

An aerial photograph of a large lake surrounded by dense green forest. In the lower center, a dam structure is visible with water flowing through it. The sky is clear and blue. There are green decorative shapes: a vertical bar on the top left, a vertical bar on the bottom left, and a rounded rectangle on the bottom right.

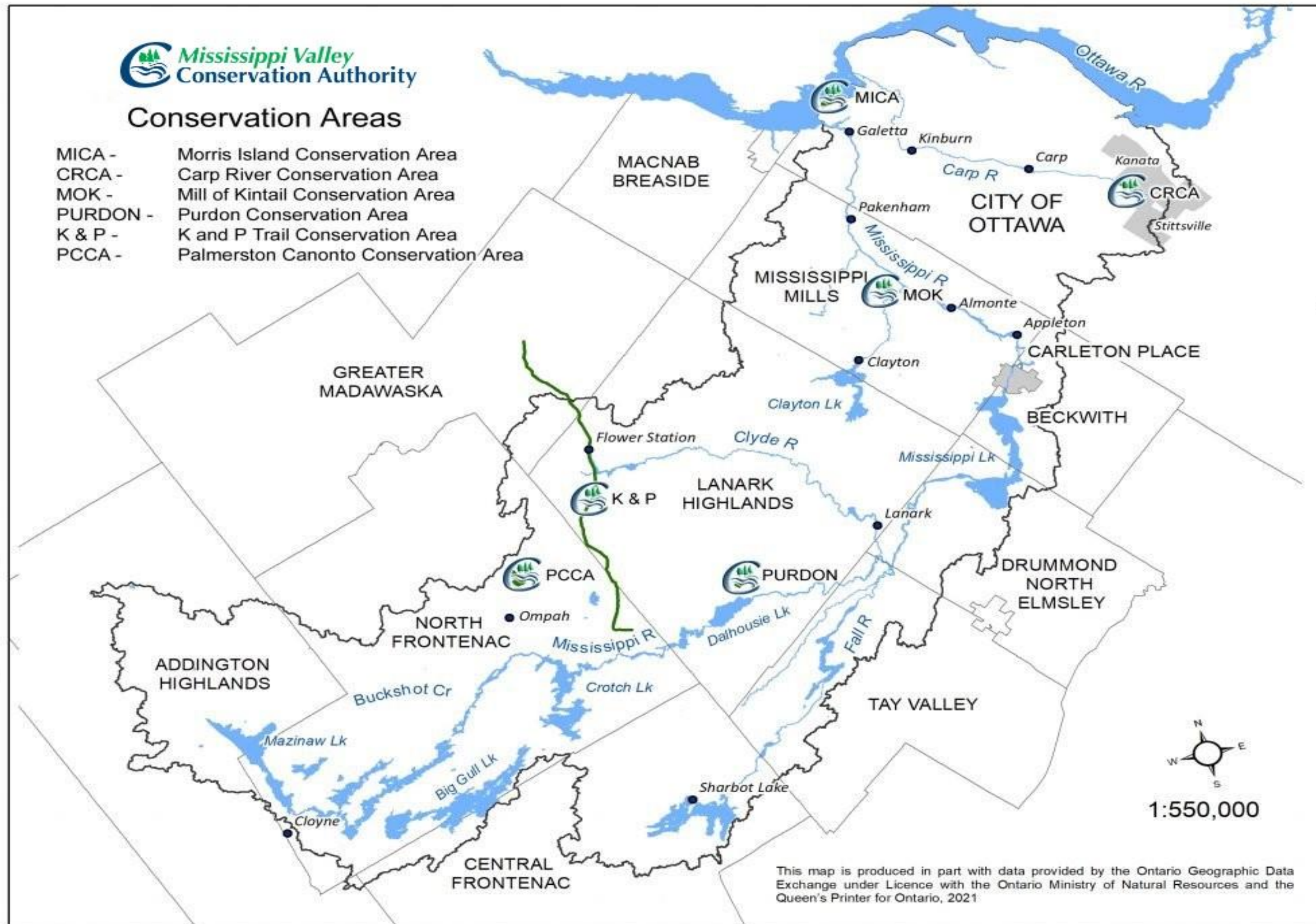
LATORNELL 2023

OPEN SOURCE DATA LOGGING

Callum Anderson & Daniel Post
Mississippi Valley Conservation Authority

Conservation Areas

- MICA - Morris Island Conservation Area
- CRCA - Carp River Conservation Area
- MOK - Mill of Kintail Conservation Area
- PURDON - Purdon Conservation Area
- K & P - K and P Trail Conservation Area
- PCCA - Palmerston Canonto Conservation Area

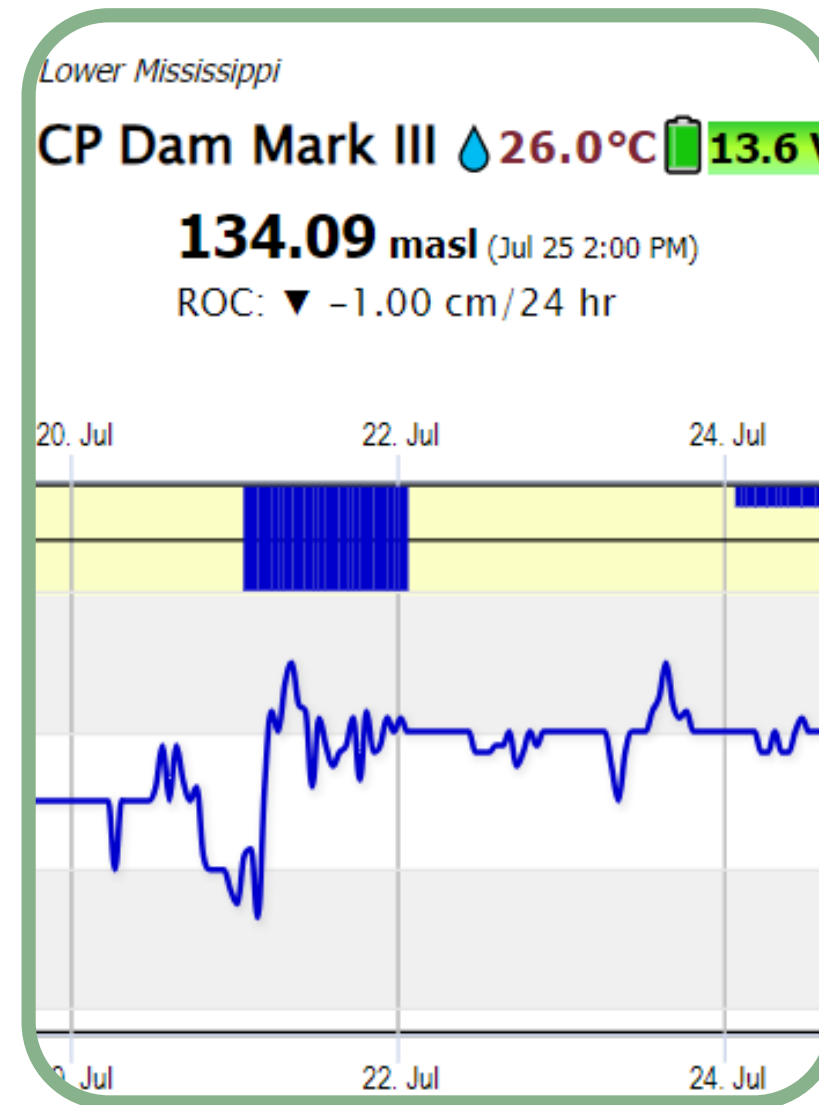


ABOUT THE CHALLENGE

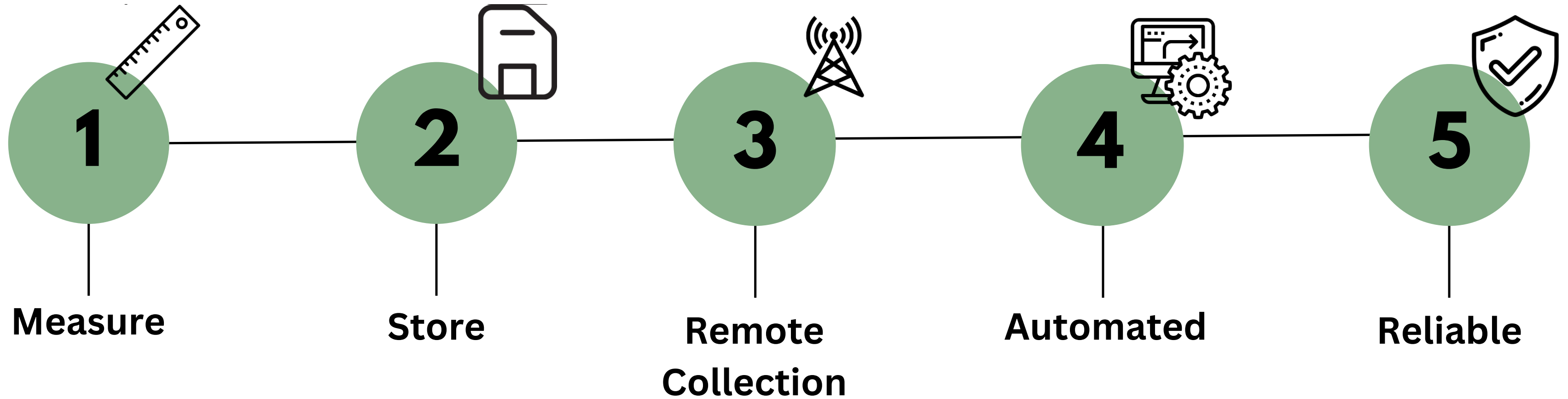
MVCA looking to develop its own datalogger

The data is used for:

- Flood/low water forecast & warning
- Dam operations
- Floodplain mapping
- Capital projects



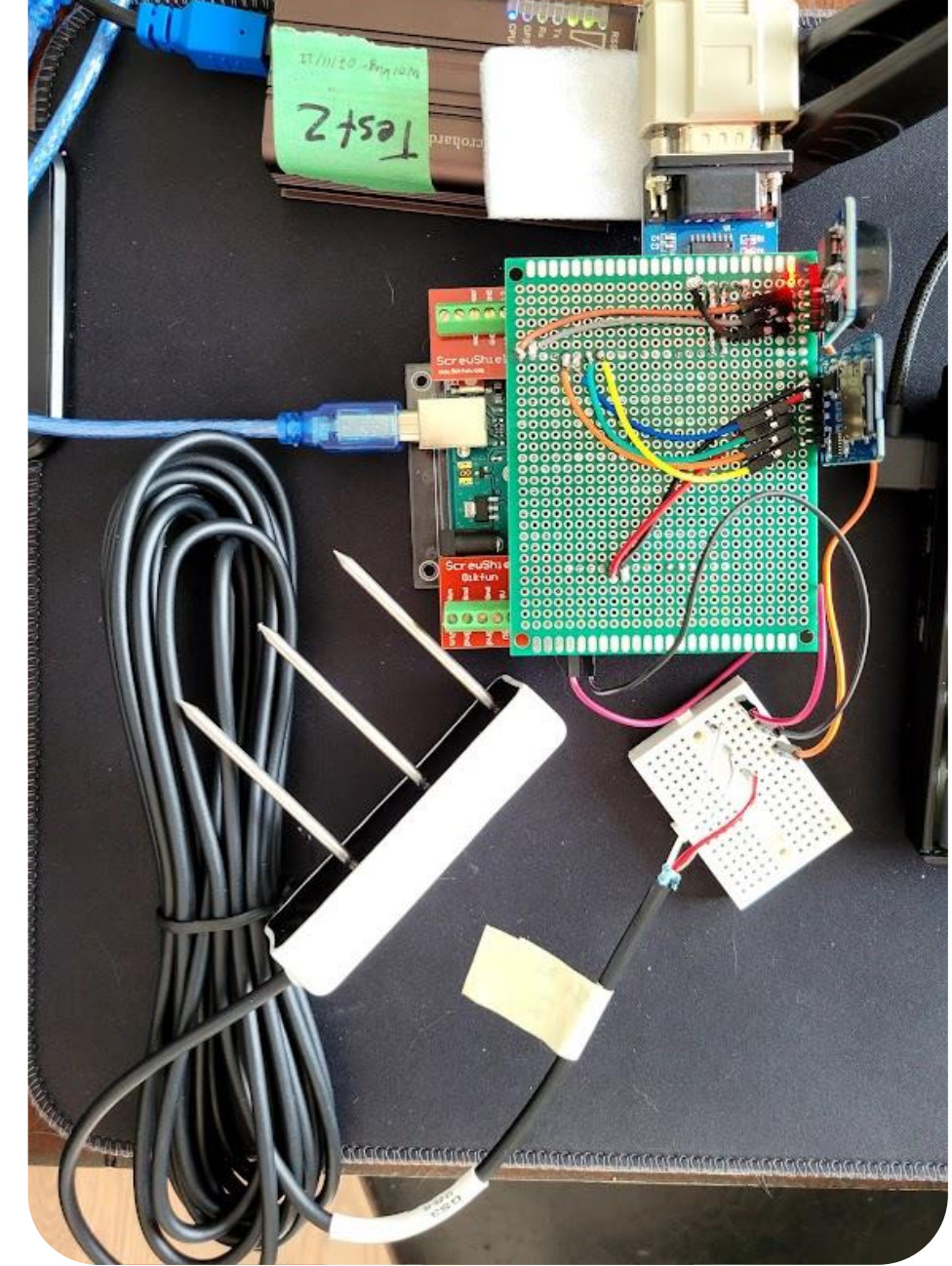
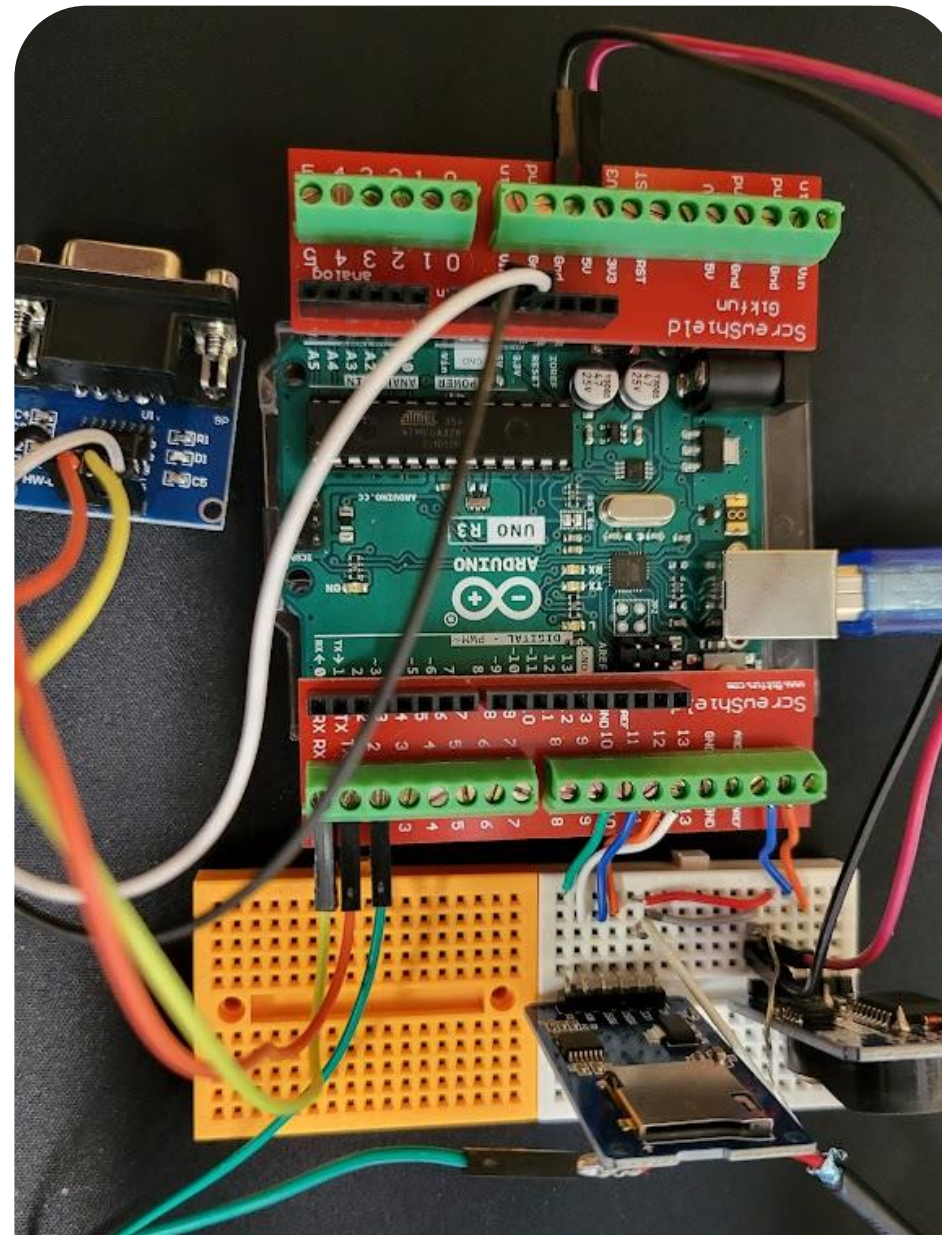
SOLUTION CRITERIA



THE ARDUINO DATALOGGER

Arduino is an open source
microcontroller

Used modules for the time,
storage, and telemetry



IMPORTANCE OF **OPEN SOURCE**

01



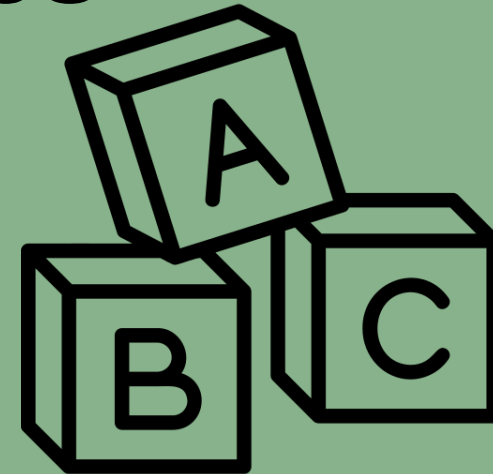
**Community
Support**

02



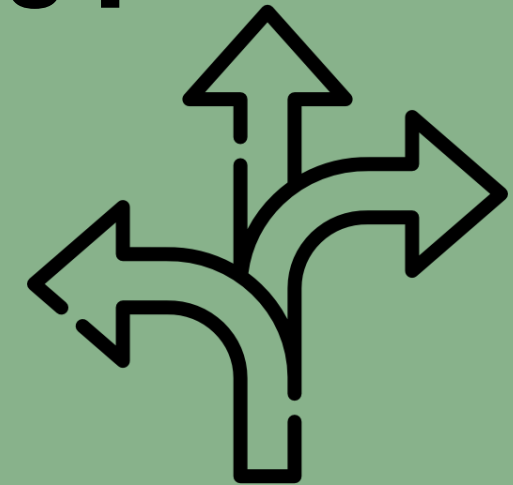
Resources

03



Simplicity

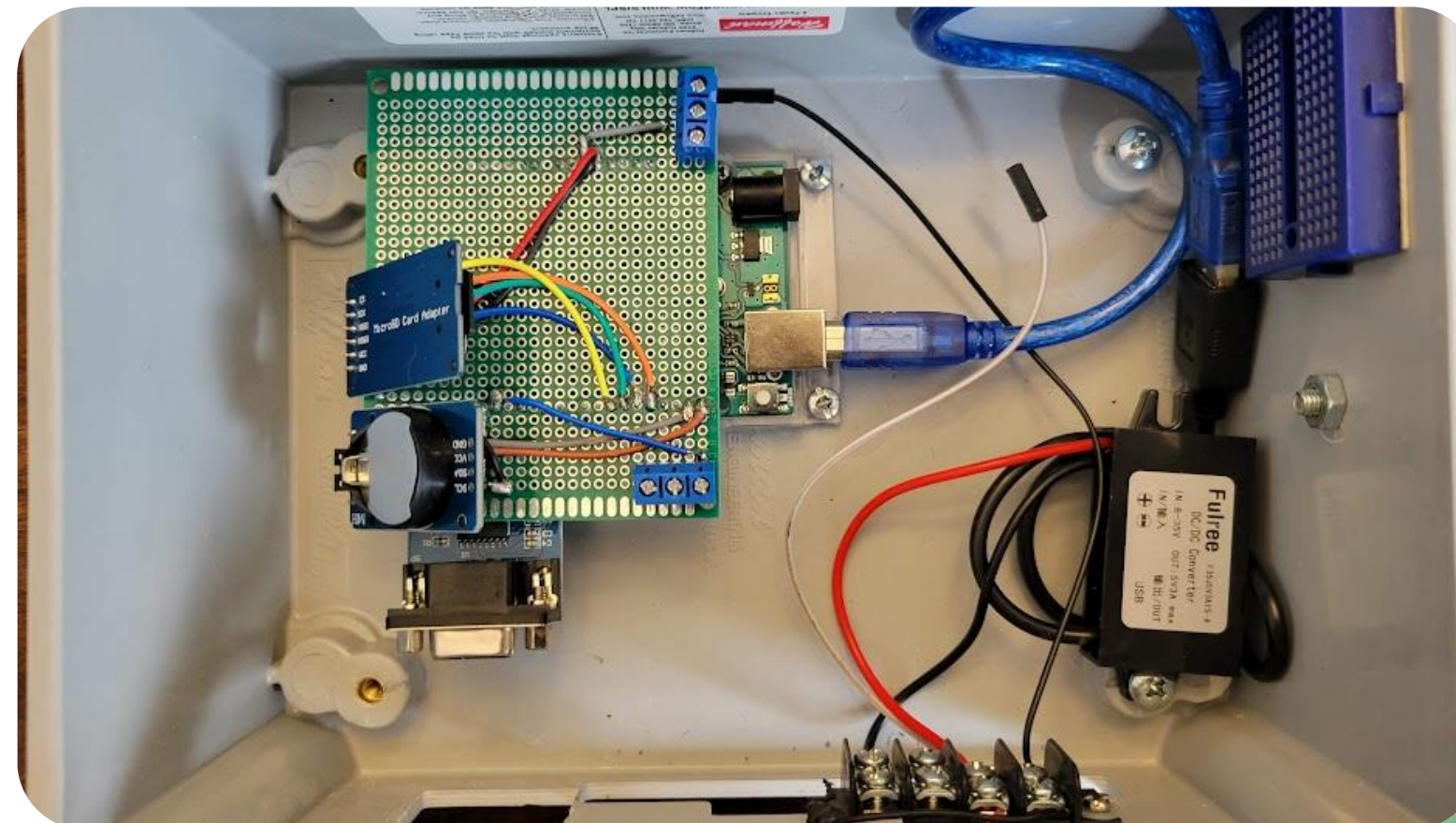
04



Flexibility

PROCESS & TROUBLESHOOTING

- Followed criteria for basic function
- Code revisions daily
- Faulty connections
- Battery problems

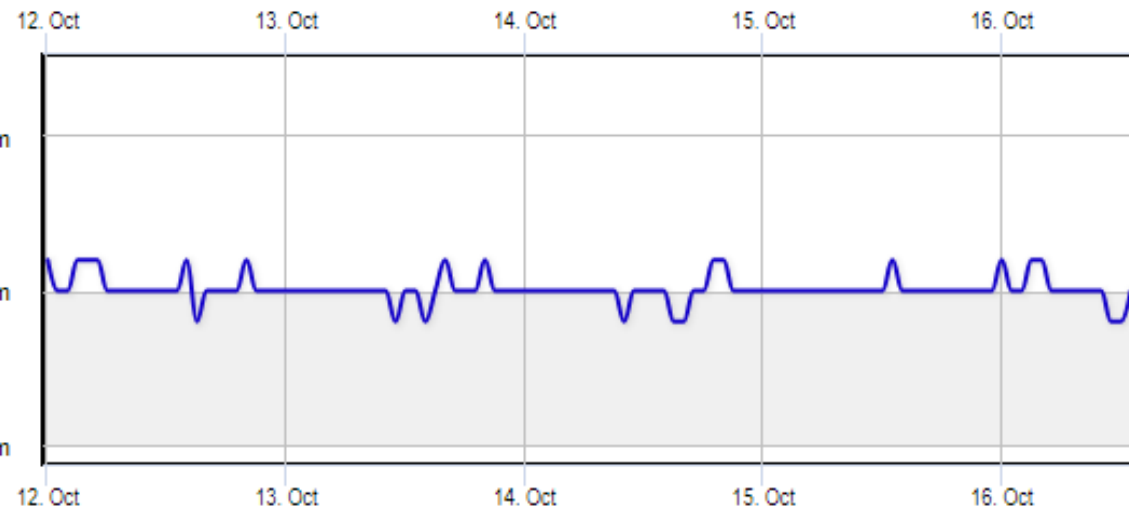


CURRENT VERSION

Lower Mississippi

CP Dam SUTRON 💧 11.6°C

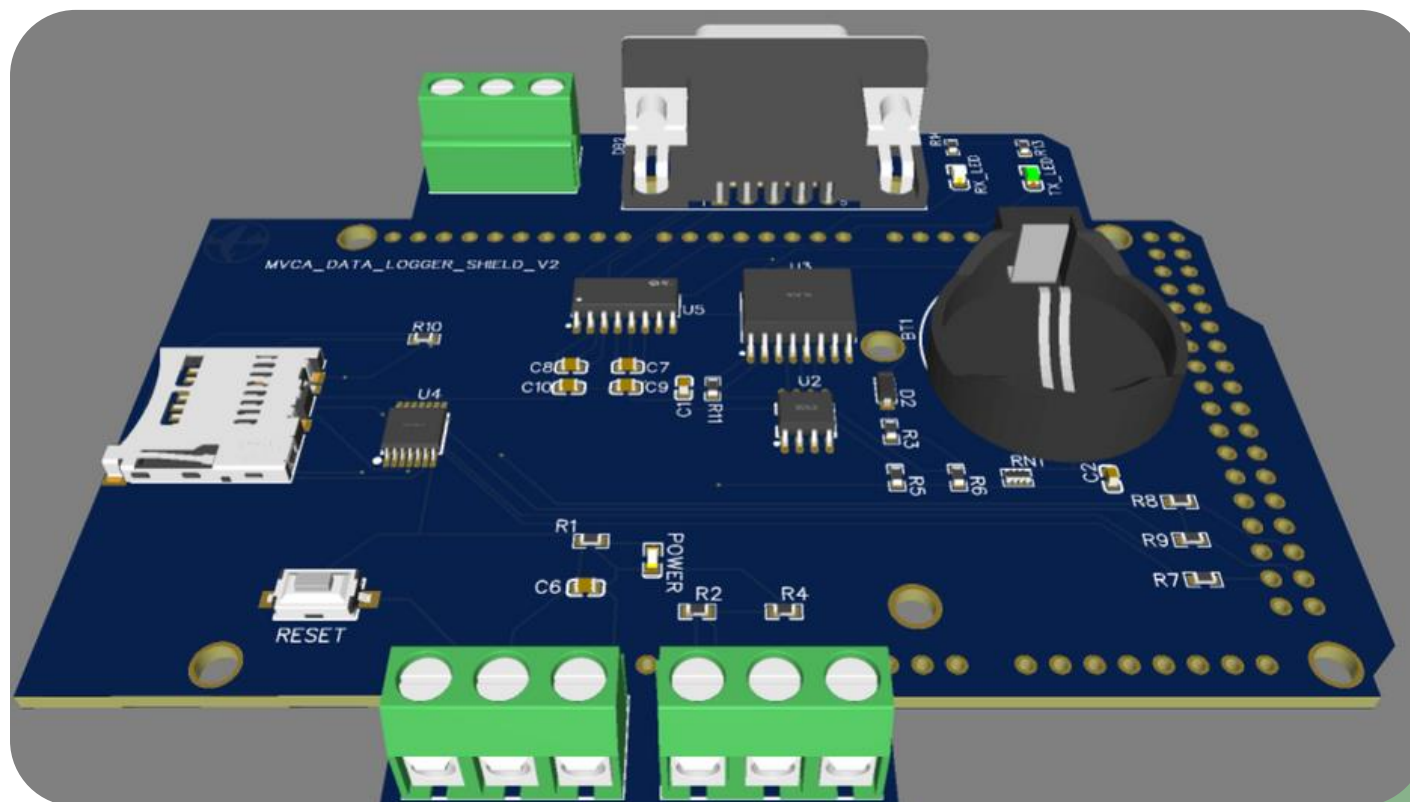
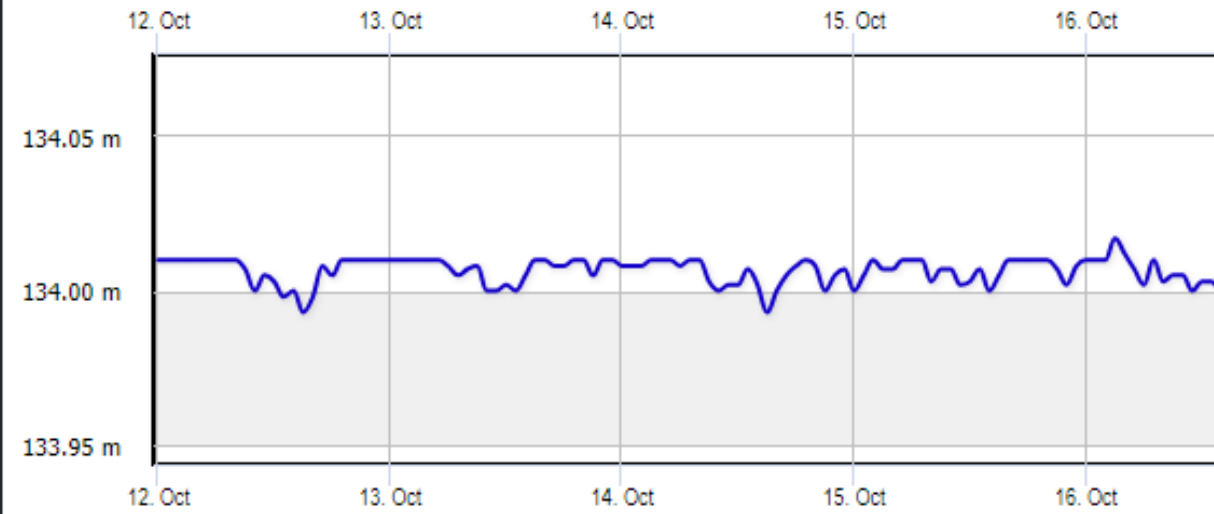
134.00 masl (Oct 16 3:00 PM)



Lower Mississippi

CP Dam ARDUINO 💧 11.8°C

134.00 masl (Oct 16 3:00 PM)



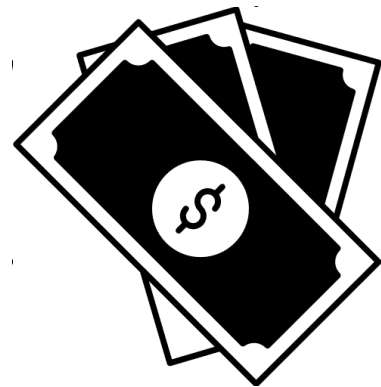
Custom PCB Shield



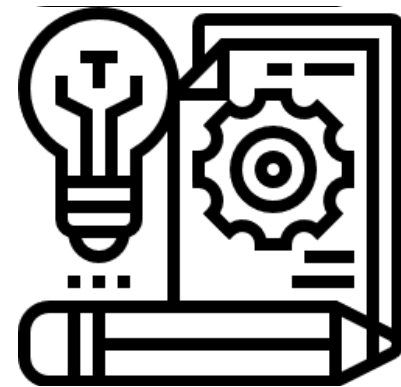
Five deployments in the field

KEY BENEFITS

Cost Efficient



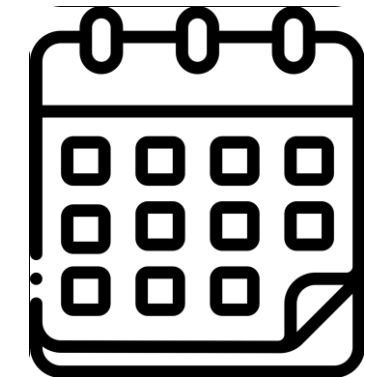
Adaptability &
Customizability



No
Dependencies



Solution
Longevity

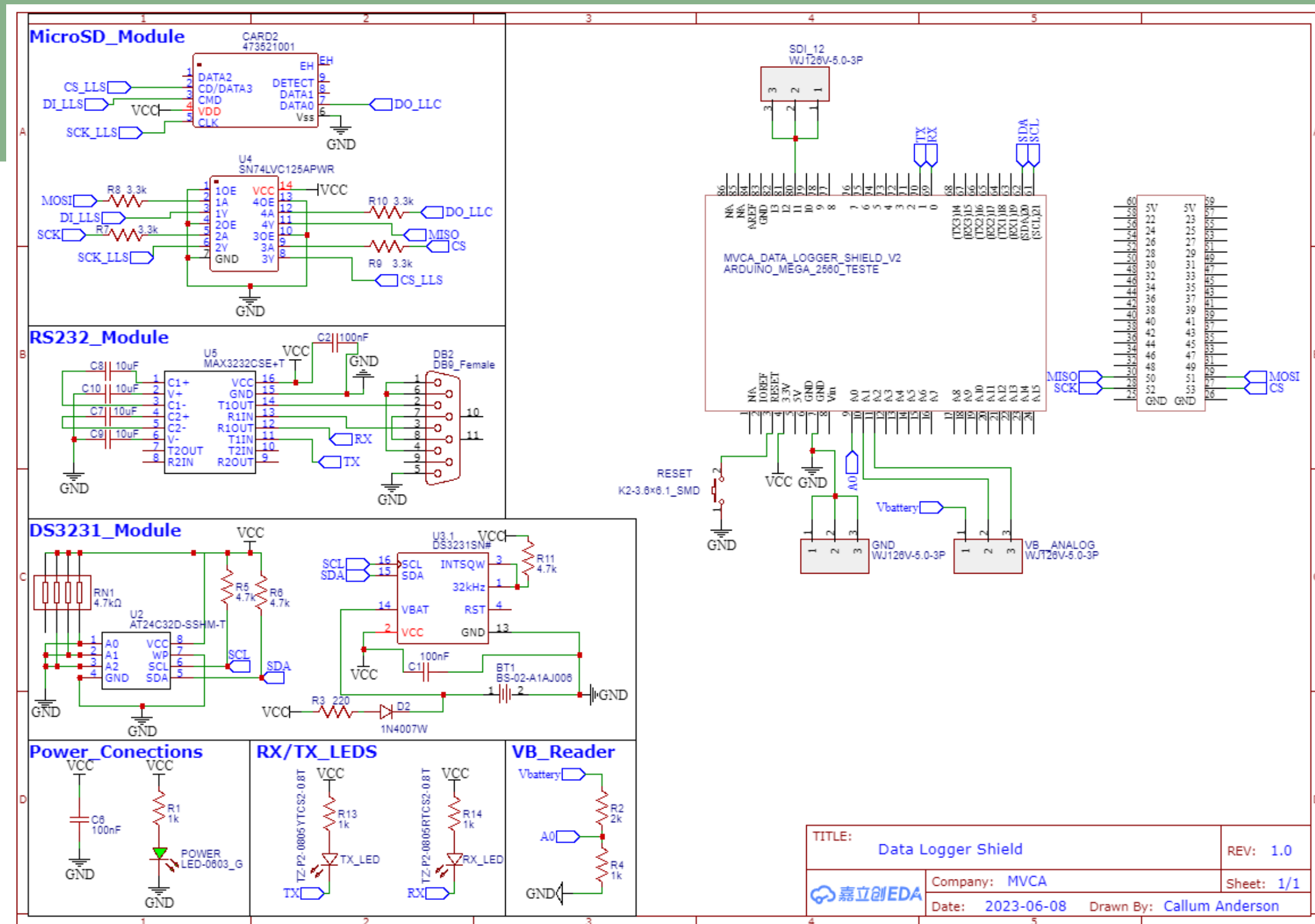


AVAILABLE RESOURCES

- Complete Arduino datalogger code
- Files for the PCB shield

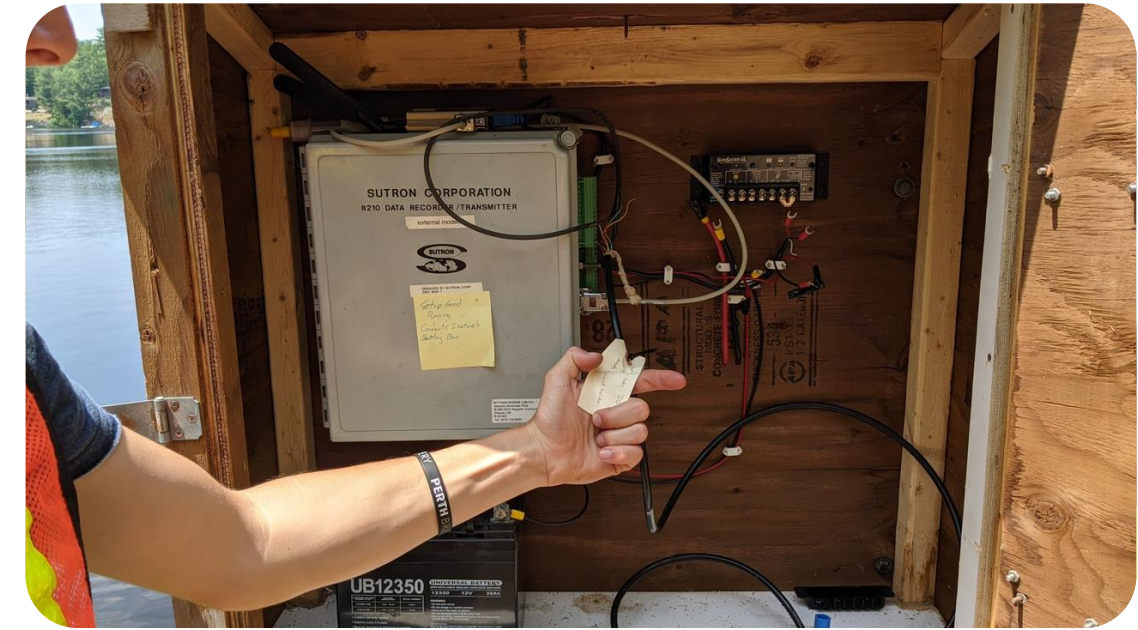
MVCA GitHub:

github.com/Mississippi-Valley-CA

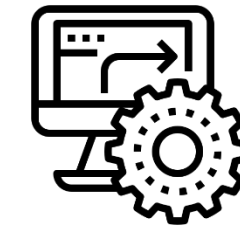
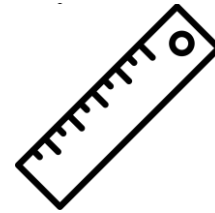


RECAP & SUMMARY

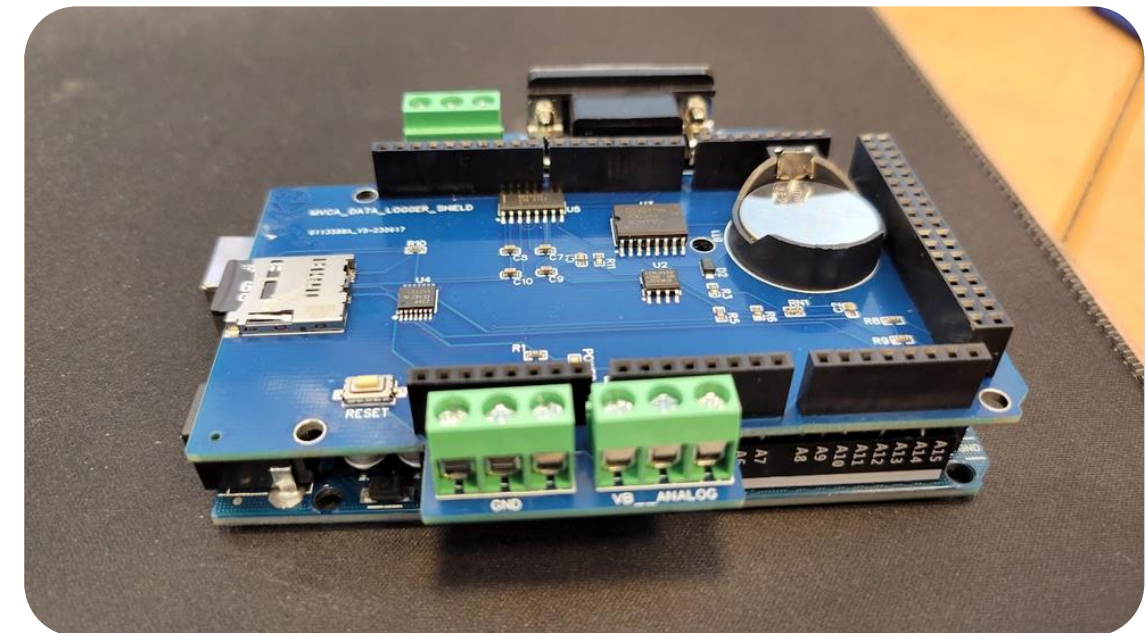
- Devise an in-house cost-effective datalogger



- 5 criteria for an in-house solution:



- Created an open source Arduino datalogger



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