*** All present are expected to conduct themselves in accordance with our City's Core Values ***

OFFICIAL NOTICE AND AGENDA

Notice is hereby given that the Solar Array Task Force of the City of Wausau, Wisconsin will hold a regular or special meeting on the date, time and location shown below.

Meeting of the:	**SOLAR ARRAY TASK FORCE**
Date/Time:	**Thursday, April 25, 2024 at 4:30 p.m.**
Location:	**City Hall (407 Grant Street, Wausau WI 54403) - Board Room**
Members:	Chad Henke, John Robinson, Jay Coldwell, Paul Svetlik, Susan Woods

AGENDA ITEMS

1. Approval of Minutes from previous meetings (03/06/2024, 03/27/2024, 04/18/2024).
2. Discussion and possible action on presentation for May 1 Public Information Meeting.
3. Adjourn

Signed by Chad Henke, Chairperson

This Notice was posted at City Hall, on the City of Wausau website, and sent to the Daily Herald newsroom on 04/19/2024 @ 4:15PM. Questions regarding this agenda may be directed to the City Clerk.

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990 (ADA), the City of Wausau will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs or activities. If you need assistance or reasonable accommodations in participating in this meeting or event due to a disability as defined under the ADA, please call the ADA Coordinator at (715) 261-6622 or ADAServices@ci.wausau.wi.us to discuss your accessibility needs. We ask your request be provided a minimum of 72 hours before the scheduled event or meeting. If a request is made less than 72 hours before the event the City of Wausau will make a good faith effort to accommodate your request.

SOLAR ARRAY TASK FORCE

Date and Time: Wednesday, March 6, 2024, at 5:00 pm, City Hall, Council Chambers
Members Present: Chad Henke (C), Paul Svetlik, Jay Coldwell
Others Present: Hal Ehrenreich (Ehrenreich's Prairie Plus), Pat Peterson (Mathe Construction), Tonia Westphal (Clark Dietz), Sam Mueller (QSTN)
Others Present Remotely: Micah Johonson (Solar Connection
Noting the presence of a quorum, Chairperson Henke called the meeting to order.

Approval of Minutes from previous meeting (01/31/2024, 02/22/2024).
Motion by Robinson. Seconded by Henke. Motion carried 3-0.

Discussion following question and answer session conducted by the task force of the following solar, engineering and landscaping professionals with regard to their expertise in serving government entities with solar array arrangements.

a. Ehrenreich's Prairie Plus

a. Hal Ehrenreich discussed the process of starting a prairie. He recommended working with someone to design it and selecting the seed. He recommended contacts at Marathon County, the City Forester, and UWSP for additional information. Planting seeds is typically in the fall, and no fertilization is needed. When there is green growth the first year, it must be removed by burning, cultivating, or fertilizing it. Robinson asked about how to minimize soil erosion. Ehrenreich recommended planting oats and mowing them in the fall. Henke questioned if the site would work for a prairie. Hal said yes and stated that it would have grasses 2-3 feet tall, with flowers and grass. He stated it takes 3 years to become a prairie an start having flowers. He stated in the first year, if it is very dry, watering might be helpful.

b. Solar Connection

a. Pat Peterson and Aaron Benson of Mathe Construction, and Micah Johnson and Chris Olafson of Solar Connection. Peterson stated the City bought the land from Mathe Construction and is familiar with the property. He stated the property to the north is rough and is not suitable for solar arrays, as well as a great distance away from the service. Benson stated that knowing the amount of service size, and has a 750-kW system size, but recommended connecting with WPS and potentially upgrading the transformer. He stated they used a SunEye tool on the potential site, and when even with the building, 180 feet back, there was no shade from the trees. The closer they are to the trees the available sunlight reduced to 80-90. Henke asked about tracking or non-tracking arrays. Johnson stated dual-access tracking is not done a lot anymore because they have maintenance issues and recommended against it. Johnson wanted to make sure that the property was zoned properly to hold an industrial-sized solar array. The fixed height will be 12 feet. On a tracker system some are 7-8 feet tall. Olafson stated that most manufacturers produce bi-facial panels, but they do not produce a lot more energy. There are a wide range of panel sizes, but most are 3.5 x 7.5 feet (500–550-watt panels). They try to keep array within 500 feet of service because otherwise you need thicker, aluminum wire which is more expensive. Robinson asked what the threshold of the tax credits are. Benson stated the administrative financial requirements change. If the array is more than 1 megawatt, then there are penalties unless you meet the percentage of domestic content. Robinson asked if there are incentives for doing the project sooner or waiting. Olafson stated that the project would not be completed until 2025-2026 due to supply and incentives. Robinson asked if there is a way to capitalize on the start-up cost to try to recover up front and operational costs through revenues. Benson stated there will be upfront costs and could be paid with bonds.

c. QSTN & Clark Dietz

a. Westphall clarified the difference of an RFP for this project versus the city's normal process. She stated Clark Dietz' role in projects like this iis usually involved with site readiness, zoning approvals, land survey, communications with WPS, similar to a design spec. There is more work upfront because it is public infrastructure and needs to be put out for bid. Sam Mueller of QSTN, a solar consultant who does assessment, planning, and conceptual designs. They have been working on a model with the factors of a 1-megawatt system, WPS interconnect agreement, to maximize the offset at the size limit, current system consumption and future capacity. He stated that as electricity consumption increases over the years with increased capacity, it decreases the amount of energy offset. Mueller stated the fixed array could be placed on a smaller footprint. Westphall

stated that the main transformer and interconnection with WPS would need to be relooked at with WPS. Robinson asked if QSTN agreed with Solar Connection's recommendation. Mueller stated that solar is technically feasible almost everywhere, but it is a matter of cost. They worked off the assumption that all potential 4 options are still on the table. Peterson stated that the area to the north is very tough, with steep slopes that creates its own shadows.

Discussion and possible action on scheduling future meetings and agenda topics.

Westphall said they would prepare more detailed information on all four options. The next meeting will be March 27th, 2024 at 5:00pm.

Adjourn

Motion by Svetlik, second by Robinson, to adjourn. Motion carried 3-0. The meeting adjourned.

SOLAR ARRAY TASK FORCE

Date and Time: Wednesday, March 27, 2024, at 5:00 pm, City Hall, Board Room
Members Present: Chad Henke (C), John Robinson, Jay Coldwell, Paul Svetlik
Others Present: Eric Lindman, Ryan Warren (QTSN), Tonia Westphall (Clark Dietz), Pat Peterson, Mark Lammar (Solar Connection)
Others Present via Webex: Andy Pohren (QTSN), Micah Johnson (Solar Electric Freedom), Jim Albright (Solar Electric Freedom)

Noting the presence of a quorum, Chairperson Henke called the meeting to order at 5:00 P.M.

1. **Approval of Minutes from previous meeting 03/06/2024.**
Henke stated that the minutes would be held for the next meeting since they were not ready for the meeting.

2. **Presentation by Clark Dietz/ QSTN related to payback period for solar array options.**
Ryan Warren from QSTN presented the 4 different scenarios. He stated Scenario 1 maximizes the energy offset and minimizes installation costs. Scenario 2 maximizes capacity, minimizes installation costs, and reduces visibility of array. Scenario 3 eliminates the visibility of the array with cost tradeoff. The 4th scenario (1 alternate) maximizes financial return of the array. Warren stated the summary of the results. The results factor in 25 years of life for the array. They only modeled a few of the potential credits: 30% tax credit through the Inflation Reduction Act and $50,000 Focus on Energy rebate. They did not include 10% domestic content credit, 10% low-income community credit, the $250,000 Energy Innovation Grant, or site prep costs into modeling. He noted paybacks are 20+ years, the electric bill offset is 56% with energy offset of 100%. The difference is due to how WPS bills the City of Wausau, the energy export agreement with WPS, and consumption vs. production variance. Warren stated the scenario that is the most ideal depends on the task force's priority:
   - If the priority is energy offset or location, Scenario 1, 2 or 3
   - If the priority is shifting load or reduce size of system: Scenario 4

   As you go smaller, you are less cost effective, but you lose less energy created. The system would be 10-12 feet tall in this projection—a single axis tracker would be taller and take up more space. Robinson asked what the City Council's payback period was looking for. Henke stated they wanted to have a goal and work to keep water bills low without a water rate increase. Lindman added that the energy costs savings must cover the debt costs to payback the loan. Tonia Westphall stated that site prep costs could range greatly but should be less than $500,000.

   Micah Johnson recommended having a meeting with the energy utility. He said transformers could cost well into five figures and could have a long lead time. Henke added that there could be long lead time on meters.

3. **Presentation by Solar Electric Freedom**
Postponed until the next meeting due to technical difficulties with presentation over Webex.

4. **Discussion on possible financing options and pros and cons related to federal requirements.**
Lindman stated they would have to have Ehlers look at taxable versus non-taxable bonds. That would take a few weeks. He stated Maryanne Groat would reach out after receiving numbers from QSTN. Robinson requested clarifications on potential benefits, range, and when determination would be made on available credits. Lindman stated he was unsure if that will be known by then but is confident on the 30% credit and Focus on Energy grant. Anything additional would reduce the costs. He stated the current payback looks like 18 years. He wants to discuss with Ehlers if the money saved on energy costs would pay for the debt service. Westphall stated it could be beneficial to look back at the old plant for trends to verify information, correlation, water flow data, and plant capacity related to plant usage. He asked what the Task Force needed to make a recommendation.

5. **Discussion and possible action recommending a solar array location and project to the Wausau Water Works Commission.**
Coldwell stated that they should at least match the load to the production. Robinson stated that there were several unknowns that need to be answered (prep costs, financing costs). He asked if the task force was trying to offset all costs, they must know what the costs are. Warren stated that the models are built and would not take long to adjust small variables. Lindman suggested focusing on the 3 smaller scenarios since the farthest north one would cost more. Henke summarized what the Task Force would like to see:
   - Electric offset cost.

- Transformer cost
- Interest rate changes
- Flipping the load
- The fence
- Options relative to the additional funding sources

Pat Peterson recommended having a discussion on interconnection with WPS.

6. **Discussion and possible action on scheduling future meetings and agenda topics.**
   Svetlik asked what a realistic time frame would be to present to the neighborhood. The next Task Force meeting will be on April 18 to review the Solar Connection presentation, and updates from Clark Dietz/QSTN. There will be a quick meeting on April 25 to review the Task Force's presentation for the neighborhood group. The neighborhood meeting will be on May 1st at 6:30pm. Lindman will reserve the room at NTC.

7. **Adjourn**
   Motion by Svetlik, seconded by Robinson, to adjourn. Motion carried and the meeting adjourned.

SOLAR ARRAY TASK FORCE

Date and Time: Thursday, April 18, 2024, at 5:00 pm, City Hall, Board Room
Members Present: Chad Henke (C), John Robinson, Jay Coldwell, Paul Svetlik, Susan Woods
Others Present: Eric Lindman, Pat Peterson, Mark Lammar (Solar Connection)
Others Present via Webex: Jim Albright (Solar Electric Freedom), Tonia Westphall (Clark Dietz), Sam Mueller (QTSN)

Noting the presence of a quorum, Chairperson Henke called the meeting to order at 5:00 P.M.

1. **Approval of Minutes from previous meeting 03/06/2024, 03/27/2024.**
Henke stated that the minutes would be held for the next meeting since they were not ready with enough time for the meeting.

2. **Presentation by Solar Electric Freedom**
Jim Albright from Solar Electric Freedom gave a presentation on a proposed Wausau Water Works project summary. The proposal includes setup costs and a fence, but not the costs of creating a berm. The current cost for power is $262,800 and the Dept of Energy expects a 4% increase in energy costs. He discussed the panels, converters, and the project timeline with permission to operate at the site in 6 months. The net project cost would be $1,370,491 after incentives, not including financing costs. This project would generate 40% of power from solar, to prevent sending power back to the utility. Albright stated the system generates a guaranteed 21,527,406 kWh in its lifespan. The current WPS rate is $0.12/kWh, and solar energy would cost $0.064 per kWh. Coldwell asked if the project could provide power if there was power outage, to which Mr. Albright stated it only could if there was battery backup. Henke asked how much acreage this project would use. Albright stated it would take no more than two acres to generate that much power.

3. **Presentation by QSTN and Clark Dietz on solar array options and payback period.**
Sam Mueller from QTSN presented updates from the previous Task Force meeting. Mueller stated the federal rebates were reduced to $25,000 in March. He stated Eric confirmed with WPS that it has a 2500kV transformer, so it is not an issue for the Task Force. He presented the two scenarios that include a 3% increase of energy costs, with the load shift to compare the same consumption, but shifting the operation to a different time of day. The model is sensitive to the different escalation rates (3-7%). Mueller stated that the energy costs are also sensitive to the different time of day and the time of year of production and usage. He showed sample load profiles over four days for summer and winter. Lindman stated they could program the system to call for water in off-peak times, so then at peak times the tanks would be full. John Roth asked if there would be additional expenses for the utility. Lindman said no because the changes would be automated to run during off-peak times. Mueller stated his recommendation would be Scenario 1, because it is sized such that the energy basis on a kWh, would offset the same amount of kWh used in a year. Furthermore, with standard operation and the 3.5% escalation assumption, it's a 19-year payback, 100% energy offset and 72% bill savings. He would try to operate the plant by shifting as much to off peak as possible because the demand part of WPS billing is based on the demand that is set within a month. This scenario would give the highest lifetime savings and offsets 100% of the kWh. Asked how accurate the diagrams were. Mueller stated they were conceptual designs, but the numbers are based on actual equipment specifications. Coldwell asked what the budget for setup was. Tonia Westphal from Clark Dietz stated, $300,000-$350,000 was budgeted for Scenario 1 which included $100,000 for landscaping, fence, grading, a little earthwork, and berm. She stated it would be pile driven, leaving topsoil, and have a gravel access road.

4. **Discussion and possible action recommending a solar array location and project to the Wausau Water Works Commission.**
Robinson stated that there are some internal cash flow issues with this and potentially need to capitalize in the early years. Every year there will be an increase in capacity, support the debt and operation which has to be factored in. Woods stated that knowing if we go with 10% or 20% bond financing makes a big difference. Woods asked if the Solar Electric Freedom was most comparable to alternate Scenario 1. Coldwell asked if adding batteries to the system, how does that change the return. Mueller cautiously said it would allow to go 100% energy bill offset. Jim Albright stayed with weather patterns, we would need 4 times the number of batteries to build up a bank, battery backload, for the days that it is cloudy which makes it much more expensive to incorporate. Svetlik stated that the Village of Rib Mountain used ARPA funding to pay for their solar panels. Lindman stated they could put an ARPA request together for the Finance Committee next week.

5. **Discussion and possible action recommending a solar array location and project to the Wausau Water Works Commission.**

   The committee discussed balancing the pros and cons between the different options and weighing the size, payback period, and financing cost differences. Henke stated he preferred the smaller option which would have a shorter payback period which is the closest to the Task Force's original 10-year payback period goal. Robinson agreed saying that the options are scalable and could be upgraded or expanded in the future. Svetlik stated the group wants to keep the trees, maintain the aesthetic of the neighborhood, reduce our carbon footprint, and improve habitat for pollinators. Robinson requested that whatever design they go with allows them to grow, and potentially add batteries in the future.

   Robinson moved to recommend plan 1-Alternate. Second by Woods. Coldwell proposed an amendment to add to the design the potential for future enhancements. Second by Svetlik. Motion on the amendment passed 5-0. Motion as amended, passed 5-0.

6. **Discussion and possible action on presentation for April 25 meeting and May 1 Public Information Meeting.**

   Henke stated he would work with Eric Lindman to create a draft presentation. The Public Information Meeting will be at NTC on May 1 at 6:30pm. The next Task Force meeting will be on April 25 at 4:30pm at City Hall.

7. **Adjourn**

   Motion by Woods, seconded by Coldwell, to adjourn. Motion carried and the meeting adjourned.

CITY OF WAUSAU
SOLAR ARRAY
TASK FORCE

May 1st, 2024

TASK FORCE HISTORY

- Started meeting in the spring of 2023
- Members

  Chad Henke – Chair

  Paul Svetlik – Vice Chair

  John Robinson

  Susan Woods

  Jay Coldwell

Goal is to make a recommendation for the Water Utility and City Council

TASK FORCE TIMELINE

- Part 1

  Collect Solar Background Information

    Effectiveness of Solar

    System Lifecycles

  Utility Costs and Needs

    New Utility costs

    Solar Project Funding available

TASK FORCE TIMELINE CONT.

- Part 2

  Develop options

  Size, Location, Configuration

  Gather public input on options.

- Part 3

  Evaluate options

  Long/Short Term Effectiveness, Practical, Monitorable, Cost

  Public input and comment period in May 2024. That is why we are here today.

TODAY

- Discussion on options reviewed by committee for array size and location
- Discussion on committee's recommended final size and location of the array
- Paul will lead Question and Answer

SCENARIO 1 (WELL HOUSE)

- 1.0 MegaWatt installation, Estimated 1.9 million kWh production first year
- Installation cost of $4.2 M, Estimated payback of 19.9 – 15.3 years (15.5 – 12.4 years)
- Uses the maximum space East of the water plant

SCENARIO 2

SCENARIO 3

SCENARIO 1 (WELL HOUSE) -ALTERNATE

- 720 KiloWatt installation, Estimated 1.19 million kWh production first year
- Installation cost of $2.57M, Estimated payback of 19.3 – 15.0 years (12.9 – 10.9 years)
- Was found to be the best size for initial investment payback time

COMMITTEE'S RECOMMENDATION

- Factor 1 – City strategic plan and mission statement

  Innovated public services:

  4. Invest in solutions to ensure environmental sustainability for generations to come.

  Strong regional alliances:

  4. Support and lead in green and eco-friendly efforts and initiatives for a cleaner, healthier, and sustainable environment

Mission Statement. . . In response to our citizens, we will provide services in the most effective manner in order to promote and enhance our living environment. Plan and encourage positive growth. Promote a positive community image by encouraging citizen involvement and civic pride.

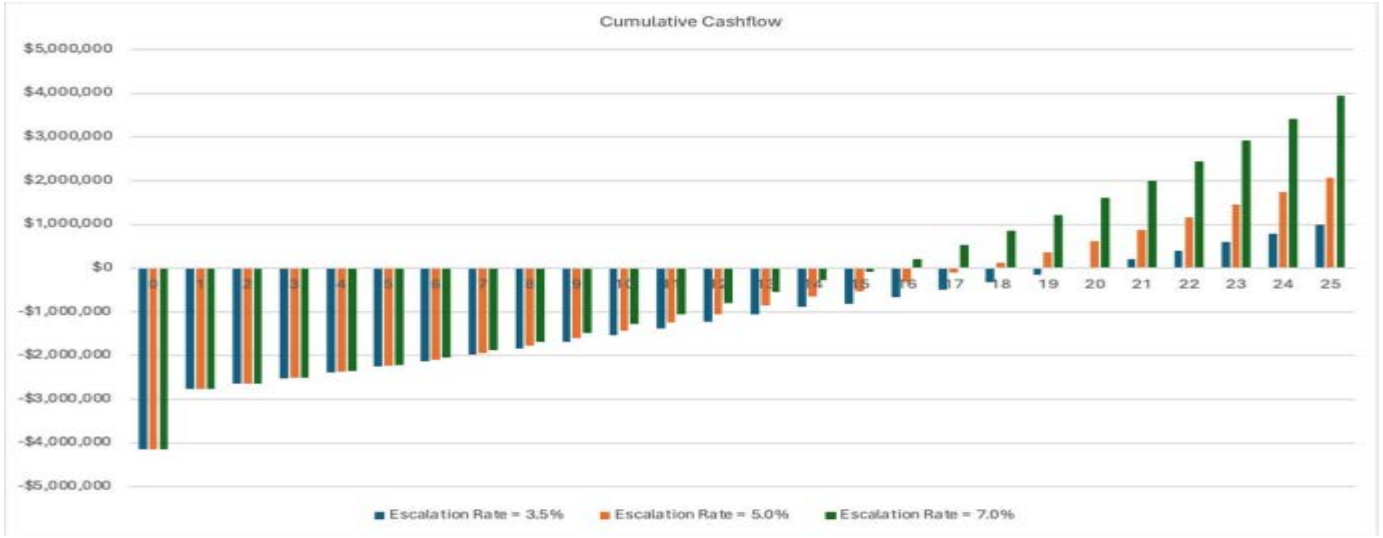
COMMITTEE'S RECOMMENDATION

- Factor 2 – Financial and Resiliency

  Committee set a goal of 10 years to payback the initial investment

  Pay for this installation without affecting the water utility rate

  Make the water plant less dependent on the electric utility



COMMITTEE'S RECOMMENDATION

- Factor 3 – Community Acceptance

  No trees in forest area north of Bugbee Avenue will be removed

  Berm will be built along Tierney Avenue to limit street view

  Prairie will be established around panels

  Access road will connect to Tierney Avenue near northern well house

  Construction will be based at the water plant and limit interference with Tierney Avenue

  No increase to water utility bill

COMMITTEE'S RECOMMENDATION

- Factor 1

  Uses the property for a green and eco-friendly propose

- Factor 2

  Uses the property to build resiliency into the water plant. Also gives us the best return on our investment

- Factor 3

  Meets the surrounding community's concerns

Scenario 1 (Well House) -alternate

Design with future panel and battery installation in mind

COMMITTEE'S RECOMMENDATION

- This is just the beginning.

  We passed a motion to recommend this option with thoughts for the future.

  Make sure we plan for additional electric generation to be installed.

  Make sure we plan for energy storage installations if/when options become more cost effective.

  Always keep in mind the existing environment and surrounding community.

*cost and option details can be found in Solar Array Task Force Packet on April 18th 2024