



# MSOA Coastal Resiliency project

## Rain Gauges

Thank you for participating in the project to accurately measure rainfall in your town for determining the proper time to initiate shellfish growing area closures. The following instructions are for your guidance in the installation, care and feeding of the devices,

The unit is AcuRite tipping bucket design with an indoor readout. In addition, a lightning detector will provide warnings of lightning strikes in the vicinity to assist in your safety protocols.

We have grouped the towns into several groups and a member of the Board of Directors will assist with the distribution and setup.

The following is a summary with specific details.

### **What is your town getting?**

#### **The equipment includes several items:**

- Remote “tipping bucket” rain gauge
- Indoor readout of the rainfall each day including some other weather information
- Lightning detector
- Hub to transmit data to the Internet.
- 4x4 PT post for mounting the collector
- 1x6 PT plate with stainless hardware to attach to the top of the post
- Includes a bubble level embedded in it to confirm stability

### **What requirements are there ?**

Locating the rain collector depends on several factors:

- Unobstructed area with no nearby things like trees, shrubs, fences, wires or overhangs.
- Nearby (generally within 100 ft) of an Ethernet (wired) internet connection (indoors).
- 110 V AC power (indoors)
- **BE SURE TO INFORM DIGSAFE (888) 344-7233 AND REQUEST A SITE SURVEY BEFORE DIGGING HOLES FOR POSTS. This process typically requires 72 hour notice.**

## How does it set up ?

An Ethernet (wired) internet connection is required for your hub to communicate with the world. Your next step is to contact your IT staff to find out if you have a “drop” nearby that will be open to connect to this device. It does not have a fixed IP address and will behave nicely with DHCP. If they would like other details please refer them to Henry Lind. That will need to be resolved before connecting the hub. The rain gauge will still report to the display as long as it is within range.

This is *not* WiFi enabled.

First, these devices all use AA batteries and they are provided. The instructions on each unit will be found inside the box.

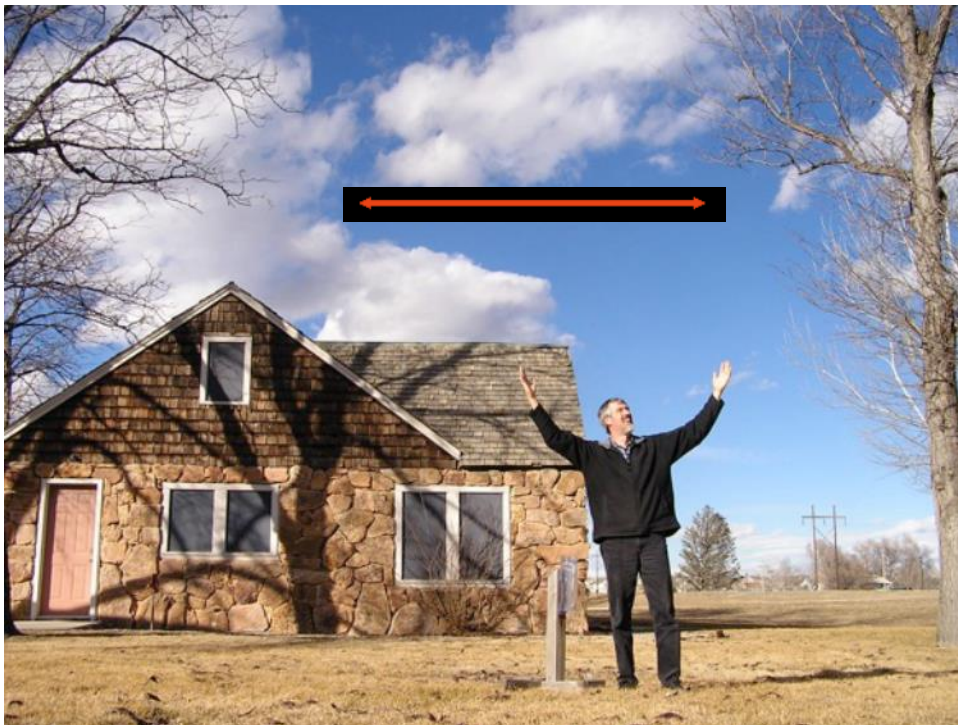
The web page has been set up for your town using your email address as login and MSOAresil1 for the password. Every town has the same password PLEASE DO NOT CHANGE THE PASSWORD !

Installing the unit shall conform to the best practices as outlined in the accompanying guide. The guide is designed for a purely mechanical rain gauge but the siting is the same.

In open areas strive to be twice as far from obstacles as they are high.

In developed areas strive to be as far from obstacles as they are high.

Ideally, place your gauge equidistant from the nearest trees



In open areas, place the gauge top approx. 2 feet off the ground

In developed areas, place the gauge top approx. 5 feet off the ground

In all likelihood the installation will need to be in a “developed area” so plan on 5 ft off the ground.



5 ft

The post must be PLUMB and LEVEL in order for the collector to work properly.

There is a ceiling hook (bronze) to attach to the side of the post for hanging the lightning detector. Put this hook below the overhang of the platform so as to shield it from heavy weather. Orient the hook on the north side under the overhang to allow for shade – otherwise the temperature readings will be too warm in the sun. Install the batteries in the back of the lightning detector.

This is what your setup should look like –



## What happens next ?

Install the backup batteries in the bottom of the hub to preserve data in the event of a power loss.

Connect the hub to the Ethernet wired connection indoors (not Wi-Fi) and plug in the power supply. Once the hub is connected to the Ethernet the light on front will turn from red to blue and stop flashing. Be sure to seat the connector as well as the power supply *firmly* in the hub unit.

Install the batteries in the back of the display unit and connect the AC power supply. Follow the directions for setting the time and date on the display. This display does not connect to the hub and the temperature and forecast are “learned” over time – please see the instruction book for “teaching” it but it allegedly comes closer and closer over about a month’s time. The one we have running for several weeks has in fact gotten pretty close.

Once the unit is activated it will link to the rain gauge and lightning detector and begin transmitting data to the internet. You can log in to your site to review or download data at any time.

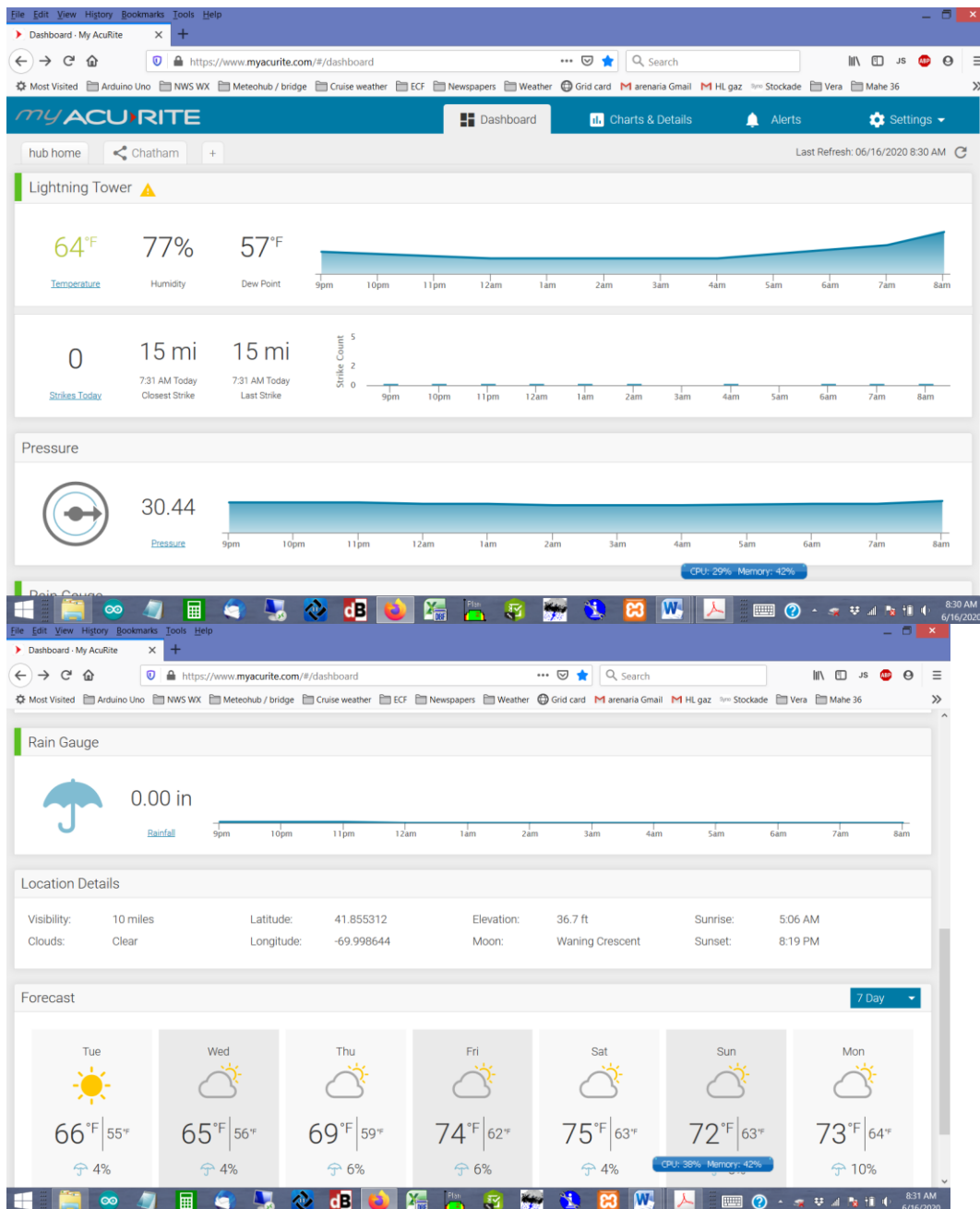
Lightning strikes will be displayed indoors with the number of strikes and approximate distance. This information will also be on the web page.

You can also install an app on a smartphone to read out the current data. The app is available for both Android and iPhone users. Search for My AcuRite. Use the same login email and password *MSOAResil1*

## MyAcuRite web page

The web service allows for real time data display of the rain gauge and lightning detector information. Go to <https://www.myacurite.com/#/dashboard> here are a number of features on the site and it is or the most part self explanatory. It also has a very good help section.

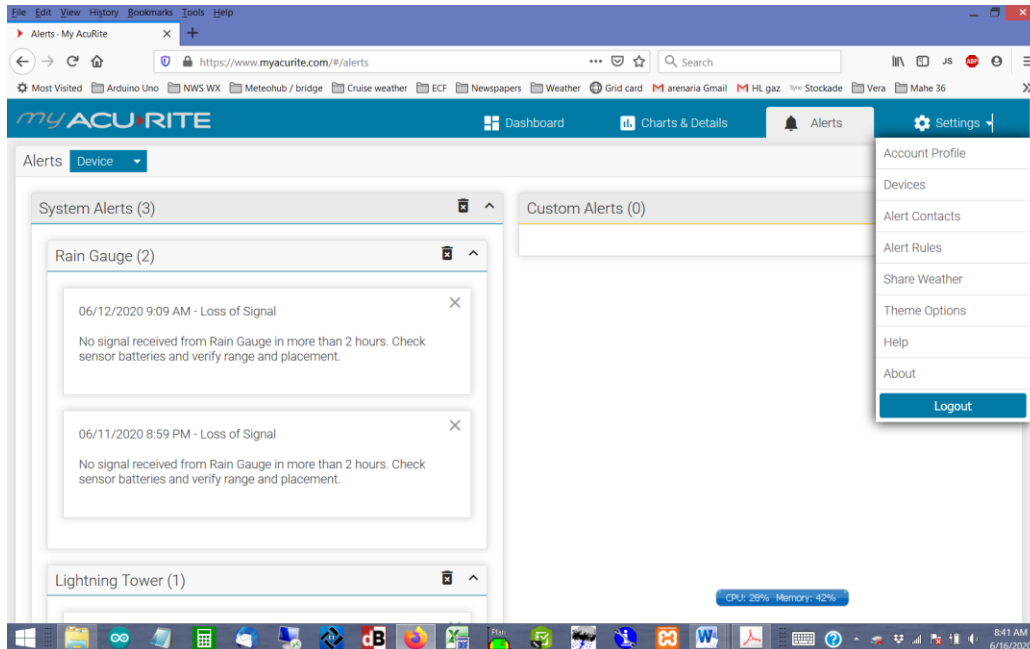
Screenshots as follows:



A few points:

- Tabs at the top of the page display the default dashboard, charts of recorded data, alerts, and settings.
- The dashboard is the current conditions including barometric pressure and as you scroll down the rainfall and long-range forecast is displayed.
- Charts will provide a graph and numerical data about rainfall (left tab) and other weather parameters and lightning strikes for the day. The top right box allows for selection of past data with a dropdown menu. All of the data can be downloaded to an Excel spreadsheet.

- The Alerts tab allows you to see any alerts that have been dispatched according to the preferences you have set up. A dropdown menu allows for viewing tem by device, condition, or device.
- Settings (top right corner) allows you to manage alerts for a variety of conditions including the loss of data and different parameters with the rainfall.



- The unit will be shipped with all alerts set to OFF to prevent you from getting numerous reminders that it is not connected. Kindly set that to allow alerts and then customize the list below for rainfall rate.
- Alert Contacts allows you to add additional contacts through email or SMS text message.
- Alert Rules allows for setting different parameters to trigger an alert.
- Share Weather allows you to see the conditions in another town, which will be useful to see the rainfall rates in a neighboring town if there is a shared water body. You will need to input the Device ID for your neighbors and that information will be published.
- IF YOU CHANGE YOUR EMAIL ADDRESS please notify Henry Lind to update the list.

## SUMMARY

This data will be used not only by your town but also by the Division as the process continues to verify and allocate the protection of shellfish growing areas. It is anticipated that as climate change continues that the rainfall closures may well become more numerous and / or widespread.

The Division will be assisting with those towns where a rainfall closure document is in place to update the language to include this equipment.

Please continue to maintain this equipment and supply the data connection to assist with this effort so that we may better evaluate the situation.

This is a guide to help with installation and setup – if you have questions or problems arise please do not hesitate to contact your group leader or Henry Lind. Feel free to use email, phone, or text message.

[lindh@c4.net](mailto:lindh@c4.net)

508-237-0700 cell

508 255-5716 wired

Thanks very much for all your assistance.