Florida Department of Environmental Protection
Division of State Lands
Bureau of Survey and Mapping

Water Monitoring System Website User Guide

www.fldep-stevens.com

Provided by Stevens Water Monitoring Systems, Inc. for the Florida Department of Environmental Protection

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1. Introduction

The Florida Department of Environmental Protection Water Monitoring System Website was created to provide easy access to water level, water quality, and related environmental parameters such as wind speed and temperature at coastal monitoring sites around the state of Florida. This information is updated 24 hours a day, and is made publicly available at [http://www.fldep-stevens.com](http://www.fldep-stevens.com).

This User Guide is provided as a service to visitors of the Florida Department of Environmental Protection Water Monitoring System Website. The User Guide can be referred to for more information on how to use the Water Monitoring System website, definitions of technical terms, and other useful information.

Questions or comments on the Water Monitoring System Website may be directed to the Florida Department of Environmental Protection, who owns and manages the data collection sites and associated hardware or Stevens Water Monitoring Systems, the contractor for the website and data collection software. Please see the [contact page](http://www.fldep-stevens.com) for more information.
2. Water Monitoring System Website Home Page

The main home page of the Water Monitoring System Website can be accessed by typing www.fldep-stevens.com into the address bar of any web browser.

The home screen displays a map of Florida with each water monitoring station in the network identified by a red icon on the map. The letter inside each icon corresponds to each station listed on the drop-down menu on the left-hand side of the screen.

Figure 1: The Water Monitoring System Website home screen.

The home screen can be used to perform several tasks and navigate to other areas of the site to include:

1. Navigating the map by using the scroll and zoom button located in the top left corner of the map or by clicking and dragging on the map with the mouse cursor.
2. The map overlay can be switched between “Map”, “Satellite”, or “Hybrid” views by using the buttons located on the top right corner.
   a. Map view: displays a traditional map showing roads, town locations, and major geographic features such as forests and bodies of water.
   b. Satellite view: displays satellite imagery of the map without any other information.
   c. Hybrid view: displays satellite imagery overlaid with map information such as roads and cities. This is the default viewing option.
3. Individual station information and data can be viewed by selecting a station from the drop-down menu on the left side of the screen:
4. Each individual station marker can be selected which will show a small picture of the station as well as options to retrieve more information about the selected station:

- **Current Reading(s):** Shows “Current Readings” page for selected station with most recently collected data displayed.
- **Historic Data:** View all previously collected data from the selected station.
- **Station Info:** View station location and equipment data.

5. Additional contact information for the Florida Department of Environmental Protection, links to other Florida state websites, and website use disclaimer information is available at the bottom of each screen on the website.
3. Current Readings

Selecting a station, either from the drop-down menu or from a station marker on the map will provide more details about the station and current data from the environmental parameters it is monitoring. For information about how to understand the data being collected, please refer to Section 6.

![Current Readings page for selected station.](image)

The data displayed on the “Current Readings” page in graphical form is the latest collected data from the selected station. The date and time that the data was recorded is displayed at the bottom of the screen.

Each parameter of station data is displayed on its own chart. For example, the “Bing’s Landing, Matanzas River” station will show data for battery charge, water temperature, water conductivity, water salinity, and water level. Each of these is shown on a single graph.

The current value for each parameter is marked by a blue arrow and is also noted in numerical form at the bottom of each graph. The background colors of the graph indicate when the parameter has moved out of a range that is considered normal.

![Retrieve data, graphs and information for: A Bing’s Landing.](image)

To see more detailed data collected at the station, including all past-collected data follow the “Data” link on the left side of the page.

To see information about the station, including location, hardware specification, and a photograph follow the “Station Information” link on the left side of the page.
Pink background color indicates above-normal reading.

Green background color indicates readings within standard range.

Blue background color indicates below-normal readings.

Figure 6: Example of Water Temperature graph from Current Readings page.

Tide level change, shown in feet. (Y-axis)

Reading times for major axis marker lines. (X-axis)

Figure 7: Water Level (Tide) Graph showing past 24-hours of tide level.

IMPORTANT NOTE: Some older computers may not have the display resolution capability of showing all charts for a station on a single page and they may continue off the right site of the web browser window in rare instances.

Users may view all the charts by scrolling the webpage to the right or by using the “zoom out” feature of the web browser to fit all data into one screen. Increasing the computer monitor’s screen resolution can also resolve this issue.
4. Viewing Collected Data

Following the “Data” link from the Current Reading page of any station (covered in Section 3) will bring up a detailed view of all available data collected at the selected station.

![Image of data display screen]

**Figure 8: Detailed data display screen.**

The top portion of the Data page allows for the data displayed below to be changed depending on what options are selected.

**Choose Report:** The default display range is the current day. The drop down can be changed from “today” to “custom” and a custom date range for data display can be entered.

**Date Range:** Select a start and end date, along with time for data to be displayed on the lower section of the page.

![Image of custom date range selection]

**Figure 9: Selecting a custom date range for data display.**
**Channel:** To see data from just one parameter, select it from the Channel pull-down menu.

![Channel Menu](image)

*Figure 10: Selecting a single parameter to be displayed using the Channel menu.*

**Export Option:** Export the displayed data for analysis in another program such as *Microsoft Excel* or for archival on a personal computer.

**Click to select units:** Selecting this option allows the change between display of Standard units of measure or Metric units.

![Units Menu](image)

*Figure 11: Selecting between Standard and Metric units for data display.*

**Update Readings:** After making any changes to the display dates, channels, or units, the “Update Readings” button must be selected for any of the changes to be shown.

**Display Chart:** If a single Channel is selected, the data may be displayed in a graphical chart format instead of a tabular data format. This option will be unavailable if more than one parameter is selected in the “Channel” drop-down menu.
Figure 12: Selecting a single Channel and clicking on Display Chart will give a graphical display of data.
5. Station Information

The Station Information page gives an overview of the selected station, including details about location and equipment information. A photo of the site is also displayed.

**Station Name:** The current station name is listed in the orange bar at the top of the page.

**Station Number:** The station number assigned by the Florida Department of Environmental Protection.

**Location:** A description of where the station is located.

**Latitude and Longitude:** Exact location of the station in standard geographical units.

**Equipment:** The monitoring equipment installed at the selected station.
6. Understanding the Collected Data

The following section of this user guide briefly explains some types of data collected at the stations in the network and what this data represents.

**Battery Voltage**: The current amount of power stored in the sealed rechargeable battery that powers the sensors and other equipment at each monitoring site. The battery is recharged each day by a solar panel at the site.

**Water Level**: Each station is equipped with an AquaTrak water level sensor, which is used to track changes in tide, which are shown in feet or meters. This data can be displayed in multiple formats described below:

- **North American Vertical Datum of 1988 (NAVD 88)**: All data collected using the NAVD 88 Vertical Datum is referenced against one specific point for a 0.00 reference reading, ensuring readings taken from any station using the NAVD 88 standard are compliant with one-another since they are all measured using the same standard. Find out more on the NOAA website.
- **Mean High Water (MHW)**: The average elevation of all high water points recorded at the station over a set period of time, usually 19 years.
- **Mean Low Water (MLW)**: The average elevation of all low water points recorded at the station over a set period of time, usually 19 years.
- **Mean Higher High Water (MHHW)**: The average of the elevations of Higher High Waters over a specific period of time, usually 19 years. (Higher High Water is the higher of the two high tides recorded during a single tidal day).
- **Mean Lower Low Water (MLLW)**: The average of the elevation of the lower low waters over a specific period of time, usually 19 years. (Lower low water is the lower of the two low tides recorded during a single tidal day).
- **Mean Sea Level (MSL)**: The average height of the ocean's surface averaged over a period of time so factors such as tide and wind waves are factored out of the level.
- **Mean Tide Level (MTL)**: The tide level when it is halfway between Mean High Water and Mean Low Water.

**Water Conductivity**: Electrical Conductivity sensors are used to measure the ability of water to carry an electrical current. Absolutely, pure water is a poor conductor of electricity. Water shows significant conductivity when dissolved salts are present. Over most ranges, the amount of conductivity is directly proportional to the amount of salts dissolved in the water.

A conductivity sensor measures how much electricity is being conducted through a centimeter of water. Specific conductivity is expressed as mhos per centimeter (M/cm), sometimes called siemens per centimeter (S/cm). Because a mho (or siemen) is a very large unit, the micromho (microsiemen) or millimho (millisiemen) typically is used (mS/cm).
**Water Salinity:** Related to water conductivity is water salinity. Water salinity is the measurement of salts (total dissolved solids) in the water, given in “parts per trillion” (ppt). Ocean sea water usually contains about 35 ppt. For comparison, drinking water should be less than 0.5 ppt. This reading is temperature compensated for accuracy by the station’s water temperature sensor.

**Barometric Pressure:** Known also as “atmospheric pressure”, this is a measurement of the force exerted against a surface by the weight of the air above it. Pressure decreases at higher altitudes and increases at lower altitudes.

**Relative Humidity:** The measurement of water vapor in a mixture of air and water vapor. Relative Humidity will change based on the temperature and barometric pressure of the surrounding air.