Chippewa Falls Green Team

The original "Green Team," of Maddie Hunt, Bella Biederman, and Kamryn Glamann graduated in 2024. We, "Green Team 2.0," took over where they left off and have completed many large scale projects. Our most notable projects include solar panel installations. These projects were conducted at our high school (6.5kW, **~$28,000**), a local youth camp called Camp Nawakwa (10kW, **~$32,000**), and Hope Village (38kW with battery backup, **~$180,000**). Aside from solar projects, our team has received various grants including the KEEP mini grant **($700)** and the Ann Marie grant **($2950)** . Recently, our team received the Earth Guard Award for our efforts in environmental activism across the State of Wisconsin and our advisor was named Energy Educator of the Year. We continue to implement the ideas of a sustainable future into our community by involving other high schools, working with our local elementary students and lobbying with legislators at the Capitol.

Chloe Johnson, Elizabeth Crosby, and Zoey Eckwright at the 5MW Lake Hallie Solar Site.

Who We Are

Joining the team as sophomores (23-24), our shared commitment to environmental sustainability and a passion for outreach fit well into the Green Team's mission. Now juniors (24-25), we share an interest in STEM coupled with our ability to research, write, present, and communicate effectively. Our specific expertise has led our school to give us an independent study in which we can pursue any environmentally related projects we find worthy. After high school, Zoey aspires to be a Chemical Engineer, Ellie plans on going to school for Environmental Engineering, and Chloe would like to pursue Law.

Our Goals:

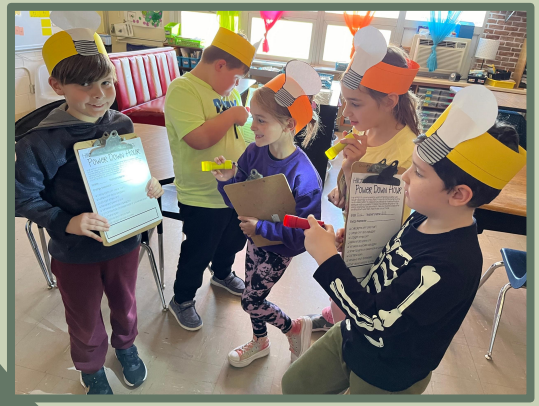
1) Apply for grants and other funding sources to finance environmental projects
2) Raise awareness about environmental sustainability in our community and state
3) Reduce our carbon footprint
4) Inspire other high school students to be environmental activists

Hope Village Project

Jan 2024, "Green Team 1.0" consisting of Kam Glamann, Bella Biederman, and Maddie Hunt, successfully wrote a State of Wisconsin PSC EIGP grant for Hope Tiny Village in Chippewa Falls, WI. Hope is a local homeless shelter. The team successfully secured **$180,000** for a 37.8 kW photovoltaic array, with battery backup! Notably, they were the youngest group to ever apply for an EIGP grant and were the highest scoring applicant in the state of Wisconsin in 2024. The team secured funding from Solar Moonshot **($25k)**, Solar for Good **($10k)**, and EIGP **($85k)** in addition to tax incentives and rebates from the IRS (IRA), Xcel Energy, and Focus on Energy. The project was fully funded by the Green Team. The system allows complete 'off-grid' capabilities while the batter system can provide surge power up to 50,000 watts, 25,000 watts continuous. After installation, Hope's main building was designated as a Community Disaster Shelter because of its 'off-grid' capabilities.

Renew Our Schools

During the Green Team transition, both teams worked collaboratively on a project that involved the Renew Our Schools Energy Competition. In order to gain points, together, we taught various lessons relating to energy saving to the second grade students at Hillcrest Elementary School. We visited their classrooms to teach 2-3 times a week for two months. At the end, not only were the students the youngest group to win the competition, but we were also awarded **$2,000** for energy projects for our school district. This project is a representation of our group's purpose of raising environmental awareness in our community.



Drones and Scanifly

Our Green Team 2.0, started this journey in the summer of 2024. Independently we completed the 30 hour Drone Pilot Ground School class, drove 1.5 hours to the nearest FAA testing site and passed the Part 107 exam to become licensed commercial drone pilots. Now, we use drones as a tool to teach students about careers in energy. Some topics we teach relate to thermal imaging, orthomosaic maps, and solar panel installation.

In partnership with **Scanifly** , an online solar drone education company- we were the first High School Students to complete the industry credentialed Surveyor Associates program. Now having our certification, we can use drones and Scanifly's AI software to render 3D PV systems. Scanifly's modeling software will recommend precise solar panel placement for optimal efficiency. We do this by flying two orbits (of different heights and angles) around the building of interest.

Our Pathway to Solar

In May of 2024, our Green Team's hope was to place a 69kW **($170K total)** Solar Panel Array on the roof of the high school. To achieve this goal, we presented at our School Board Meeting and were given permission to fundraise. We quickly faced setbacks; the installation of solar panels would violate the roof warranty. Still, our Team was determined to acquire solar panels for the high school, so we attended a city zoning meeting. Ultimately, there wasn't a piece of land feasible for a 69kW array without rezoning on the high school's property.

How we persevered...

Instead of giving up, the Green Team worked effortlessly to acquire solar panels at the high school. Reaching out to One Energy, the company kindly donated a 12 panel array that met the zoning requirements**.** In total, the system would cost **$27,750** (5kW). After incentives and donations, we were left to cover **$5,000.** Using the money gained from the Renew Our School competition and help from our School Board, we were able to complete the installation in the fall 2024 saving **$1,200-$1,800** per year in electricity**.**

Camp Nawakwa

In September of 2024, Camp Nawakwa reached out to our Green Team; the camp asked for help in obtaining solar panels for the roof of their chalet building. Before starting the process of acquiring solar panels, we learned that buildings from the 1970's lacked energy efficient qualities. We helped the camp complete an energy audit, and it became apparent that the building lacked insulation, modern appliances and outdated HVAC. In April of 2025, our team will meet with Camp Nawakwa's energy provider, Chippewa Valley Electric Cooperative. CVEC Board of Directors are willing to discuss solar energy rebates, incentives, insulation and net metering options. Additionally, our Green Team will continue to write grants to renovate and update the camp.

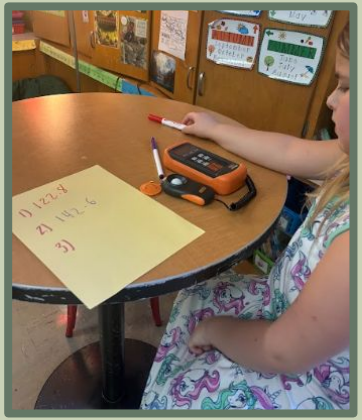
While in discussions with One Energy, they were so impressed with our work at the high school they were happy to donate a 2nd PV system of ~6.5 kW! The Nawakwa project would cost ~**$30,000** with over ~**$25,000** in incentives, rebates, and donations. Once installed, the 6.5kW system will be roof mount on top of the chalet. The array is estimated to save **$1,400-$1,900** per year for the camp.

Additionally, One Energy donated 6 decommissioned panels. With these panels, we plan to incorporate agrivoltaics at the camp. Agrivoltaics, the integration of solar panels with agricultural practices, offers a unique way to pair renewable energy with farming. This presents an opportunity to educate students who attend the camp about the concept of sustainable agriculture. In the future, we plan on creating lessons based on environmental practices, energy savings, and solar panels to teach youth attending the camp about how innovative solutions can address both environmental and food security challenges.

In May (2025), our team was invited by Solar For Good to give a presentation at SolStock. SolStock is a competition for Green Teams in Wisconsin to pitch their ideas. The team with the best idea will receive funding and solar panels. Video Link

NEED and the Anne Marie Grant

NEED'S Hands-On Energy Kits as well as their curriculum were inspiration for grant money use. We carefully selected items that NEED had provided in their kits to customize a kit of our own. We decided on writing a request for tools that include: kill-o-watt meters, light meters, light bulbs and displays, humidity sensors, hand crank generators, a 167WH battery pack, soil meters, non-contact voltage testers, GFCI receptacle testers, a solar pathfinder, portable 30W solar panel, and a thermal imaging camera. Additionally, we requested an 85" LCD tv display so that we had an energy efficient way to display the savings of our school's PV system to all students. The Anne Marie Grant we applied for and won awarded us **$2,950** to fulfil our request. Using NEED'S lessons, we will teach our district's elementary students about energy efficiency and conservation.



Grants & Funding

Keep Mini Grant

While teaching lessons at Hillcrest Elementary School, one of our assignments involved testing different appliances around the room using a kill-o-watt meter. Through this, our team realized that the SmartBoards in each classroom consumed 46W when not being used in "Idle Mode." Vampire electrical usage is a huge problem. We calculated that there are twenty five Smart Boards in the building, each using 46 watts of energy while in an idle state (in total 1150 watts). We calculated an average daily idle time of ~16 hours, so Smart Boards 'waste' 18,400 Wh = 18.4 kWh/day. By counting the days of the year (260 w/summer school) and the amount of electricity (18.4 kWh/day), we estimate that this costs Hillcrest 4784 kWh/yr of electricity in one school year (@$0.15/Kwh = $700/yr). To solve the problem, our team wrote a **$700 KEEP Mini Grant** for 25 Smart Strips to connect to each SmartBoard in the building. These allow the boards to completely power off when not being used. This productivity is due to the smart strip's connectivity to the computer in the classroom. As a result, the Smart Strips save Hillcrest about $700 annually. The grant was a logical investment with a ROI of just 1 year. To inform the teachers about how to use the smart strips, we made this **informative video.**

Other Grants

Past grants include:

- EIGP (85k awarded)
- Solar Moonshot (25k awarded)
- Solar For Good (10k awarded)
- Anne Marie ($2,950 awarded)
- Additional Keep Grant ($500 awarded)

Our current/future grant requests include:

- Solar On Schools
- Potawatomi Grant
- Solar Moonshot

Professional Conferences

Midwest Energy Fair

Youth Climate Conference

Climate Fast Forward

Our team has been given many opportunities to participate in professional conferences in a variety of settings. We have been fortunate to attend the Midwest Renewable Energy Fair in Custer, WI and the Climate Fast Forward Conference in Wausau, WI. At these conferences, we were able to network with professionals including individuals from solar panel installation companies. Additionally, we presented at the Youth Climate Conference in Madison, WI. We thoroughly enjoyed the Youth Conference since we were able to talk to other high schoolers about our projects. Consistently, one of our main goals as a team is to inspire other young adults to take actions relating to environmentalism.

Advocating at the State Level

Our team was invited to Madison, WI to participate in the Renew Wisconsin Conference giving a Keynote address, representing the youth of our state. At the conference, we presented our projects to an audience of over 300 people including CEO's, Public Service Commision members and even legislators! After the conference, our team was asked to meet one-on-one with our Senator Jeff Smith. During our meeting with the Senator, we talked about how we imagine Wisconsin's renewable future. Some topics that we discussed were nuclear energy, agrivoltaics, tax incentives and solar. While we were there, we toured the capital and were invited back to meet the Governor in May 2025!

WAEE Earthguard Award

In March (2025), we were awarded the WAEE Earthguard Award. This honor recognizes students who have demonstrated an outstanding environmental passion project in Wisconsin. Specifically, our group received this award because of our dedication to leadership and passion for the environment throughout our projects. Although we have faced many roadblocks, our team is determined to persevere and to overcome any challenge. In May (2025), we will receive the award at Forest Edge Elementary School, our states first net-zero school, in Fitchburg, WI. We hope to inspire our peers and other generations in leading by example.

WAEE
wisconsin association for environmental education

Career Fair Opportunities

CVTC:

Clark County:

NWTC:

When our Green Team isn't writing grants, we attend a variety of Career Fairs. During these fairs, our team is able to share our projects with other high schoolers across Wisconsin. Oftentimes, we present our keynote projects and encourage high schoolers to ask questions and get involved. Furthermore, we are motivated through inspiring other schools that no project is too big or too small, action is what matters. Notably, we teach high schoolers about drones and how they are used in various careers. Using the thermal camera on one of the drones, we teach an informal lesson on how infrared light waves work to find heat loss. Holding up a solid garbage bag, students are able to see themselves through the bag on the camera. After the short experiment, they are given a hands-on-experience and are able to fly the "big" drones. Most of the students we ask have never flown a drone before. At every career fair, we have been voted the favorite career table :)

Environmental Club

In addition to the Green Team, we lead the school wide Environmental Club. This club is student led, and the three of us are all co-presidents. The club currently has 35 members and as a team we provide different environmentally related opportunities. These include volunteering and hands on projects across the Chippewa Valley. This year we organized a parking lot clean up day, created easy-to-read posters for the recycling bins, and as a group discussed projects to work on in our school/community. Currently, we are working with the club on designing lessons (with the help of NEED's kits and curriculum) that the club members will teach at various elementary schools in our district. In addition to this, we have an Earth Day field trip planned to Nawakwa, and a volunteer opportunity with a small business in our town that refills and reuses household products to reduce waste.

Green Team News 2024 - 2025

Chippewa Herald (Local News Paper)

Renew Our Schools

WQOW Ribbon Cutting

WCV Stories

Leader-Telegram