

ThirdAveWind User Manual

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1	ThirdAveWind Application Tutorial	1
1.1	General Information and Setup	2
1.2	Dial, Meter, and Gauge Views	3
1.2.1	General View Description	3
1.2.2	Wind View	5
1.2.3	Temperature View	6
1.2.4	Meter View	7
1.2.5	Gauge View	8
1.3	History Views	10
1.3.1	Wind Histories	10
1.3.2	Temperature Histories	11
1.4	Sensor Data View	12
1.5	Camera Views	16
1.5.1	Parking Lot View	17
1.5.2	Wind Flag and Ramp View	18
1.5.3	Jump Area View	19
1.5.4	Lower Beach View	20
1.5.5	Panoramic View	21
1.5.6	Weather Data Dials/Buttons	24
1.5.7	General Operation	25
2	Troubleshooting	25

1 ThirdAveWind Application Tutorial

Welcome to the ThirdAveWind tutorial! If you are here then there is a good chance you have purchased ThirdAveWind and either want to review the features or are confused and are looking for answers. First, thank your for your interest/patronage! 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 ThirdAveWind installed on your device, you can return to it using the following link: [ThirdAveWind](#).

ThirdAveWind 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 inside of the Electronics for Imaging (soon to be Gilead Sciences) building in Foster City, CA. If you wish to return to the application, please select the following link: [ThirdAveWind](#) (only from an iOS device that has it installed of course).

It is important that you know that ThirdAveWind is a monitoring application and not a prediction 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. 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.

ThirdAveWind, and its cousins ThirdAveView and ThirdAveSuite were developed for kites 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. ThirdAveWind 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, ThirdAveWind might not provide data. If the weather instrument or its server are down, or if there is an interruption in network connectivity, ThirdAveWind will be useless and you will need to use an alternate source for weather information at 3rd Ave.

1.1 General Information and Setup

ThirdAveWind is divided into five types of views:

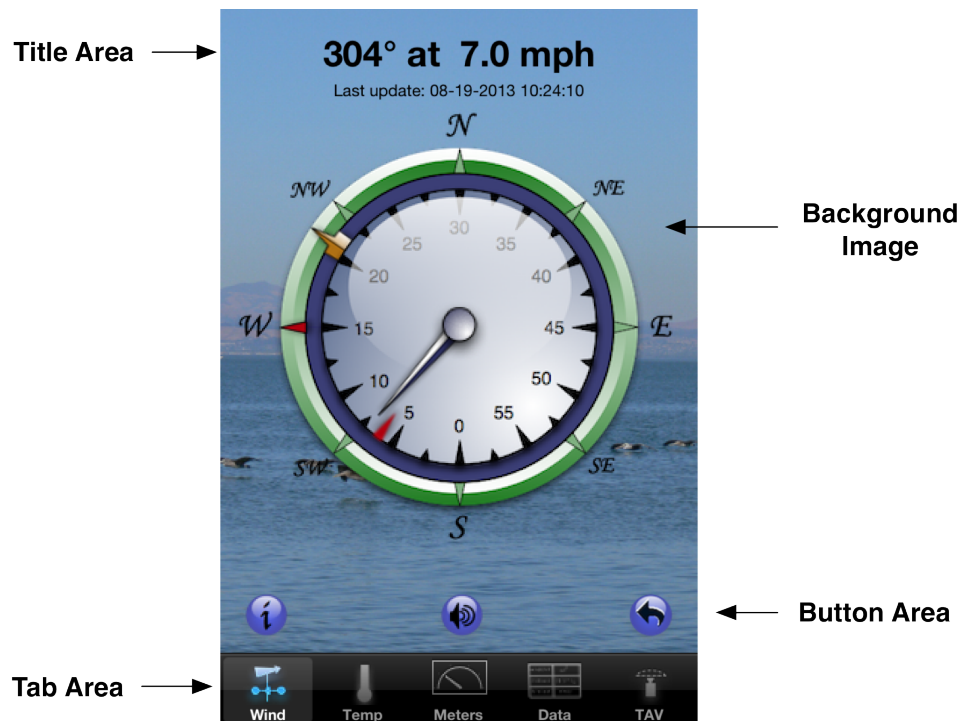
- **Dial views** show near realtime data values on analog dials
- **History views** show historical data for the data presented in the dial view
- **Sensor Data** shows attributes and their values, some of which aren't shown in dial or history views
- **Play view** allows the user to play a practice
- **Webcam views** shows image views of various important viewpoints (if ThirdAveView is installed)

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.

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





1.2.1 General View Description




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
- **Temp**  : Provides information on temperatures

- **Meters**  : Provides temperature and humidity information
- **Data**  : Provides a table of relevant sensor data
- **TAV**  : Provides access to ThirdAveView


1.2.1.3 Button Area

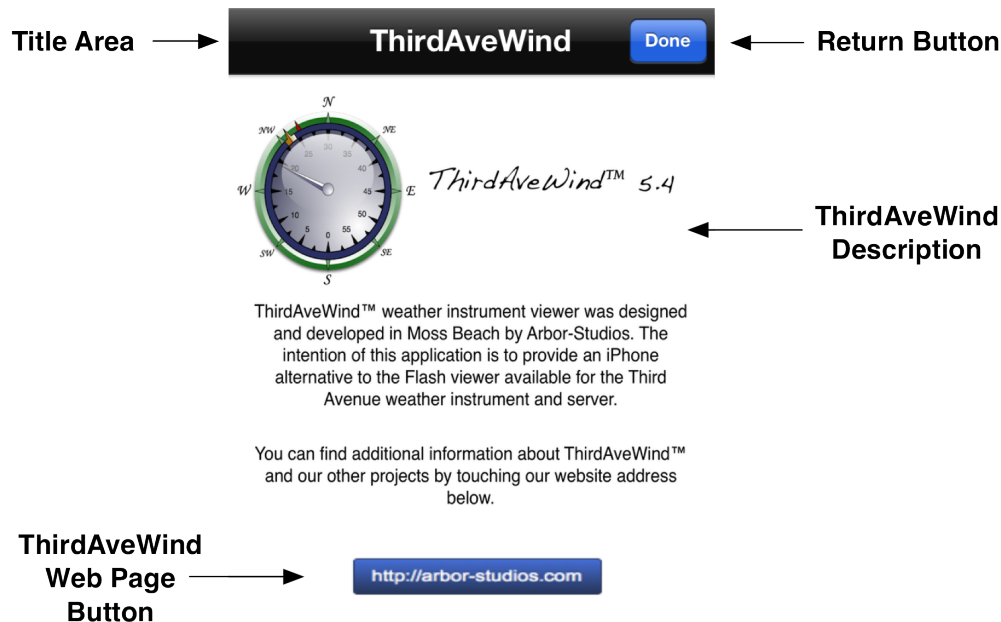
Each top-level view (from the tab bar) displays a button area with three buttons.

1.2.1.3.1 Background Sounds

At the bottom center of every dial 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 as the background images. The default is for sound to be off.

1.2.1.3.2 ThirdAveWind Information Page

At the bottom left of every dial view is an icon  that opens a view that describes the application.




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On this information page there is a button that will launch the Arbor-Studios ThirdAveWind home page (and access to the tutorial) in Safari. If you have

ThirdAveWind installed on an iOS device you can return to the app from a link on the tutorial page.

1.2.1.3.3 Toggle to History/Alternate Meter View

At the bottom right 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 Background Audio

Along with background images there is background audio, when audio is toggled on. The background audio also changes with wind speed using the same logic as the background images.

- **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

1.2.2 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.

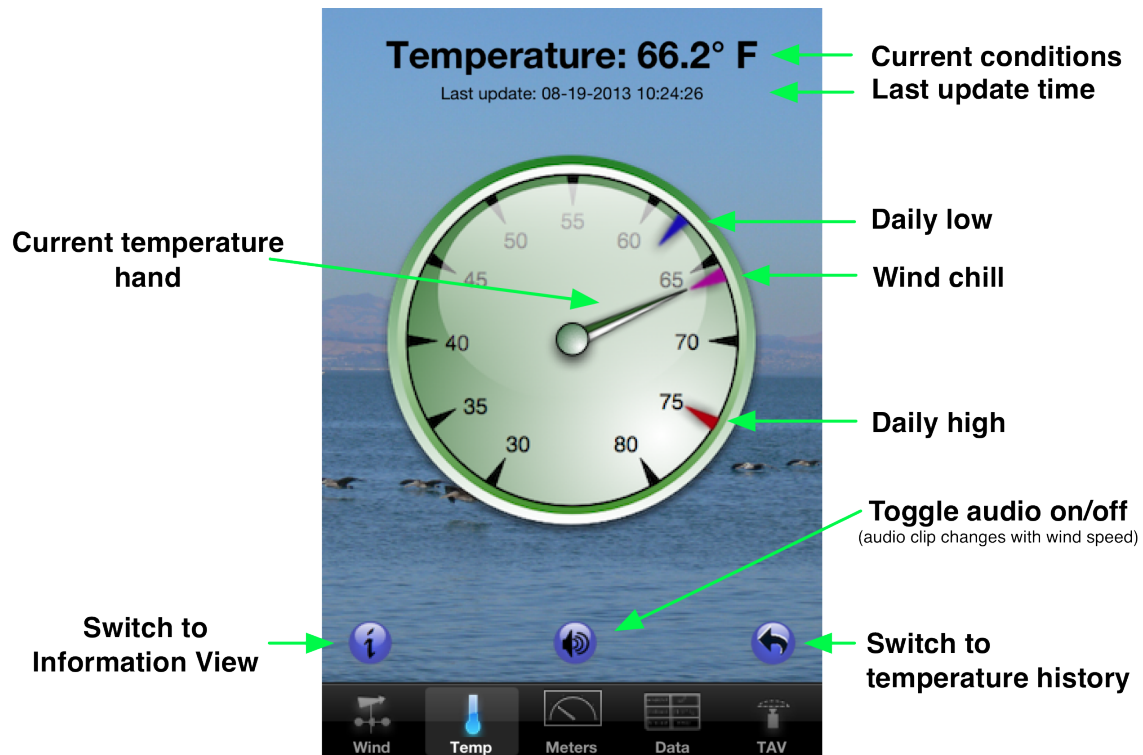
- **Yellow/Gold dial hand:** Shows the current wind direction and runs along a dark blue annular path. It points in the direction from which the wind is blowing.
- **Outer red chevron:** Shows the average wind direction over the past 10 minutes. It points in the direction from which the wind is blowing.
- **Inner 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 4 times per minute.

1.2.3 Temperature View




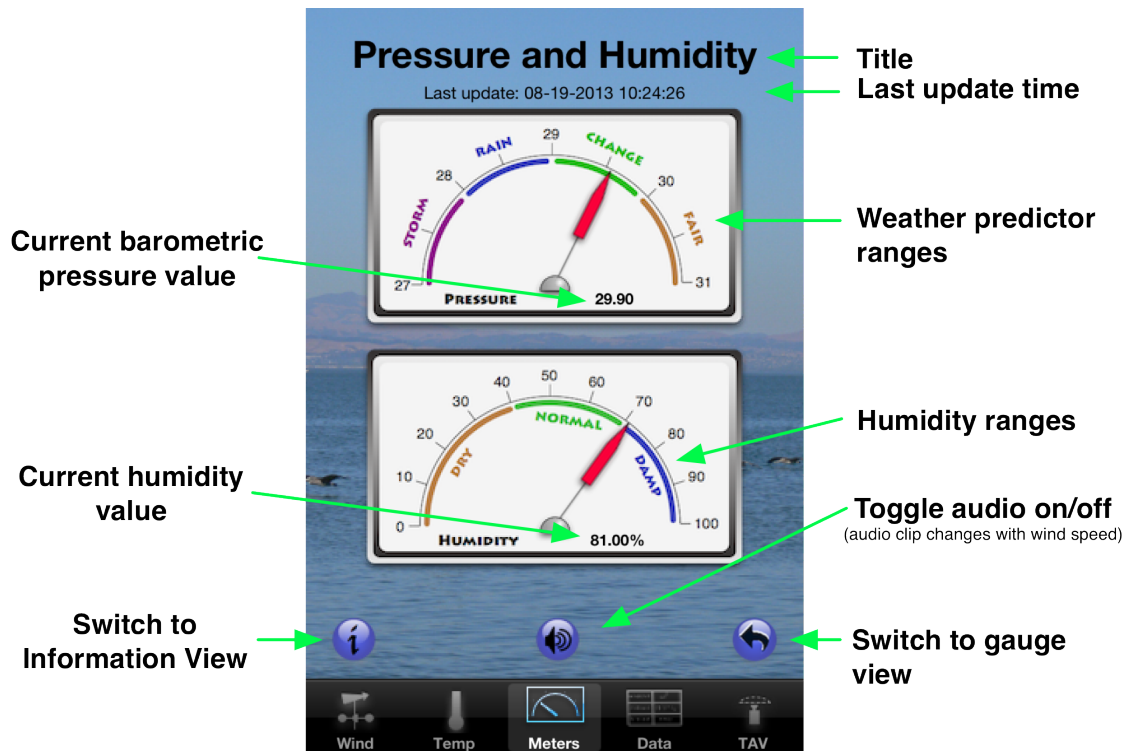
The figure below identifies all of the features available on the Temperature view. This view depicts the current temperature as well as the wind chill, and the daily low and high temperatures. The current temperature is displayed using the main dial hand. The mini blue chevron is used to display the 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).



All temperature information is updated approximately 4 times a minute.

1.2.4 Meter View

The figure below identifies all of the features available on the **Meter**  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.


Barometric pressure is updated approximately 4 times a minute.

1.2.4.2 Humidity

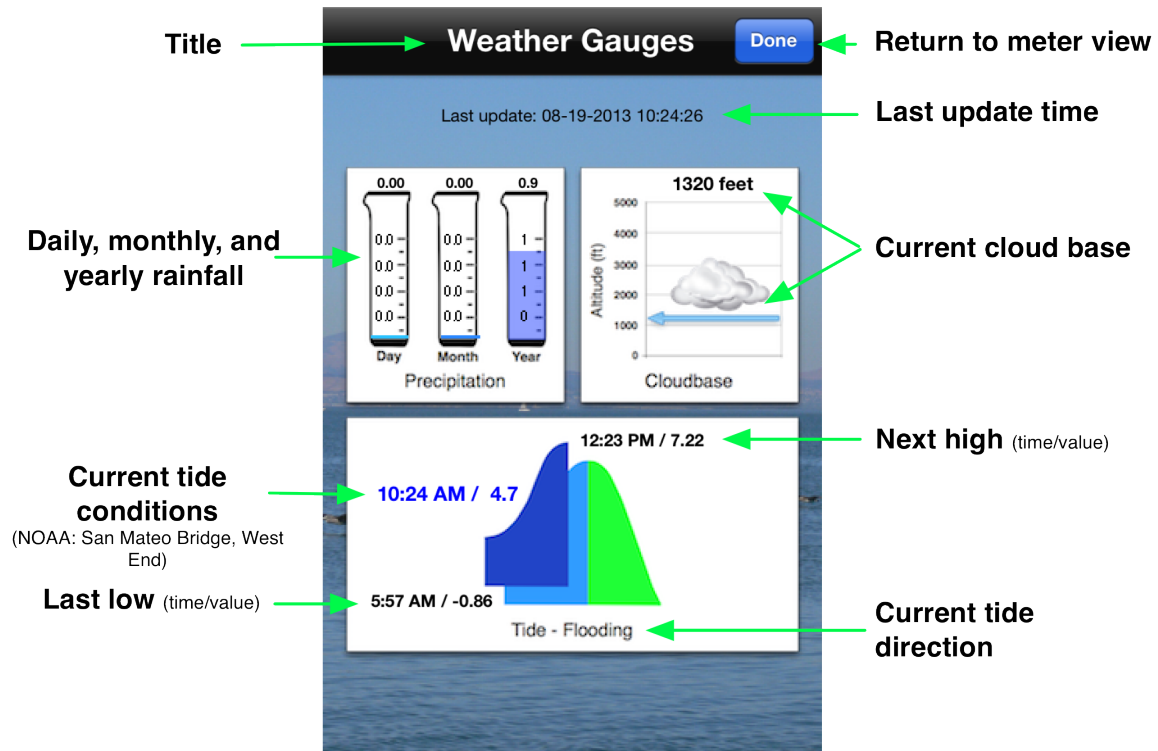
The current humidity is shown measured as a percentage from 0-100, where 100% humidity would be rain. The meter is divided into 3 regions, one each for dry, normal, and damp conditions. Dry is generally associated with high pressure systems, while damp is generally associated with low pressure systems, 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.

Humidity values are updated approximately 4 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 ThirdAveWind, the last update time for this information is shown below the title.



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 for the day or month this snapshot was taken, but there was a 0.9" accumulation for the year.

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 4 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 4 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.

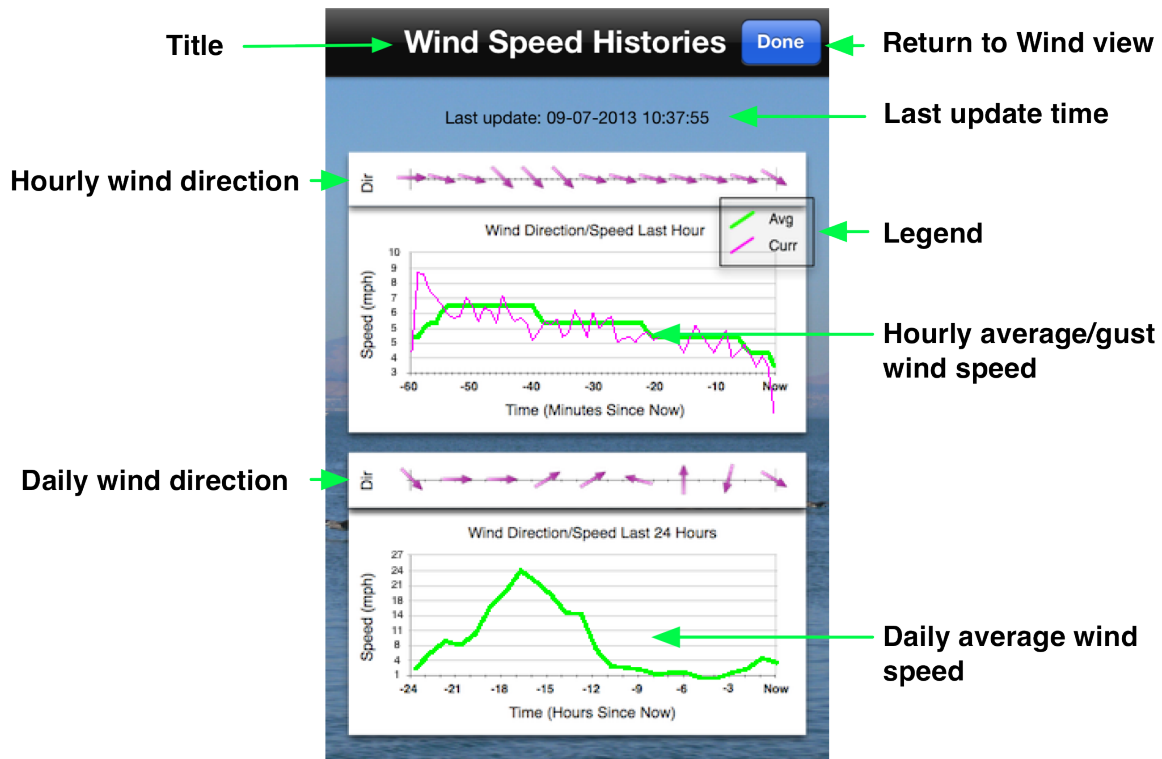
The values in black refer to either the last low tide and the next high tide (as depicted), or the last high tide and the next low tide. For the former the values will be displayed on the left and the top, and for the latter they will be displayed at the top and on the right.

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.

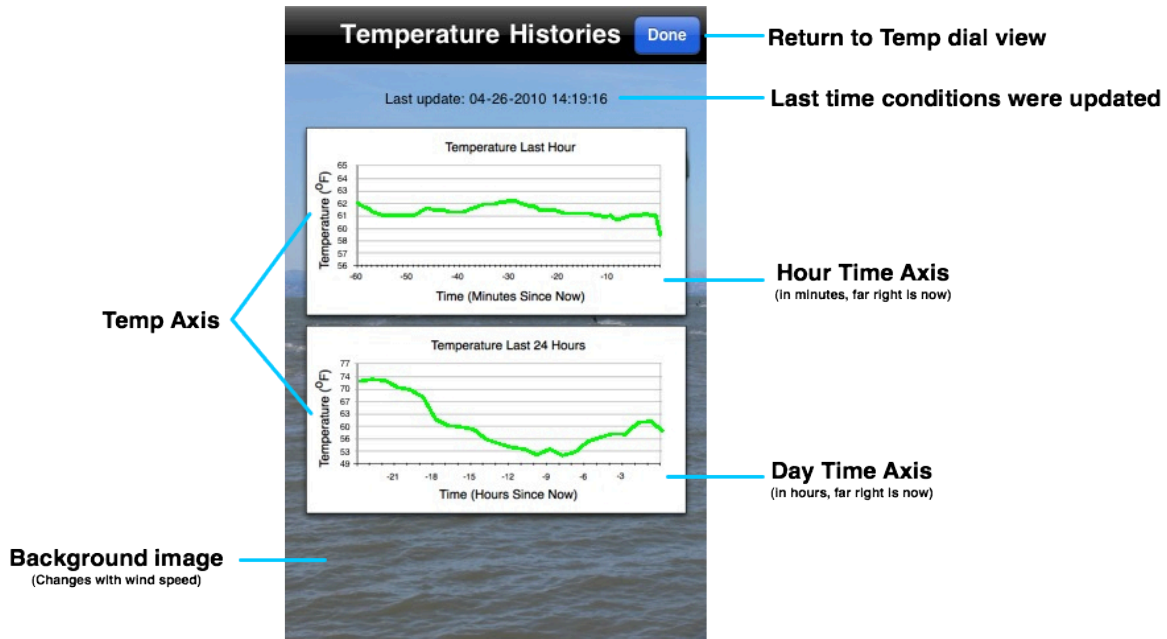
Hourly wind speed is updated every minute. Hourly direction is updated every 5 minutes to save space. Daily wind speed is updated every hour. Daily wind direction is updated every 3 hours to save space.

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 is determined by the same simple formula. The graph minima and maxima are bounded by a 20% margin.

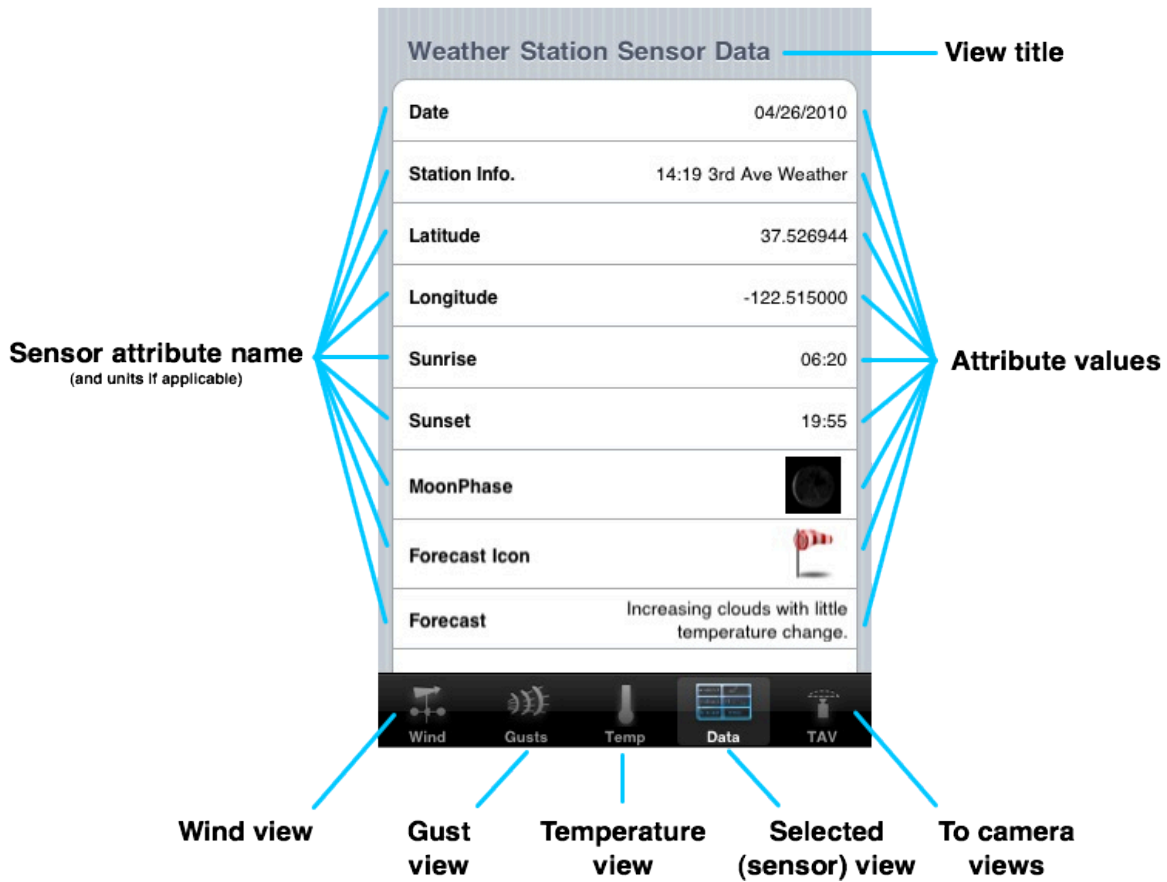


Hourly temperatures are updated every minute, while daily temperatures are updated every hour.

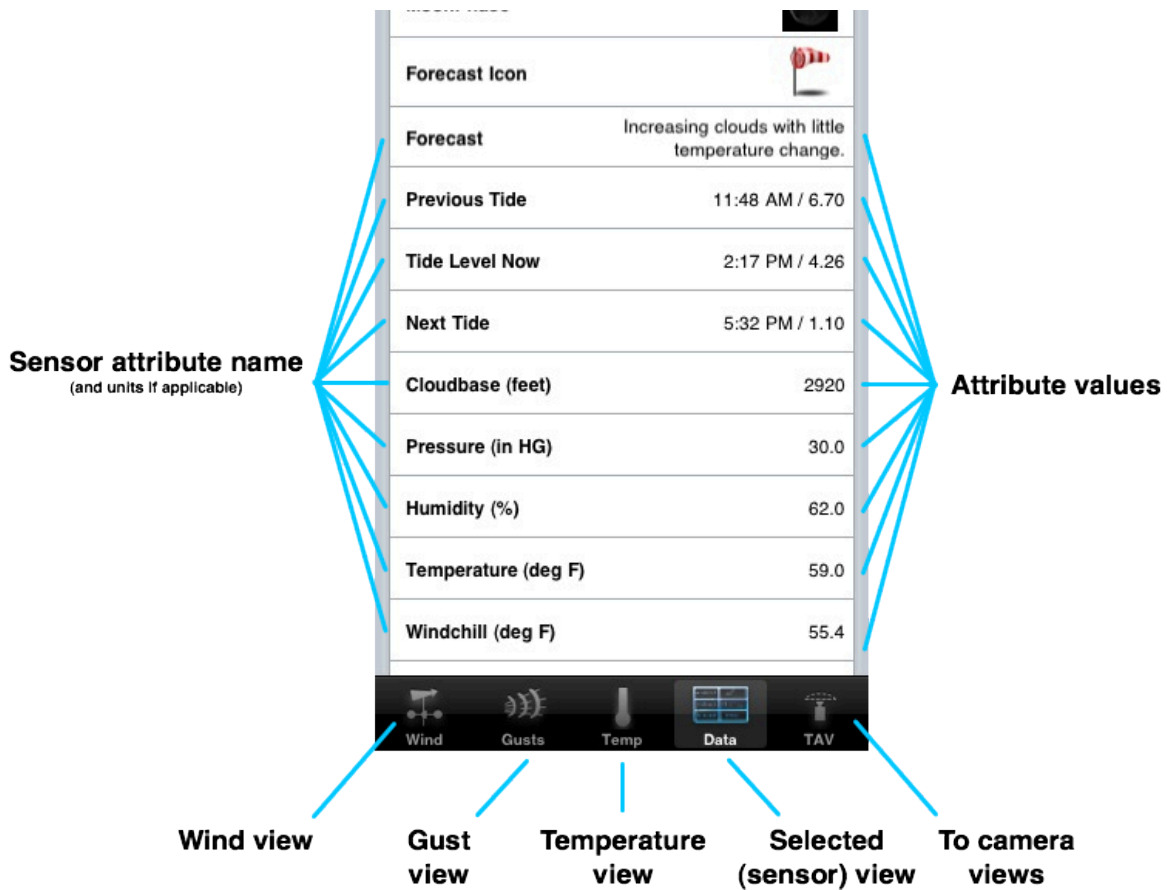
The magnifying glass also works on the temperature history view.

1.4 Sensor Data View

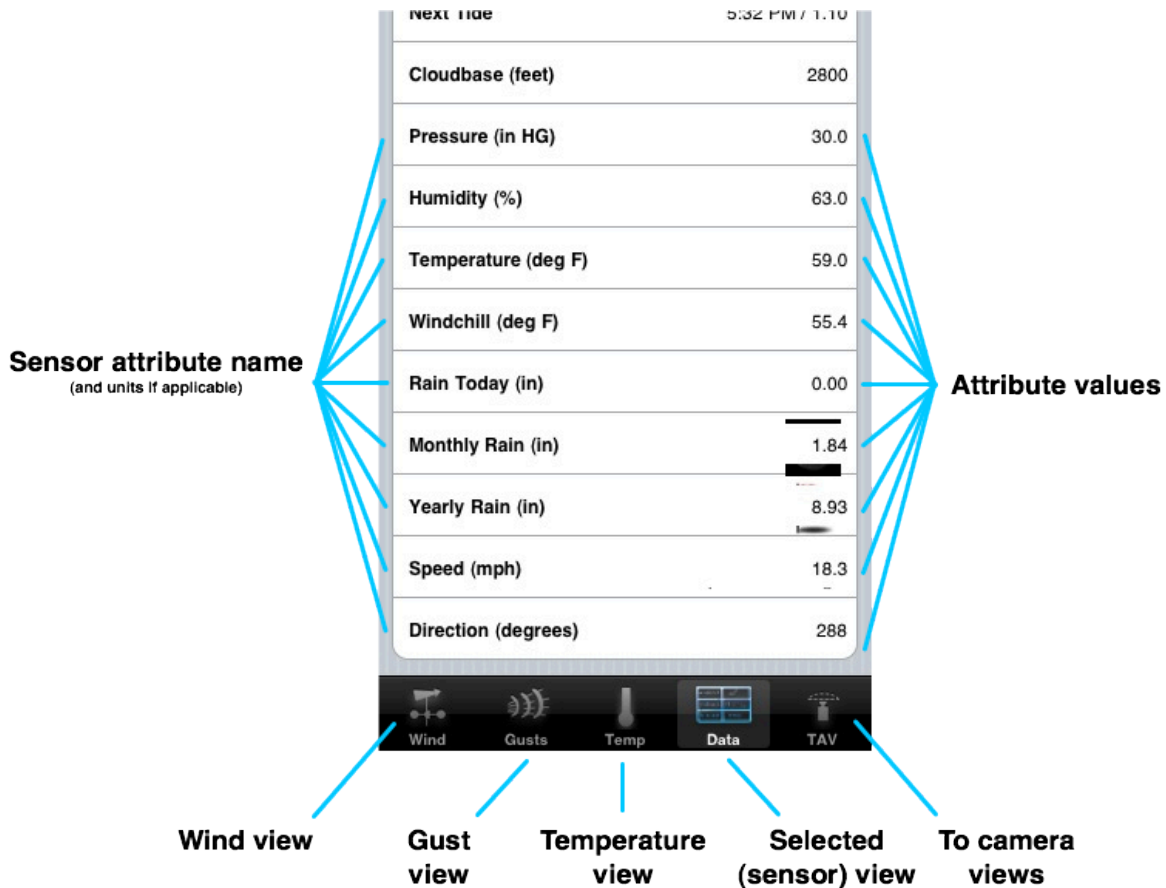
The sensor view  presents a table of about 30 attribute/value pairs that do not make sense to show in a dial or history view but are valuable nonetheless. The image below describes how to interpret the view.



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).



1.4.1.1 Latitude and Longitude

These are the values of the weather station location.

1.4.1.2 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.

1.4.1.3 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.

1.4.1.4 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.

1.4.1.5 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.

1.4.1.6 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.

1.4.1.7 Barometric Pressure

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

1.4.1.8 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.

1.4.1.9 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.

1.4.1.10 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.

1.5 Camera Views

The application supports five (5) different photographic views of the Third Avenue kiteboarding and sailboarding site acquired from our Sony PTZ network camera:

- **Parking Lot** () shows a view of the main parking lot
- **Carpeted Area and Flag** () shows the main setup area and the flag by the sailboard ramp
- **Jump** () shows the main kiteboarding jumping area at the corner of the path, to the right of the sailboarding ramp
- **Beach** () shows the lower beach setup area
- **Panoramic** () shows a panoramic view created by stitching together 33 images together (3 rows of 11 images)

The camera views are accessed from any of the dial or history views from the tab on the far right labeled "tav". When selected, the ThirdAveView application will be launched (if

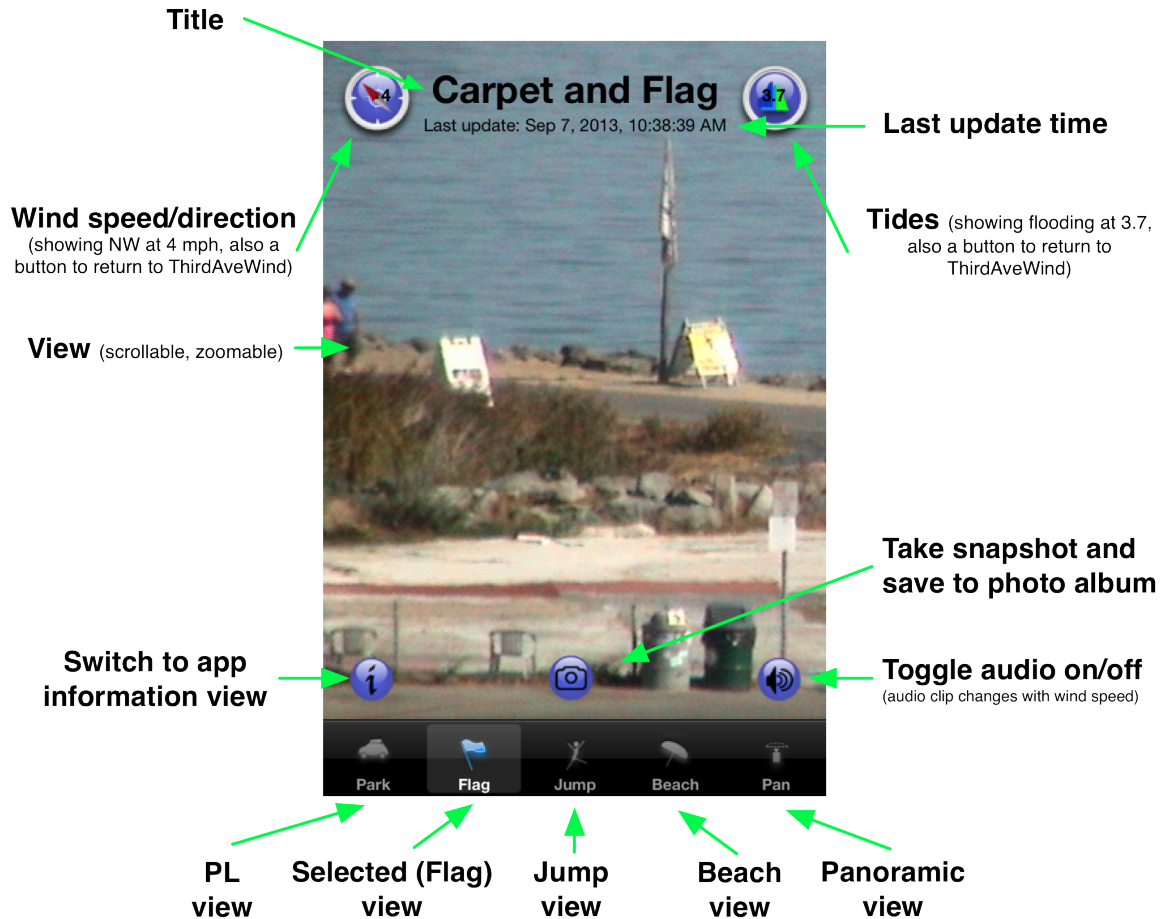
installed). All of the camera views look the same so only one  will be described as a legend. Each image is implemented with a Pan and Zoom view that supports tap functionality. What this means is that you can use your finger to scroll left and right, up and down. In addition, you can use double taps to zoom in, and two-finger taps to zoom out. You can use pinch and stretch two-finger motions to zoom out and in, but it doesn't seem to work very well right now.

1.5.1 Parking Lot View



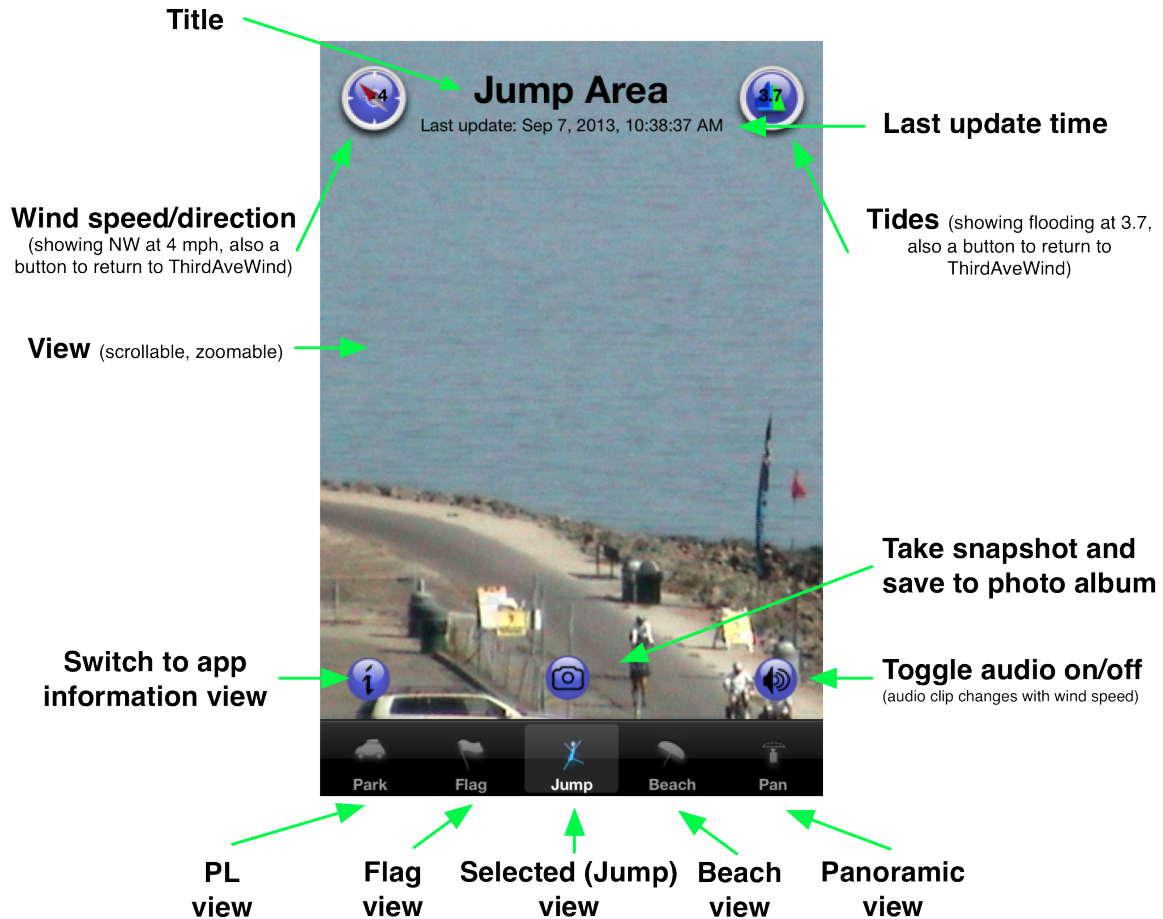
1.5.2 Wind Flag and Ramp View

The camera view for  looks as follows



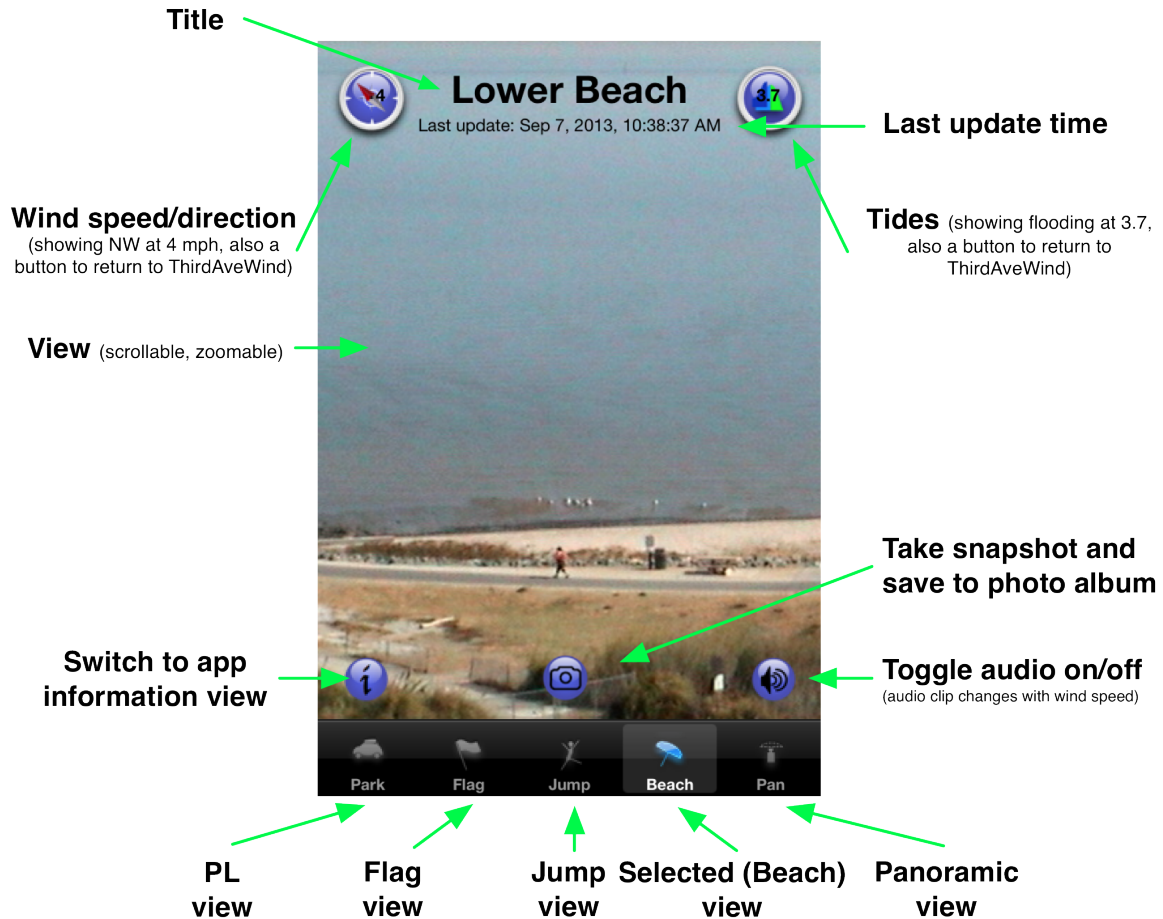
1.5.3 Jump Area View

The camera view for  looks as follows



1.5.4 Lower Beach View

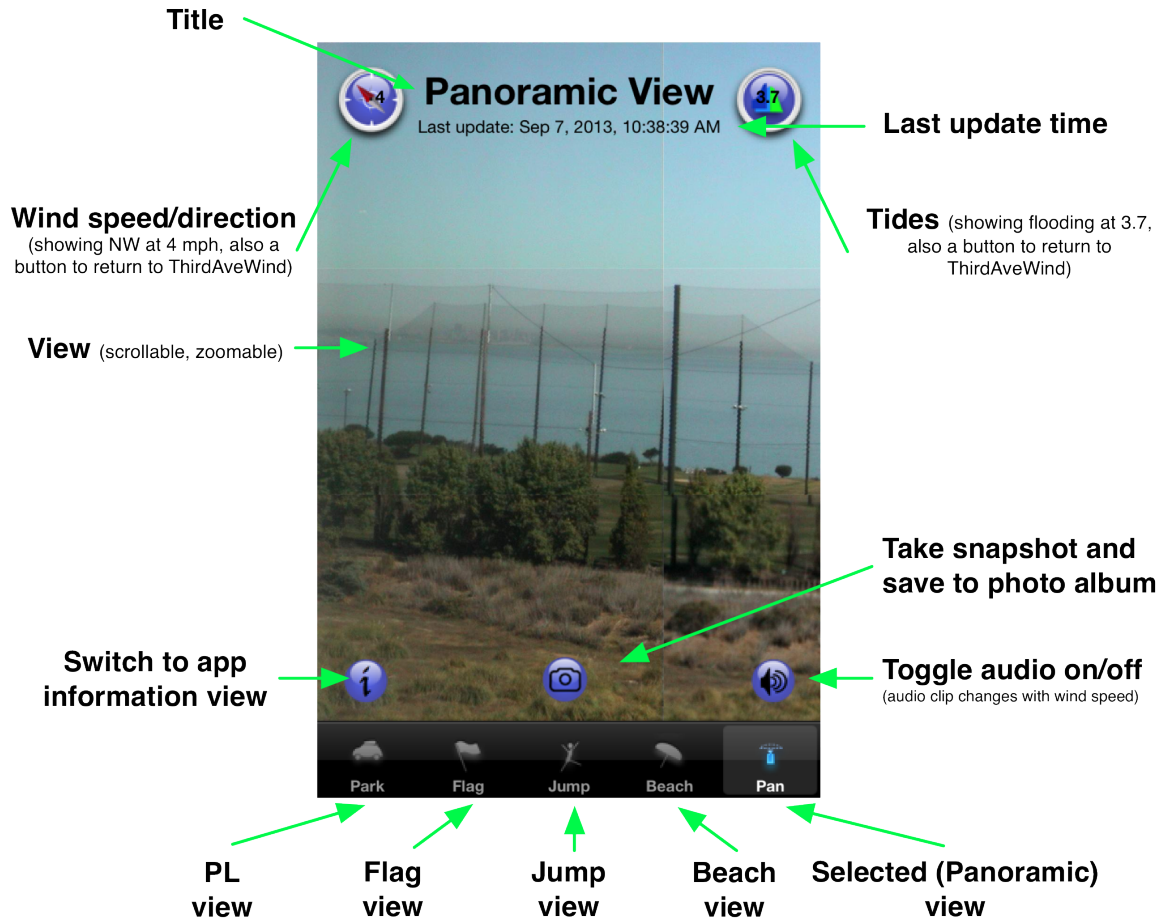
The camera view for  looks as follows



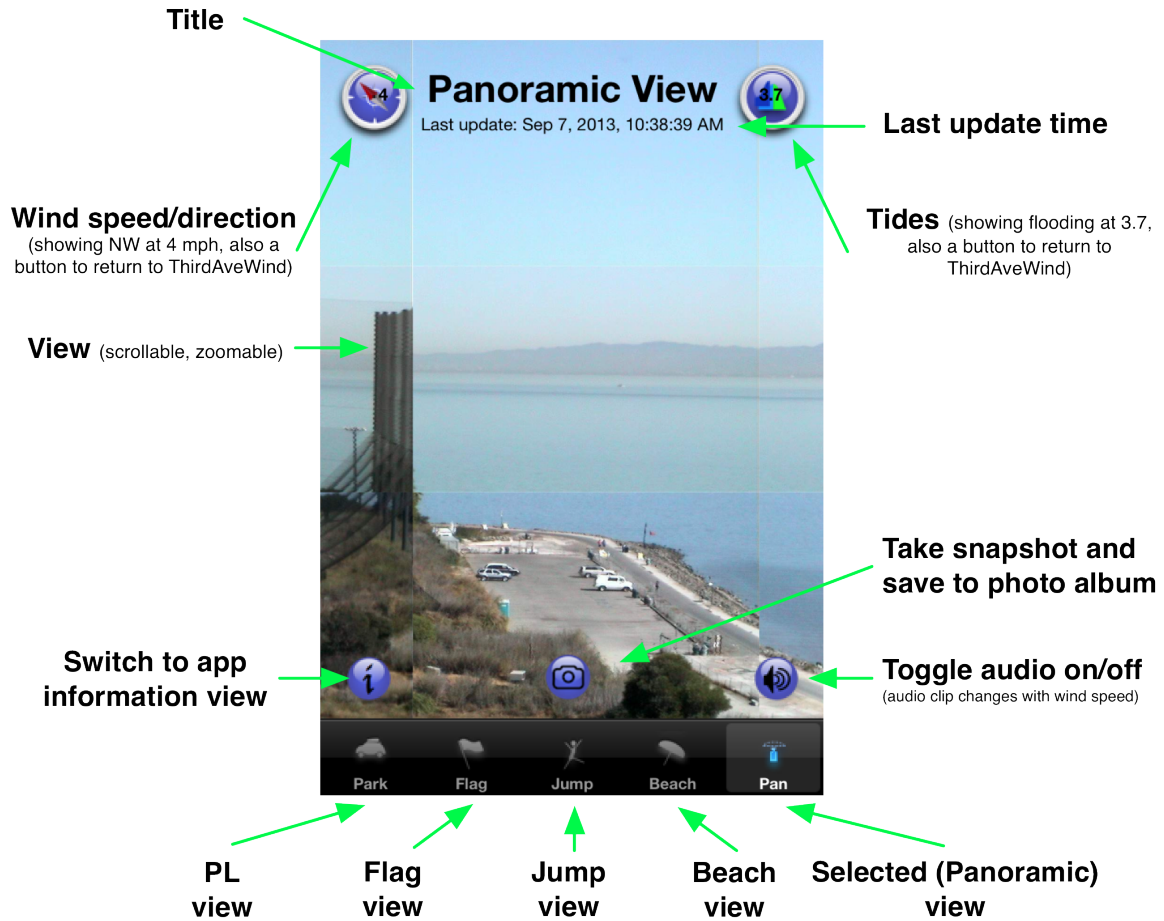
1.5.5 Panoramic View



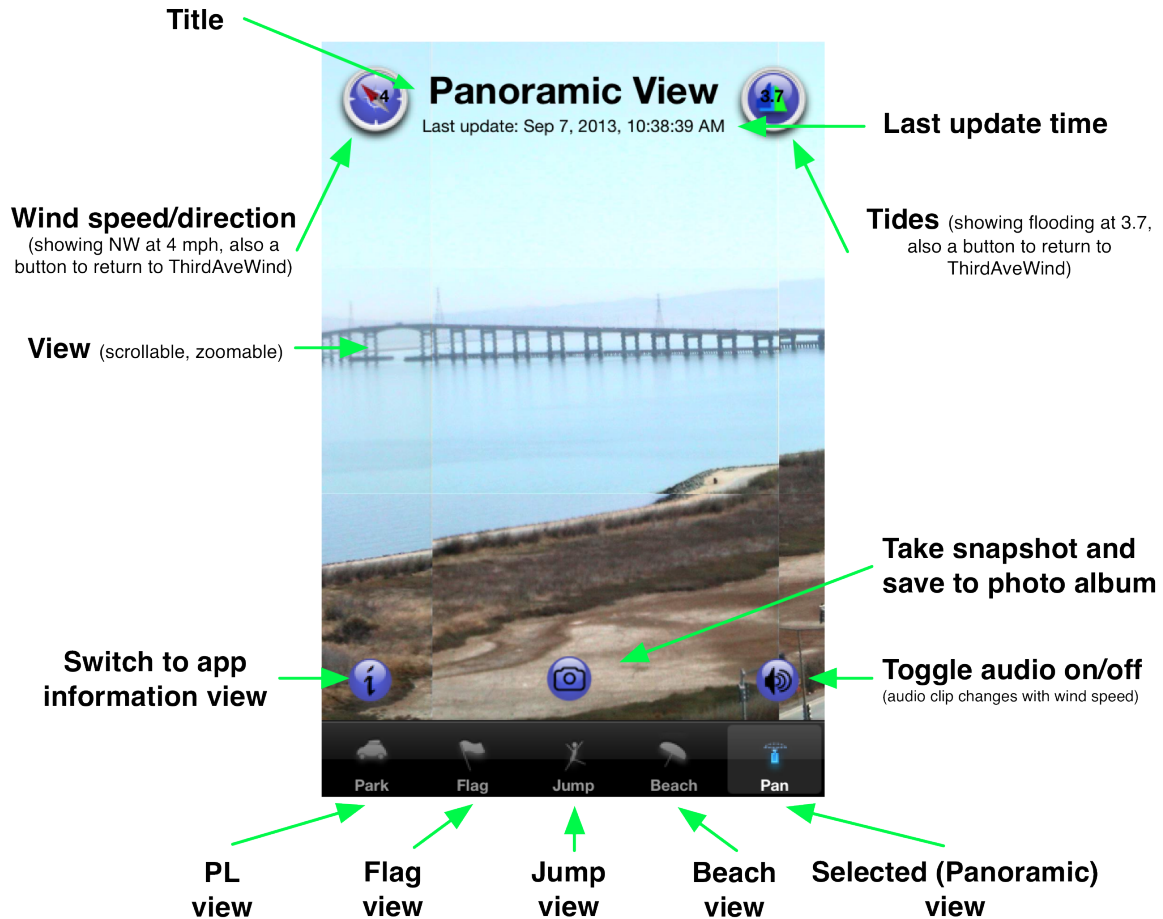
The camera view for  looks as follows. It is a large image that takes a while to load but is worth the wait. Here are shown 3 images scrolling left to right.



The next view shows the center of the panoramic view:



The last view shows the right side of the panoramic view:




When you select to save a snapshot of the panoramic view you will indeed be saving the entire view and not the section that is in view on the phone at the moment. It will look as follows:



1.5.6 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 ThirdAveWind application.

1.5.7 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 1 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 33 separate images and allows you to scroll from almost the north end on the left all the way to Inktomi on the right. It may not load on older (3G and before) iPhones. In fact, it may crash the application. If the panoramic view opens in zoomed mode it will probably do so for the entire day, and will not respond to *zoom out* touch events. This is not a problem with the application but with the software controlling the camera.

2 Troubleshooting

Symptom	Solution
The app doesn't launch.	<ul style="list-style-type: none">• 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.	<ul style="list-style-type: none"> • 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 never available.	<ul style="list-style-type: none"> • You may not own a copy of ThirdAveView. ThirdAveView is a companion app that is sold separately.
Webcam images are unavailable.	<ul style="list-style-type: none"> • There may be a network connectivity issue. Check your network access. • The webcam may be offline.
Webcam views appear in grayscale	<ul style="list-style-type: none"> • Occasionally the camera gets confused and the images will be in grayscale for the whole day. It is annoying, but it always fixes itself by the next reboot (reboots occur around midnight daily).

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