NWSTC

CHPS Job Sheets

A Supplemental Resource for the CHPS RFC User Course

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Opening CHPS

Objective: Use one of these methods to open CHPS and begin forecasting.

Starting CHPS from the Command Line

Step	Action	Notes
1	Log into an AWIPS workstation using your username and password.	
2	Left-click on the background, and select **Terminal** from the popup menu.	
3	Navigate to the OC directory. **cd /awips/chps_share/oc/username**	
4	Type the following command: **./bin/fews.sh xxrfc_oc**	
5	Select a Master Controller and synchronization profile from the **Login to Master Controller** popup GUI.	Defaults to primary MC/ full synch profile.
6	Click **OK**, and wait for the System Synchronization indicator (a cell in the lower right of the main CHPS GUI) to turn from magenta to green.	Green indicates completed synchronization.
7	Select a forecast group in the **Forecasts** panel and start analyzing segments.	

Starting CHPS from the AWIPS Startup Menu

Step	Action	Notes
1	Log into an AWIPS workstation using your username and password.	
2	Left-click on the background, and select **AWIPS start-up menu** from the popup menu.	
3	Scroll to the CHPS start application.	For example: **xxrfc_chps(localapp)**
4	Select a Master Controller and synchronization profile from the **Login to Master Controller** popup GUI.	Defaults to primary MC/ full synch profile.
5	Click **OK**, and wait for the System Synchronization indicator to turn from magenta to green.	Green indicates completed synchronization.
6	Select a forecast group in the **Forecasts** panel and start analyzing segments.	

Note: Starting CHPS from the AWIPS Startup Menu requires edits to an AWIPS file. Ask your AWIPS Focal Point if you want this option at your office!

Creating a LocalApp Menu Item to Open CHPS

Note: This is a System Administrator task.

STEP 1 Creating the "run_chps" File

Step	Action	Notes
1	Log into an AWIPS workstation using your user name and password.	
2	Left-click on the background, and select **Terminal** from the popup menu.	
3	Navigate to the directory where you want the **run_chps** file to reside. **cd /awips/chps_share/oc**	
4	Create a new file to house the script. **gedit run_chps**	Gedit is one example of an editor – vi also works.
5	Add the following lines to the newly created file: **#!/bin/sh** **cd /awips/chps_share/oc/$USER** **./bin/fews.sh xxrfc_oc**	Where **xxrfc** is the identifier of your OC instance.
6	Save and exit.	

STEP 2 Editing the Local AppLauncher Script

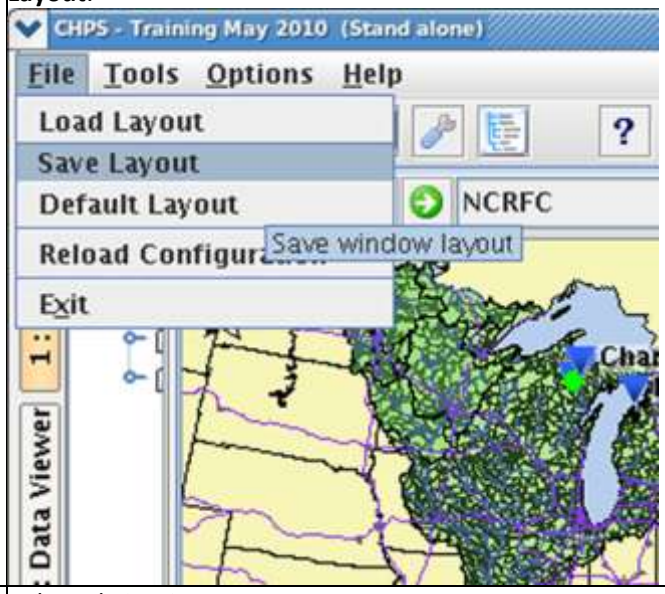
Step	Action	Notes
1	Navigate to the directory containing the AppLauncher scripts. **cd /awips/fxa/data/appLauncher**	
2	Edit the local.conf file using your preferred editor. **gedit local.conf**	This example uses Gedit.
3	Scroll to the bottom of the file and add the following lines: **START_RECORD** **Name=run_chps(localapp)** **Exec=/awips/chps_share/oc/run_chps** **END_RECORD**	Most of the file is comments.
4	Save and exit.	

STEP 3 Verifying Functionality

Step	Action	Notes
1	Close all CHPS instances.	
2	Left-click on the background, and select **AWIPS start-up menu** from the popup menu.	
3	Choose **run_chps(localapp)** from the popup menu.	
4	Verify the CHPS OC opens for the user currently logged into AWIPS. **If** the application does not open, check the following items: ● Make sure the AWIPS login and the CHPS user accounts match. For instance, if you are logged into FEWS, you cannot launch CHPS as a user. Is the directory for the user's OC named the same as their AWIPS login? If you name the directory containing the OC instance "George" instead of their user name, "gmurphy", CHPS will not open.	

Saving a Custom Display Layout

Objective: Save a user-customized layout (not a configuration change) for future use.

Step	Action	Notes
1	Open the CHPS Interactive Forecast Display (IFD) using the method in place at your office.	Some RFCs launch from the left-click menu in AWIPS.
2	Arrange the panels by dragging and dropping them into place.	Keep arranging them until you find a layout you like.
3	Save the layout changes by clicking the **File** menu and selecting **Save Layout**. 	
4	Relaunch CHPS.	The interface should have the panels where you specified.

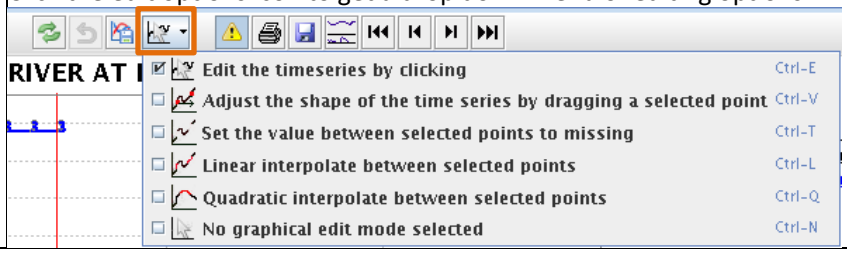
Note: Revert to the default layout by selecting **Default Layout**, from the **File** menu.

Editing Data Graphically

Changing information is a necessary part of the forecast process. CHPS offers several ways of editing.

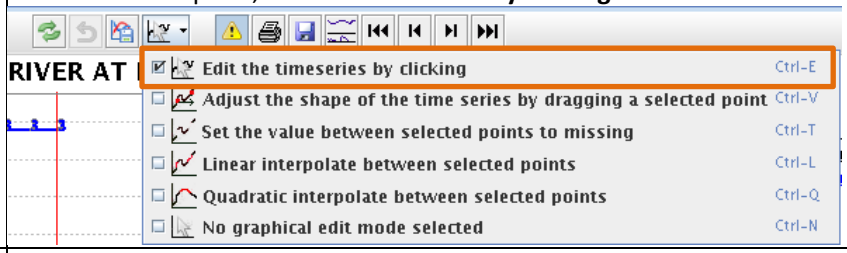
Note: Make sure you are in Forecast Mode. You will not be able to make changes in View Mode!
Caution: Undo Modifications does NOT work after clicking **Save and Run**!

Preliminary Steps for All Graphical Editing Methods

Step	Action	Notes
1	Open the CHPS IFD.	
2	On the **Forecasts** panel, click a forecast group folder icon.	
3	Click the paper icon next to a segment in the **Forecasts** panel to select a location.	
4	Click the **Plots** tab.	
5	Click the edit options icon to get a drop down menu of editing options. 	

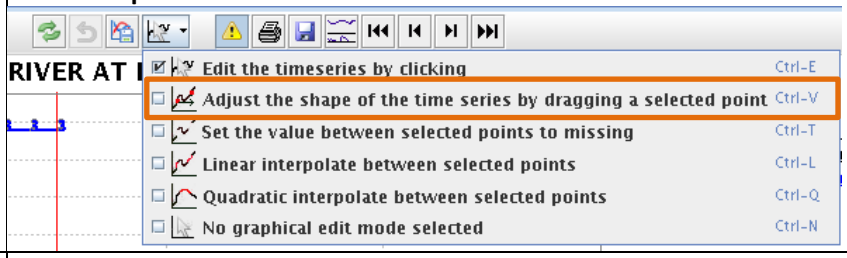
Editing the Time Series by Clicking

This option works well for adding data that did not previously exist (for example, adding precipitation to a previously dry forecast).

Step	Action	Notes
1	Complete Steps 1 through 5 from the **Preliminary Steps** table.	
2	Select the first option, **Edit the timeseries by clicking**. 	
3	From the list in the legend, left-click the time series you want to edit.	The editable parameter turns blue in the legend.
4	Hover over the graph until you determine when you want the precipitation to start.	
5	Move the mouse up until you see the precipitation value you want to add.	
6	Left-click to put the precipitation value on the graph.	
7	Continue to left-click as you scroll, moving to the “zero” line for periods of no precipitation.	
8	Click the **Save Changes and Run** icon to save the changes OR the **Undo Modifications** icon to abandon the changes.	

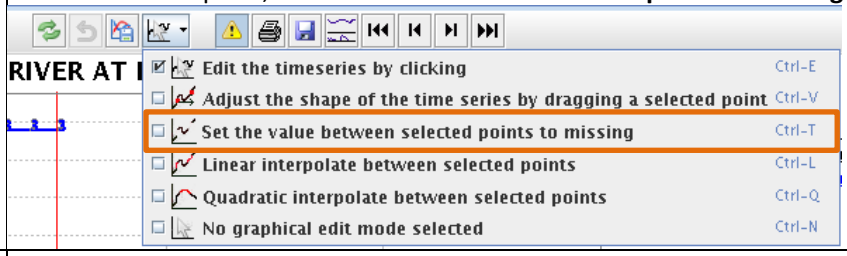
Editing the Time Series by Dragging a Point

This option works well for editing existing data.

Step	Action	Notes
1	Complete Steps 1 through 5 from the **Preliminary Steps** table.	
2	Select the second option, **Adjust the shape of the time series by dragging a selected point**. 	
3	From the list in the legend, left-click the time series you want to edit.	
4	Left-click and hold on the data point you want to edit.	
5	Drag the point to a new location and release the left mouse button.	
6	Click the **Save Changes and Run** icon to save the changes OR the **Undo Modifications** icon to abandon the changes.	

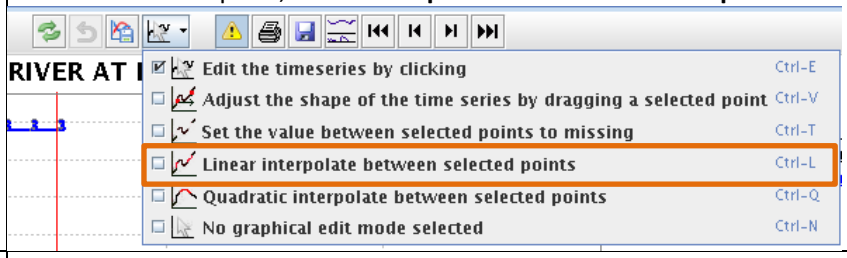
Setting Missing Values Between Selected Points

Use this option to set bad or questionable values missing (better option: create a modifier to do this!).

Step	Action	Notes
1	Complete Steps 1 through 5 from the **Preliminary Steps** table.	
2	Select the third option, **Set the value between selected points to missing**. 	
3	From the list in the legend, left-click the time series you want to edit.	
4	Select the points between which you want to delete data.	
5	Click the **Save Changes and Run** icon to save the changes OR the **Undo Modifications** icon to abandon the changes.	

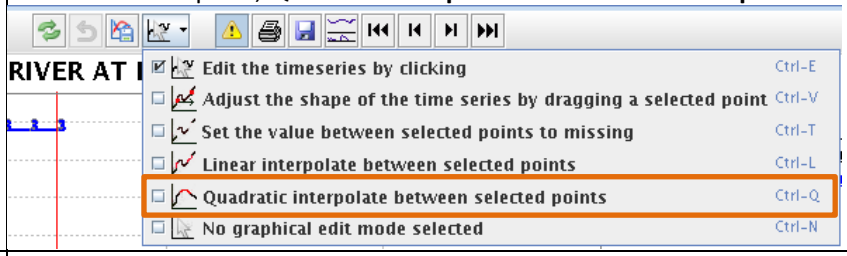
Linearly Interpolating Between Points

This is a good option for creating a realistic curve when “drawing in” data.

Step	Action	Notes
1	Complete Steps 1 through 5 from the **Preliminary Steps** table.	
2	Select the fourth option, **Linear interpolate between selected points**. 	
3	From the list in the legend, left-click the time series you want to edit.	
4	Select the points you want to interpolate between.	
5	Click the **Save Changes and Run** icon to save the changes OR the **Undo Modifications** icon to abandon the changes.	

Quadratically Interpolating Between Points

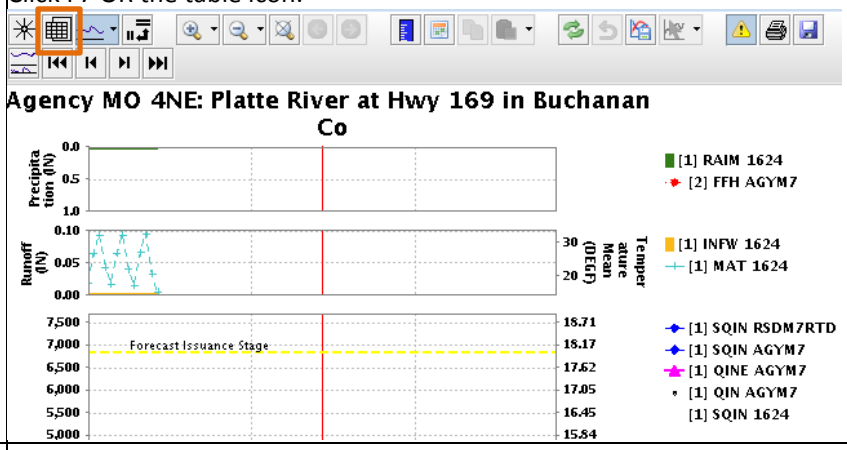
This provides a different mathematical solution when interpolating between points.

Step	Action	Notes
1	Complete Steps 1 through 5 from the **Preliminary Steps** table.	
2	Select the fifth option, **Quadratic interpolate between selected points**. 	
3	From the list in the legend, left-click the time series you want to edit.	
4	Select the points you want to interpolate between.	
5	Click the **Save Changes and Run** icon to save the changes OR the **Undo Modifications** icon to abandon the changes.	

Editing the Time Series in the Data Table

Objective: Edit data in a table for more precision than graphical editing.

This option works well for adding data that did not previously exist (for example, adding precipitation to a previously dry forecast), or adding more precision to what is already in the table.

Step	Action	Notes
1	Open the CHPS IFD.	
2	Click the paper icon next to a segment in the **Forecasts** panel to select a location.	
3	Click the **Plots** tab.	
4	From the list in the legend, left-click the time series you want to edit.	
5	Click F7 OR the table icon. 	
6	Locate the element and time you want to edit. You may need to scroll in the table to find the element.	The header is the same color as the time series trace, and the selected element's cells in the table are white (not grey).
7	Click in the table.	
8	Use the keypad to input numerical values.	
9	Click the **Save Changes and Run** icon to save the changes OR the **Undo Modifications** icon to abandon the changes.	

Creating Modifiers

Objective: Create modifiers so the model more accurately represents stage and flow.

Note: Modifiers are created and edited using various methods. The methods are similar to editing time series plots. Grey shading indicates optional steps.

Creating a New Modifier

Step	Action	Notes
1	Start CHPS using either method from Lesson 1.	
2	Select the icon (Map panel) or segment name (Forecast tab) corresponding to the desired forecast point.	
3	Click a modifier type button on the **Modifiers** GUI or select **Create Mod** and select one from the pull-down menu.	More options on the pull-down menu.
4	Type a name in the **Modifier Properties** box.	Optional.
5	Select a start time using the calendar or the up/down arrow selectors.	The date format is MM-DD-YYYY HH:MM:SS.
6	Select an end time using the same technique.	Some mods do not have a selectable end time.
7	Edit the properties of the modifier using slider bars, text entry boxes, clicking on the graphic, or editing tabular data.	Edit method varies by modifier type.
8	Click **Apply** to apply the modifier to the selected segment only OR click **Apply to** and choose segments by clicking in the boxes next to the segment name.	
9	Click **OK**.	This applies the modifier.
10	View the hydrograph and repeat steps 7 through 9 until you think the hydrograph is more representative.	

Deactivating Modifiers

Step	Action	Notes
1	Locate the modifier in the list.	
2	Click the check mark in the **Active** column of the modifiers list.	

Deleting Modifiers

Step	Action	Notes
1	Locate the modifier in the list.	
2	Click the red **X** in the **Delete** column of the modifiers list.	

Copying Modifiers

Step	Action	Notes
1	Locate the modifier in the list.	
2	Click the paper icon in the **Copy** column of the modifiers list.	Nothing in the filename indicates this is a copy.

See the SACSMA and API modifiers documents for additional information on modifiers.

Creating Forecasts

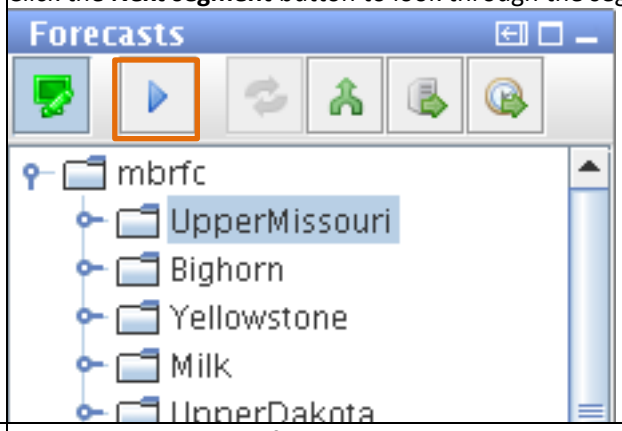
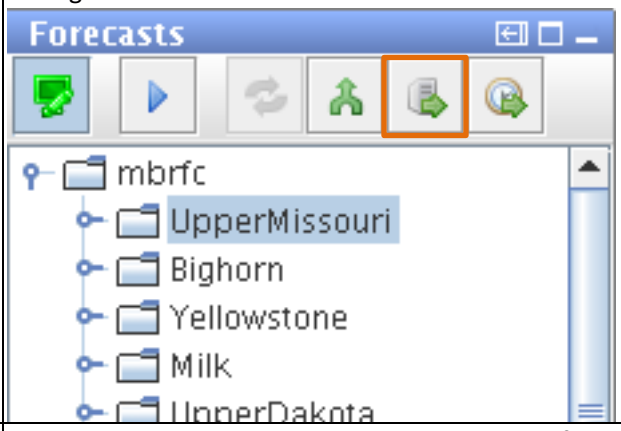
Objective: Create hydrologic forecasts of varying types, such as water supply forecasts, and forecast periods.

The basic method of creating a forecast is the same, whether the forecast period is 5 days or 30.

Grey shading indicates optional steps.

Creating a Daily Forecast

Step	Action	Notes
1	Open CHPS using your preferred method.	
2	After initial synching completes, click the **Tools** menu and select **Manual Forecast**.	Optional steps to import additional data.
2b	Select a workflow from the **Workflow** pull-down menu.	
2c	Select a subbasin.	
2d	In the **State selection** part of the GUI, click the checkbox next to **Select initial state**.	
2e	Use the radio buttons and up/down arrows to select the state and the run start and end times.	
3	Click the RFC folder in the **Forecast** panel.	The area to select a Run Option becomes available.
4	Click the **Run Options** button to select an initial state.	Only if using states other than the default.
5	Use the radio buttons and/or calendar to make a selection.	Only if using states other than the default.
6	Select the forecast group from the Forecast panel.	This makes the Plots tab active.
7	Click **OK**.	
8	Click **Rerun forecast group** to do all the calculations so you can go through the segments quicker.	Optional step, but considered a best practice at many offices.
9	Double click either the name of the segment or the icon.	
10	Click the **Plot Overview** panel.	Gives you thumbnails of all of the parameters available at the location.
11	Reposition the overview by dragging it to the top of the plot, or to the right or left side.	Click and drag where other panels are located. If you release over the active tab, it will not be repositioned.
12	Make modifiers as needed.	

13	Click the **Next segment** button to look through the segments. 	Use the F4 key to advance through the segments; F3 to see the previous segment.
14	Scroll back to the top of the segment list and click on the forecast group folder icon.	See lesson on analysis for more details.
15	Click the **Run Approved Forecast** button after completing analysis and editing. 	
16	Wait until you get a green checkmark beside the forecast group folder. 	
16	Click the **Forecast Management** button, or select it from the **Tools** menu.	The keyboard shortcut for this command is Cntrl+F.
17	Look on **Current Forecasts** tab to make sure the forecast made it to the Central Database.	Click here for a link to the icon legend.
18	Close CHPS. From the **File** menu, select **Log out**.	The keyboard shortcut for this command is Cntrl+M.

Creating Supplemental Forecast Products

Objective: Create the supplemental forecasts produced at your office.

Creating a Contingency Forecast

Step	Action	Notes
1	Create the contingency QPF using GFE.	Contact the GFE focal point at your office if you need help with this step.
2	Follow the same procedure for a daily forecast.	
3	From the **Tools** menu, select **Manual Forecast**.	
4	Select a workflow from the pull-down menu to import additional QPF.	

Creating a Water Supply Forecast

Step	Action	Notes
1	Follow the same procedure for a daily forecast.	
2	From the **Tools** menu, select **Manual Forecast**.	
3	Select a workflow from the pull-down menu to import historical data.	

Creating a Long Range Forecast

Step	Action	Notes
1	Follow the same procedure for a daily forecast.	
2	From the **Tools** menu, select **Manual Forecast**.	
3	Change the date to 28 days.	

Creating an Ensemble Forecast

Step	Action	Notes
1	Follow the same procedure for a daily forecast.	
2	From the **Tools** menu, select **Manual Forecast**.	
3	Select a workflow from the pull-down menu to import additional data.	

What-If Scenarios

Objective: Use What-If Scenarios to explore forecast possibilities.

STEP 1 Creating Scenarios

Step	Action	Notes
1	Start CHPS using your preferred method.	
2	From the **Tools** menu, select **What-if Scenario**.	The keyboard shortcut for this command is Cntrl+W.
3	From the **What-if Scenario** GUI, select **Add New Scenario**.	Give the scenario a logical, representative name.
4	Click **OK**.	

Create a Transformation		Select Module Datasets	
5	In the **Transformation** tab, choose the following: **input time series** **location set or all locations** **operator** **value**	5	Click **Select Module Data Set File** for other data. Only data sets loaded into the database through the Configuration Manager appear in the pull-down list.

Step	Action	Notes
6	Click **Add to List**.	
7	Click **Save Scenario**.	Unsaved scenarios are listed in blue text; saved scenarios in magenta.

STEP 2 Running the Scenario

Step	Action	Notes
1	From the **Tools** menu, select **Manual Forecast**.	The keyboard shortcut for this command is Cntrl + N.
2	Select a workflow with which to run the scenario.	
3	Choose a transformation or other option (module parameters, datasets, etc.) from the pull-down menu.	
4	Click **Run**.	

STEP 3 Managing Scenarios

The number of What-if Scenarios in the system can become quite large. Limit the number of visible What-if Scenarios by deleting scenarios or making them invisible to all users.

Step	Action	Notes
1	In the **What-if Scenario** interface, click the **Edit Visibility** button.	
2	Click **Toggle Visible** to make the selected what-if scenario invisible to users.	Invisible scenario names are greyed out.
3	Click **Toggle Delete** to delete scenarios from the system permanently.	While the interface is still open, scenarios are marked with **D**.

Reporting Problems on FogBugz

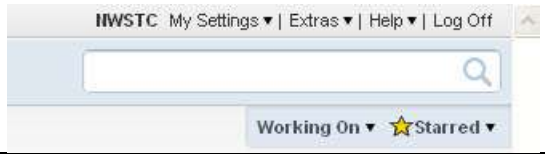
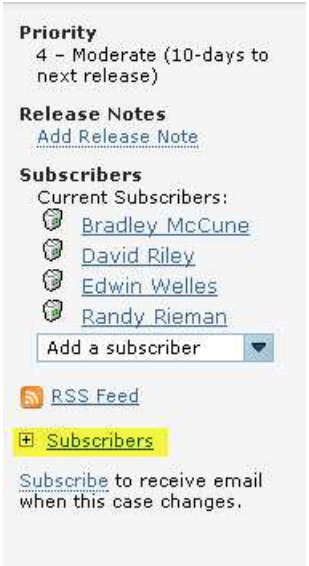
Objective: Report issues on the FogBugz web site, providing as much pertinent information as possible.

STEP 1 Log On to the FogBugz Website

Step	Action	Notes
1	From an internet browser, go to **Schuylkill.nws.noaa.gov:7069**	If the page does not load, send it again.
2	Log in using the RFC username and password. 	Box is in the upper right corner.

STEP 2 Search for Relevant Cases

Note: In Internet Explorer, the search function only works in Compatibility mode.

Step	Action	Notes
1	Type a keyword associated with the topic/problem in the upper right search box. 	Documents will be listed first, then cases.
2	If a case is located, look through the status to see if it is still in progress or has been solved. Also, check the notes in the case.	
3	Track the progress of cases similar to the problems at your RFC by clicking the **Subscribe** button on the left side. 	
4	If the search yields no similar cases, add a case.	

STEP 3 Submit a New Case

Step	Action	Notes
1	Click **New Case** on the top navigation bar.	
2	Name the case the main topic of the problem.	Labeled **1** on Figure 11.
3	Select **CHPS-bugz** in the **Project** drop down menu.	Labeled **2** on Figure 11.
4	Select the area relating to the issue.	Labeled **3** on Figure 11.
5	Choose a category.	Labeled **4** on Figure 11.
6	Enter your name.	Labeled **5** on Figure 11.
7	Enter your RFC ID.	Labeled **6** on Figure 11.
8	Describe the issue, in depth. Make sure to note where, when, how, what directories or files are involved, and its impact.	Labeled **7** on Figure 11.
9	Set a priority.	Labeled **8** on Figure 11.
10	Make sure to include tags for easier searching.	Labeled **9** on Figure 11.
11	Change the priority, add more users, and attach a file.	Labeled **10** on Figure 11.
12	Click **OK**.	Labeled **11** on Figure 11.

Figure 11