ThirdAveWebcamAndWeather User Manual
Version 5.3, May 2022

1 ThirdAveWebcamAndWeather Application Tutorial

Welcome to the ThirdAveWebcamAndWeather tutorial! If you are here then there is a good chance you have downloaded ThirdAveWebcamAndWeather and either want to review the features or are confused and are looking for answers. First, thank your for your interest! Second, if you are confused then we apologize. We hope to improve the application but hope that this tutorial will help you better understand the app and how to use it to your best advantage.

When done with this tutorial, if you have ThirdAveWebcamAndWeather installed on your device, you can return to it using the following link: ThirdAveWebcamAndWeather.

ThirdAveWebcamAndWeather is an iOS application that is dedicated to monitoring the Third Avenue kiteboarding and sailboarding weather instrument mounted on top of, and the network ptz camera mounted on top of the Gilead Sciences building in Foster City, CA. If you wish to return to the application, please select the link above (only from an iOS device that has it installed of course).

It is important that you know that ThirdAveWebcamAndWeather is a monitoring application and not a prediction/forecasting application. We provide you with up-to-date information on the conditions at a particular location, and history information for the last hour and the last 24 hours, but we do not provide history information further back (at present), nor do we try to predict into the future. We also do not provide webcam historical records in this application. There are other applications that try to do that, with mixed success.

It is also important to note that no one application or source will suffice to make a decision about the conditions at 3rd or anywhere else. I use as many sources as I can to make the decision of whether to go, and when to go. Some are other apps. Some are weather sources. Some are weather maps and satellite imagery. And some of it is just reading the conditions by looking outside. In the end it is up to you to decide for yourself.

ThirdAveWebcamAndWeather was developed for kiteboarders and sailboarders needing up-to-the-minute observational data. Why is this so? Well, 3rd Ave gets its great winds largely through north-south convection caused by the temperature differences between San Francisco and San Jose. On any given day it takes time for this convective flow to get started (and to shut down). In the fall, as the number of hours of daylight diminish, the time it takes for a convective flow to begin gets closer and closer to dusk, so someone wanting to go out needs to be on site and prepped sometimes before the conditions are good enough to go out. ThirdAveWebcamAndWeather provides the kind of information that helps its users get out when other apps, which don't provide data as frequently, cannot.

Being a monitoring application, ThirdAveWebcamAndWeather might not provide data. If the weather instrument, camera, or their servers are down, or if there is an interruption in network connectivity, ThirdAveWebcamAndWeather will be useless and you will need to use an alternate source for information at 3rd Ave.

1.1 General Information and Setup

ThirdAveWebcamAndWeather is divided into six types of views:

- **Dial views** show near realtime data values on analog dials
- **History views** show historical data for the data presented in the dial view
- **Webcam views** shows image views of various important viewpoints
- **Meter and Gauge views** show non wind/temperature views: barometric pressure, humidity, rainfall, cloudbase, and tides
- **Forecast views** show daily and weekly NOAA weather forecasts
- **Sensor Data** shows attributes and their values, some of which aren't shown in dial or history views

The following sections describe each of these view types in detail. The screen shots shown in this document are the iPhone versions. The iPad versions are functionally identical but the layout is different owing to the differences in screen size. The Apple Watch views will be discussed later in the document.
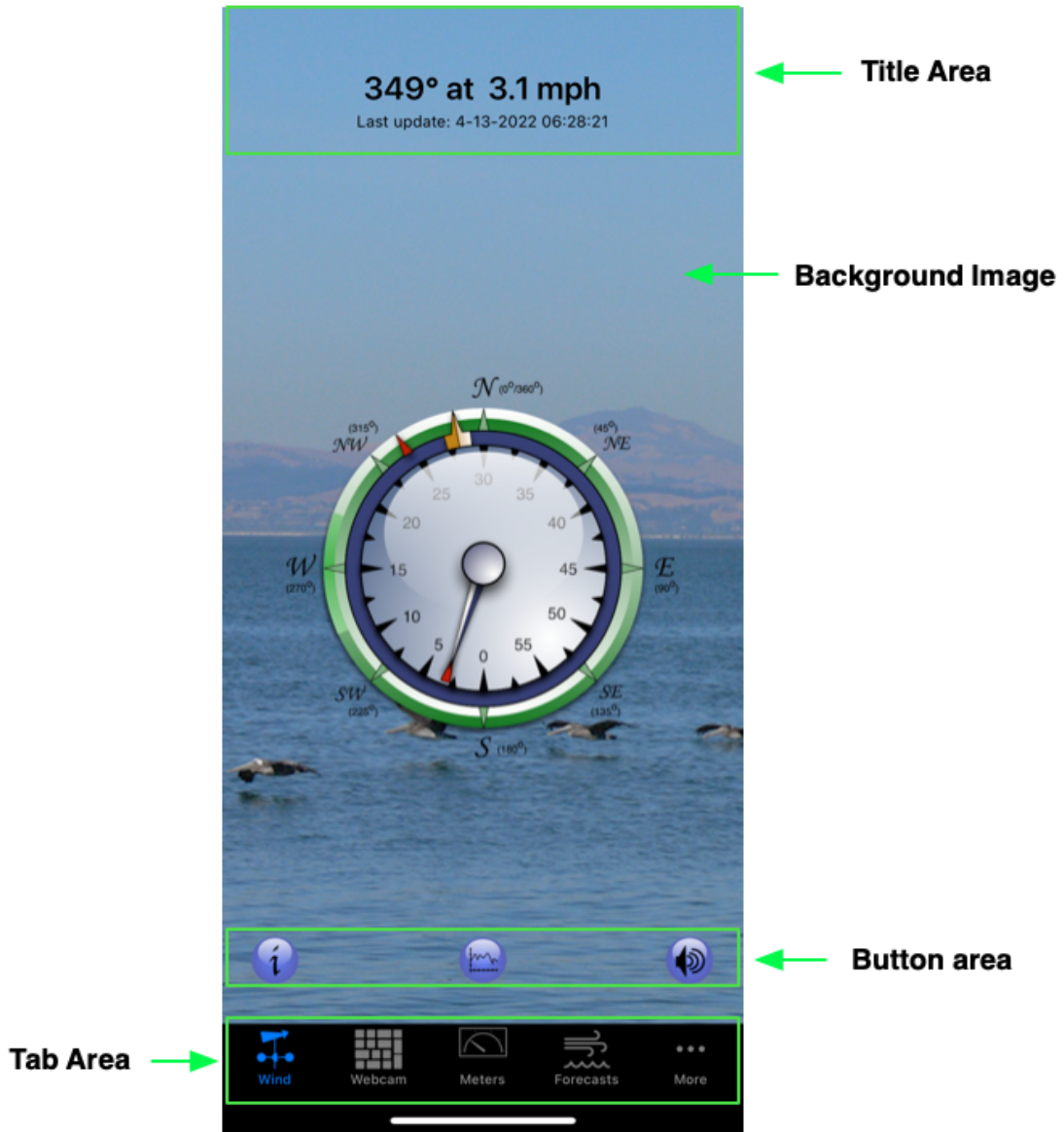
1.2   Dial, Meter, and Gauge Views

There are four dial-type views available from the main/startup screen:

- **Wind Direction and Speed View** shows the current wind direction and speed, along with 10-minute averages
- **Temperature View** shows the current temperature, the daily low and high temperatures, and the wind chill
- **Meter View** shows the current pressure and humidity gauges on the front, and rainfall, cloudbase, and tide values on the back
- **Webcam Views** show images of the webcam in different locations along with larger versions of each

1.2.1 General View Description

Each view in ThirdAveWebcamAndWeather can consist of three different areas, as shown on the image below: (1) a Title area, (2), a Tab area, and (3) a Button area.

349° at 3.1 mph
Last update: 4-13-2022 06:28:21

← Title Area

← Background Image

← Button area

Tab Area →

Wind   Webcam   Meters   Forecasts   More

1.2.1.1 Title Area

Each dial view has at the top a label showing the current values that the dial is depicting graphically. Also provided in this area is a timestamp for the last data collection time. If the data seems odd, make sure to check the timestamp!

1.2.1.2 Tab Area

At the bottom of every dial (or top-level/tab) view is a tab bar with the other top-level tabs. Selecting these other tabs will transfer control to the associated view. The five tabs are:

- **Wind** ⚓ : Provides information on wind speed and direction
- **Webcam** ▦ : Provides access to the webcam images
- **Meters** ⌂ : Provides temperature and humidity information
- **Forecast** ≋ : Provides information on forecasts
- **More** …: Provides an additional table for temperature dials/histories, relevant sensor data, and notification settings

1.2.1.3 Button Area

Each top-level view (from the tab bar) displays a button area with three buttons.

1.2.1.3.1 ThirdAveWebcamAndWeather Information Page

At the bottom left of every dial or webcam view is an icon ⓘ that opens a view that describes the application.
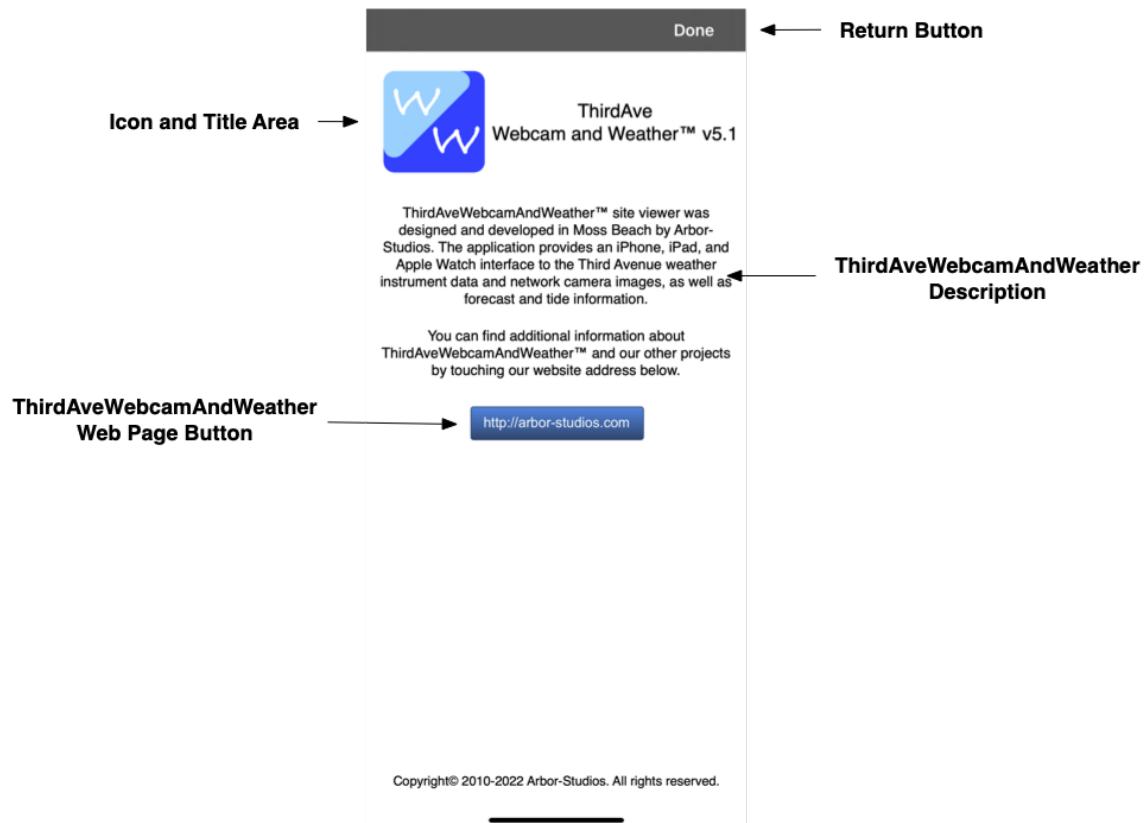
On this information page there is a button that will launch the Arbor-Studios ThirdAveWebcamAndWeather home page (and access to this tutorial) in your browser. If you have ThirdAveWebcamAndWeather installed on an iOS device you can return to the app from a link on the tutorial page.

1.2.1.3.2   Background Sounds

At the bottom right of every dial or webcam view is an icon that toggles the background sound on and off. The audio in the application is run in a thread that lasts about 30 seconds, so sounds will turn on and off in that duration. The audio clips in the application change with the same wind speed values just as the background images. The default is for sound to be turned off.

- **0-11 mph**: Gentle lapping of water against rocks
- **12-16 mph**: Pumping sounds
- **17-26 mph**: Discussion and deflation sounds
- **27+ mph**: Wind oversaturating the microphone

1.2.1.3.3   Toggle to History/Alternate Meter View

At the bottom center of each top-level dial/meter view is an icon that rotates the dial view into the History view (or the Meter view into its alternate view). Selecting the Done button at the top of the history (or alternate) view will return you to the associated top-level view.

1.2.1.4   Background Images

Each dial view has an underlying image. This images changes with wind speed according to the following logic:

- **0-11 mph**: Chatting, eating, etc.
- **12-16 mph**: Go set up
- **17-26 mph**: Go have fun on the water
- **27+ mph**: Consider whether or not to go out

These ranges correlate to times one would normally use to: (1) chat, eat, etc; (2) set up; (3) go have fun on the water, and (4) wonder whether it is worthwhile going out at all, respectively. They are only general guidelines and are intended for fun.

1.2.1.5   Nightime Background Images and Views

Every dial and meter view has a nighttime background image, as shown below. The purpose is to make sure that people viewing the app at night don't accidentally think that they are seeing a daytime image (don't laugh, its happened). Also, we just love our nighttime background image, courtesy of Clark Beckstead.

The screenshot shows a wind monitoring app interface with the following labeled elements:

- **Current conditions** — 61° at 7.8 mph
- **Last update time** — Last update: 3-26-2022 17:51:47
- **Compass rosette**
- **Current direction hand**
- **Average direction** (10 minute avg)
- **Speed dial** (mph)
- **Current speed hand**
- **Average speed** (10 minute avg)
- **Switch to wind history**
- **Switch to Information View**
- **Toggle audio on/off** (audio clip changes with wind speed)

Bottom navigation: Wind, Webcam, Meters, Forecasts, More

The same is true of the webcam images.

Although not showing in this image, the titles also change from black to white at night.

1.2.2 Wind View

The far left tab of the top-level view shows a wind van/anemometer icon (⊤) that will provide access to the wind view. As mentioned, yoga poses are the primary compositional level of the application. The figure below identifies all of the features available on the **Wind** main application view.
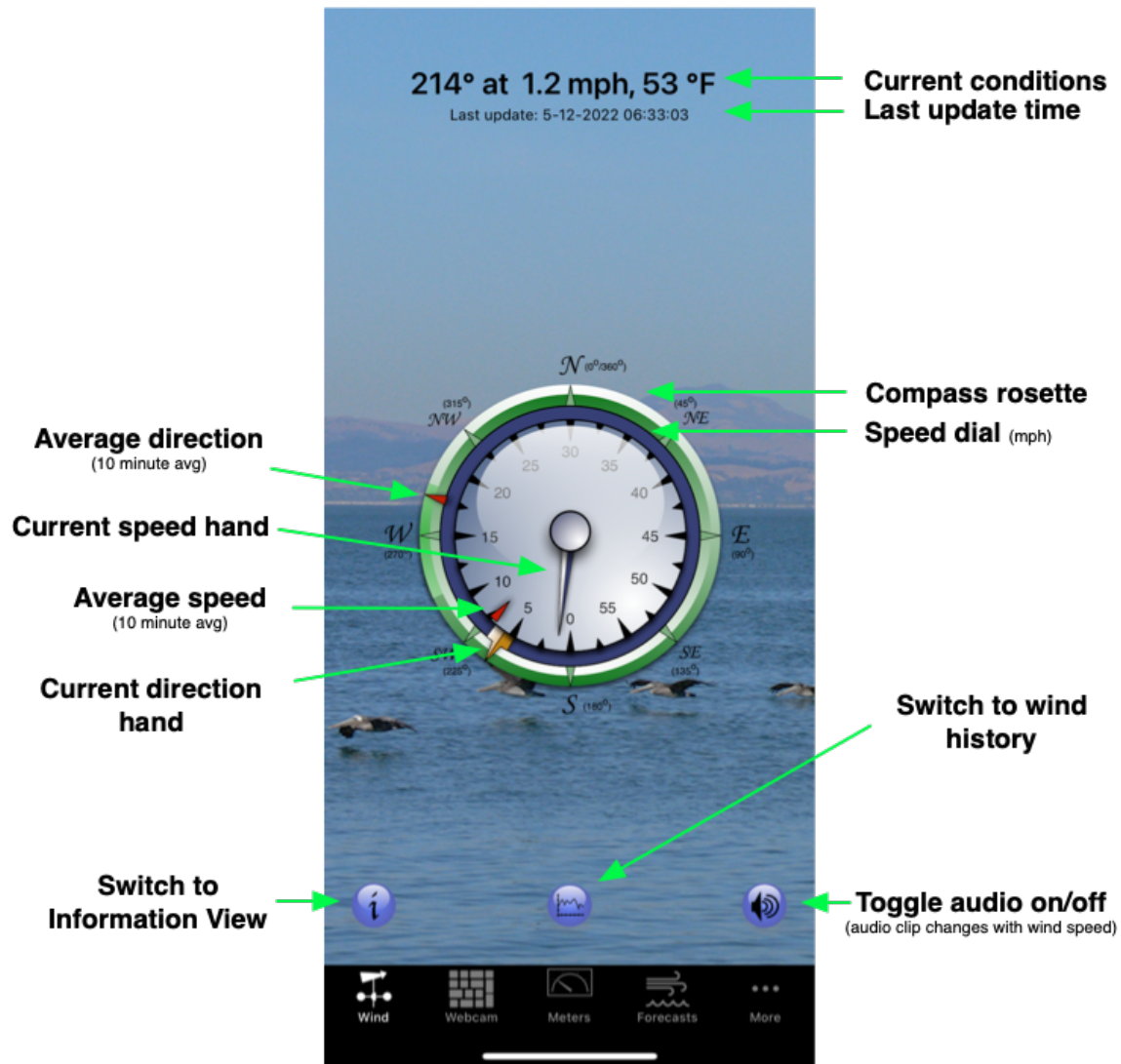

The view consists of two concentric dials and four dial hands. The outer dial is the compass rosette, while the inner dial is the speed dial.

- **Yellow/Gold dial hand**: Shows the current wind direction and runs along a dark blue annular path. It points in the direction from which the wind is blowing.
- **Outer red chevron**: Shows the average wind direction over the past 10 minutes. It points in the direction from which the wind is blowing.
- **Inner (long) dial hand**: Shows the 2-second gust wind speed. The dial has markings from 0-60 mph. Beyond 60 mph the label at the top of the view will still show accurate speeds.

- **Inner red chevron**: Shows the average wind speed over the past 10 minutes. The chevron points toward the center of the dial.

Wind direction and speed information is updated approximately 3 times per minute.

In Version 5.3 the current temperature has been added to the title

1.2.3 Temperature View

The figure below identifies all of the features available on the Temperature 🌡 view. This view depicts the current temperature as well as the wind chill, and the daily low and high temperatures. The current temperature is displayed using the main dial hand. The mini blue chevron is used to display the day's low temperature value, while the mini red chevron is used to display the day's high temperature value. The mini purple chevron is used to display the current wind chill (temperature reduction due to wind speed).
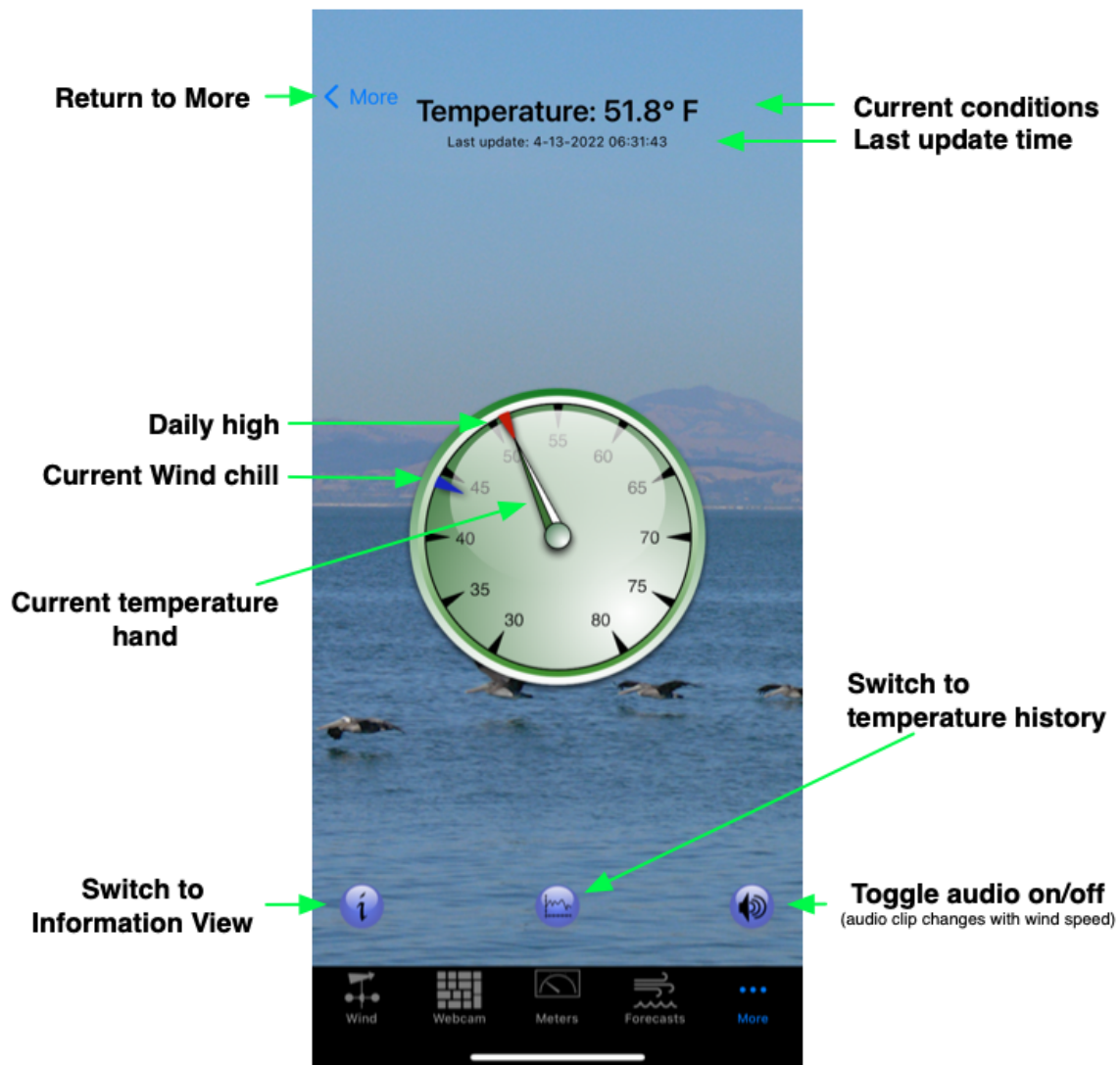
Background images also change in the evening. After sunset the background image, regardless of wind speed and direction. All temperature information is updated approximately 3 times a minute.

1.2.4 Meter View

The figure below identifies all of the features available on the **Meter** [icon] view. This view depicts the current barometric pressure and humidity.
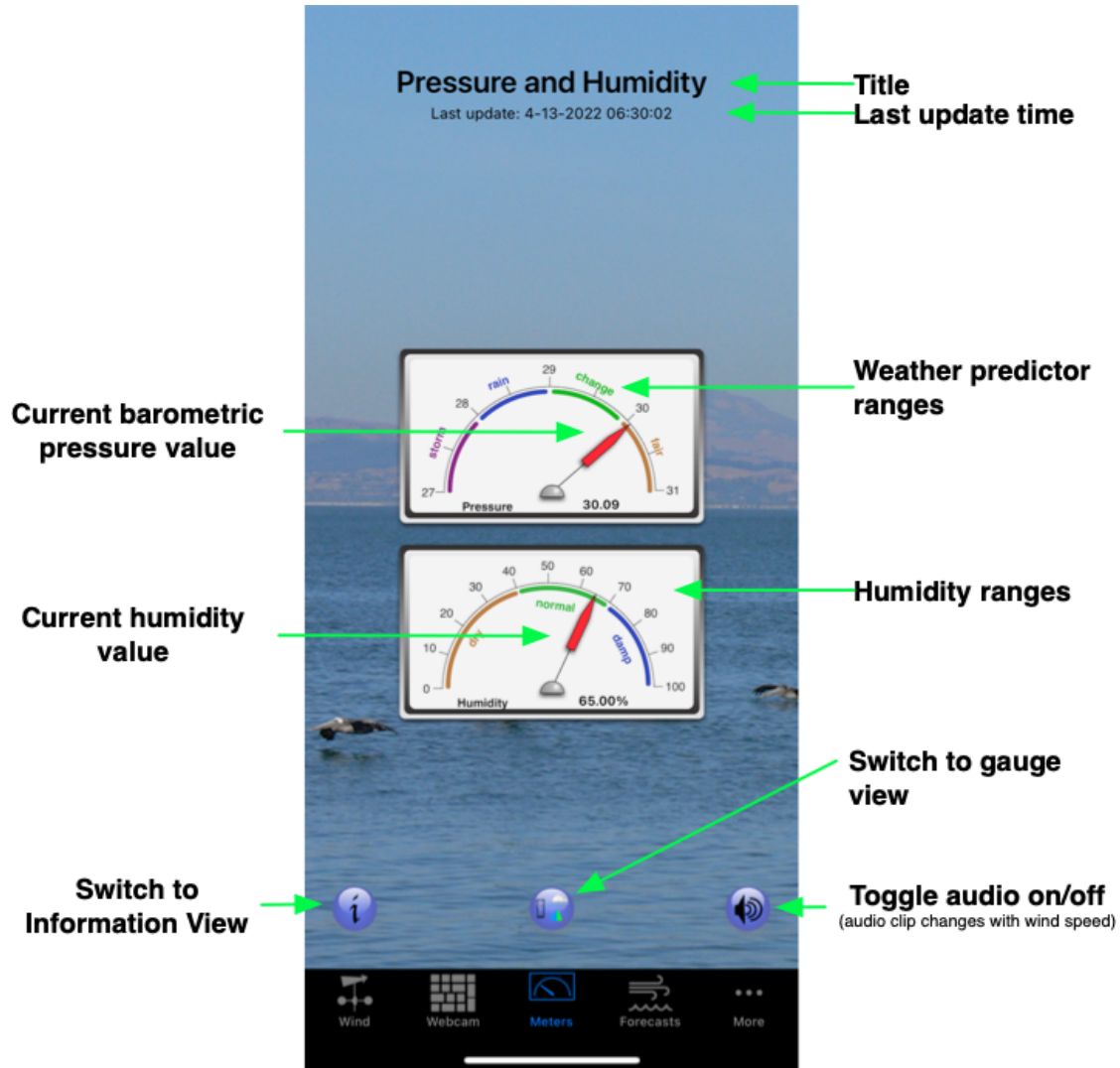
1.2.4.1   Barometric Pressure

Barometric pressure is shown measured in inches of mercury, so its normal range will be from 27-31 inches of mercury. This is a standard in the United States. The meter is divided into 4 ranges, one each for stormy, rainy, change, and fair weather. Barometric pressure follows low and high pressure systems and this is why barometric pressure is a good predictor of current local weather. The value of the current barometric pressure is shown on the meter, with a red hand, as well as a value to the right of the dial hand center along the bottom of the meter.

Barometric pressure is updated approximately 3 times a minute.

1.2.4.2 Humidity

The current humidity is shown measured as a percentage from 0-100, where 100% humidity would be rain. The meter is divided into 3 regions, one each for dry, normal, and damp conditions. Dry is generally associated with high pressure systems, while damp is generally associated with low pressure systems, though neither is correct all of the time. The value for humidity is shown both on the meter, with a red hand, and as a value to the right of the meter hand center at the bottom of the meter.

Humidity values are updated approximately 3 times a minute.

1.2.5 Gauge View

If you select the 'flip view' icon ( ) on the meter view the view will change to the **Gauge** view. The gauge view shows three separate gauges: rainfall, cloudbase, and tides. Selecting the 'Done' button will return you to the **Meter** view. As with all views in ThirdAveWebcamAndWeather, the last update time for this information is shown below the title.

Title → Weather Gauges | Done ← **Return to meter view**

Rain, Cloud Base, and Tides
Last update: 4-13-2022 06:28:36 ← **Last update time**

← **Current cloud base**

Daily, monthly, and yearly rainfall → Precipitation (Day, Month, Year)

2601 feet — Cloudbase

Last high (time/value) → 10:46 AM / 6.70

Current tide conditions (NOAA: San Mateo Bridge, West End) →

11:46 AM / 5.7 ← **Current tide direction**

5:17 PM / 0.34 ← **Next low** (time/value)

Tide - Ebbing

1.2.5.1 Rainfall

The rainfall is shown as three test tubes/beakers, one each for today, this month, and this year. They will display the accumulation for the time period. In this figure there is no accumulation shown because the new weather instrument rain data isn't being transmitted for some reason…so don't pay any heed to the rainfall values at the present time.

When it is raining outside the test tubes/beakers will be shifted to the right and the current rain rate will be displayed, along with an icon showing the type of rainfall, to the left.

Rainfall information is updated every time there is an update. In the case of today's rainfall it is updated approximately 3 times a minute, but for monthly and yearly it is updated once a day.

1.2.5.2 Cloudbase

Cloudbase information is taken from humidity and pressure data and gives an indication of how clear the sky will be. In terms of kiteboarding and sailboarding, when there are clouds the convection is affected which can shut down our sport or impact the quality of

the wind, so cloudbase can be a useful measure. Of course, looking at the webcam images will also provide this information. Cloudbase is shown in two ways: (1) as a value at the top of the gauge, and (2) as a bar on a scale from 0 – 5000 feet. Outside this range the value at the top of the gauge will be accurate but the bar will not.

Cloudbase information is updated with every download, approximately 3 times a minute.

1.2.5.3   Tides

Tide information is acquired from NOAA tables for the San Mateo Bridge, West End and are updated every time the app is opened.

Tide information is shown with an image of a tidal swell. The baseline swell is divided into a light blue left side and a green right side. When the tide is coming in (flooding) there will be a darker blue overlay on the left. When the tide is going out (ebbing) there will be a darker green overlay on the right. There will also be a label at the bottom of the gauge to tell whether it is flooding or ebbing.

Whether it is flooding or ebbing the current time/tide value will be shown between the bottom and top of the image. When it is flooding, as depicted in this snapshot, the current value will be displayed on the left in blue. When it is ebbing, the current value will be displayed on the right in green.

The values in black refer to either the last low tide and the next high tide (as depicted), or the last high tide and the next low tide. For the former the values will be displayed on the left and the top, and for the latter they will be displayed at the top and on the right.

1.3   History Views

On the flip side of the **Wind** and **Temperature** views is a history view for the same

information. These views are accessed by the 'flip' ( ) button on the lower right of the view.

1.3.1 Wind Histories

Wind histories are shown in two tables, one for the past hour and one for the last 24 hours. In each case, 'now' is at the far right, and the far left represents the furthest time from now. So on the hourly graph the far left represents the wind speeds one hour ago, while on the daily graph the far left represents the wind speeds 24 hours ago.
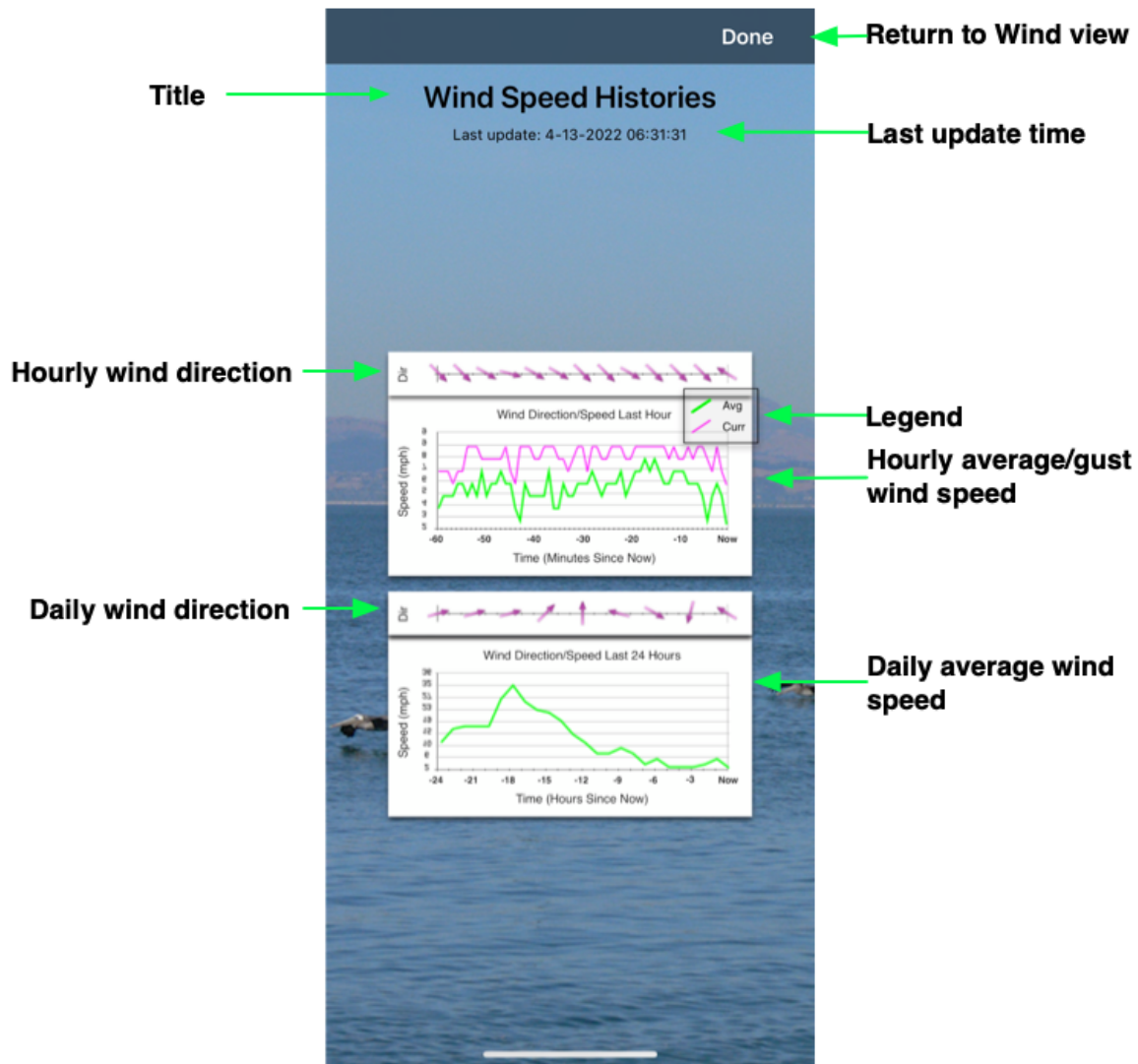
There are two graphs for each view, one representing direction and one representing speed. On the hourly view there will be two plots, one representing the average wind speed (in green) and one representing the instantaneous or 2-minute gust speed (in purple).

Wind direction is provided in 15-degree increments.

Hourly wind speed is updated every minute. Hourly direction is updated every 5 minutes to save space. Daily wind speed is updated every hour. Daily wind direction is updated every 3 hours to save space.

When there is a substantial loss of data the graphs will appear bizarre. They may bottom out on the scale and they may look some other way which is neither contiguous with the other data points nor reasonable.

Sometimes the numbers are too small and you may want to know what they are. For this reason a magnifying glass has been implemented on the history views. Simply press your finger to the screen and hold it and the magnifying glass will appear. You can then drag it to the location you want to see larger.

1.3.2 Temperature Histories

Although temperature in the bay area fluctuates very little over the time periods we plot it is provided as a history view. The time scales are identical to wind speed histories. That is, an hourly graph and a daily graph. The vertical axis a determined by the same simple formula. The graph minima and maxima are bounded by a 20% margin.
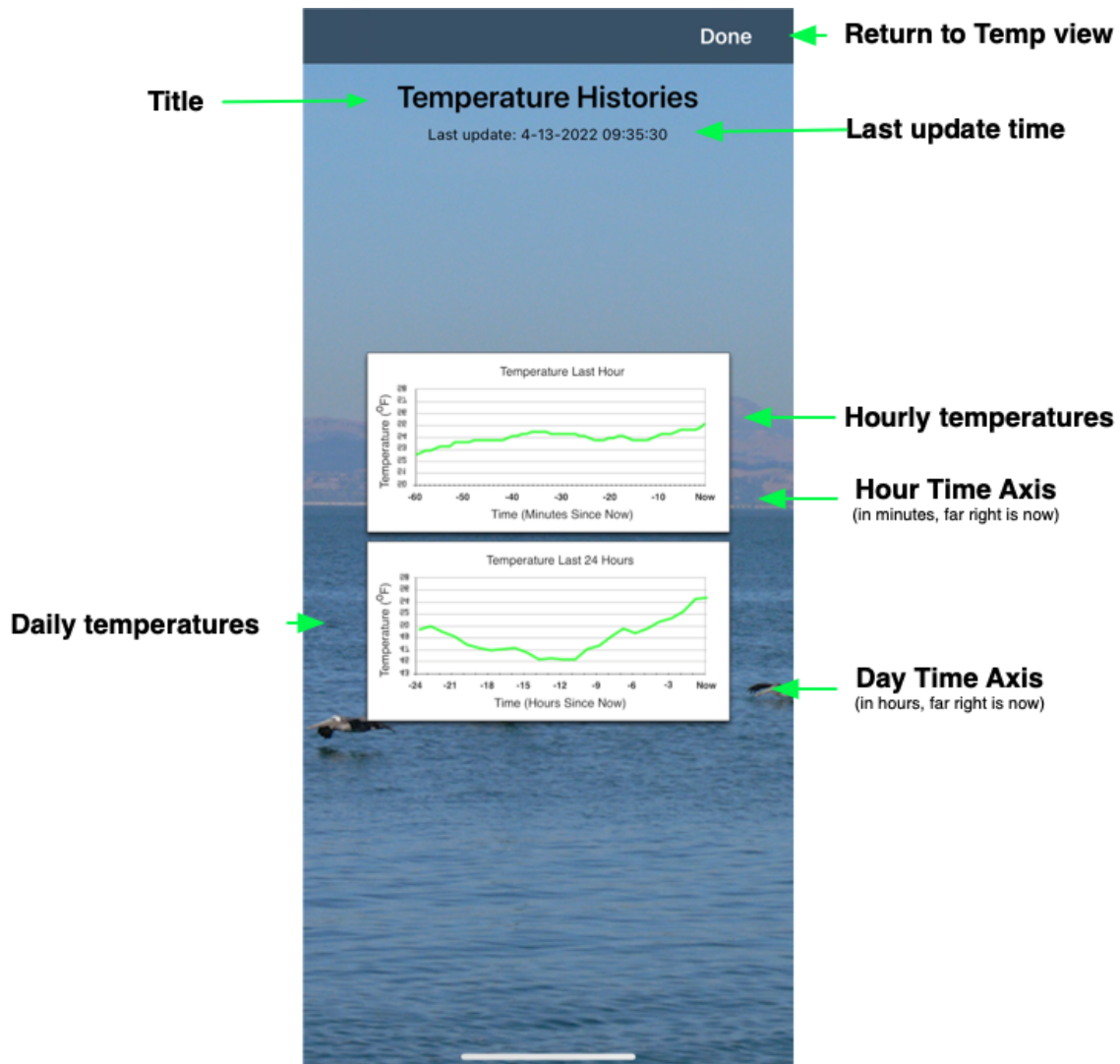
Hourly temperatures are updated every minute, while daily temperatures are updated every hour.

The magnifying glass also works on the temperature history view.

1.4 Forecast View

The application currently supports a view of forecast information 〜 from the National Weather Service in 2 sections (today and this week), as shown below:

Weather Forecasts
(acquired at: 8:44 AM Tue, Apr 12, 2022) → **View title**

Today's and Tomorrow's Hourly Forecasts

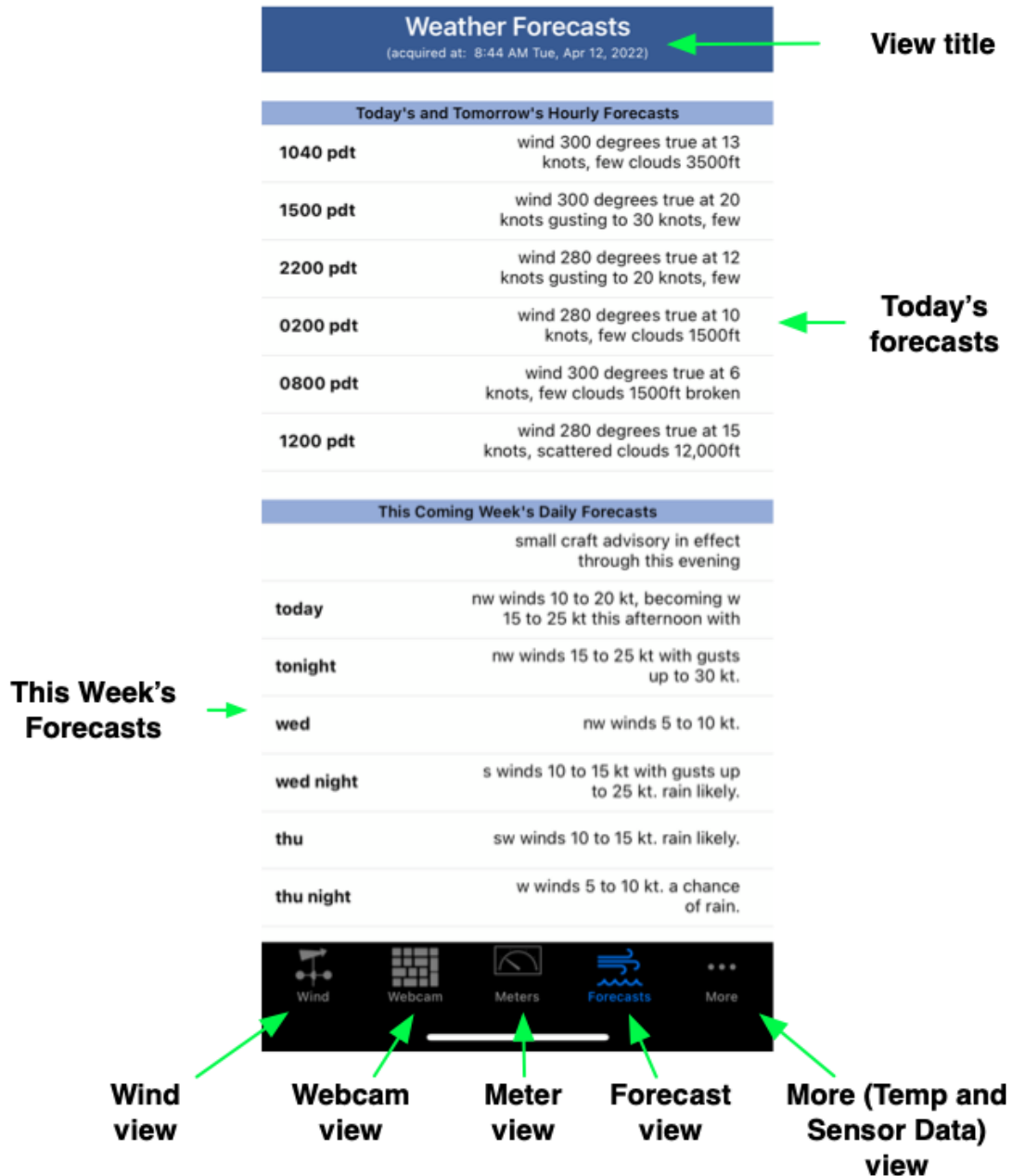| 1040 pdt | wind 300 degrees true at 13 knots, few clouds 3500ft |
1500 pdt	wind 300 degrees true at 20 knots gusting to 30 knots, few
2200 pdt	wind 280 degrees true at 12 knots gusting to 20 knots, few
0200 pdt	wind 280 degrees true at 10 knots, few clouds 1500ft
0800 pdt	wind 300 degrees true at 6 knots, few clouds 1500ft broken
1200 pdt	wind 280 degrees true at 15 knots, scattered clouds 12,000ft

→ **Today's forecasts**

This Coming Week's Daily Forecasts

	small craft advisory in effect through this evening
today	nw winds 10 to 20 kt, becoming w 15 to 25 kt this afternoon with
tonight	nw winds 15 to 25 kt with gusts up to 30 kt.
wed	nw winds 5 to 10 kt.
wed night	s winds 10 to 15 kt with gusts up to 25 kt. rain likely.
thu	sw winds 10 to 15 kt. rain likely.
thu night	w winds 5 to 10 kt. a chance of rain.

This Week's Forecasts →

Wind | Webcam | Meters | Forecasts | More

Wind view | **Webcam view** | **Meter view** | **Forecast view** | **More (Temp and Sensor Data) view**

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1.5   Camera Views

The application currently supports twelve (14) different photographic views of the Third Avenue kiteboarding and sailboarding site acquired from our AXIS PTZ network camera. This collection view can be easily expanded to accommodate more images in the future. The images are accessible from the Webcam view, as shown below:

The camera views are accessed from the 'Webcam' tab on main view. Each image is labeled for its location and, when tapped, will take you to a larger view that is implemented with a Pan and Zoom view that supports swipe and pinch functionality. What this means is that you can use your finger to scroll left and right, up and down. In addition, you can use double taps to zoom in, and two-finger taps to zoom out. You can use pinch and stretch two-finger motions to zoom out and in.

1.5.1 Large Webcam Views

When a thumbnail view is selected a larger image will be displayed in a new view:

Return Button → Done

Wind speed/direction
(showing E at 3 mph)

Title
(changes to white at night)

Current Tide
(showing ebbing at 5.7)

Last update time

Upper Launch Wide Angl
Last update: Apr 13, 2022 at 11:45 AM

View (scrollable, zoomable)
Single click to show buttons at bottom

Take snapshot and save to photo album

Switch to app information view

Toggle audio on/off
(audio clip changes with wind speed)

Each view will have two round images near the title. The left one will show the wind direction and speed when you selected the image, and the right one will show the type of tide (flood or ebb) and the current tide value when you selected the image.

The image, when first displayed, is on the left side of the image but centered vertically, so you will have to swipe to the left to see further to the right. You can pinch and stretch to zoom in or out as well.

A single tap will raise the top bar and the bottom buttons. This action toggles, so each time you tap you will change the view of the top bar and lower buttons.

There are three (3) buttons on the lower edge of the view. The one on the left is an Information button that will take you to the 'info' view for the application.

The button on the right will toggle the background sounds on and off. They have a 30 second timeout so when you toggle them off they might take a while to fade out.

The middle button is used to save a copy of the current image to your photo collection. There is no feedback for when this is happening except if the app has to ask you for permission to do so.

1.6   Sensor Data View

The sensor view ▦ presents a table of about 30 attribute/value pairs that do not make sense to show in a dial or history view but are valuable nonetheless. The image below describes how to interpret the view.
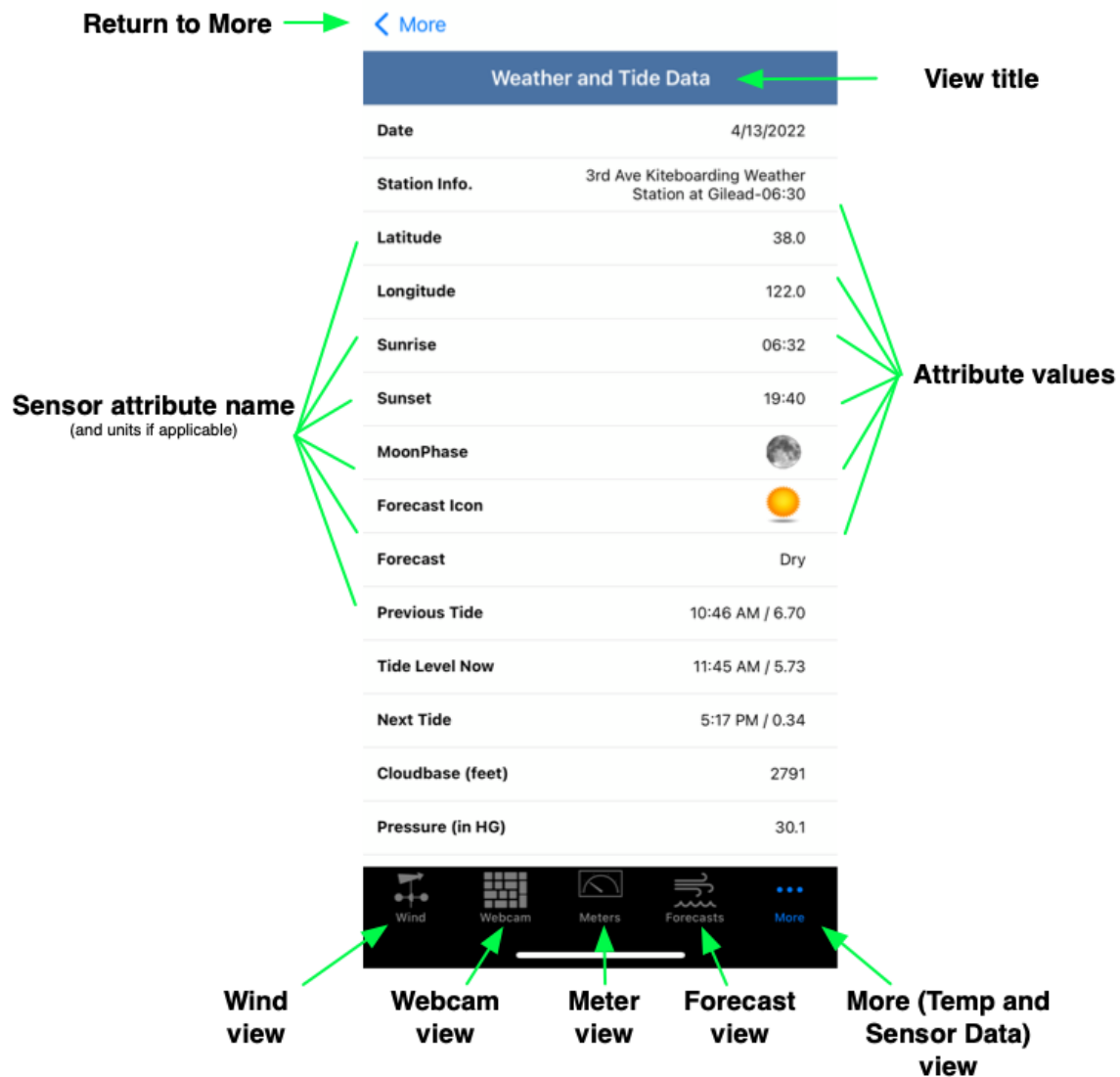
Along the left side of the table are displayed the sensor attribute names (e.g., Date, Sunset, Forecast, Windchill, Cloudbase, etc.). Along the right are displayed those attribute's values.

The attribute names will also include the unit categories (parenthetically) for those attributes that have units. For example, temperatures are displayed in Degrees Fahrenheit (i.e., deg F) while Pressure is displayed in Inches of Mercury (in HG).

You can use swipe motions to scroll up and down the list to see all of the attributes and their values. It should be noted that most of these values appear somewhere on the graphical views.

1.6.1.1   Latitude and Longitude

These are the values of the weather station location.

1.6.1.2   Moon Phase

There are generally 30 days in a month, and there are 30 images in this set. The data values provided from the weather station describe moonphase in percentages. These percentages are then multiplied by the number of images to determine which one to display. They will generally be pretty close to the moon phase that you see in the sky.

1.6.1.3   Forecast Icon

Forecast icons will change depending on the half of the day that is currently in effect. That is, if it is between sunrise and sunset "daytime" forecast icons will be displayed, while if it is between sunset and sunrise the "nighttime" forecast icons will be displayed. The algorithm for selecting forecast icons has been rewritten to favor windy conditions. Before the application displayed whatever forecast icon was delivered from the weather instrument. More recently, as mentioned, the algorithm would distinguish between daytime and nighttime conditions. Now the algorithm checks to see if the forecast says that it is windy or, if, in fact, it is actually windy (using the same values used to switch between background images). If so, then a windy icon is selected.

1.6.1.4   Forecast

The forecast string is a combination of current conditions and a generic forecast that is conjured up from the temperature, pressure, wind speed, humidity, cloudbase (I am guessing here). The application has been modified to support variable-height table cells to accommodate long forecast strings.

1.6.1.5   Previous, Current, and Next Tide

Tide information has been acquired from the NOAA Tide Predictions site for the San Mateo Bridge, West End. Three days are being acquired: today, yesterday, and tomorrow. This guarantees that there will always be data for two full tide cycles in any given day, so previous and next tide values will be data from the NOAA site. For the current tide value these two bounding values are interpolated. Each tide value is displayed with the time

and value, so by looking at the previous and next values you can tell which was the high tide, which was the low tide, and whether it is currently flooding or ebbing.

1.6.1.6 Cloudbase

Our site is very sensitive to cloud cover since the winds on the bay are mostly generated as a result of convection between San Francisco and San Jose. So high clouds can shut our convection down and stratus can either kill us altogether or signal a low-pressure system that could be stable but most likely southerly in nature. So cloudbase can be a useful prediction mechanism.

1.6.1.7 Barometric Pressure

Barometric pressure and, more importantly, barometric pressure trends, are very helpful in predicting weather and winds.

1.6.1.8 Humidity

Humidity is a measure of the water content in the air. San Francisco can show relatively high levels of humidity and still feel dry, but if the values reach above 60% rain is likely.

1.6.1.9 Temperature and Windchill

For some the air temperature and windchill are determining factors in whether they are willing to go out (me for one). The values here can provide you with some extra decision-making information in that regard.

1.6.1.10 Rainfall Measures

Rainfall usually tells us that kiting is not going to happen, whereas it can sometimes mean a good sailboarding session. If it was raining and is now sunny or partly cloudy a clearing wind might be happening or about to happen, so measurements of rainfall can be very helpful.

1.7 Notification Settings View

The notification settings view ⚙ presents a set of options and controls so that you can decide when to be notified of conditions at 3rd Avenue. There are 2 notification types, (1) ramping notifications, and (2) go notifications.

Return to More screen — < More

Notification Settings

Setting		Label
Enable day time settings:	● (green)	**Enable day hours**
Starting hour (24 hour):	10	**Set day start hour**
Ending hour (24 hour):	14	**Set day stop hour**
Enable speed settings:	● (green)	**Enable speed**
Enable temperature settings:	○	**Enable temperature**
Enable direction settings:	○	**Enable direction**

Conditions Ramping Notification Settings

Setting	Value	Label
Min wind speed (mph):	12	**Set min speed**
Min temp (degrees F):	60	**Set min temp**
Low direction:	250	**Set min direction**
High direction:	310	**Set max direction**

Get to 3rd NOW Notification Settings

Setting	Value	Label
Min wind speed (mph):	14	**Set min speed**
Min temp (degrees F):	62	**Set min temp**
Low direction:	250	**Set min direction**
High direction:	300	**Set max direction**

Wind   Webcam   Meters   Forecasts   More

1.7.1 Notification Types

For the ramping notifications, you will decide what wind speed and directions, and perhaps temperature, you want to be notified of to ready yourself to go to 3rd. For the go notification you will decide what wind speed and direction, and possibly temperature, require you to get off your behind and in the car.

1.7.2 Enablements

There are 4 things you can use to determine how to receive notifications:

- Time of day
- Minimum wind speed
- Minimum temperature
- Wind direction on a compass rose

For each enablement there is a switch in the notification settings interface that lets you turn these settings on and off. If they are off then this setting will not be used in determining whether to send you a notification.

1.7.2.1 Time of Day Enablement and Values

Many people do not want to get notifications at all times of the day but, rather, during times they would consider going to 3rd. For this reason the time of day enablement and associated sliders have been provided. The time of day enablement lets you decide what your typical day at 3rd Ave means, and thus when to send you notifications.

Caution: If you set the day enablement switch to off then you can receive notifications at any time of the day.

If the time of day switch is set to on, then you will decide when to start and stop receiving notifications. You will use the first slider to determine at what hour (on a 24-hour clock) to start sending notifications. In the sample figure this value has been set to 10:00 am. Likewise, the second slider is used to determine when to stop sending notifications, and for some reason the sample figure shows this value as 14 or 2:00 pm.

1.7.2.2 Speed Enablement and Values

Typically, all we care about is how strong the wind is blowing and so the speed enablement perhaps should never be disabled. On the Apple Watch it isn't. When you set this enable speed switch the associated slider value will determine the minimum wind speed (as a gust value) you want the particular notification type to apply to. In the sample figure, the ramping notification minimum speed is set to 12 mph, while the go notification minimum speed is set to 14 mph.

1.7.2.3 Temperature Enablement and Values

Some people care about the air temperature to motivate them to go (or not to go) to 3rd. When you set the enable temperature switch the associated slider value will determine the minimum air temperature you want the particular notification type to apply to. In the sample figure, the ramping notification minimum temperature is set to 60 degrees F, while the go notification minimum temperature is set to 62 degrees F.

1.7.2.4 Wind Direction Enablement and Values

Some people care about the wind direction to motivate them to go (or not to go) to 3rd. When you set the enable direction switch the associated slider values will determine the wind direction range you want the particular notification type to apply to. In the sample figure, the ramping notification direction range is set from 250 → 310 degrees on the compass rose, while the go notification wind direction range is set from 250 → 300 degrees F.

When you change any of these values and leave the screen, for example to return to the wind dial screen or to the webcam images, the new settings will take effect with respect to sending you notifications.

1.8   Weather Data Dials/Buttons

Below the upper bar on each camera view there are two dial images/buttons. The one on the left ( ) shows a miniature compass rose with a number in it. The dial in the rose is displaying the currently correct wind direction, while the number displayed is showing the currently correct wind speed value. You can touch the dial because it is implemented as a button. When it lights up it will be easier to read the value.

The dial on the right ( ) displays the current tide type (ebb or flood) and the current tide value. If the tide is an ebb tide then the right side of the sine wave will be highlighted, while if the tide is a flood ( ), as depicted, the left side of the sine wave will be highlighted (as shown). Note the darker section for each example.

Both of these dials are implemented as buttons, and if you select either one it will return you to the ThirdAveWebcamAndWeather application.

1.9 General Operation

Each of the views is designed to fit vertically in as much of the space as is available. This means that you are only viewing a 'band' of the image, and can scroll (or pan) to the left or right by swiping your finger across the image. You can use pinch and stretch motions to zoom out or in.

Clearly the most dramatic of all the views is the panoramic view. Unfortunately, it is a very large image (almost 12 MB) so it takes a long time to load. When it does, it will be worth the wait, because it has been stitched together from 28 separate high-resolution images and allows you to scroll from beyond the north end on the left all the way past Inktomi on the right; i.e., the whole site.

2 iPhone/iPad Troubleshooting

| Symptom	Solution
The app doesn't launch.	• If there is no weather data available the app will not launch. Please try again later. • If you have wifi turned on and there is no wireless in your current area, the app may open so slowly that it times out. Try turning off wifi. • Contact us at help@arbor-studios.com
Weather information is not shown.	• There may be a network connectivity issue. Check your network access. • The weather sensor may be offline. If tide information is unavailable an alert will be shown.
Webcam images are unavailable.	• There may be a network connectivity issue. Check your network access. • The webcam may be offline.
Webcam views appear in grayscale	• At night the camera automatically shifts to infrared which appears as grayscale.

3   Apple Watch

An Apple Watch interface was designed and implemented and is now fully functional. The Apple Watch interface has 4 views:

- Wind speed and direction view
- Webcam view
- Forecast view
- Tide view

3.1   Wind speed and Direction View

The wind speed and direction view looks a lot like the Apple Exercise app with 2 concentric rings that provide information. The outer ring provides wind direction information as a circular 'dot' that moves around to indicate the wind direction. The inner ring shows the wind speed as a filled arc. On even multiples of 5 mph the speed will be shown in the bar. The actual speed and direction will be shown in the center of the rings.

The wind speed and direction data is updated 3 times per minute. The dials are also animated.
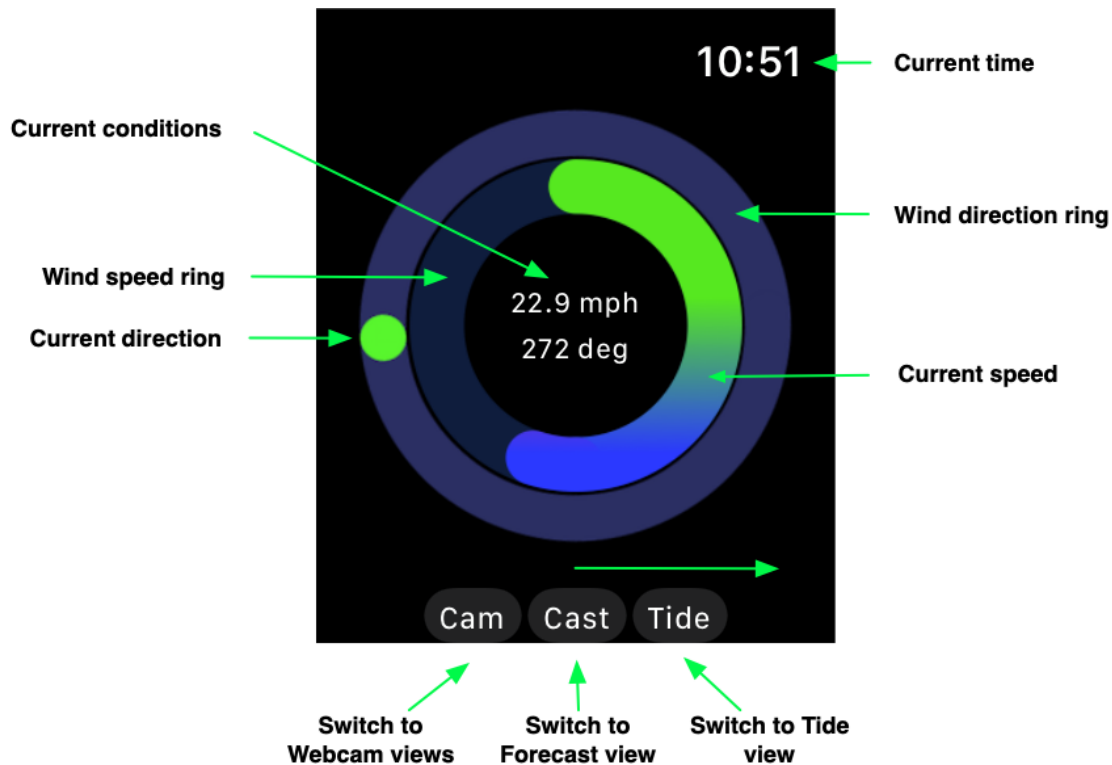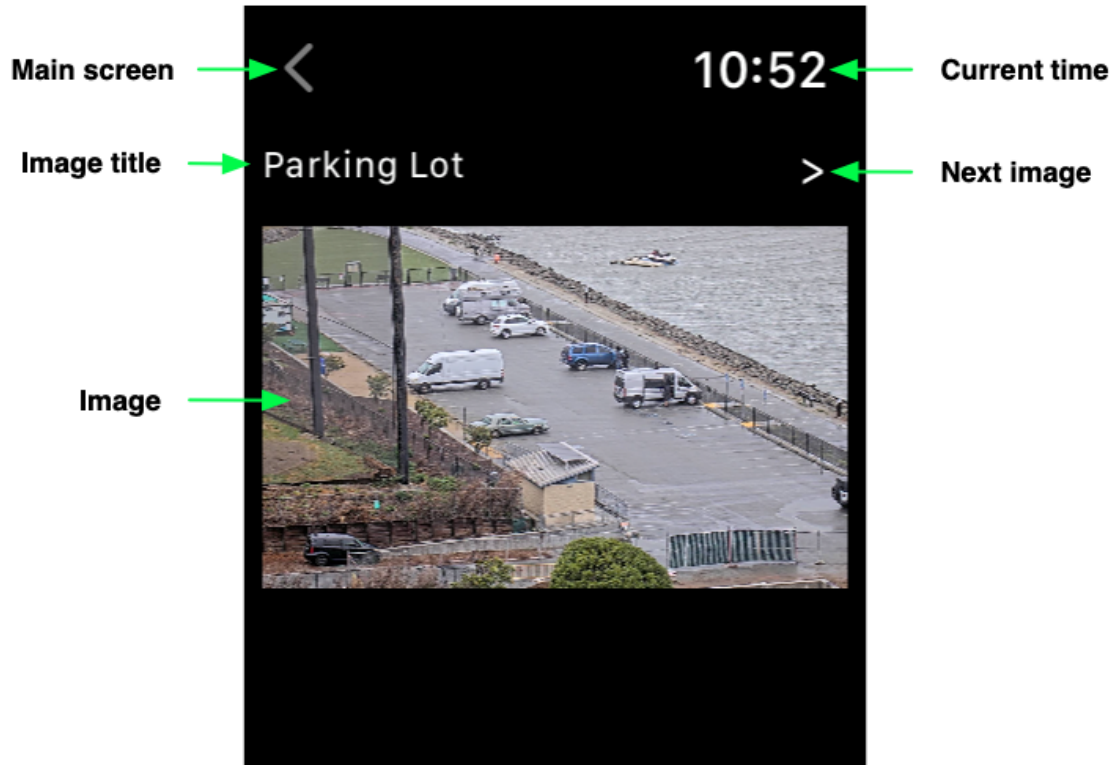

3.2   Webcam Views

The Apple Watch application has 4 webcam views to select from:

- Parking lot view (shown below)
- Upper setup and flag view
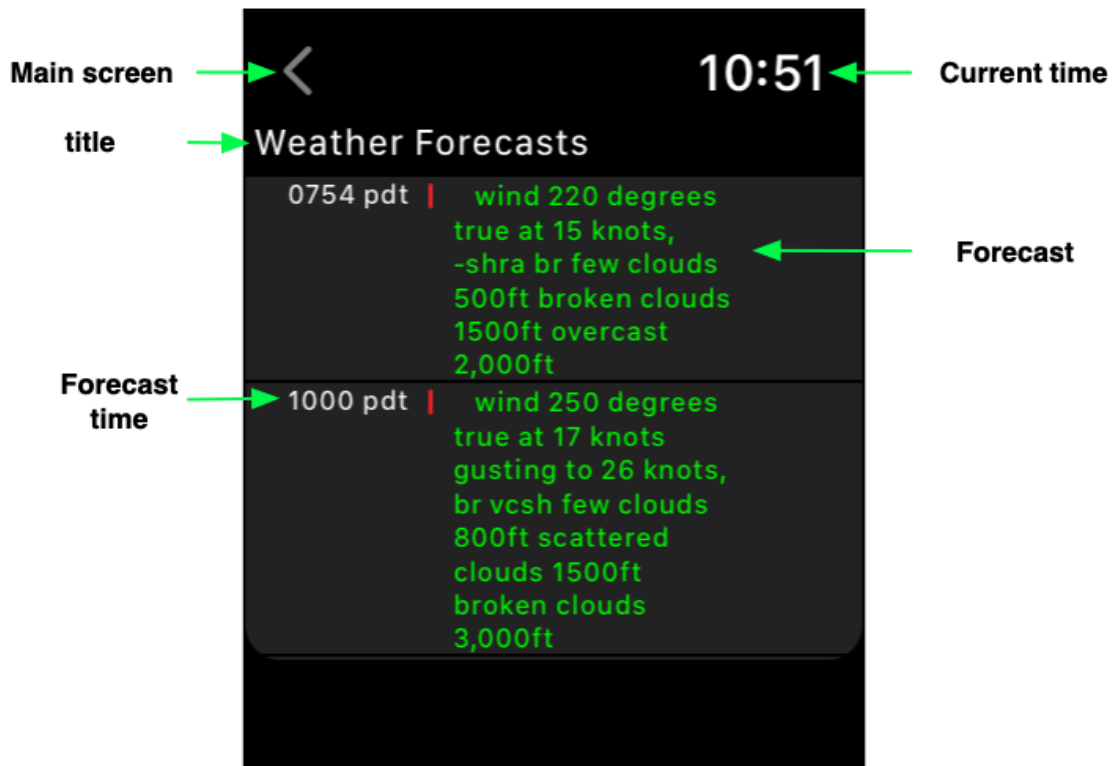
- North end setup and flag view
- Lower setup view

Each view has buttons to go forward and backward through the list.

On the last view, the forward button will return to the main screen.

3.3   Forecast View

There is a forecast view that shows the National Weather Service forecast for today, as shown below:
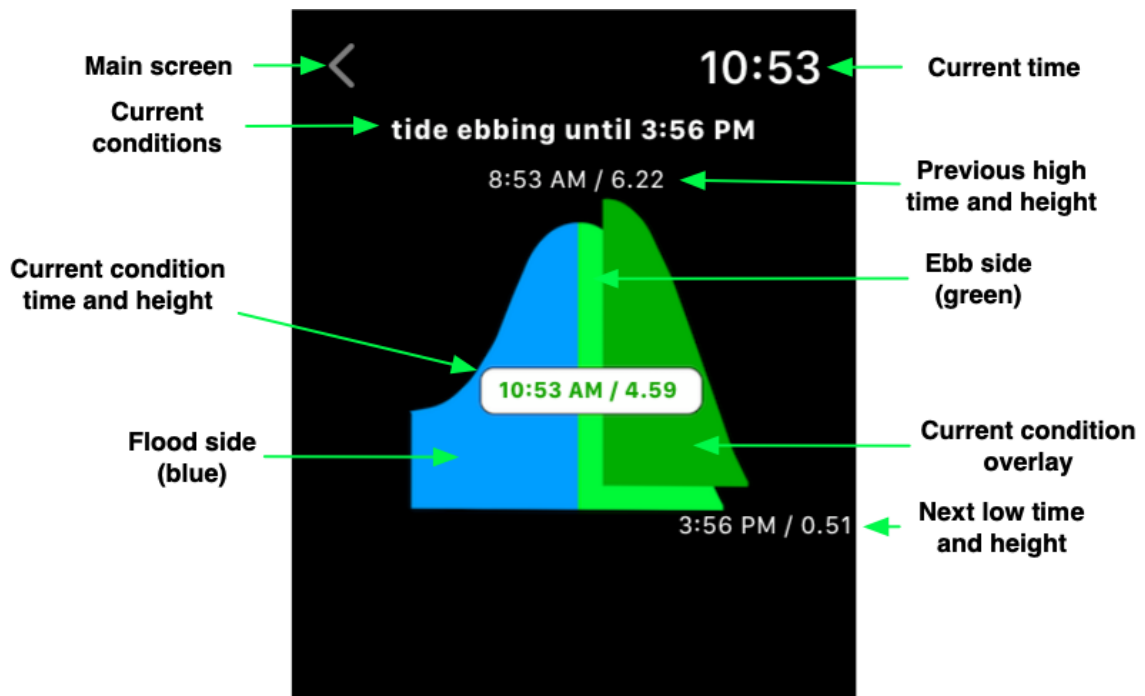
It is a simple table with times on the left and forecasts on the right.

3.4 Tide View

There is a tide view that uses the same graphic as the iPhone and iPad application versions. There is a back button to return to the main screen, and the current tide conditions for Floor or Ebb (ebb shown below). The basic graphic shows a half sine wave split between flood (in blue) and ebb (in green). An overlay in darker blue or green gives a quick indication whether we are currently in a flood or ebb condition, but it is also stated near the top of the sine wave image.

The overlay will indicate the last and next values. For the ebb tide shown below the last value is the last high tide value and the next value is the next low tide value, where values are always times and heights.

There is a label in the center that shows what the current value (time and height) when the last data was acquired. In the image below you can see that the last data was acquired at the same time as shown on the clock but this is not always the case, depending on how responsive the network connection is.

Main screen

Current conditions

Current condition time and height

Flood side (blue)

Current time

Previous high time and height

Ebb side (green)

Current condition overlay

Next low time and height

10:53

tide ebbing until 3:56 PM

8:53 AM / 6.22

10:53 AM / 4.59

3:56 PM / 0.51

4   Apple Watch Troubleshooting

Symptom	Solution
The app doesn't update on main or any view.	- If there is no weather data available the app will show as zero values. Please try again later. - If there is a problem with the network the views might not update. - Contact us at help@arbor-studios.com
Weather information is not shown.	- There may be a network connectivity issue. Check your network access. - The weather sensor may be offline. If tide information is unavailable an alert will be shown.
Webcam images are unavailable.	- There may be a network connectivity issue. Check your network access. - The webcam may be offline.
Webcam views appear in grayscale	At night the camera automatically shifts to infrared which appears as grayscale.
Forecast is empty	- The forecast site might be down or not delivering data - The thread that delivers the forecast data may not have retrieved data yet. Be patient.
Tide graphic shows no data or null values	- The tide site might be down. - The thread that delivers tide data may not have retrieved data yet. Please be patient.

If there is any other type of problem with the application, please send mail to:
help@arbor-studios.com and please mention ThirdAveWebcamAndWeather in the
subject line. We will try to understand and resolve your problem.