All You Need To Know To Use Hurrevac Effectively

An Essentials-Only Review

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Introduction –

Hurrevac2000, a program funded by FEMA (DHS), Army Corps of Engineers and NOAA, has developed into a comprehensive decision tool for emergency managers.

However, the numerous features of the program can present challenges to the occasional or infrequent user who may have a problem figuring which routines are important in the decision-making process.

This training is designed to review only those Hurrevac topics and features that are felt necessary for hurricane decision-making by a county emergency manager.

There are of course other outside factors that come into play in evacuation decision-making, but by outlining only the most relevant topics in Hurrevac, we hope to maximize the utility of the program for decision-making in threat situations.

The 5 Main Topics we will cover are:

1. **How to Get the Program**
2. **How to Set up the Program for Your Community**
3. **How to Work with the Program Interface and Maps**
4. **Basic Evacuation Decision- Making with Hurrevac**
5. **How to Get Help When You Need It**

Our goal is to train you in a way that avoids information overload, and makes it more likely that you will use the program when the next threat develops.

Main Topic 1 -

How To Get Hurrevac

Hurrevac is available only to the government emergency management community and involves no cost to the users. Users must register however, in order to receive communications such as updates, corrections etc. for the program.

Registration is simple - go to the website at http://www.hurrevac.com and click on the Register link .

Fill out the form that appears and hit send. Once we receive it we will determine your eligibility and then send you instructions on how to download and run the setup program. The installation program is straightforward and involves only clicking on a 10 megabyte setup file.

Main Topic 2.

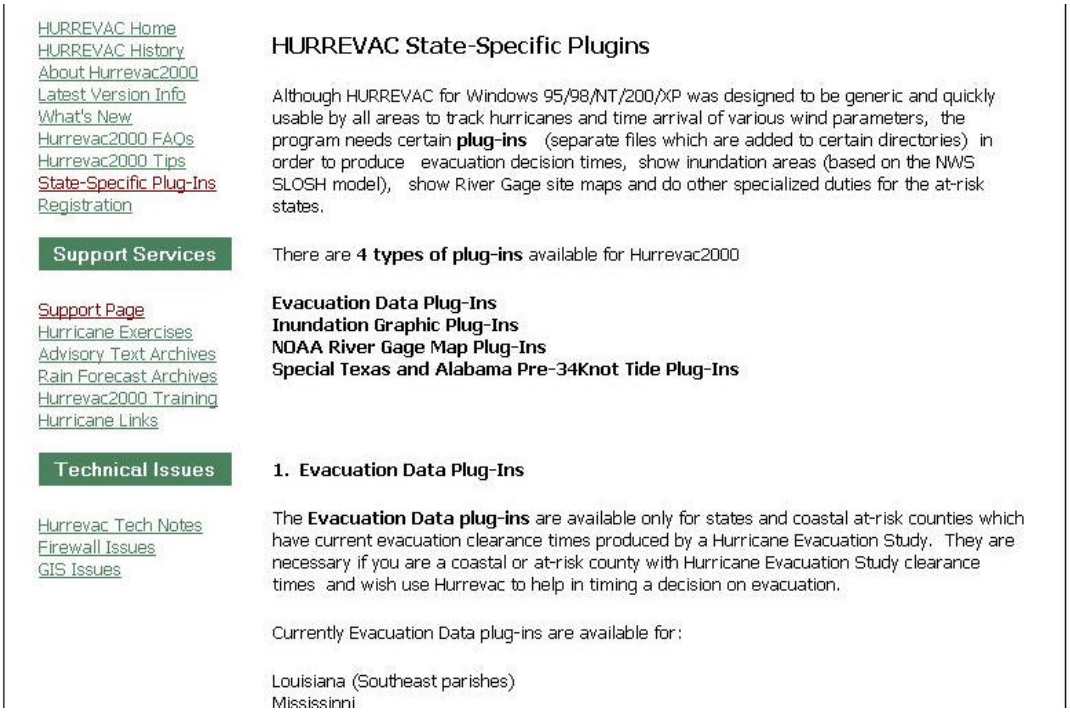
How to Set up the Program for Your Community

There are **3 primary steps** to setting up Hurrevac for your community:

A. Install State Plug-Ins
B. Edit Program Setup
C. Edit Download Profile

A. Installing State Plug-Ins

First, find out if your state has one or more special **plug-ins** (add-on modules) available. To do this, go to the web site at http://www.hurrevac.com/plugins.htm



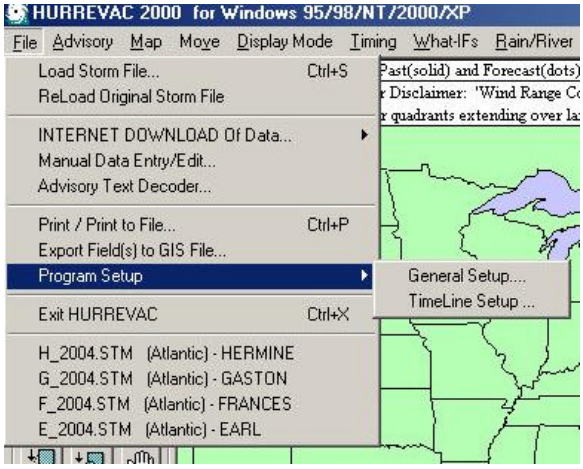
This web page will explain what you need to do to install the available plug-ins for your state.

The most important set of plug-ins is the Evacuation Data Plug-Ins, which must be installed to allow Decision-Making in at-risk counties covered by a Hurricane Evacuation Study. These include the official evacuation clearance times for your area.

B. Editing Program Setup for your area

Next, we will set up the Hurrevac program especially for your county or parish and Internet access particulars…

For Hurrevac Program Setup use the menu item File | Program Setup



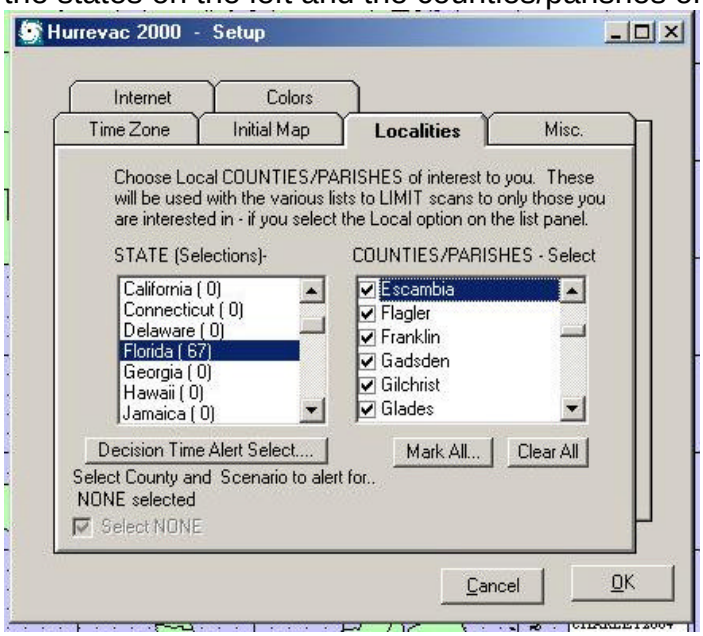
Note that there are **two setups….General and Timeline**. First we will deal with General Setup because it affects every user…

General Setup

The General Setup panel contains 6 tabs -- Internet, Colors, Time Zone, Initial Map, Localities, and Miscellaneous. Since we are concerned in this training with what items must be set, we will focus only on the Localities, Internet and Time Zone items.

Localities setup

Looking at the graphic above, you will see the Localities page consists of two panes, the states on the left and the counties/parishes on the right.



The purpose of the Localities page is to select the county or counties that you are concerned with, so that displays in the program which list the arrival of various storm parameters in the counties will list, if you choose, only those you are concerned with.

This is a time-saver, because not only does the list run faster but you do not have to search through a long list of items to find the area you are interested in.

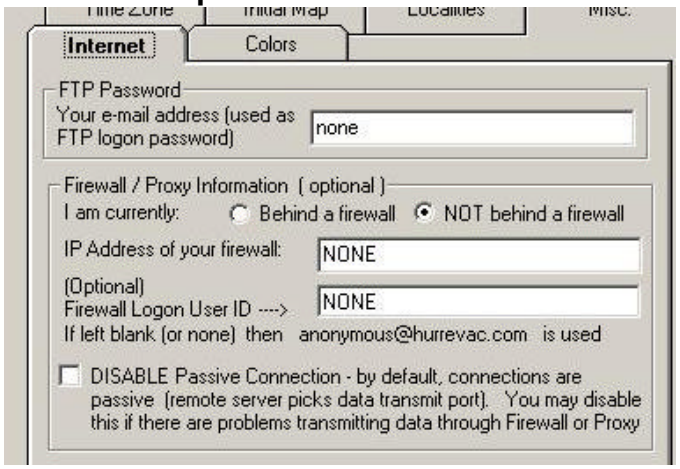
Decision Time Alert Select… (button)

If you are a county or parish with an official HES evacuation clearance time…and have installed the evac data plug-ins for your state…you may choose to be alerted automatically if your county or parish is **in or near the NHC Average Error Cone and you are within 12 hours plus or minus of Evacuation Decision Time** as computed by the program using the standard Direct Hit assumption.

After clicking on the select button you will select your county/parish and evacuation scenario to alert for. When the alert is triggered, a small alert box will pop up in the upper right corner of your program. You may get details of the alert then by clicking on the Alert box.

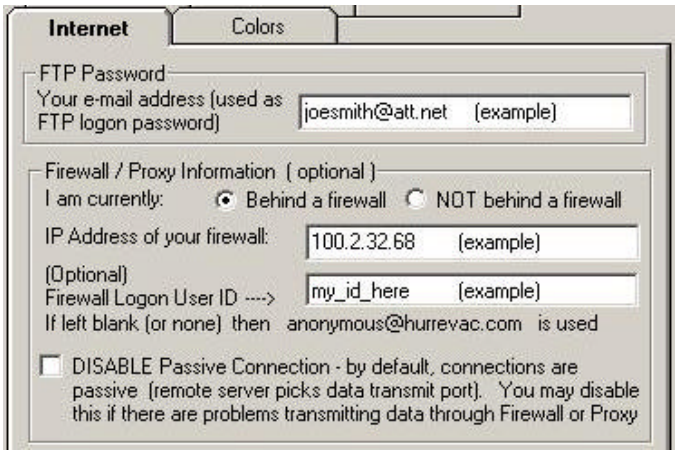
Time Zone setup
You need to select your time zone on this page….

Internet setup



If you are on a **stand-alone PC** that does **not** go through your office firewall or proxy server….**or** are on a home PC (even if you have a personal firewall)…the settings shown above are probably correct for your situation….and you do not need to make any changes.

However, **if your Internet connection goes through an office firewall or proxy server**, you may have to set *one or more* of the parameters shown below in order to get through to the hurrevac.com server…



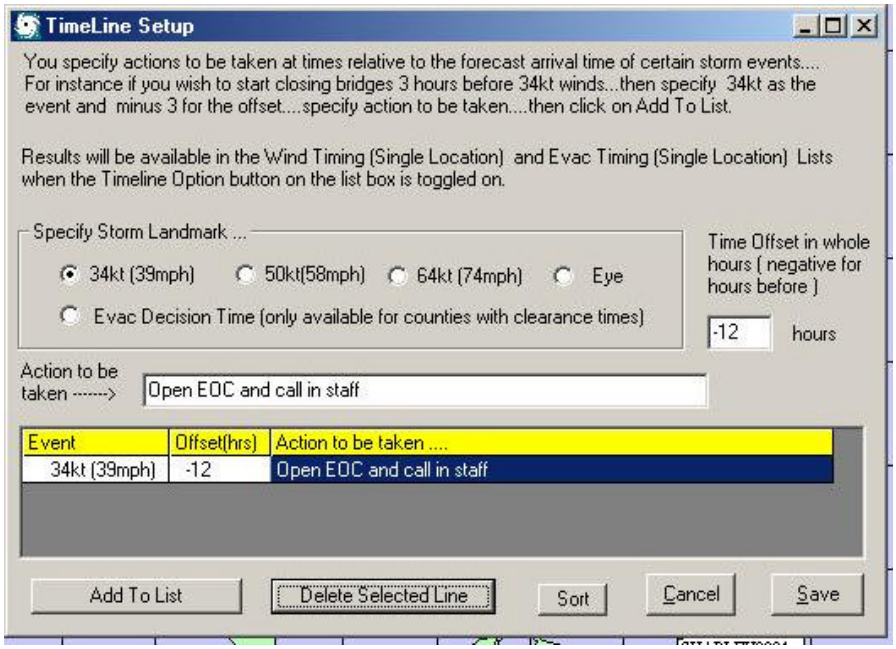
Your best bet to approaching this is to contact your network administrator so that the correct parameters and user IDs (if needed) can be entered. If problems in connecting persist, call up the web page at

http://www.hurrevac.com/Techno10.htm

Print the above web page out and give to your network admin person to see if they can solve the problem using the more detailed information shown.

Timeline Setup

The other item in Program Setup is Timeline Setup accessed by using menu item File | Program Setup.. | Timeline Setup…



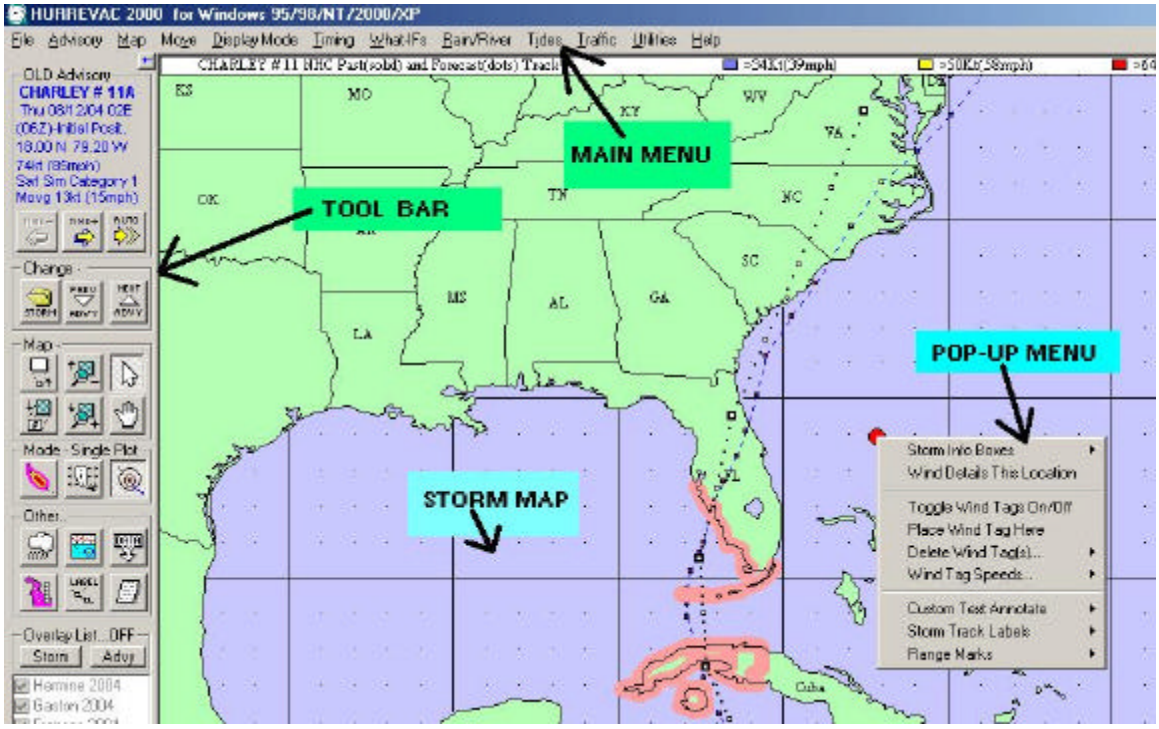
This setup is mainly concerned with allowing Decision times for various actions for those counties/parishes that **do not have** an official evacuation clearance time from a Hurricane Evacuation Study. This may be most useful for inland counties for example.

First a storm landmark such as arrival of 34kt (39mph), 50kt(58mph), 64kt(74mph) or Eye arrival is selected. Then a time offset **before** the wind or eye arrival is specified, an action to be taken then is specified, and added to the list (any number can be added).

Then, as a storm approaches, the **menu item Timing | Wind Timing Details (Single Location)** is monitored. When actions you specified in Timeline setup are to be taken…they are inserted into the Wind timing list at the appropriate hours.

Main Topic 3.

Working with the Program Interface and Maps

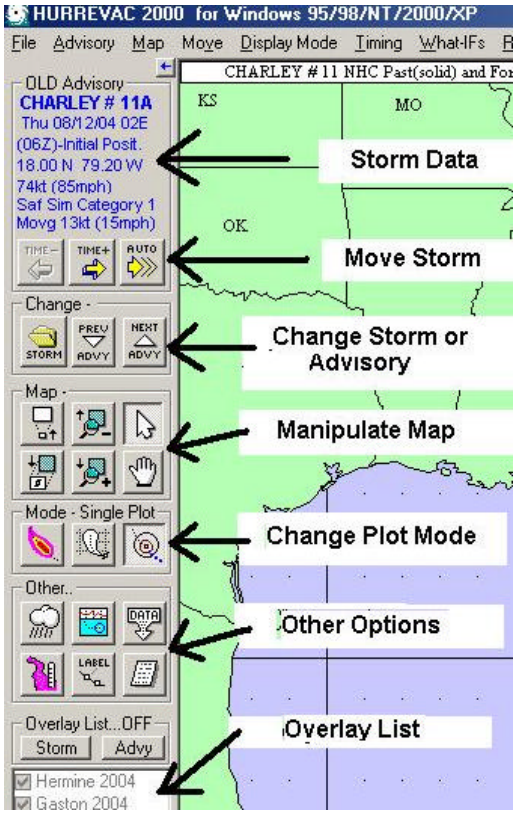


There are 4 parts to the program interface….

Main Menu
Tool Bar
Storm Map
Pop-Up Menu

<u>Item 1 of the Hurrevac Interface</u> : The Main Menu – contains *all* of the program options. In this review, we will be covering only those options that are *absolutely necessary* to know. Most of the necessary features are located also on the **Tool Bar**

Item 2 of the Hurrevac Interface : The Tool Bar



The **Storm Data** panel shows info on the current storm….

The **Move Storm** buttons move the storm forecast forward or backward in hourly steps…or Animates the storm …

The **Change** group of buttons allows you to change the storm displayed or change the Advisory of the storm displayed.

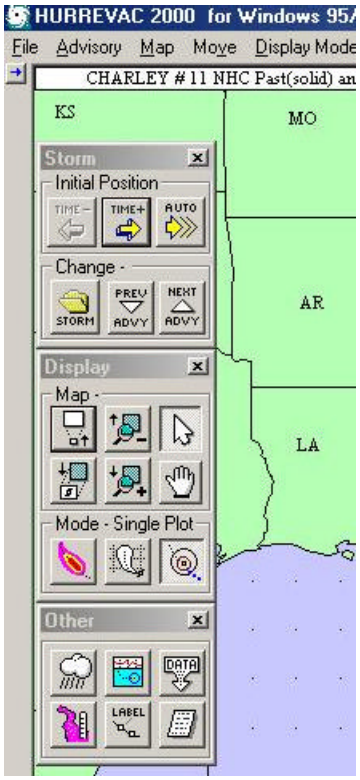
The **Map** buttons allow you to change the area viewed

The **Mode** buttons change the way the storm is viewed…

Other options buttons are for special display requests and Data access

The **Overlay List** is to select multiple storms

Access the **Floating Tool Bars** by clicking on the small left-pointing arrow at the top right of the fixed tool bar or by using the Map menu item entitled Floating Tool Bars…



These tool bars work the same except they are divided into groups so some can be closed while others stay visible…and they can be moved to other parts of your screen.

When the floating tool bars are selected the Storm Data is transposed to an info box on the upper right of the Storm Map.

To restore the fixed toolbars select the right-pointing arrow on the upper left border of the screen. Upon re-selection of the floating tool bars…all the tool bars will be visible again.

The basic toolbar buttons you need to be familiar with include the top 5 rows and the Data button in the Other group. The remaining buttons in the Other group and the Overlay list is an advanced feature and therefore is not discussed in this basics-only review.

Familiarize yourself with the basic buttons by clicking on them.

<u>Item 3 of the Hurrevac Interface</u> : The Storm Map

The storm map viewing area is manipulated by the Map group of buttons

The action of the 4 buttons on the left side of this box is best demonstrated by clicking on them to zoom in and out and to got directly to the displayed storm. We need to discuss the two buttons in the right hand column:

The **Default Cursor** arrow (or Area Selection Tool) is used to **select an area** of the map **to zoom in** on. Simply click and drag an area on the map to demonstrate this.

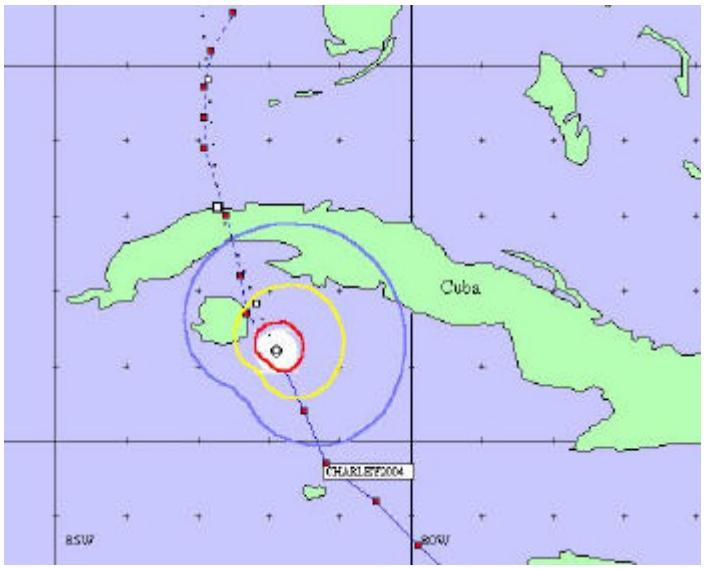
The **Pan Tool** open hand cursor is used to pan the area left/right and up/down by clicking and dragging on the map to suit.

Practice zooming in on a storm such as Charley (2004) shown below. (Load Charley by using the Load Storm button

in the Change Group of buttons as shown above. Select the file C_2004.stm from the list of files and click on Load.

Once Charley is loaded, change Advisory to #14 with the Prev Advy button 

and Zoom in using the map buttons so that the view is similar to the one shown below



To get the view shown here you will have to turn off the warnings by toggling the warning flag button showing in the lower right corner of the screen. 

This view shows Charley as it was approaching the Isle of Pines on its way to southwest Florida.

The rings around the storm represent the range of winds as described in the NHC advisory.

The Red ring represents the range of 64 knot (74mph) or hurricane force winds.
The Yellow represents the range of 50 knot (58mph) winds and
The Blue ring represents the range of 34 knot (39mph) tropical storm force winds.

In some ways, the **Blue ring is most important for evacuation decision-making** since we will use it later in this review, along with an evacuation clearance time, to determine Decision Time for evacuation.

To the south of the storm in the picture above, the **Past Track** is plotted as a solid blue line with colored boxes at the time of each NHC advisory. The boxes are colored similar to the wind rings described above…that is

Blue if storm was only Tropical Storm strength at that location
Yellow if storm was strong Tropical Storm strength (50 knots or more) at location
Red if storm was Hurricane strength at that location

To the north, or ahead of, the storm, there are two lines showing. One with **dots shows the forecast path** of the storm hourly for the next 120 hours. The **dashed line shows on old advisories and describes the actual path** taken by the storm. The actual path taken can be switched off if desired by toggling it in the Map | Parameters Displayed… menu item.

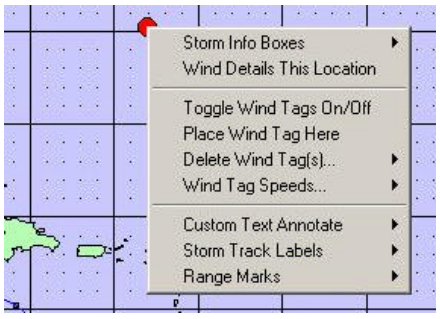
To see the forecast path of the storm let's use **the Move Group of buttons** to move the storm ahead on the Hurricane Center's forecast track….

By clicking on the **Right Arrow** (middle button) we move the storm **ahead one hour** and with the **Left Arrow** we move the storm **back one hour**. With the button labeled Auto we animate the move forward along the forecast track.

With a **Right-click** on these buttons, the move is **in 6 hour increments** (faster).

<u>Item 4 of the Hurrevac Interface</u> : The Pop-Up Menu

The fourth item of the Hurrevac interface is the Pop-Up menu, which is **accessed by right-clicking on the Storm Map**.



This menu allows access to some advanced features that are referenced by a point on the map such as Wind Tags, Annotations, etc.

Since these are advanced features and we are only concerned here with the features of Hurrevac you absolutely need to do your job…we will not be covering the pop-up menu items, but you should know how to access it if the need should arise.

Main Topic 4 -

Basic Evacuation Decision- Making with Hurrevac

There are two parts to this section:

Assessing the Threat (do we need to act?) and
Timing the Decision for Action (if action is needed)

1. Assessing the Threat (do we need to act?)

Hurrevac uses the official National Hurricane Center forecast, which is the end result of careful consideration of all the Dynamic and Statistical models available to the National Weather Service. The NHC forecast is is **the best information available** and through much effort, is getting slowly but steadily better each year.

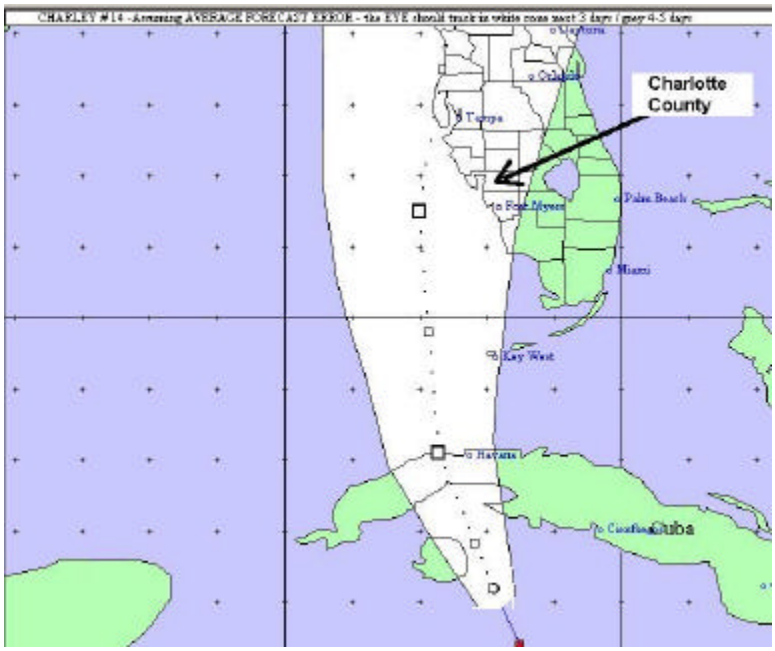
However, there is error in the forecast which increases with time. Simply put, this translates to a relatively small error in the hours just after a forecast and increasing larger errors in forecasting a storm center in the out hours, 36 48, 72, 96, 120 hours and so on.

Fortunately, Hurrevac is able to quantify the error using the latest error statistics from the NHC, and use these to help us determine the threat.

Let's go back to the Charley display we used previously, Advisory #14, and now we will use the Average Error Swath (or Error Cone) button from the Mode group of buttons on the toolbar

The **Average Error Swath button**

Click on this button and our display should look like this (turn warnings off if necessary for clarity)



We have highlighted Charlotte County in this view because we will be discussing the threat assessment and Decision Timing for this county as an example.

Note that although the official forecast NHC track (black dots) shows the storm center entering land near or just to the north of Tampa, **Charlotte county is well within the Error Cone**.

This means that we should be considering action when Decision Time is reached!

The **Error Cone defines the limits of the area in which the Center or Eye will track**, given the average error statistics for the last 10 years.

So, **<u>if your community is in the Error Cone</u>, it is prudent** to plan on and take action **as if the eye or center is going to move over your area!** This means **planning on <u>a full evacuation commensurate with the forecast intensity</u>** of the storm.

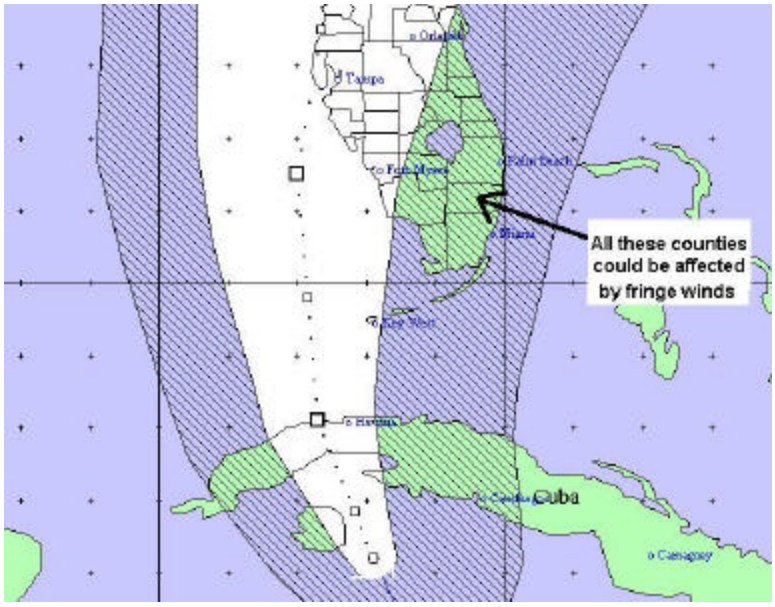
Fringe Areas –

But what if our community is <u>outside of the Error Cone</u>, but near it? What should we do then about the threat?

If you are near the Error Cone, It is possible that you could receive fringe effects or winds, even though the storm center tracks within the Error Cone.

In Hurrevac, we can **define the fringe** area by using the **Error Cone + Winds** option…..which is a **Right-click** on the same Error Swath button:

Right-click on this button to show Error Plus Winds



The hatched area represents the limit of Tropical Storm force winds, **should the eye or center track along the edge of the Error Cone** (white area).

If you are in this area, plan on taking action at Decision Time, <u>but for a lower level of evacuation, voluntary evacuation (for a weaker storm), or such action as dictated by your particular circumstances.</u>

<u>Here is where some consultation with your local NWS office is advisable</u>, concerning the expected effects. If you are near the outside edge of the hatched area, it is quite possible that the effects may be minimal. <u>The closer you are to the Error Cone (white area) the more you should plan on an evacuation, but for a lower level of storm than the full strength in the forecast.</u> Admittedly this is a gray area, but it always pays to err on the side of caution.

2. Timing the Decision for Action (when do we need to act?)

The calculation of Decision Time for your county (in this case Charlotte county) is done using the following criteria or stipulations -

- There must be enough time to evacuate the county and all threatened populace to safe shelter before Tropical Storm winds (blue ring around storm) arrive.

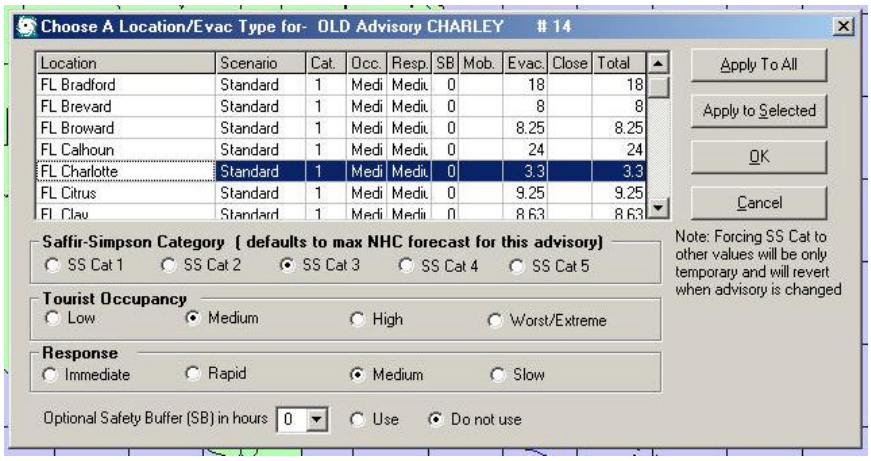
- The Hurricane Evacuation Study for the area provides the numbers that are used, in the form of Evacuation Clearance Time for the county.

The Hurrevac program does the following for you:

a. Calculates the time of arrival of Tropical Storm winds in your county, assuming a direct hit on your county at the NHC forecast speed of movement.

b. Subtracts the time needed to get affected people to safe shelter to arrive at a relevant Evacuation Decision Time

This is all done automatically for you by the program, for all counties with HES study times.

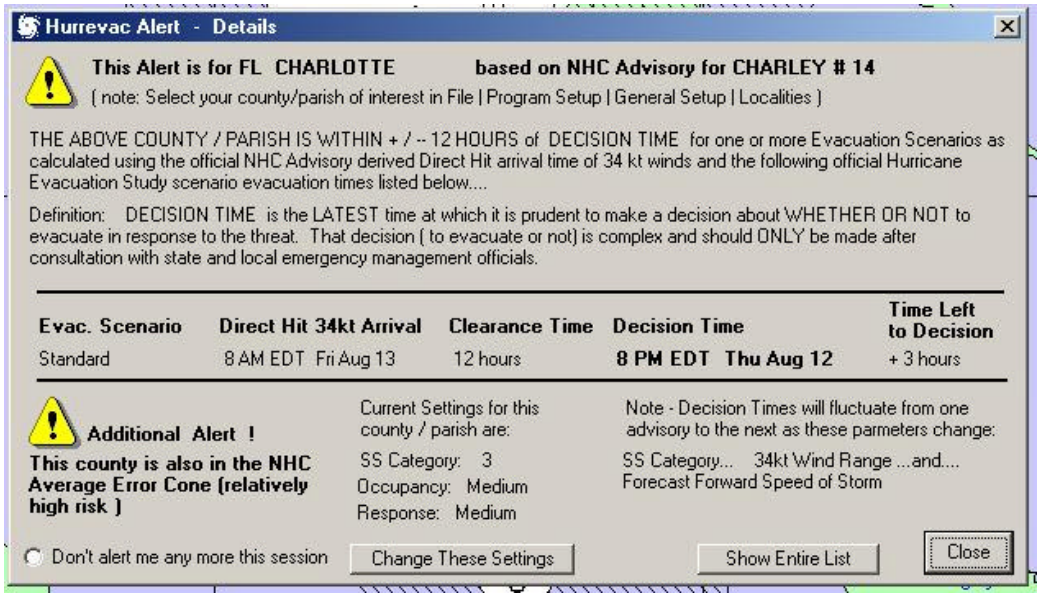


The **only settings you need to make** to insure the correct Decision Times, are coordinated settings of storm Category, Occupancy, and Response which are made in the **Evac Options Settings…** screen accessed from the Timing menu.

So, to determine the optimum Decision Time for action in Charlotte County, we only need to bring up the Evac Timing panel by using menu item **Timing | Evac Timing (All Available Areas)…** see that Charlotte has **about 3 hours** til Decision time…

If you have the **Auto-Alert feature** for Decision Time set for your county in Program Setup | General Setup | Localities… then you will be alerted when within 12 hours plus or minus of Decision Time if you are in or near the Error Cone.

When this box appears in the upper right corner of the screen you may click on the Details button on the Alert panel to bring up an explanation of the situation…



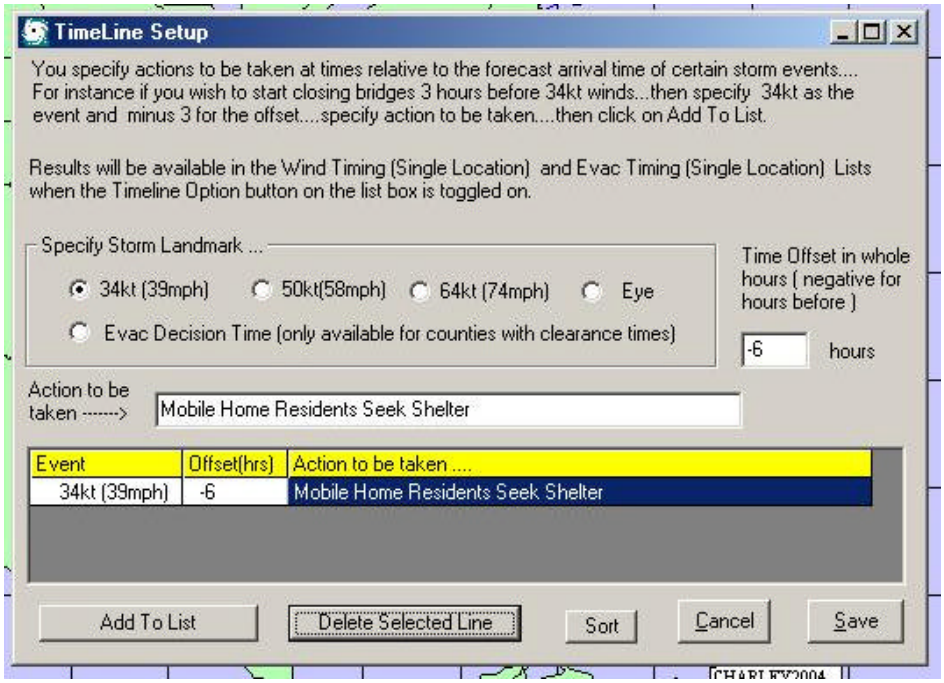
Note that in addition to alerting you to the decision time for Charlotte county, it lets you know that you are in the Error Cone even though it may not be showing on screen.

Decision Timing For Inland Counties

What if I'm in or near the Error Cone and need to take action, but I'm an inland county and don't have a Hurricane Evac Study time?

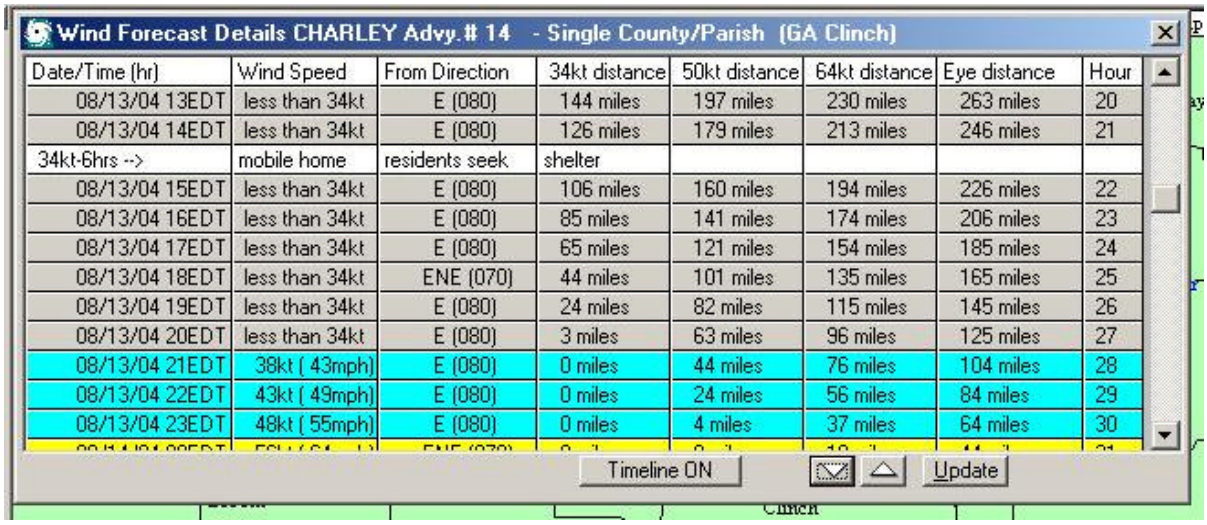
There is an alternative method, and it utilizes the Timeline we set up in the first section….

Let's say for example we have settled on a standard time of 6 hours lead time before 34 knot (39mph) sustained winds to get our county residents in mobile homes to safe shelter. We go to the **File | Program Setup |Timeline Setup** panel and enter the following……



Note in the above graphic we have specified
39mph sustained (Tropical Storm Force winds) as our evacuation cutoff point
minus 6 hours as our Time Offset for taking action and
filled in the Action to be taken box and added this to our list of Timelines.

Now, as we see a storm approach, we check the **Timing | Wind Timing Details (Single Location)** panel with each new advisory to monitor the threat to our area.



Date/Time (hr)	Wind Speed	From Direction	34kt distance	50kt distance	64kt distance	Eye distance	Hour
08/13/04 13EDT	less than 34kt	E (080)	144 miles	197 miles	230 miles	263 miles	20
08/13/04 14EDT	less than 34kt	E (080)	126 miles	179 miles	213 miles	246 miles	21
34kt-6hrs -->	mobile home	residents seek	shelter				
08/13/04 15EDT	less than 34kt	E (080)	106 miles	160 miles	194 miles	226 miles	22
08/13/04 16EDT	less than 34kt	E (080)	85 miles	141 miles	174 miles	206 miles	23
08/13/04 17EDT	less than 34kt	E (080)	65 miles	121 miles	154 miles	185 miles	24
08/13/04 18EDT	less than 34kt	ENE (070)	44 miles	101 miles	135 miles	165 miles	25
08/13/04 19EDT	less than 34kt	E (080)	24 miles	82 miles	115 miles	145 miles	26
08/13/04 20EDT	less than 34kt	E (080)	3 miles	63 miles	96 miles	125 miles	27
08/13/04 21EDT	38kt (43mph)	E (080)	0 miles	44 miles	76 miles	104 miles	28
08/13/04 22EDT	43kt (49mph)	E (080)	0 miles	24 miles	56 miles	84 miles	29
08/13/04 23EDT	48kt (55mph)	E (080)	0 miles	4 miles	37 miles	64 miles	30

We can see from the **above example for Clinch County, Georia on the southern border with Florida and well inland**, that the panel has alerted us to the time for

action, the white line with 34kt -6 hrs -→ which shows the action to be taken. We can also see the blue lines 6 hours later which indicate Tropical Storm force winds.

We could just as easily have specified 50kt (58mph) winds as our cutoff time for evacuation, if we felt the higher number was more appropriate.

This **brings us to the end of our basics-only discussion on Decision-Making using Hurrevac.**

There are **many other features that can be used** in the program, but by ending the Decision-Making discussion here, we hope that we have distilled the training down to **only those items and features in the program that you absolutely need to make a decision.**

Hopefully, this will make it easier and more likely that you will use the program when the next threat develops.

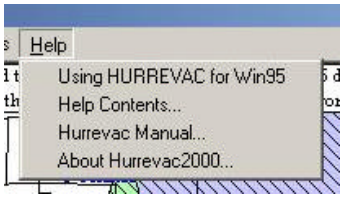
Main Topic 5 -

How to Get Help When You Need It

There are several sources for help with Hurrevac, should you need it:

- The **Help Menu** system in Hurrevac
- **Interactive Help** in Hurrevac
- **Tool- Tip Text** in Hurrevac
- **Hurrevac Web Site** Help and
- The **Hurrevac Support Line**

The Help Menu System



Using HURREVAC … option is a Tour of Hurrevac with hyper-links for the various features of the program. Taking this 'tour' is a good way to get up to speed on the advanced features of the program in a short time.

Help Contents…. allows you to search for a word or phrase and bring up the relevant Help topic related to the search.

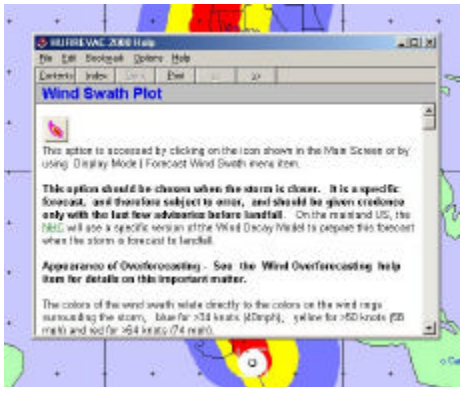
Hurrevac Manual… brings up the Hurrevac Manual, filename Manual.pdf (located in your Hurrevac program folder) using your Acrobat file viewer.

About Hurrevac2000… is a panel which shows the program version and other pertinent information about sponsorship, etc.

Interactive Help system

The Interactive Help system is accessed by first clicking on a toolbar button, for example the Wind Swath mode button

Then pressing the F1 key, which will bring up the corresponding help topic



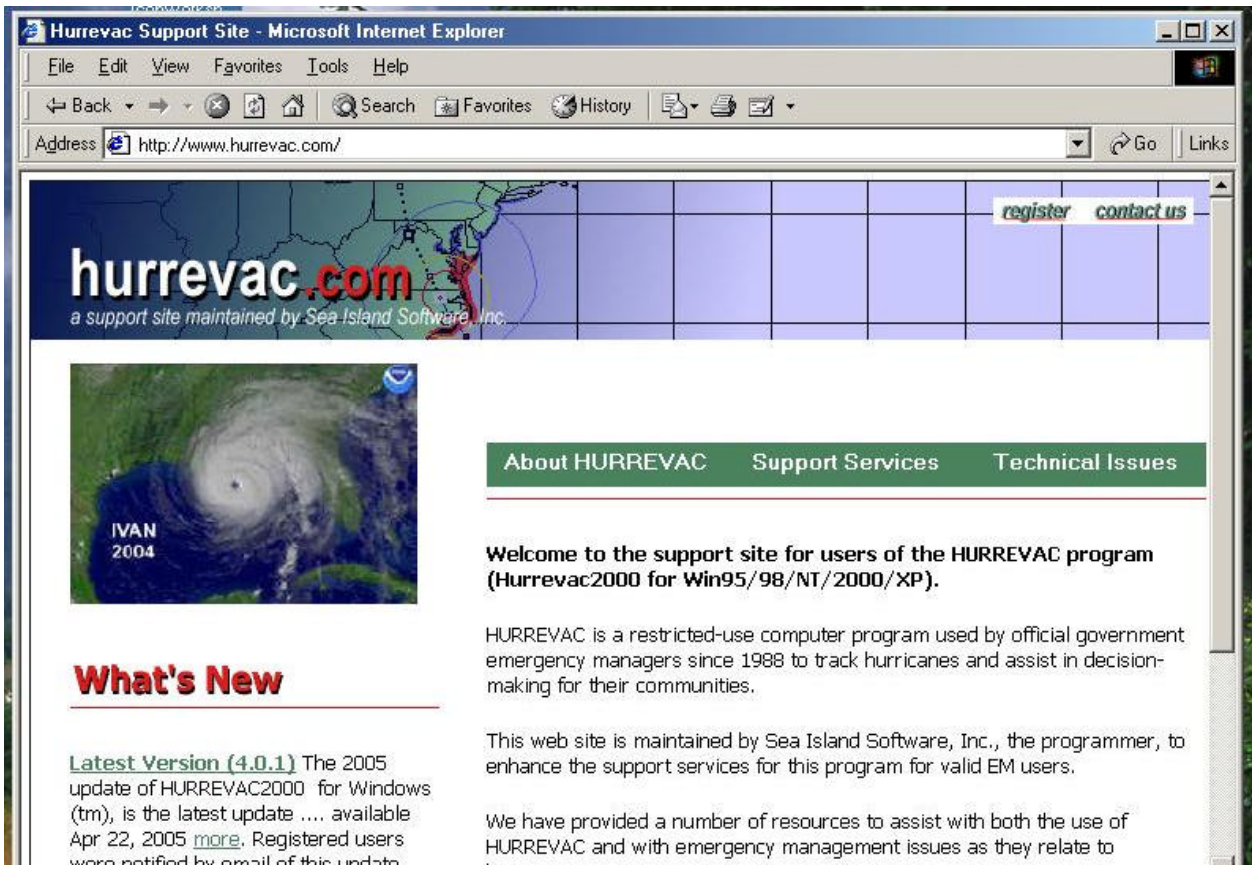
…..for the NHC Forecast Wind Swath.

Tool- Tip Text in Hurrevac

When you hover your cursor over an item on the Tool Bar in Hurrevac, a Tool-Tip is generated saying the purpose of the time as in the example below for the Pan Tool:

Hurrevac Web Site Help

The Hurrevac Web Site at **www.hurrevac.com** is a resource for help on all subjects Hurrevac



It is specifically targeted for Hurrevac users only, and includes a wealth of information pertinent to the running of Hurrevac and hurricane evacuation in general.

As noted earlier, when applying to use Hurrevac, you will use the **Register** link located on the upper right of the home page to send in your initial request to use Hurrevac. Within a few hours, you should receive a reply by email along with download and password information.

This graphic shows the topics covered on the Hurrevac.com site.

One of the first items you will use when you download and set up Hurrevac is the **State Specific Plug-Ins** link.

Anytime you need help that cannot be found on the site, or for any other reason, you can go to the **Support Page** where you can describe the problem and get on-line support.

The **Hurrevac Tech Notes** page is a spot for finding help with issues of a technical nature such as Installing on a Network, specifics of installing plug-ins and so on.

We also have **Advisory Text archives** if you are looking for some printed advisories of past years.

If you feel you need in-depth training on Hurrevac, the **Hurrevac2000 Training** link provides a source of training materials that can be downloaded or even run on-line, including a special training module developed for Hurrevac and Slosh by FEMA.

Sea Island Software also offers **Hurricane Exercise** options at various levels of service, with incremental transmission of your exercise in real time over the hurrevac.com site.

Hurrevac Support Line

Finally, the Hurrevac Support Line, 843-881-0593 is available 24/7 during the Atlantic hurricane season (and during normal hours the rest of the year), to help you with Hurrevac issues.

We have 43 years of meteorological experience (35 years with National Weather Service at a southeast coastal office) and 17 years with Hurrevac and the hurricane evacuation study process. We will be happy to provide help with any issues relating to the hurricane threat.