

Fall 2021: Rhinebeck Asher Dam Capstone Project

Group A: Tipping Bucket and Rain Logger

Group B: Telemetry Box



Our Agenda for the Evening

- ◇ Introductions
- ◇ Project Purpose
- ◇ Our Process
 - ◇ Site Planning
 - ◇ The Equipment We Worked With
 - ◇ Sample Data
 - ◇ Installation of Equipment
- ◇ Our Demo
- ◇ What We Learned



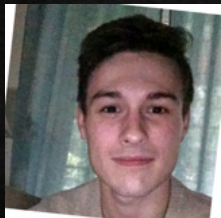
Meet the Tipping Bucket/Rain Logger Team



Anton Sachs - IS Lead - Austin, TX



Robert Perrone - CS - Rye Brook, NY



Nicholas Carmello - CS - Clifton Park, NY



John Aldarelli - CS - Jackson, NJ



Thomas Damers - IT - Rocky Point, NY



Meet the Telemetry Box Team



Leo Goldshmid – IS Lead – Stroudsburg, PA



Ryan Straub – CS – Bear Creek, PA



Jonathan Pedernera – CS – Freehold, NJ



Nicholas Ruiz – IT – Cresskill, NJ

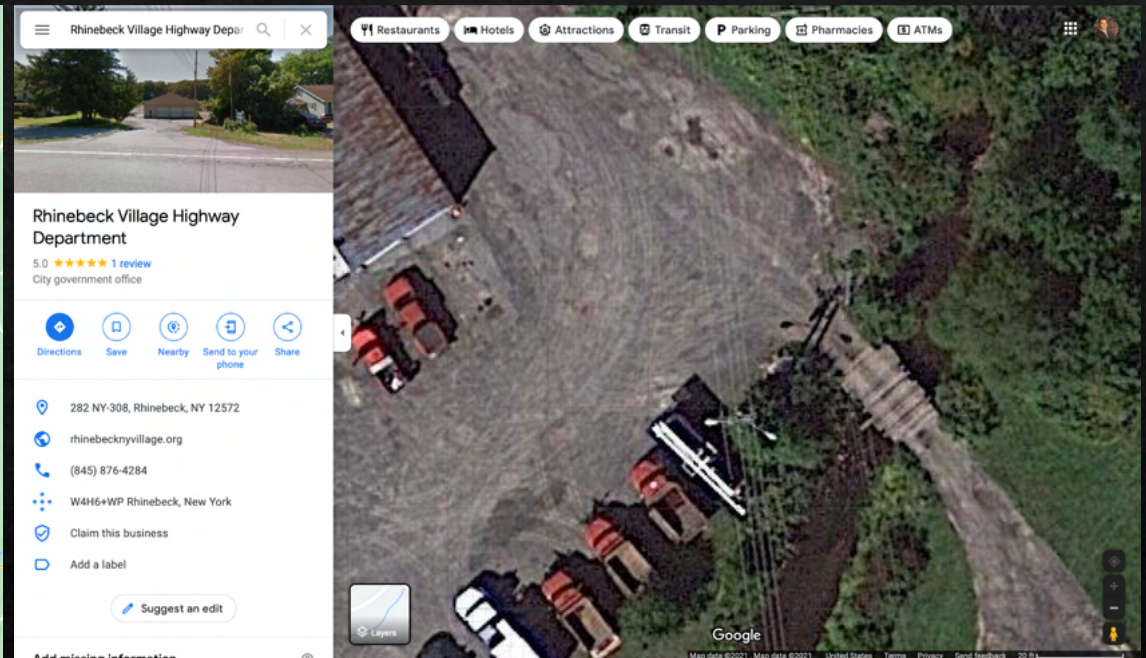
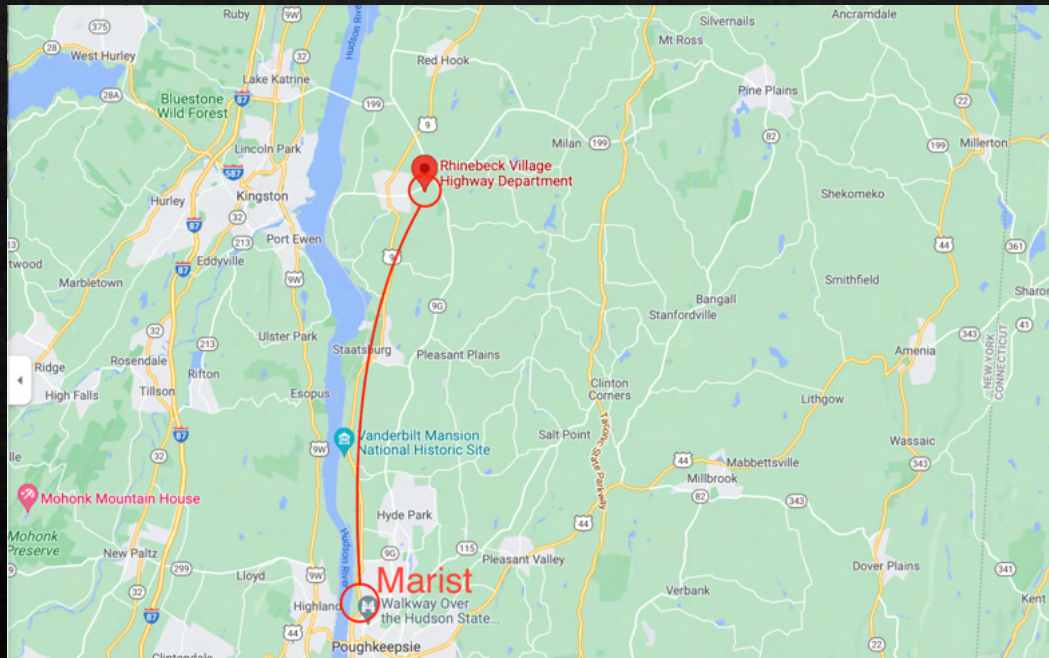


Project Purpose

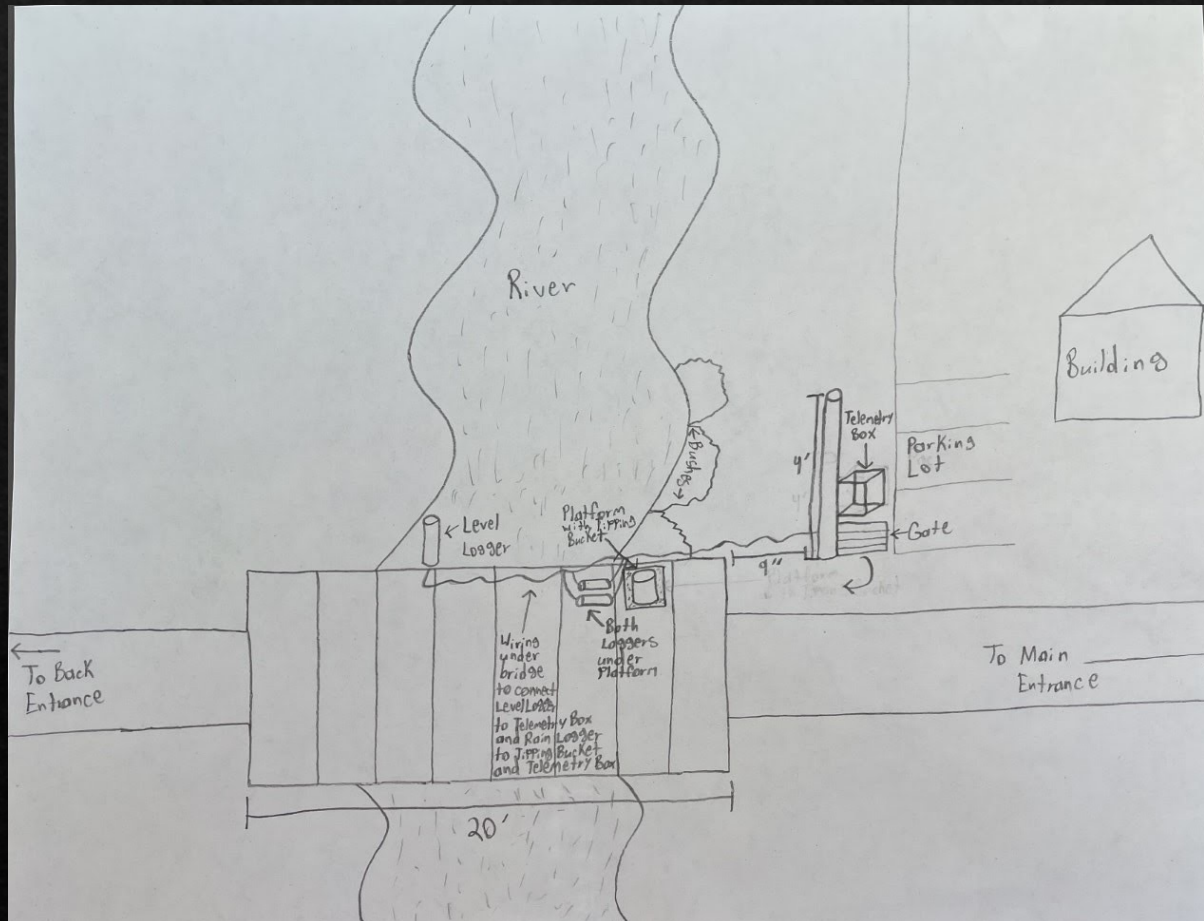
- ◆ To expand on research investigating if the Landsman Kill poses a potential flooding threat.
- ◆ Tipping Bucket/Rain Logger Team's Role:
 - ◆ To install and configure the tipping bucket with its corresponding rain logger.
 - ◆ Take the data from the rain logger and place it on ADAS.
- ◆ Telemetry Box Team's Role:
 - ◆ To install and configure the telemetry box.
 - ◆ Develop a way to store the data received from the data loggers into a master database.
 - ◆ Integrate the dataloggers with ADAS.



The Site



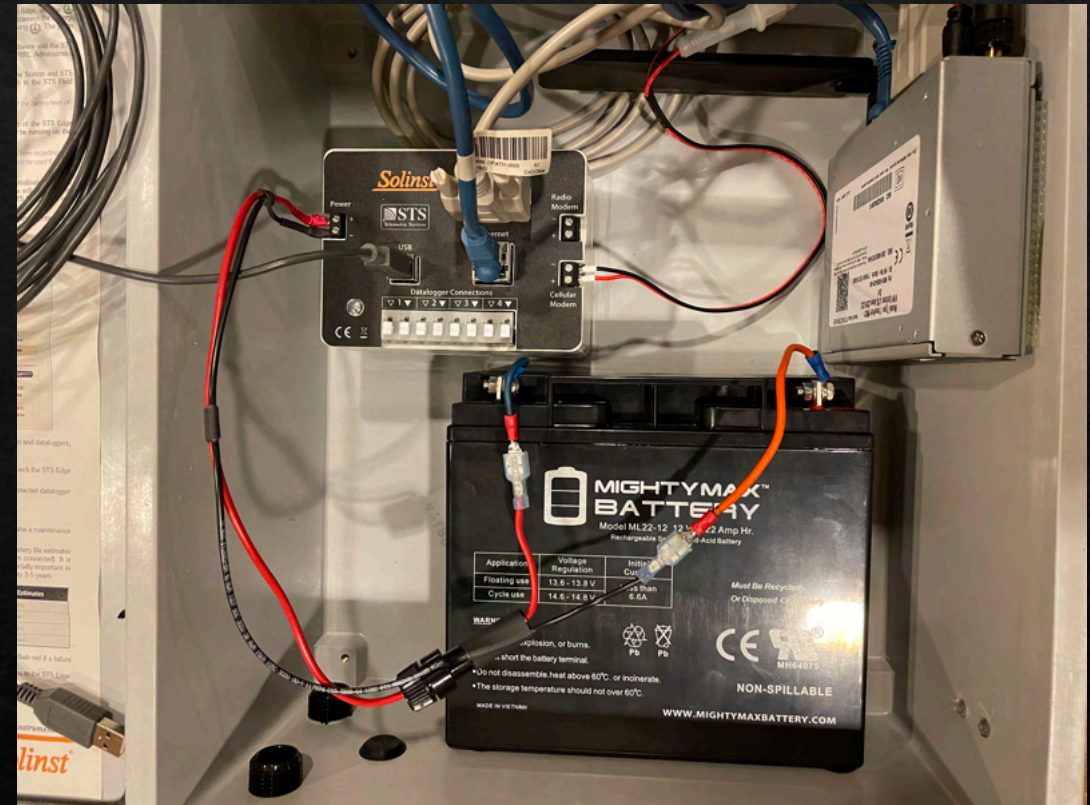
Our Map of the Site



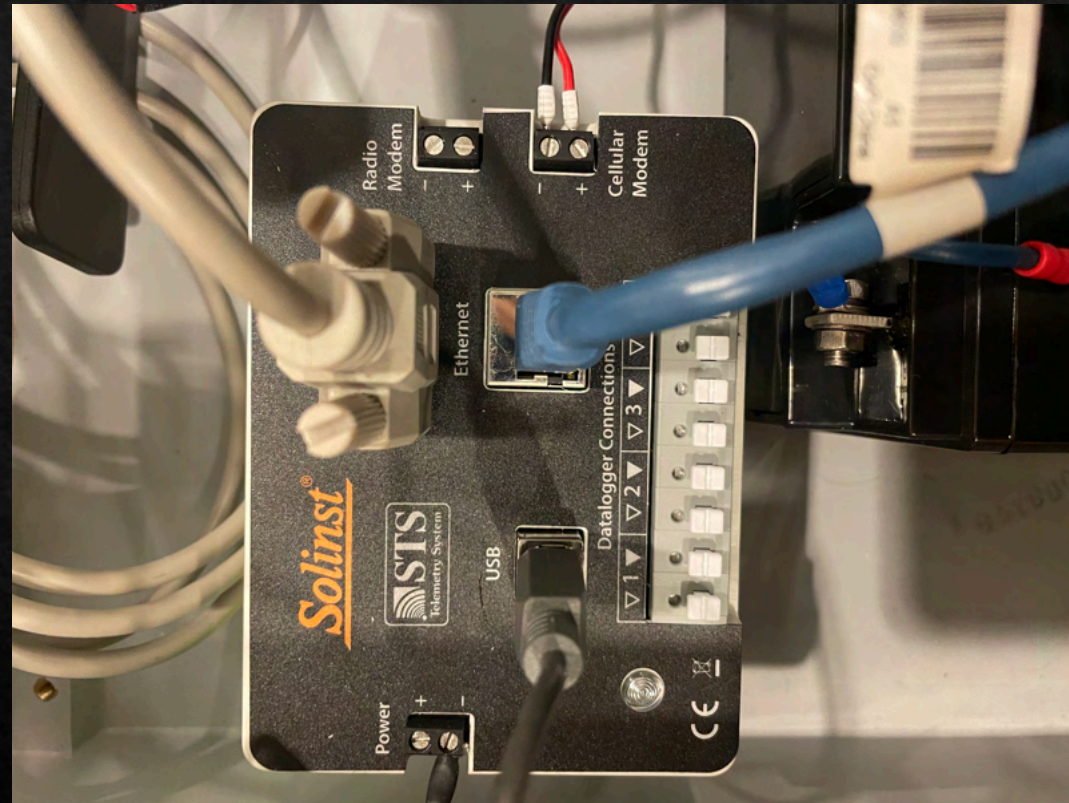
STS Telemetry Box

Contains:

- ◆ STS Telemetry System
- ◆ Digi Modem
- ◆ Battery



STS Telemetry System



Digi Modem



Before the SIM Card

- ◆ Tried other methods of connection
- ◆ Developed an SQL database to store data from loggers
- ◆ Modified ADAS to be able to display the data



SIM Card Received – November 9th, 2021

- ◆ Allowed us to move forward with the project
- ◆ Set up the modem, enabling us to create a connection between the Solinst software and ADAS



Telemetry Box Installation Day – December 7th, 2021









Tipping Bucket & Rain Logger



The HyQuest Solutions TB6 Series II Tipping Bucket Rain Gauge



The Solinst Rainlogger Model 3002

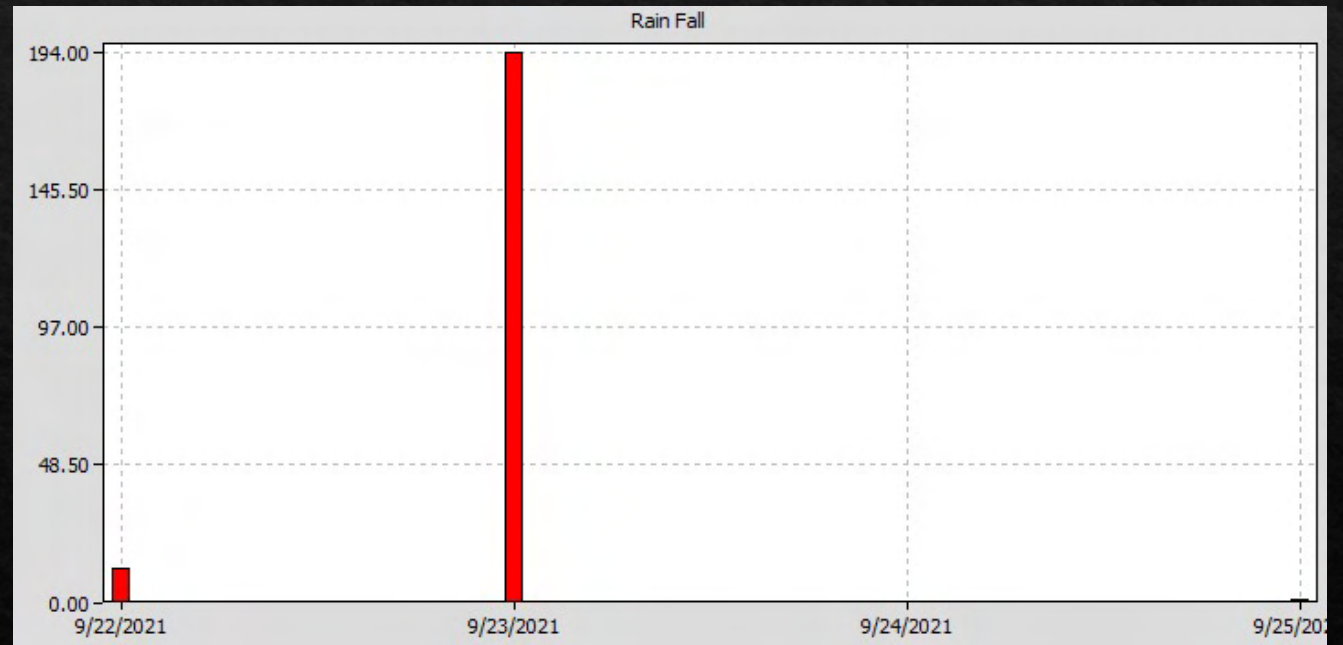


Test Run – September 22nd, 2021



Data Results From Our Test Run

Serial_number:			
367990			
Project ID:			
Location:			
RainFall			
UNIT: mm			
Rain Cal. Constant: 1.000000 mm			
Date	Time	ms	RainFall
9/22/21	7:43:28 PM	0	12
9/23/21	7:43:28 PM	0	194
9/24/21	7:43:28 PM	0	0
9/25/21	7:43:28 PM	0	1

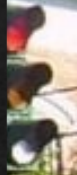


Tipping Bucket and Rain Logger Installation Day –
October 11th, 2021









We made updates to ADAS, let us show you.



What Did We Learn Throughout This Process?

- ◆ This collaborative experience taught us how to come together for a great civic project.
- ◆ We learned how to make the most out of our skills as a group of learning professionals.
- ◆ Using an Agile methodology, the two Rhinebeck teams were able to effectively delegate tasks and complete the project.



Conclusion

- ◆ Inherited the project
- ◆ Had two teams that distributed work between the STS telemetry box and the data loggers
- ◆ We were able to successfully deploy the telemetry box and the dataloggers



Thank You Very Much for Listening!

Special Thanks To:

Dr. Richard Feldman; Prof. Christopher Algozzine;
James Erlanger; Robert Lynch, IBM; Chris Mitchell

Any Questions?



STS/RRL Administrator IP Addr: 127.0.0.1

File View Tools Help

Site New Edit Delete Print Display Data Barometric Compensation *Solinst*

Site Serial Number

- RhinebeckPhase3
 - STS
 - Rhinebeck (284430)
 - RRL

Firmware Upgrade Utility

Com Port Settings

Com Port: Intel(R) Active Management Technolog Baud Rate: 9600 Version: 1.2.12

File Information

Firmware File Name: C:\temp\STSE-Controller-V2.000.ssf
Datalogger Type: STS Edge
Model Number:
Firmware Version: 2.000
Bootloader Version: 0.000

Datalogger Status

Waiting for STS Edge bootloader...
Firmware Update Completed!



Asher Dam Alert System

Flood Prevention Calculator

weather.gov

VIEW
GRAPHS

TODAY

0.00

IN

TOMORROW

0.00

IN

THURSDAY

0.00

IN

FRIDAY

0.00

IN

TODAY

0.00

IN

TOMORROW

0.00

IN

THURSDAY

0.00

IN

FRIDAY

0.00

IN

DISCHARGE VOLUME

0 M³

?

VALVE OPENINGS

OPEN 2 VALVES FOR 0 HOURS
OPEN 3 VALVES FOR 0 HOURS
OPEN 4 VALVES FOR 0 HOURS

Asher Dam Alert System

Flood Prevention Calculator

VIEW
WEATHER
DATA

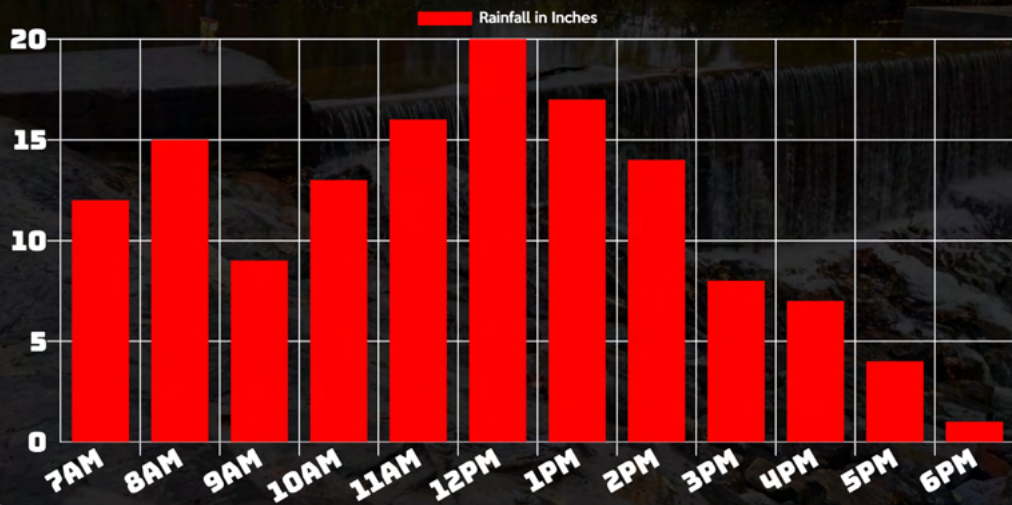
Notifications

DATA LAST UPDATED 23 HOURS AND 39 MINUTES AGO

Thresholds



RAINLOGGER DATA



LEVELLOGGER DATA

