

# Using Community Weather Data to Influence Community Energy Decisions

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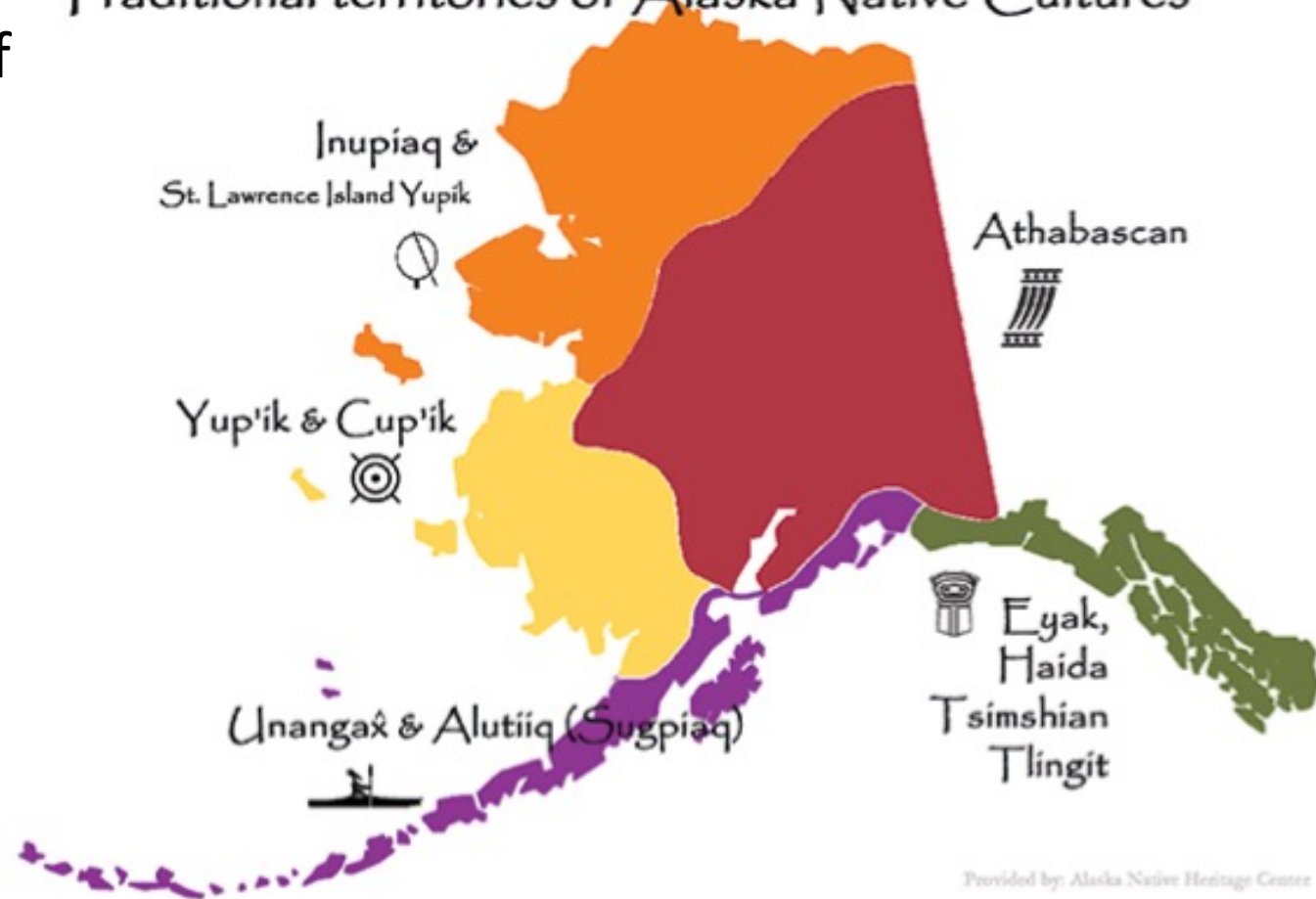
Renewable Energy  
Alaska Project



# Land Acknowledgement

- I live on Dena'ina Ełnena, the ancestral and unceded homeland of the Dena'ina
- REAP staff live and work on the lands of the Tlingit, Dena'ina, and Ahtna
- We acknowledge the thousands of years of stewardship of these lands and waters and life, and the Indigenous knowledge and ways of life that continue to guide us today

Traditional territories of Alaska Native Cultures





# *Renewable Energy Alaska Project (REAP)*

- Mission: to facilitate the increased development of renewable energy and energy efficiency in Alaska through collaboration, education, training, and advocacy
- Education team provides classroom visits, teacher trainings, materials and curriculum, and other outreach



# *Weather Education Program*

- REAP purchases and loans 10 Davis Vantage Pro2 weather stations to schools in Alaska
- Goals:
  - Use local weather data to assess renewable energy potential at school site
  - Increase STEM learning and citizen science opportunities
  - Contribute to local meteorological data sets
  - Help engage students in community energy decisions
- Free for schools

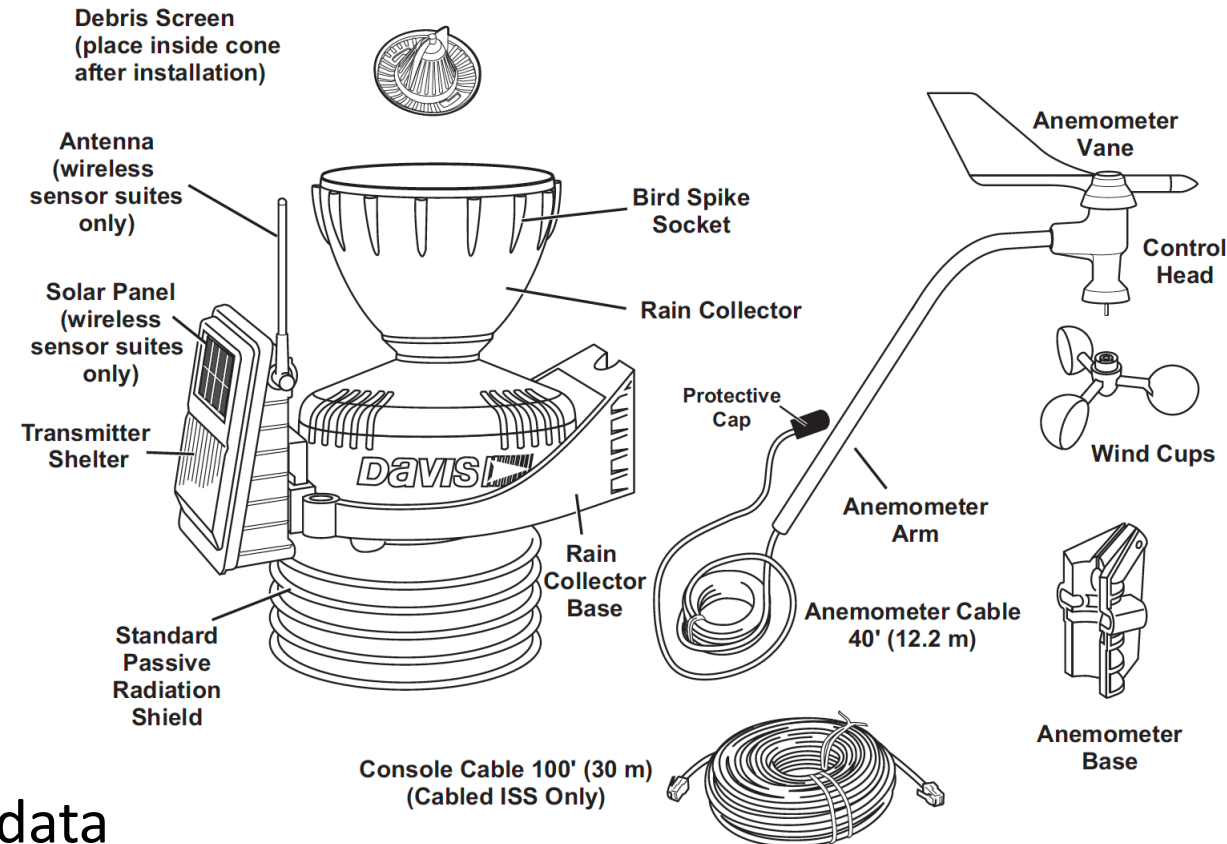


# *Example Research Questions*

- Is there a viable solar or wind resource in the community?
- How are temperatures related to community heating costs?
- How does the amount of HDD relate to the amount of energy required to heat our school?
- How can we use the weather station to determine if a commercial air or ground source heat pump would be a viable option of supplementing heating?

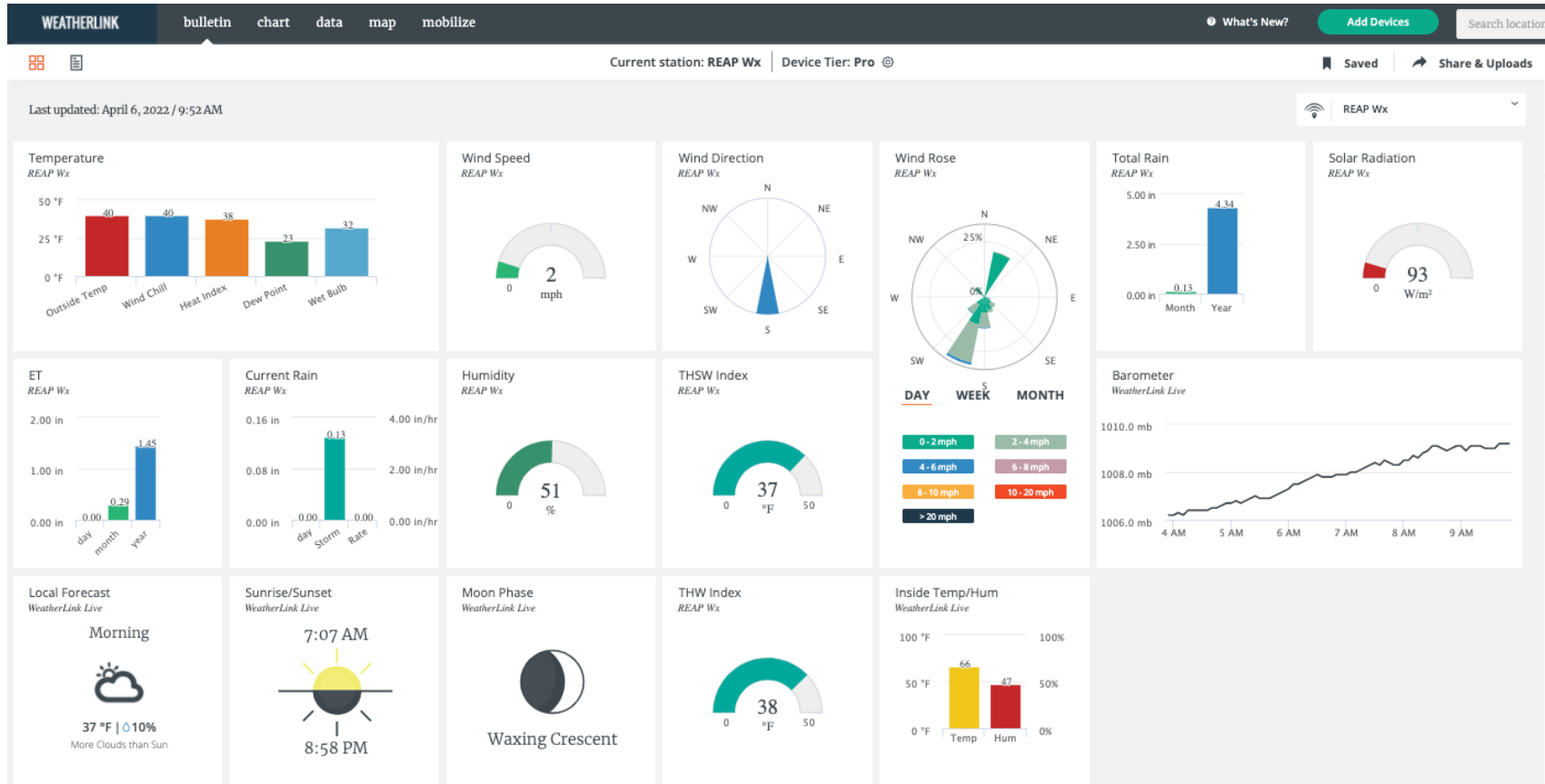
# Davis Vantage Pro2

- Data Collected:
  - Wind Speed and Direction
  - Temperature
  - Humidity
  - Solar Radiation
  - Precipitation
- Solar powered with backup battery
- Unit reports remotely to Weatherlink Live modem
- Dashboard can be used for real-time observations, historical data, and graphical data





# Data



# Weatherlink Ecosystem in Alaska





# Challenges and Lessons Learned

- Similar programs have not lasted long
  - See UAF Artic Climate Modeling Program
- Clear need for supporting curriculum
  - Curriculum in development
- Some schools lack the staff, expertise, and assets to install and maintain the weather stations
  - Travel to school site for initial install and relationship building
- Teacher turnover
  - Find the star teachers



# Wrap Up

- Anyone interested in fostering a weather station or learning more? Scan here →
- Six stations are currently on location
- Five stations installed and reporting
- Three stations still available





Thank you!

Quyana  
Tsin'aen  
Gunalchéesh  
Mahsi'  
Quyanaa

Baasee'  
Chin'an  
Quyanaq  
Dogedinh  
Háw'aa

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