

Energy Savings

Chippewa Falls High School Green Team

The 2022-2023 school year marks the beginning of the Chi-Hi Green Teams' legacy. We have completed many actions already on our agenda. For example, applying for a \$1,000,000 PSC Grant, a \$2,000 grant for implementation of air quality monitors, \$8,000 grant to aid in sustainable outdoor learning space, and rebuilding our Environmental Club chapter. Our efforts so far are just the tip of the iceberg. Everyday we continue striving toward educating our community and implementing innovative energy efficiency options. In addition, we plan on inspiring students younger than us to continue the work we've started.



Bella Biederman, Maddie Hunt, and Kamryn Glamann



The Green Team

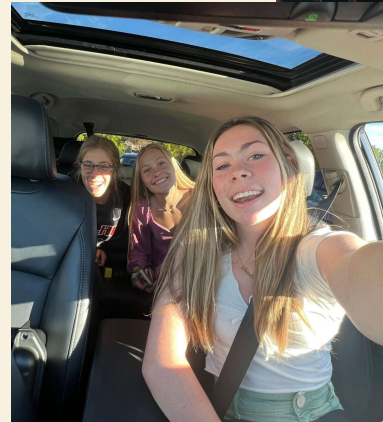
Who Are We?

We are three high school juniors who are passionate about the environment and helping our community. Uniquely, we are all females interested in the STEM field. Through our writing, analyzing, research, and presentation skills in AP Seminar, we were asked to follow our passion. An independent study for energy education was then created for us to further our work of effecting change within our school district and community.

Goals:

Our original goal was to save energy and reduce CO₂ emissions from our school, but after a year together we have shifted and expanded our goals:

- 1) Apply for grants to implement effective change
- 2) Improve air quality in our school.
- 3) Mapping our school buildings for heat loss
- 4) Continue to educate students and our community about energy savings and the environment.



Drone Work

Drone License:

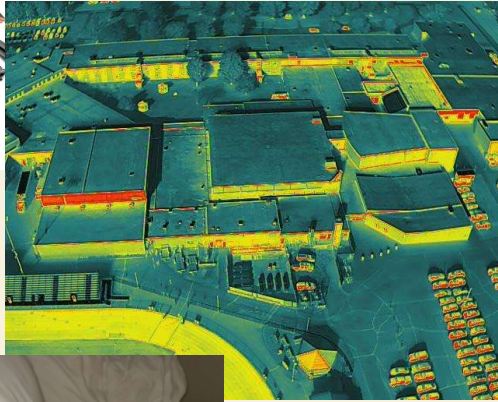
Over the summer of 2022 we received our Remote Pilot's License FAA-107, allowing us to fly the school's thermal imaging drone. These drones allow us to see areas of heat loss throughout school districts buildings.

Original Goal:

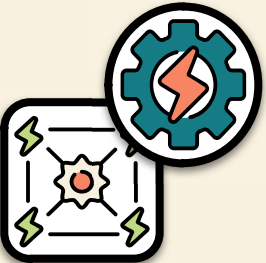
Our original plan was to write a \$1,000,000 PSC Grant using thermal images from our DJI Mavic 2 Enterprise drone to reduce energy loss in our district buildings. We visited all 8 school buildings identifying areas of heat loss. After discussing this plan with Focus On Energy, we were advised to approach the PSC grant from a different angle that would yield better results with a much better R.O.I...

Future Goals:

In 2023, we will complete the thermal image mapping district-wide. This will allow our school district to implement effective building envelope repairs.



(Red shows hot areas)

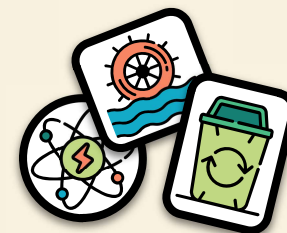


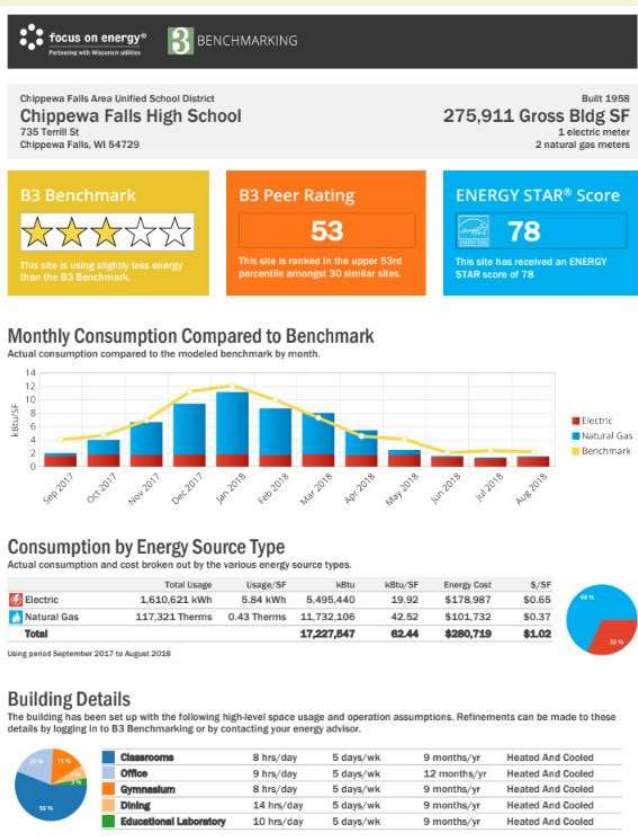
Climate Fast Forward Conference

What is it?

In October, 2022 we were invited by KEEP to attend the Climate Fast Forward Conference in Madison, Wisconsin. At the conference achievable, impactful, and equitable climate solutions for the state of Wisconsin were identified. With this, the state of Wisconsin will take adequate steps to improve the current dynamics of climate change.

We also networked with top environmentalists around the state. As the only high schoolers attending the event, it was an amazing opportunity for us to be the voice of k-12 students!





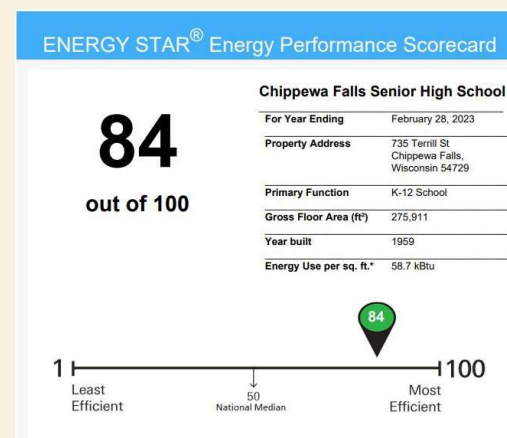
2017 - 2018

Energy Benchmarking & Goals

Partnering with Focus on Energy, we restarted our High School's energy monitoring. The Energy Star score is determined by building energy efficiency per square foot. One year of data is required for a baseline score. In 17-18 our building scored 78/100, however in 2020 building upgrades and additions occurred. At this point our building score is 84, but we are currently collecting updated baseline data for the 2022 - 2023 school year.

Current Goals:

We would like to increase our score into the 90s. We will do this by implementing lighting changes, educating teachers on correct lighting control, and improving building envelopes by reducing heat loss.





PSC Grant

Grant Application:

January 2023 we applied for the category 2 Energy Efficiency and Innovation grant through PSC/OEI. We requested \$800,000 for implementation of LED lighting throughout our high school with tunable/dimming switches. Another component within the grant was RGB color changing lights for our special education rooms. Although we were unsuccessful, we did score as the top school district and lighting design project out of the 45 applicants in our category!

This was a great learning experience as we had to work with our school board, KEEP, Focus on Energy, LDS (Lighting Design Solutions), and PSC while writing our grant application. Additionally we presented to our school board multiple times to get support for the project, securing funding and quotes from local contractors. As the youngest and first ever high school applicants to this statewide grant, applying was a great accomplishment in itself.



PSC Grant

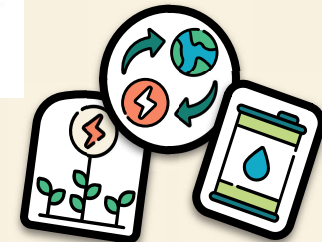
Goals: Moving Forward

DOE

Although we were not successful this year, we still have our independent study and another year to implement change. After having a meeting with Joe Pater, the Director of the Office of Energy Innovation at PSC, we talked about our grant submission and decided to go after federal funding with our project through the Department of Energy (DOE).

PSC/OEI Energy Innovation Grant Program

We also plan on applying again next year through PSC this time through multiple categories, including Category 2: Energy Efficiency and Demand Response and/or Category 1: Renewable Energy and Energy Storage grants in hopes of improving the state of our local schools.



Mayo Grant



Our partnership with KEEP led us to discovering another opportunity to improve our school building by applying for a Mayo Grant. The focus of the mayo grant was for implementation of outdoor learning spaces in K-12 schools. This grant was geared towards aiding students with mental illness, obesity, alcohol misuse, while simultaneously increasing inclusion and diversity.

Specifically, we applied for \$8,000 in order to implement a sun canopy. This sun canopy will be used as an outdoor learning space for our HOPE Program students. The HOPE program presents equitable learning opportunities for at risk students with mental health issues. Currently, the HOPE Program students are learning in an environment that does not suit their needs. This grant will implement the first step to creating a comfortable learning space for effective education. With planned expansion of the space in the near future to include herb, ivy and flower gardens.



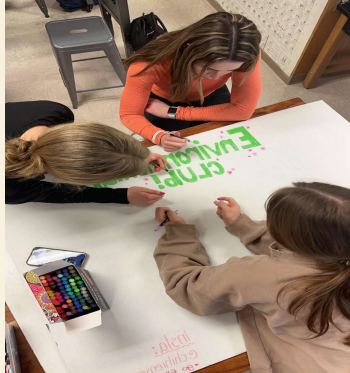
Ann-Marie Grant

The Ann-Marie Grant is a local community based foundation out of Wisconsin. After our larger grant-writing experience we thought this would be a great opportunity to target other environmental areas of need within our school, specifically indoor air quality.

We received \$2,000 from the grant which was then used to purchase air quality monitors which we deployed throughout our High School. These track many data points including particulate matter, Radon, and CO₂. These air monitors not only serve as a way to identify problem areas in our school, but also are used by the environmental classes within our school. We've identified two classrooms with elevated Radon and are working with our facilities manager on remediation methods.



Starting Environmental Club



We identified many aspect of our school that could easily be improved with the right people. With this, we rebuilt our environmental club.

As mentioned previously, we implemented air quality monitors in our high school using the Ann-Marie Grant. Currently, based off of the air quality monitor results, the Environmental Club is assembled and implemented Corsi-Rosenthal box fan filtration systems. These filters are inexpensive and effective at reducing particulate matter (94% of 2.5 um or larger) while simultaneously circulating air, therefore creating a cleaner environment for students and teachers.



Environmental Club



After the snow melting downtown we have noticed an abundance of litter. Therefore, Environmental Club is partnering with our school FBLA chapter to organize a community wide Earth Day clean up.

Chippewa Falls Main Street, a business organization, helped secure donations so that all community members involved will receive a free t-shirt. More importantly, the purpose of this event is to help spread awareness about the significance of having a clean environment.

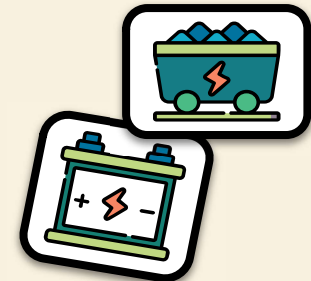


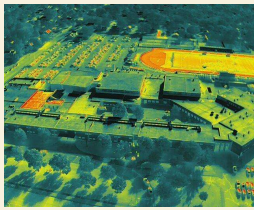
Environmental Club

Future Goals & Projects:

As we move forward with Environmental Club, we are striving to maintain our involvement with the environment. We are in the process of planning many events such as a Beaver Creek Trail clean up, a high school recycling competition, making awareness and recycling bin posters, and selling bracelets to bring awareness to the environment.

Specifically, we will be partnering with the Eau Claire Beaver Creek Reserve, and cleaning up their trails. The Beaver Creek Reserve works to sustain the natural diversity of Wisconsin's Chippewa Valley Region. By partnering with them we will help them maintain the goal of improving our environment, while additionally increasing our schools involvement in preservation and sustainability.





Green Team Press

**All articles are linked*

Chippewa Herald & LaCrosse Tribune



Wisconsin School News - 2022 October Newsletter - Page 10-13



Wisconsin Academy of Arts and Letters- Student Centered Solutions



Wisconsin Academy of Arts and Letters- Student Centered Solutions

2022 September- English Students of the Month



Chippewa Falls Area Unified School District
Congratulations Bella Biederman, Maddie Hunt, & Kamryn Glamann - "The Dream Team" MightyCardinals English Department Students of the Month!

Bella Biederman, daughter of Scott and Lavonne Biederman; Maddie Hunt, daughter of Heather and Rick Hunt; and Kamryn Glamann, daughter of Sarah Backhaus and Jason Glamann, are Ms. Karen Koehler's selections for September's English Students of the Month. During the 2021-2022 school year, Bella, Maddie, and Kam (The Dream Team) excelled in every skillset developed in AP Seminar: time management, teamwork, researching, writing, and presenting. The Dream Team's achievements in AP Seminar became a springboard for a realworld project they are completing during the 2022-2023 school year: applying for a \$1 million PSC grant by using cutting edge thermal imaging drones to prioritize areas of thermal energy heat loss in the entire school district's buildings.

Outside of the classroom, Bella enjoys playing softball,

School Board- Annual Newsletter



