

DATE: 12/18/2024

FOR: Solar PV System

City of Fifty Lakes
40430 Co Rd 3
Fifty Lakes, MN 56448, USA

60 Day Pricing
Not a Final Cost Estimate
Subject to Material Costs/Availability & Site Visit

49.80 kW (DC) Solar PV System	Qty	Unit Price	AMOUNT
Solar modules VSUN600N-144BMH Silver Frame	83	\$ -	
ENPHASE IQ8P 3 Phase Micro Inverters	83	\$ -	
Monitoring Commercial Enphase- Requires Customer Wi-fi	1	\$ -	
IronRidge Aluminum Roof Racking (New Shingles Recommended)	1	\$ -	
Jeff Wohler OK Whole Build Disco 6-16-23	1	\$ -	
AC DC Wire/Conduit/Disconnects/Misc	1	\$ -	
Electrician & Apprentice Prev Wage Labor	1	\$ -	
Rented Equipment	1	\$ -	
Utility Interconnection, Structural, Permitting, design (Building Permit Not Included -Bv 50 Lakes)	1	\$ -	
Misc	1	\$ -	
	1	\$ -	
TOTAL Solar Electric System and Installation			\$ 142,570.06

Payment Terms	AMOUNT DUE
Milestone 1: Deposit Due at Signing	\$ 14,257.01
Milestone 2: Due at Construction Scheduling	\$ 71,285.03
Milestone 3: Final - Due at Project Completion	\$ 57,028.03

If the solar rebate is from a government agency, the 30% Direct pay/federal tax credit remains unaffected.
If the rebate comes from a utility company or other non-government sources, the 30% tax credit is calculated based on the net system cost after the rebate. [CONSULT A FINANCIAL EXPERT](#)

Estimated Rebates and Incentives	Amount
LESS: \$49,000 MPCA Local Climate Action Grant	\$ 49,000
30% Federal Renewable Energy DIRECT PAY Tax Credit - Calculated After Subtracting Utility Rebate**	\$ 42,771
TOTAL rebates and incentives	\$ 91,771
TOTAL first-year cost after subtracting rebates and incentives	\$ 50,799

Estimated Value of Energy Savings over 30 years **	\$ 276,529
Estimated Warranty/Maintenance Costs**	\$ 0
Estimated Tax Paid on Rebate Income**	\$ 0
Estimated 30 Year Total Net Cash Flow Value**	\$ 225,730

**Tax credits are estimated. As the purchaser/owner of a solar photovoltaic system, you may qualify for federal, state, local, rebates, tax credits or other incentives (collectively, "incentives"). If you have any questions as to whether and when you qualify for any incentives and the amount of such incentives, please consult your personal tax or financial advisor. Wolf Track Energy makes no representation, warranty or guaranty as to the availability or amount of such incentives.

Scope of Work Clarifications:

Fixed prices for Scope of Work are based on assumptions, and are subject to change per requirements that may result from engineering reports
Final Equipment may vary - subject to site-visit and material availability
Driven Post-based foundations can hit unknown rocks or obstructions, may require concrete footings and a change in contract price
Unknown Upgrades/Structural Remedial Required by Engineering (Not Included)
Ground assumptions base on local well reports
Geotechnical Specific Engineering Report for Driven-pile Racking (Not Included)
Utility related upgrade costs : Engineering Studies, Distribution, Infrastructure, Rewire of Offpeak, New transformer (Are Not Included)
Tree trimming or removal, Site Leveling & Preparation (Not Included)
Labor Hours are not for winter conditions

10 year standard workmanship warranty is included - as per construction contract
Minnesota Licensed General Contractor #BC804183
Minnesota Licensed Electrical Contractor #EA805508
NABCEP PV-102216-013658

Wolf Track Energy, LLC · Two Harbors, MN · Backus, MN · (218) 302-5601

Rebates and Incentives

Federal Solar Energy Tax Credit

The credit is available to tax paying organizations and individuals. It's equal to 30% of expenditures for a solar installation, with no maximum credit. Eligible solar energy property includes equipment that uses solar energy to generate electricity, to heat or cool (or provide hot water for use in) a structure, or to provide solar process heat. See IRS form 5695 and Section 25d for more information on the residential Investment Tax Credit or IRS form 3468 and Section 48 for more information about the commercial Investment Tax Credit (ITC). [If the solar rebate is from a government agency, the 30% Direct pay/federal tax credit remains unaffected. If the rebate comes from a utility company or other non-government sources, the 30% tax credit is calculated based on the net system cost after the rebate. CONSULT A FINANCIAL EXPERT](#)

The Inflation Reduction Act

The Inflation Reduction Act introduced a monetization method for commercial solar projects for tax exempt organizations:

Direct pay: This process allows entities exempt from income tax—such as nonprofits, state/local/Tribal governments, publicly owned utilities, and rural electric cooperatives—to claim the equivalent amount of tax credit in the form of a direct payment from the IRS.⁴ This enables tax-exempt entities to take advantage of clean energy tax credits for the first time.

Minnesota State Sales Tax Exemption

In Minnesota, solar energy systems purchased on or after August 1, 2005, are exempt from the state's sales tax. This exemption applies to solar electric (PV) systems, solar water heating systems and solar space heating systems. All components of these systems are exempt, including panels, wiring, pumps, and racks.

Minnesota Real Estate Property Tax Exemption

Minn. Stat. § 272.02, Subd. 24, exempts solar-photovoltaic (PV) systems installed after January 1, 1992 from Real property taxation.

Net Metering

Systems under 40 kW: Reconciled monthly; customer may opt to receive payment or credit on next bill at the retail utility energy rate. For systems 40kW AC -1 MW AC, NEG is credited at the avoided cost rate, or customers may elect to be compensated in the form of a kWh credit. Excess credit will be reimbursed at the end of the calendar year at the avoided cost rate.

Disclaimer:

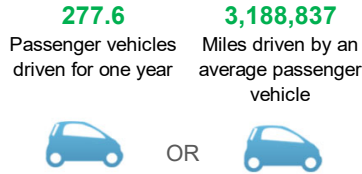
*Tax Situations Vary, Please Consult a Competent Tax Professional
Incentives, Rebates, Taxes, Costs and Energy Savings Are Estimated And Are Not Guaranteed
Wolf Track Energy, LLC, does not make any warranty for accuracy or completeness of energy predictions or this information from U.S. Department of Energy National Renewable Energy Laboratories (NREL). The energy output prediction is a forecast estimate based on assumptions.*

Environmental Benefits

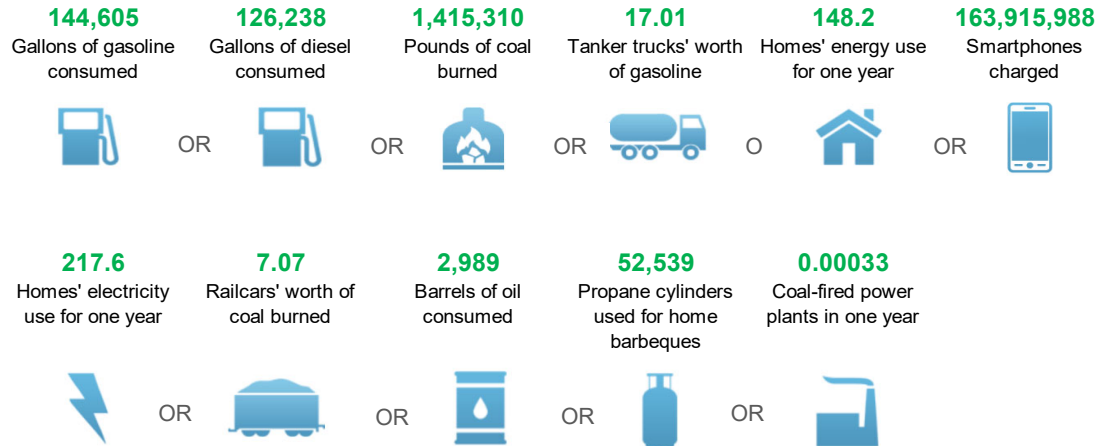
In 30 years, your 49.8 kW solar array will offset about 1817682 kWh's of energy & 1285 metric tons of CO₂.

This is equivalent to:

Greenhouse gas emissions from



CO₂ emissions from



Greenhouse gas emissions avoided by



Carbon Sequestered by



Energy-related activities were the primary sources of U.S. anthropogenic greenhouse gas emissions, accounting for 82.6 percent of total greenhouse gas emissions on a carbon dioxide (CO₂) equivalent basis in 2014. The primary greenhouse gas emitted by human activities in the United States was CO₂, representing approximately 80.9 percent of total greenhouse gas emissions. The process of generating electricity is the single largest source of CO₂ emissions in the United States, representing 37 percent of total CO₂ emissions from all CO₂ emissions sources across the United States (Source: EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014, April 15, 2016). The report is available at: <https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport.html>

Thanks for doing your part!

Wolf Track Energy, LLC · Two Harbors, MN · Backus, MN · (218) 302-5601

Why Wolf Track Energy?



We're certified experts

Recognized by the North American Board of Certified Energy Practitioners, we know solar inside & out. We're also licensed electrical and building contractors that will take care of every step of your solar installation.

We're locally owned and operated

Our staff and installation crews are your neighbors! **We have office locations in Two Harbors and Backus, Minnesota.** We are invested in the communities that we serve and are committed to providing reliable service from design to installation.

Solar is what we do

Since 2018, Wolf Track Energy has installed hundreds of solar projects across Minnesota and Wisconsin. We have helped homeowners and businesses cut their power bills using clean, renewable energy. Solar is not a secondary service for us, it's what we do.

Peace of mind

We stand by our work. Our installations come with a 10-year workmanship warranty. If anything goes wrong at your home due to the quality of our installation, it will be covered for up to 10 years. This warranty includes roof penetrations, conduit, and wiring.

Any questions?

We are here to be a resource! Feel free to contact us with any questions.

Check out our website at wolftrackenergy.com





2025 Budget Confirmation

Please use the form below to indicate your decision to support the Initiative Foundation in 2025. Thank you! Together, we can continue to serve this great region we call home!

Initiative Foundation
405 First St. SE, Little Falls, MN 56345
Or Email it to: cnewbanks@ifound.org

Or AGAIN THIS YEAR - online submission at ifound.org/city-and-county.

Yes, the City Council of _____ has approved funding to the Initiative Foundation in 2025 in the amount of \$ _____.

Would you like the Initiative Foundation to send you a payment reminder/invoice?

Yes, please send payment reminder/invoice to us in _____ / _____.
Month / Year

Not necessary, we'll send payment to IF without a payment reminder/invoice.

Payment attached.

No, the City Council has decided against funding the work of the Initiative Foundation in 2025.

Name of Contact Person _____
Printed Name Title

Signature Date

Email Address Phone #

If the City Council would like to schedule a presentation by the Foundation, request more information, or discuss local projects, please call Carl Newbanks at 320-631-2042 or email cnewbanks@ifound.org.

Thank you again for considering this request! We appreciate your partnership.

VACATION LEAVE

(Please see addendum A for vacation amount allowed.) Vacation leave may be used as earned (except as noted above with respect to the probationary period).

1. Requests for use of vacation leave should be reported to:
 - City Clerk for City Employees
 - Liquor Store Manager for Liquor Store EmployeesNotice must be given at least forty-eight (48) hours in advance of the requested time off. This notice may be waived at the discretion of the department head. Leaves of one (1) week or more will typically require greater notice.
2. During the probationary period following a hire, an employee is not entitled to paid sick leave or use vacation leave. After the end of the probationary period, an employee is entitled to use paid vacation leave accrued from the start of the probationary period.
3. A maximum of 50% unused vacation hours may be carried over into the following calendar year as of December 31. These transferred hours will be lost if not used within one year of being transferred.
4. An employee using earned vacation leave is considered to be “working,” for purposes of this policy, and therefore will accrue vacation and paid sick leave while using vacation leave.
5. Any employee leaving employment with the City in good standing after giving proper notice of such termination of employment shall be compensated for vacation leave accrued and unused to the date of separation.

VACATION AND SICK LEAVE 2024	Anniv. Date Avg Hrs/Wk	(in Hours)	Per Qtr Used	Vacation	(in Hours)	Per Qtr Used	(Sick Hours)
		VACATION Accrued		Balance Available	SICK LV. Accrued		Balance Available
Ann Raph (4 wk)	4/19/99	114.53					153.35
First Quarter	32.00	32.00	43.51	103.02	9.60	4.00	158.95
Second Quarter	32.00	32.00	17.84	117.18	9.60		168.55
Third Quarter	32.00	32.00		149.18	9.60		178.15
Fourth Quarter	32.00	32.00	20.42	160.76	9.60		187.75
Year End Total		242.53	81.77	160.76	191.75	4.00	187.75