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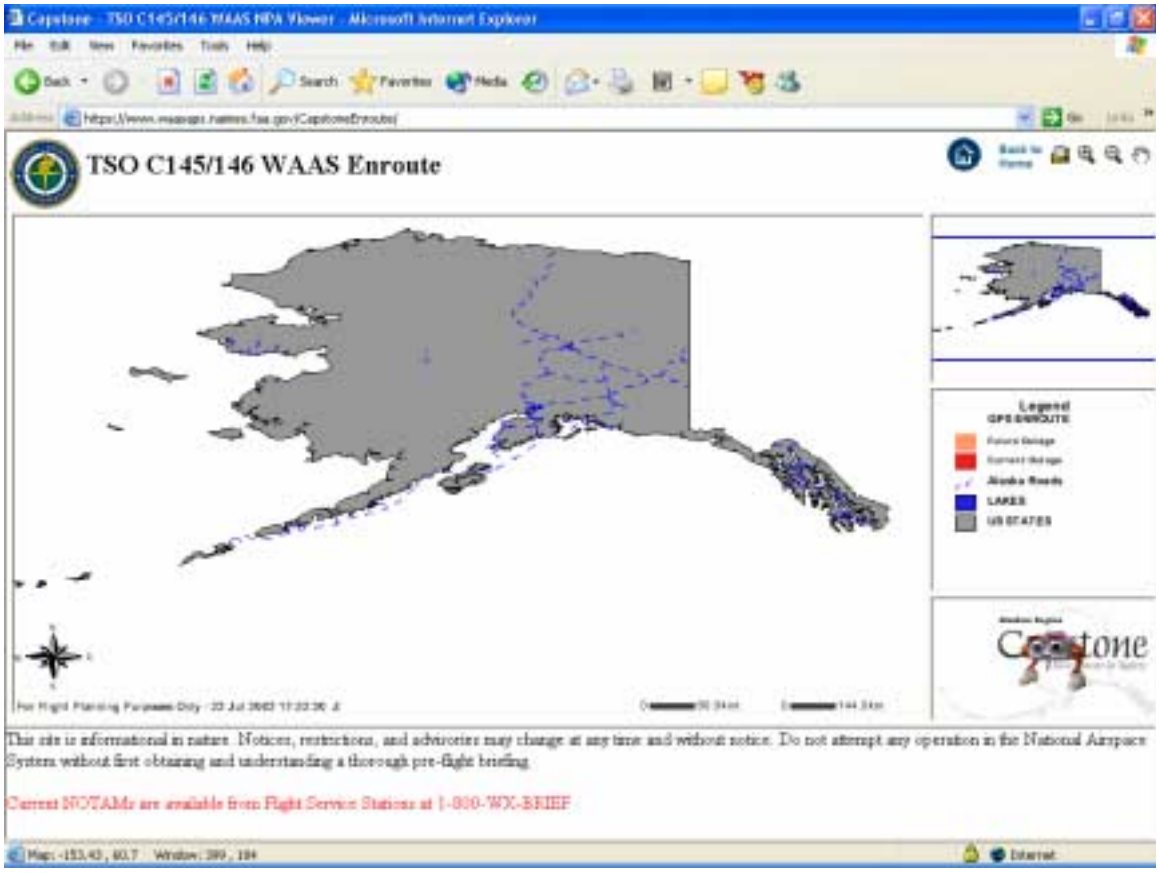
Capstone TSO C145/146 WAAS Availability Predictive System Display

The Capstone WAAS TSO C145/146 WAAS Availability Predictive System Display Viewer is a feature that allows users to interactively display predicted WAAS Outages on the NAIMES DINS site. The Viewer is located at as a link from the NAIMES Pilotweb web page and is updated dynamically as the predictions are calculated either on a scheduled or unscheduled basis. The Capstone WAAS
Availability Predictive System Display contains three views. The first view, show in Figure 1 is the TSO C145/146 WAAS NPA Display

Figure 1 – TSO C145/146 WAAS Enroute Display



In the upper right hand corner of the page there are the viewer control buttons:

From the top left these buttons control:

Zoom to Full Extent

Zoom In

Zoom Out

Pan (Drag)

The functions of each of these buttons will be discussed in the paragraphs below along with step-by-step instructions on how to use the Capstone TSO C145/146 WAAS NPA Display.

Capstone TSO C145/146 WAAS Enroute Display Zoom In Feature

The Capstone TSO C145/146 WAAS Enroute Display Zoom-In Feature is the tool that allows users to localize or 'drill down' to the level of display and detail needed. This feature will be one of the most used option in the Capstone WAAS Display service offering.

Figure 2 – Using the Zoom In Feature (below) depicts the initial Enroute Display. To select and area to Zoom-In and display the user can draw a 'square' around an area where a more detailed display is desired. Zoom in is activate by selecting the icon on the upper right hand part of the display.

Figure 2 - Using the Zoom-In Feature

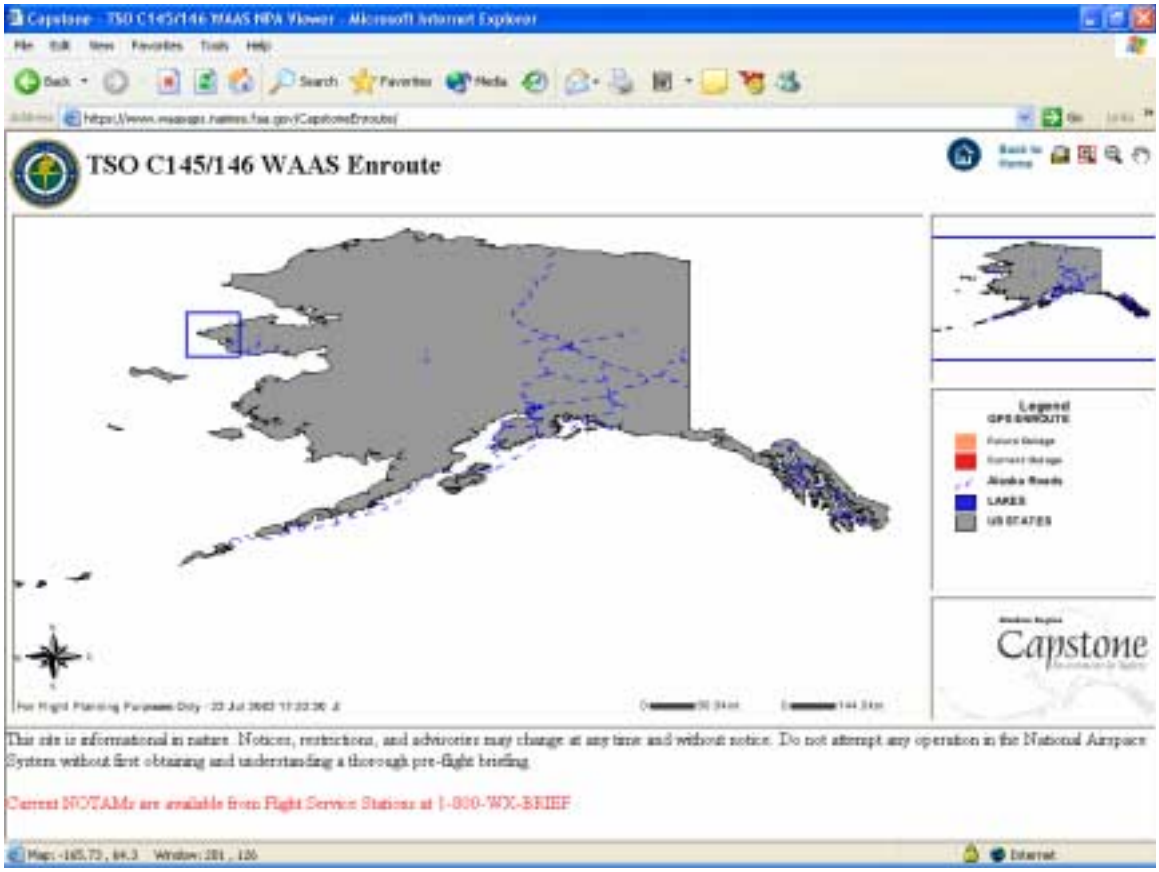
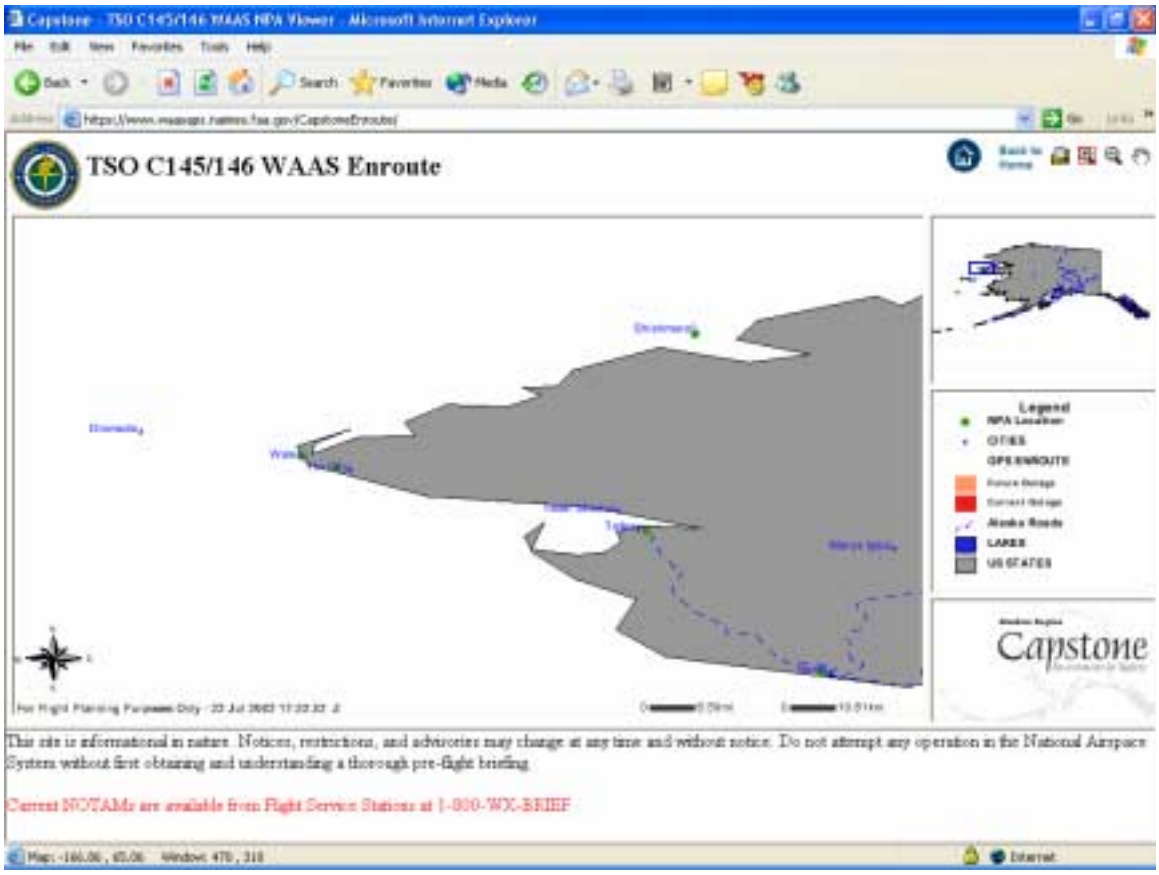


Figure 3 - (below) shows the result of this action.

Figure 3 – Zoom-In Results

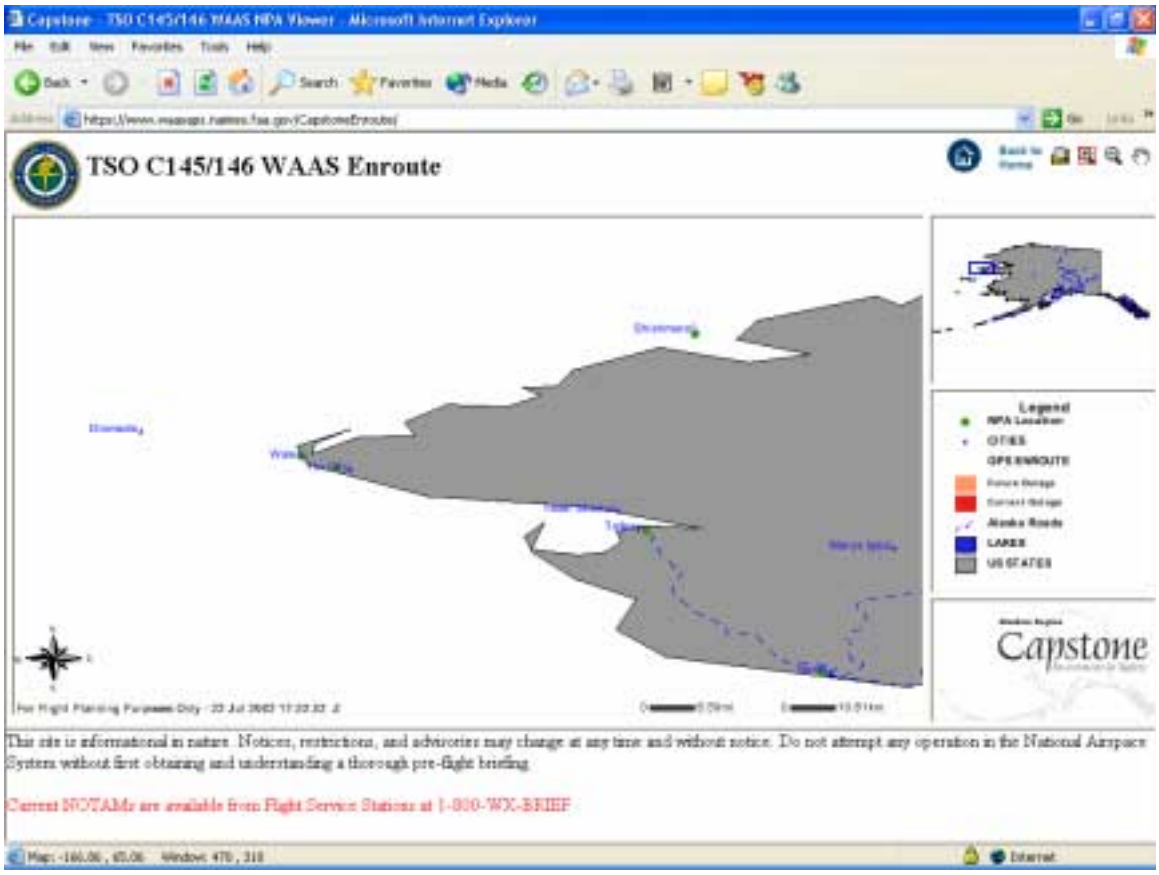


- To display more detail repeat the procedure (above), which will bring you to closer elevations of display
- Users can display any level of detail that they wish by continuing to zoom in on the display by selecting more detailed areas using the mouse.

Capstone TSO C145/146 Enroute Display Zoom-Out Feature

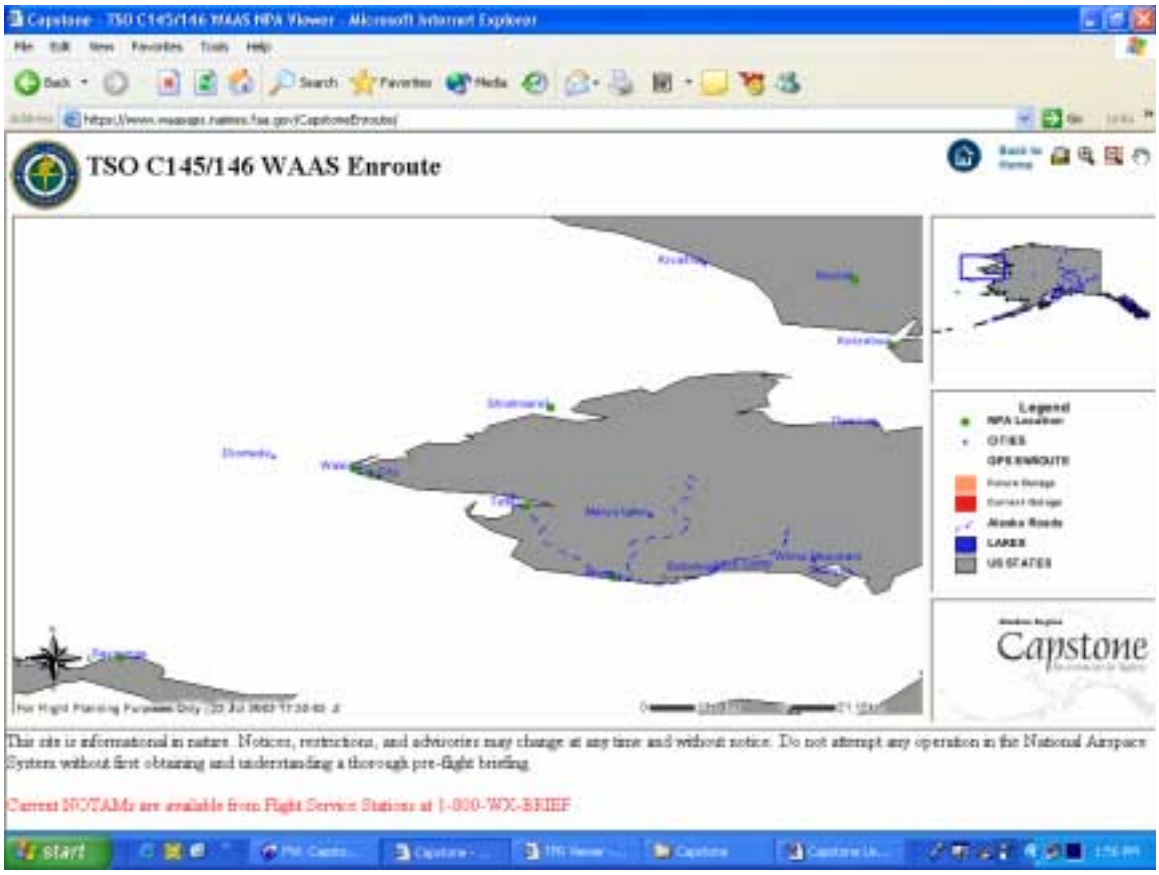
The Capstone TSO C145/146 Enroute Zoom-Out Feature is another tool that allows users to change to the level of display and detail needed. This feature, the opposite of the Zoom-In feature, allows a user to raise the level of display to the desired 'altitude'.

Figure 4 - Using the Zoom-Out Feature



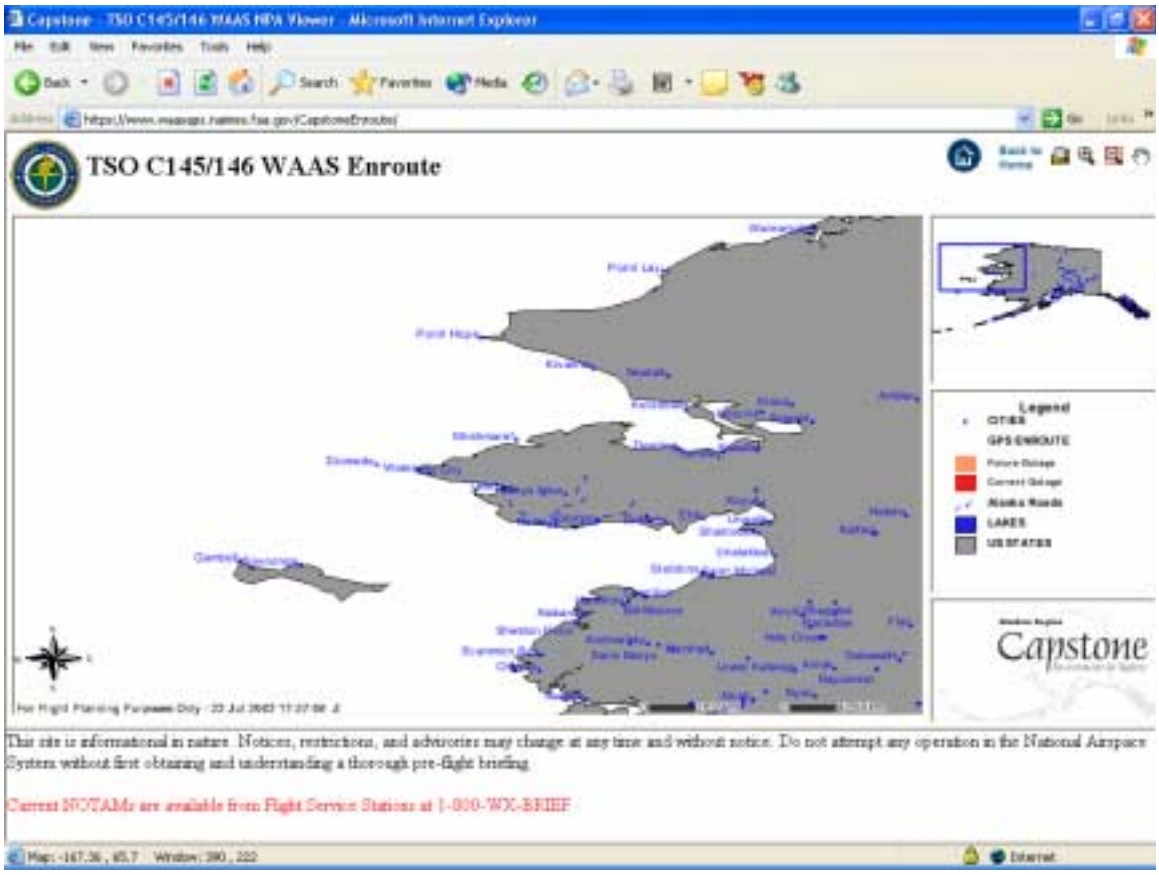
- To use the 'Zoom-Out' feature click on the Zoom-Out button, which will then be highlighted in red indicating that it is the active zoom feature.
- Clicking on any part of the display will activate this feature. Figure 5 Zoom-Out Display (below) shows the results of the Zoom-Out Feature.

Figure 5 - Zoom-Out Display



- This display is twice the altitude display of the previous screen when the Zoom-Out option was selected (note the Zoom-Out button on this display is highlighted in red indicating that it is the active Zoom function).
- Clicking the display again will Zoom-Out the display even further.

Figure 6 - DINS Graphical TFR Zoom-Out Display (continued)

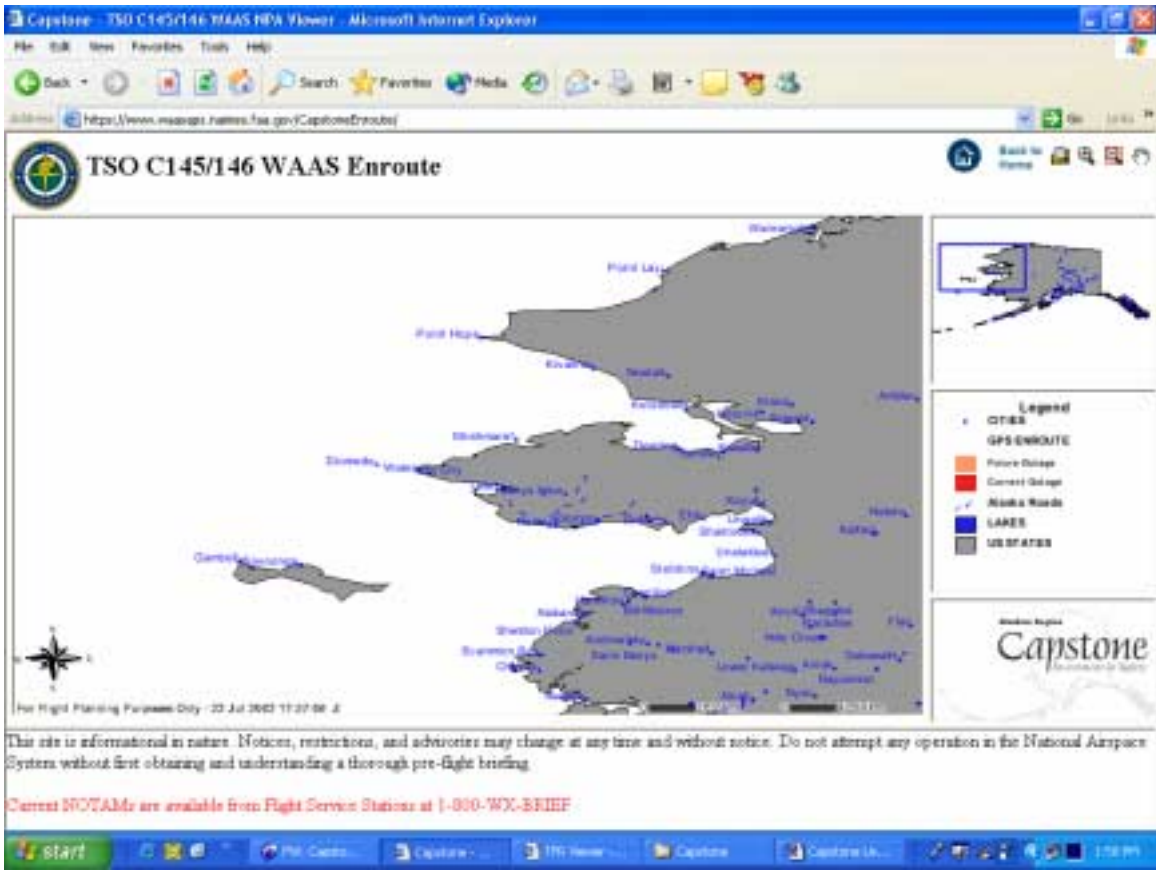


- At this altitude the sectional display is disabled and the user-selected (or default) Layers are again displayed.
- The Zoom-Out feature can be used until the initial display of the entire Alaska Region re-appears.

Zoom to Full Extent Feature

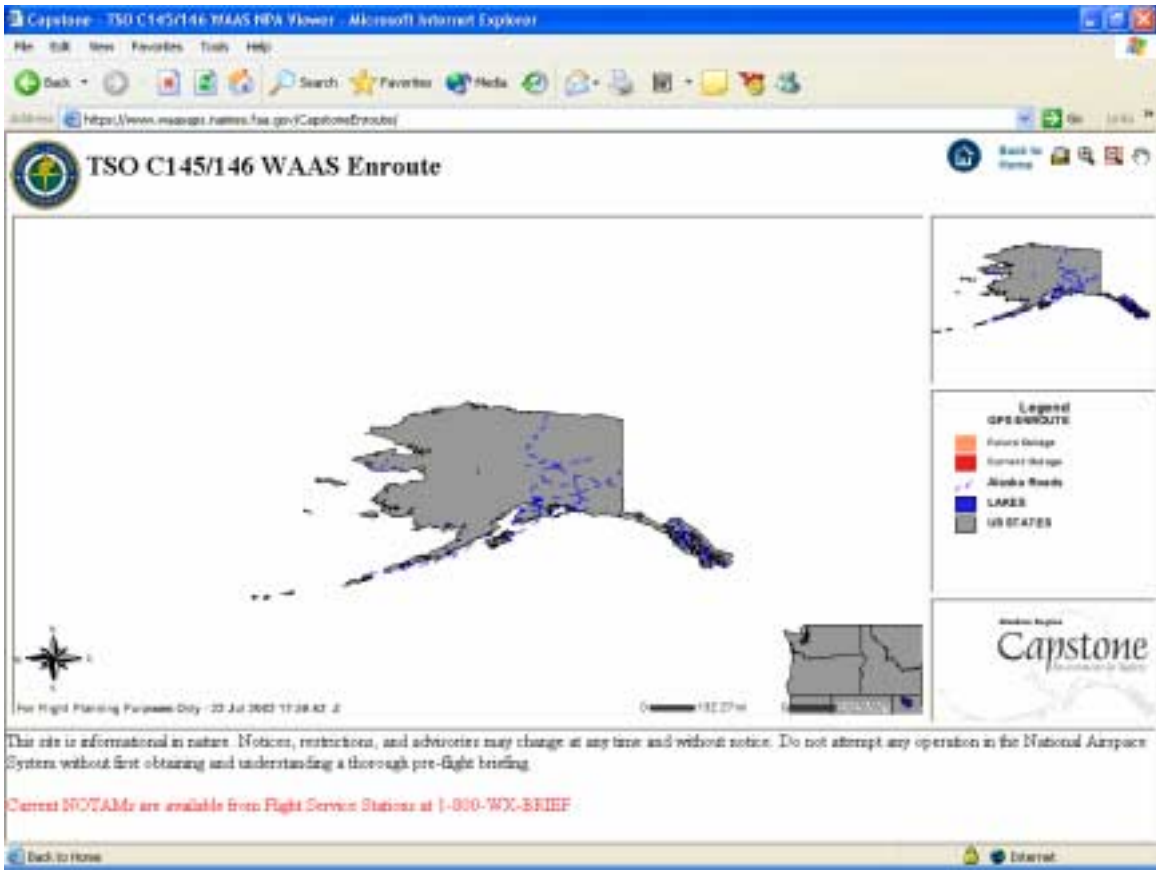
The Zoom Back to Full Extent Feature is used to immediately return to the high level, initial display from any active screen.

Figure 7 - Zoom Back to Full Extent Feature



- To activate the Zoom to Full Extent Feature from a lower level display as in the example above the user clicks the Zoom to Full Extent button, one time.
- Once clicked, the initial high level Alaska Region display is presented to the user as shown in Figure 8 - Zoom to Full Extent

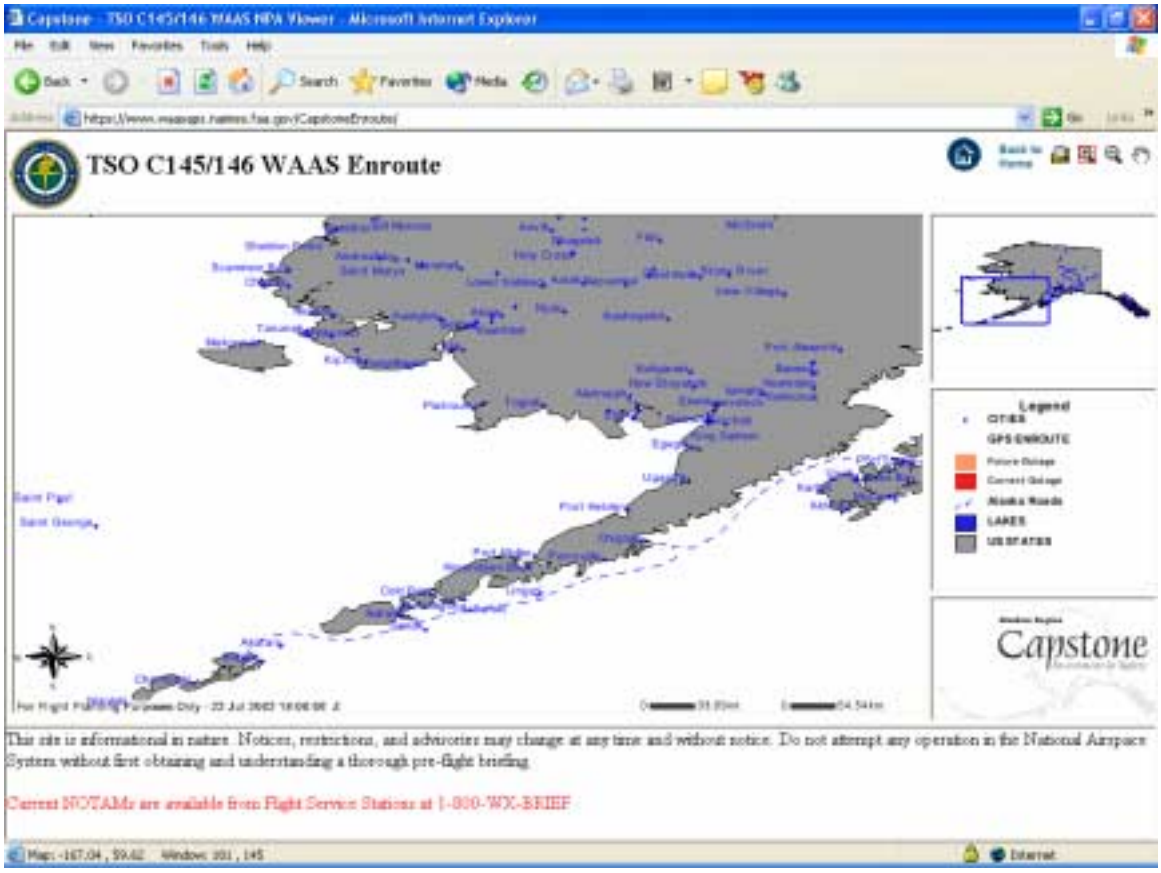
Figure 8 - Zoom to Full Extent



Panning Feature

- The panning feature of the Capstone TSO C145/146 Enroute viewer can be used through the Pan – Drag control buttons The Pan-Drag feature allows you to selectively move the display by selecting the button and then, using the mouse, move the map in what ever direction you desire.
- From the elevation that you are displaying the display will be moved one full panel in which ever direction you select using the 'arrow' keys.

Figure 9 – Pan-Drag Feature

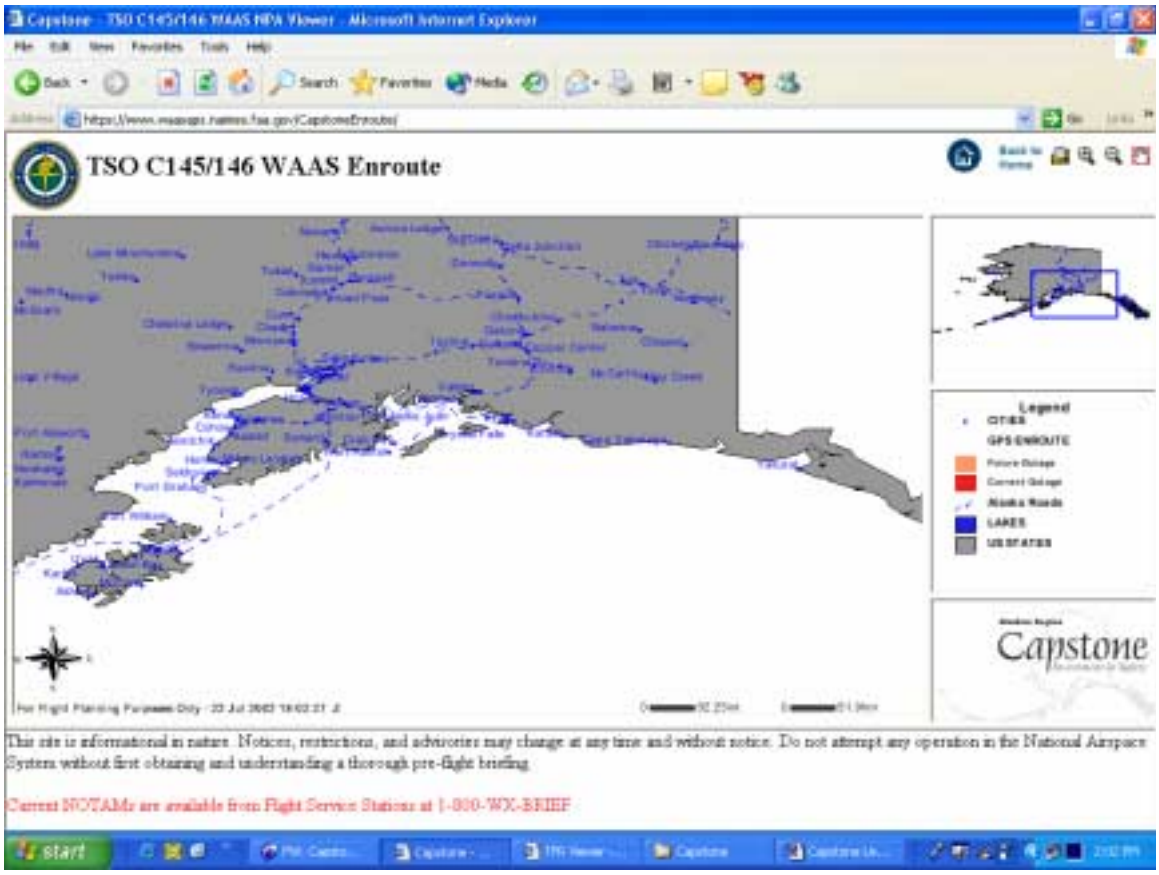


- To use the Pan-Drag Feature from the display that you are currently viewing select the Pan-Drag button (it will be highlighted in red once selected)

Figure 10 - Pan-Drag Feature Use

- Using your cursor drag the map in any direction you wish while holding the left mouse button down (in this example the map is dragged to the right approximately 2/3 of the width of the screen)

Figure 11 - Pan-Drag Feature Result

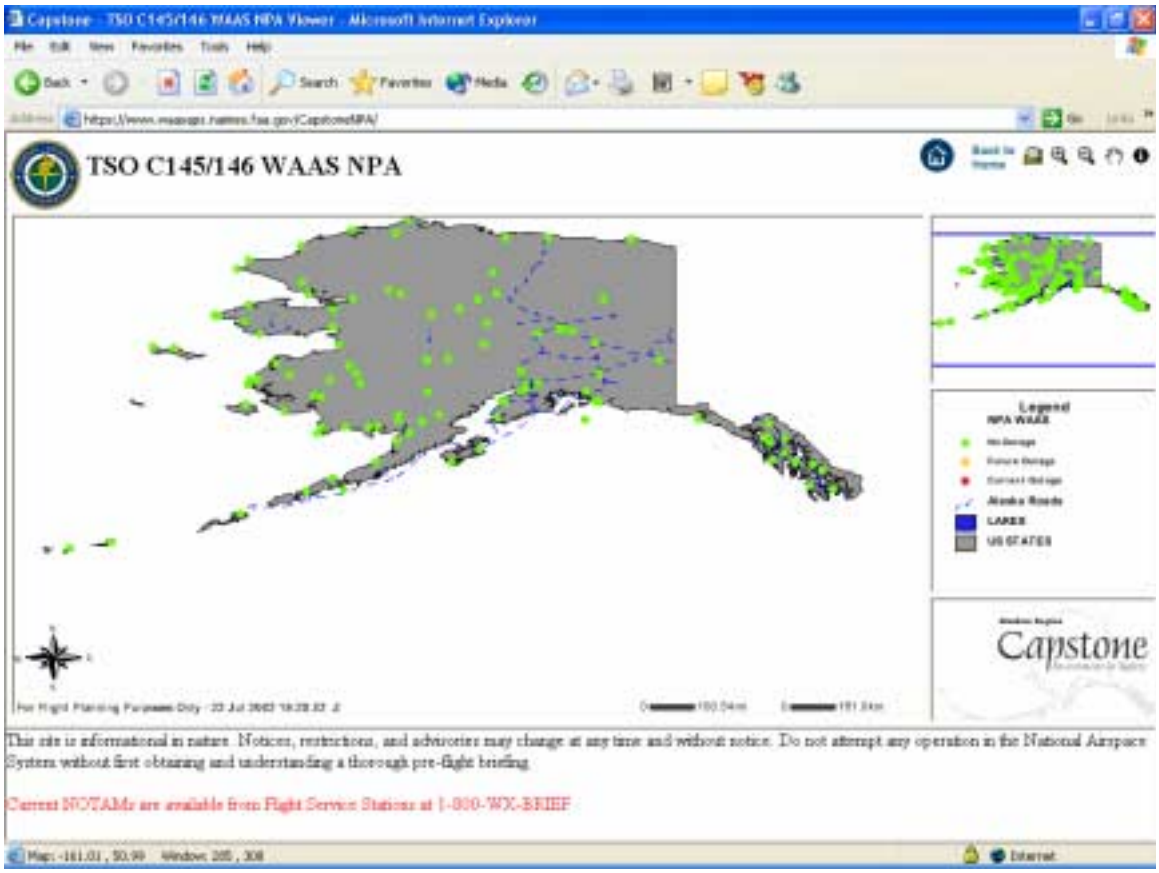


- When the left mouse button is release the map is repositioned and re-drawn based on the user's directional movement.

Capstone TSO C145/146 WAAS Non-Precision Approach (NPA) Display

The second of the three Capstone WAAS Predictive Outage Displays is the TSO C145/146 WAAS NPA Display. This display codes airport locations with NPA procedures with red, yellow, and green codes to denote whether there are current NPA outages, outages predicted for the next 24 hours, or no outages predicted for the next 24 hours.

Figure 12 – TSO C145/146 WAAS NPA Display



In the upper right hand corner of the page there are the viewer control buttons:

From the top left these buttons control:

Zoom to Full Extent

Zoom In

Zoom Out

Pan (Drag)

Identify (Information)

The functions of each of these buttons will be discussed in the paragraphs below along with step-by-step instructions on how to use the Capstone TSO C145/146 WAAS NPA Display.

Capstone TSO C145/146 WAAS NPA Display Zoom In Feature

The Capstone TSO C145/146 WAAS NPA Display Zoom-In Feature is the tool that allows users to localize or 'drill down' to the level of display and detail needed. This feature will be one of the most used option in the Capstone WAAS Display service offering.

Figure 13 – Using the Zoom In Feature (below) depicts the initial NPA Display. To select and area to Zoom-In and display the user can draw a 'square' around an area where a more detailed display is desired. Zoom in is activate by selecting the icon on the upper right hand part of the display.

Figure 13 - Using the Zoom-In Feature

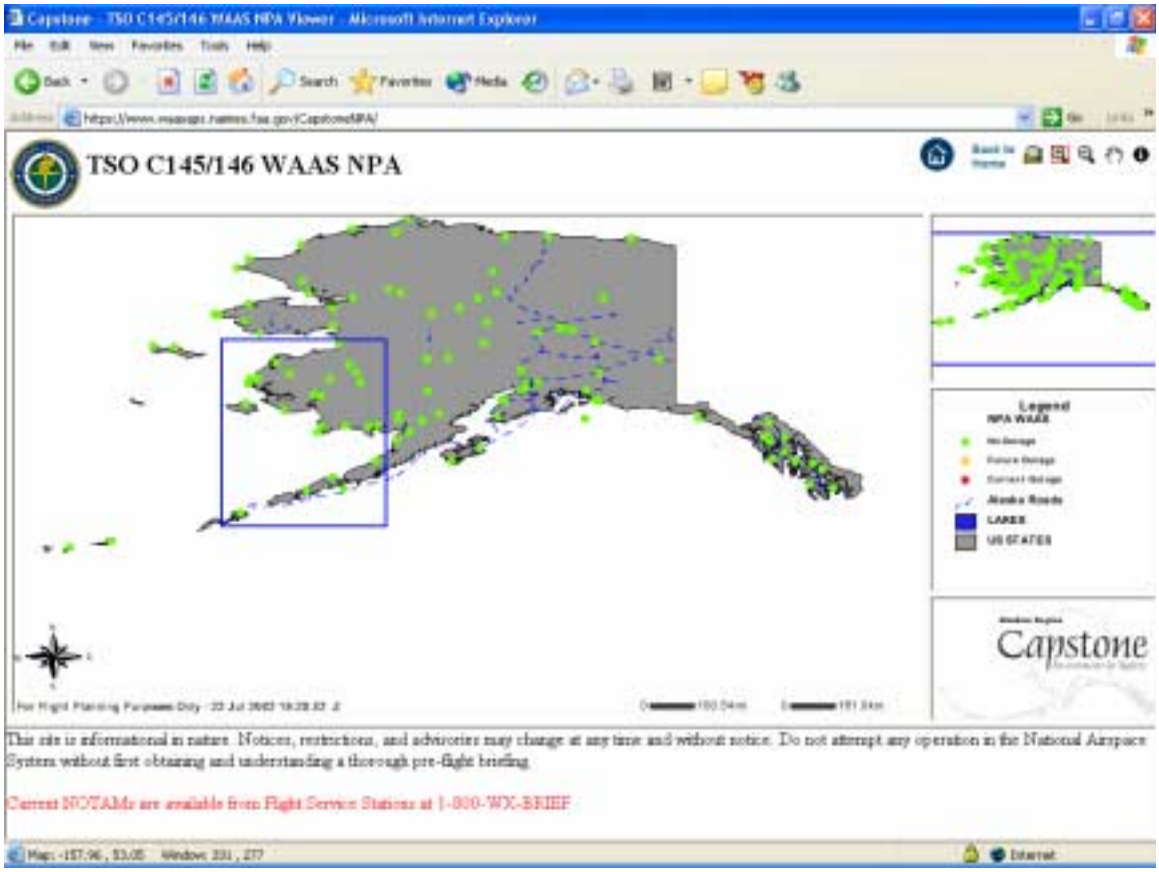
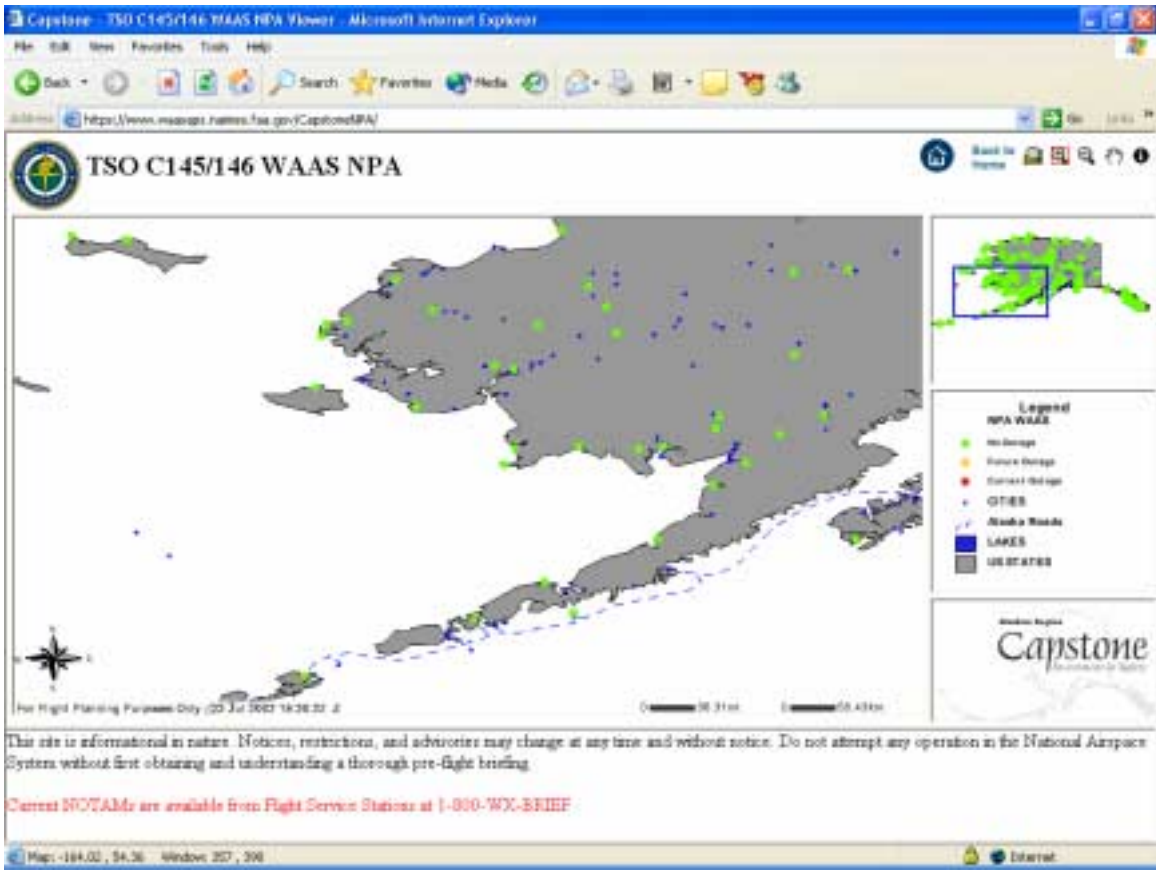


Figure 14 - (below) shows the result of this action.

Figure 14 – Zoom-In Results

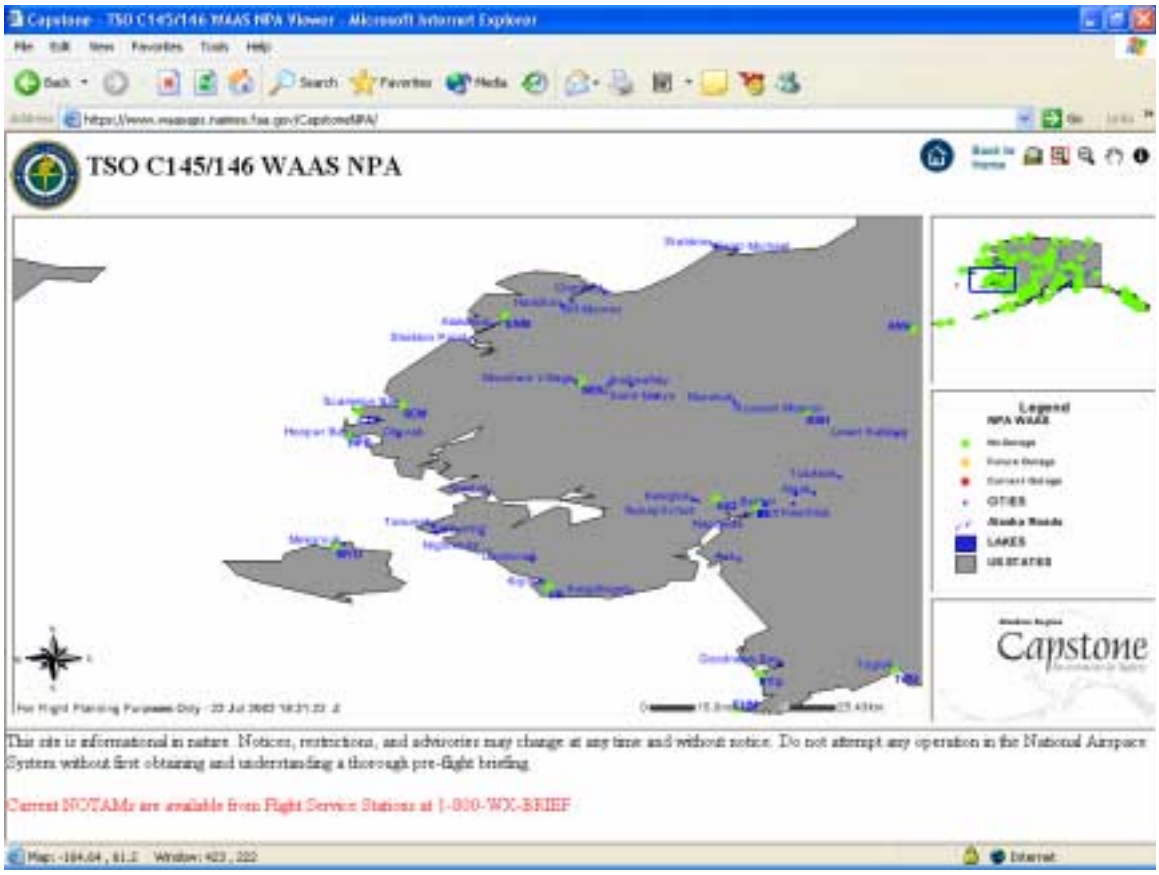


- To display more detail repeat the procedure (above), which will bring you to closer elevations of display
- Users can display any level of detail that they wish by continuing to zoom in on the display by selecting more detailed areas using the mouse.

Capstone TSO C145/146 NPA Display Zoom-Out Feature

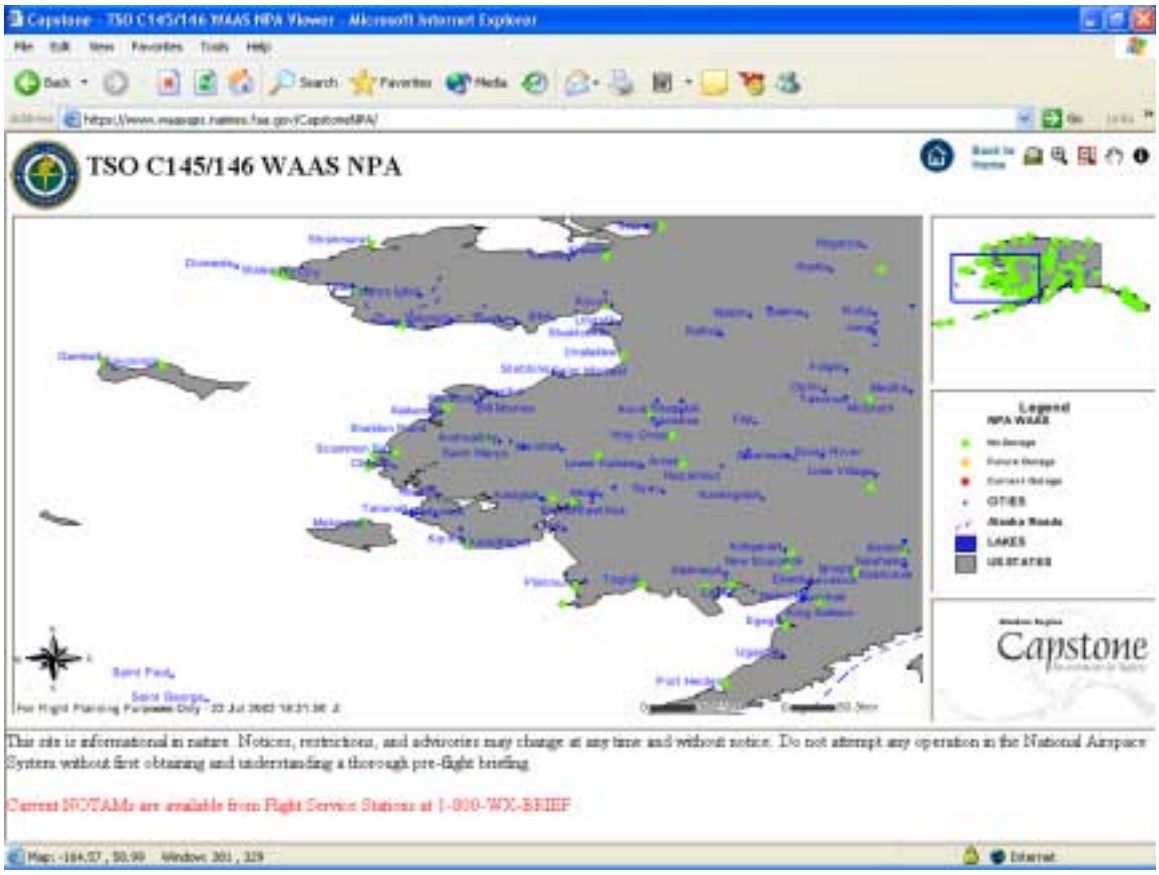
The Capstone TSO C145/146 NPA Zoom-Out Feature is another tool that allows users to change to the level of display and detail needed. This feature, the opposite of the Zoom-In feature, allows a user to raise the level of display to the desired 'altitude'.

Figure 15 - Using the Zoom-Out Feature



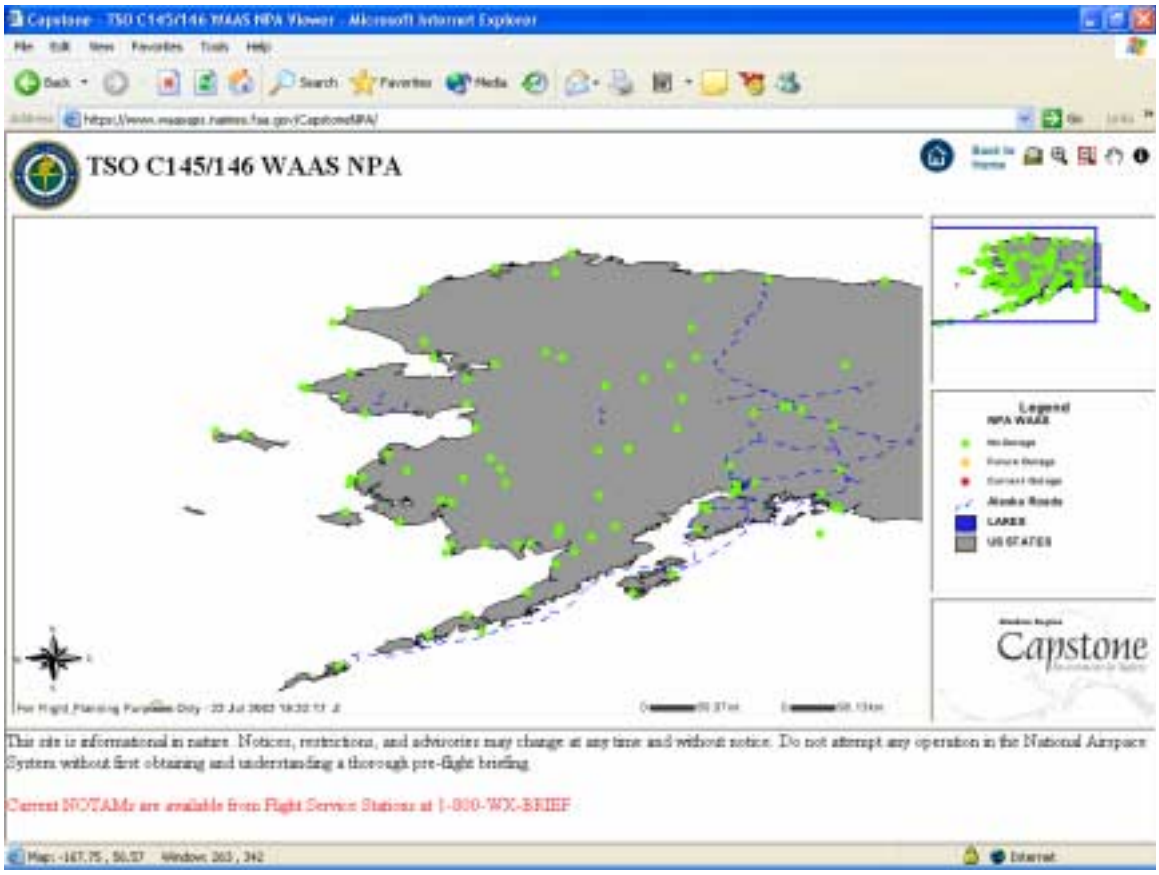
- To use the 'Zoom-Out' feature click on the Zoom-Out button, which will then be highlighted in red indicating that it is the active zoom feature.
- Clicking on any part of the display will activate this feature. Figure 16 - Zoom-Out Display (below) shows the results of the Zoom-Out Feature.

Figure 16 - Zoom-Out Display



- This display is twice the altitude display of the previous screen when the Zoom-Out option was selected (note the Zoom-Out button on this display is highlighted in red indicating that it is the active Zoom function).
- Clicking the display again will Zoom-Out the display even further.

Figure 17 - DINS Graphical TFR Zoom-Out Display (continued)

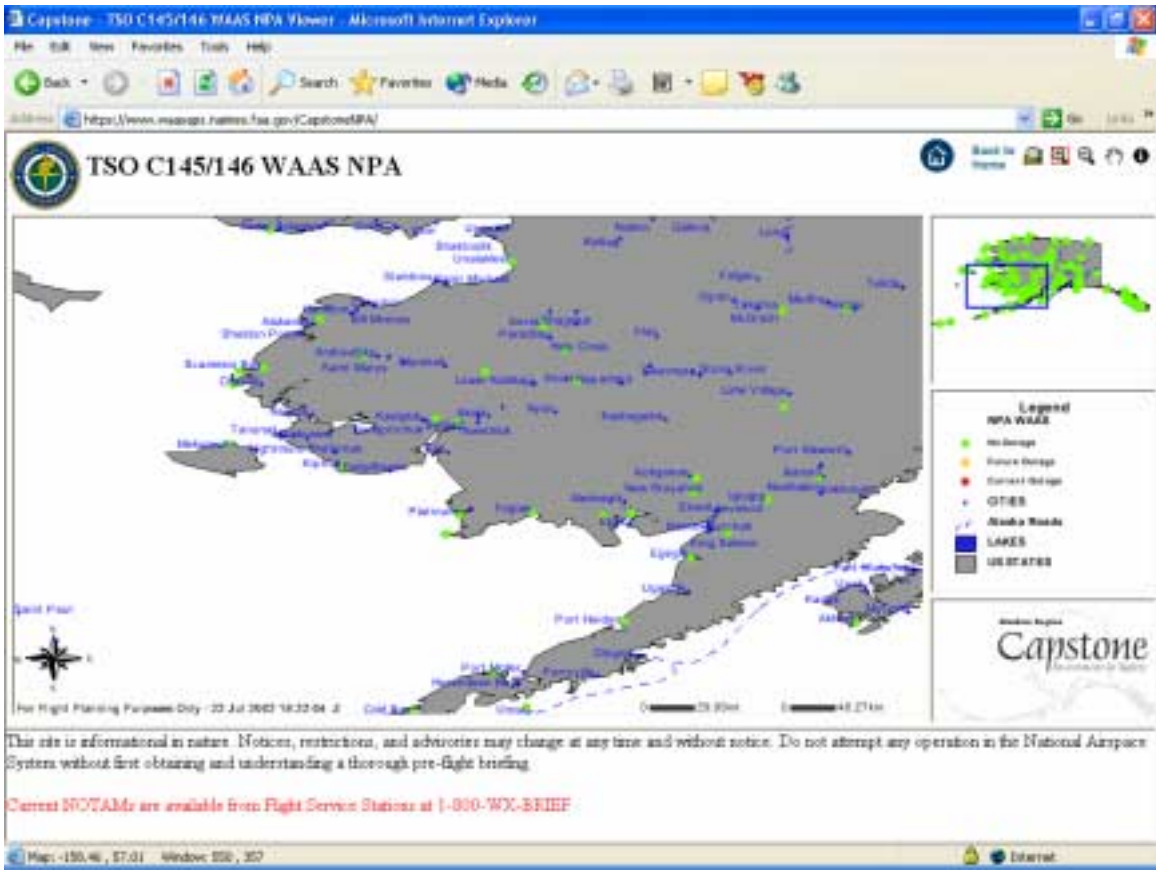


- At this altitude the sectional display is disabled and the user-selected (or default) Layers are again displayed.
- The Zoom-Out feature can be used until the initial display of the entire Alaska Region re-appears.

Zoom Out to Full Extent Feature

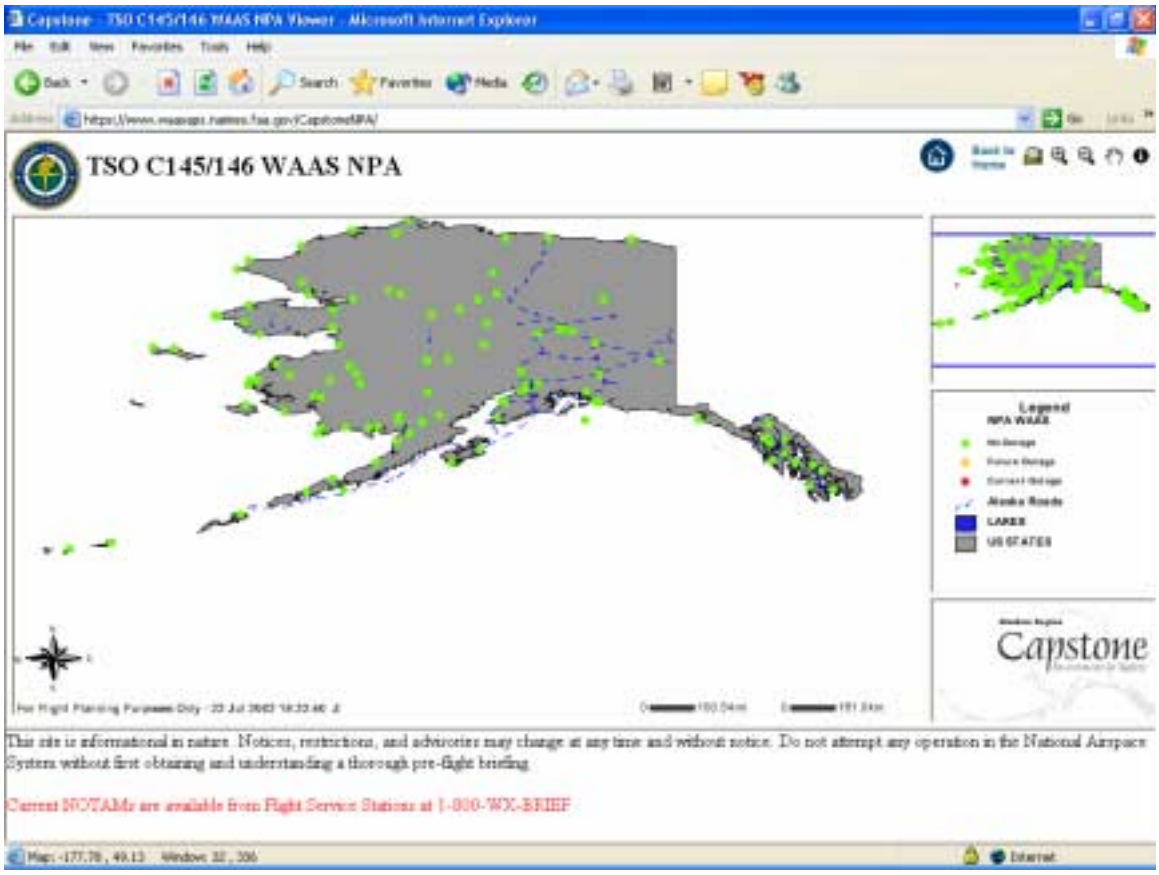
The Zoom Out to Full Extent Feature is used to immediately return to the high level, initial display from any active screen.

Figure 18 - Zoom Out to Full Extent Feature



- To activate the Zoom to Full Extent Feature from a lower level display as in the example above the user clicks the Zoom to Full Extent button, one time.
- Once clicked, the initial high level Alaska Region display is presented to the user as shown in Figure 19 - Zoom to Full Extent

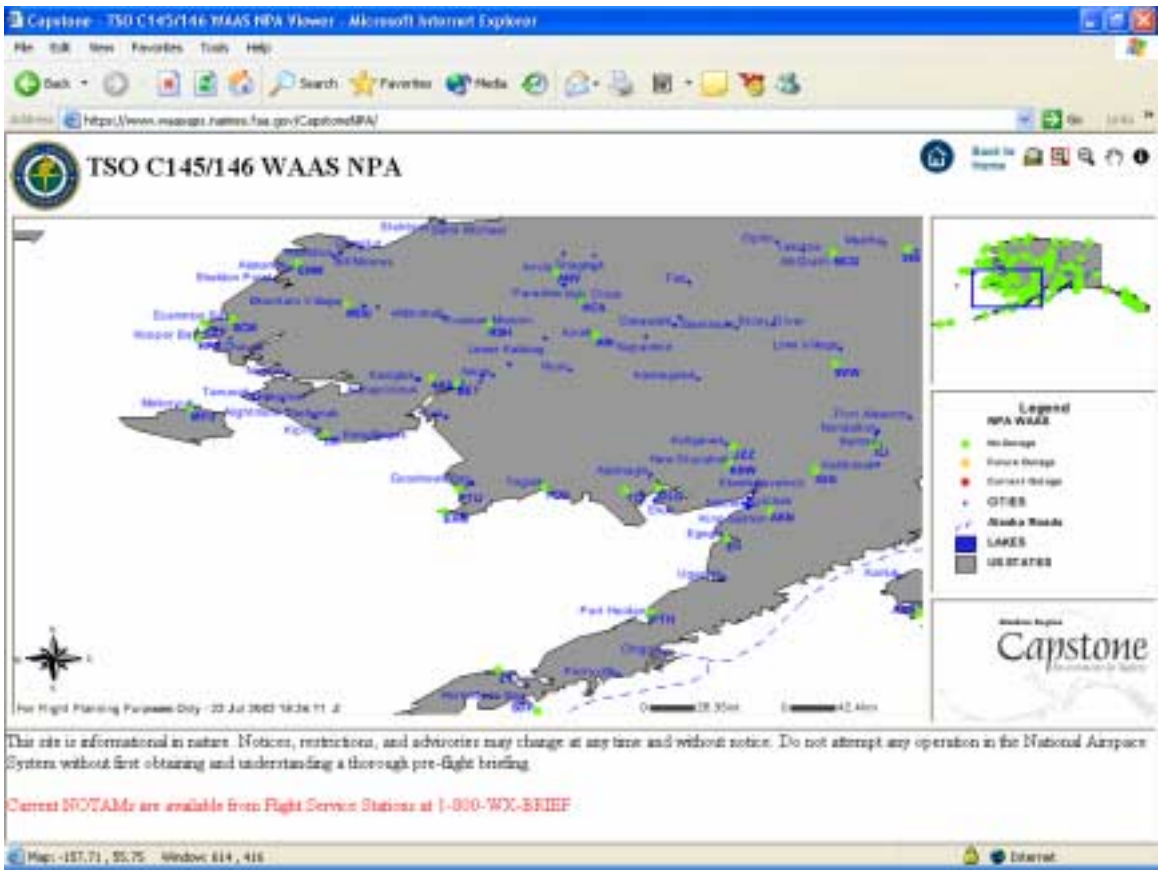
Figure 19 - Zoom to Full Extent



Panning Feature

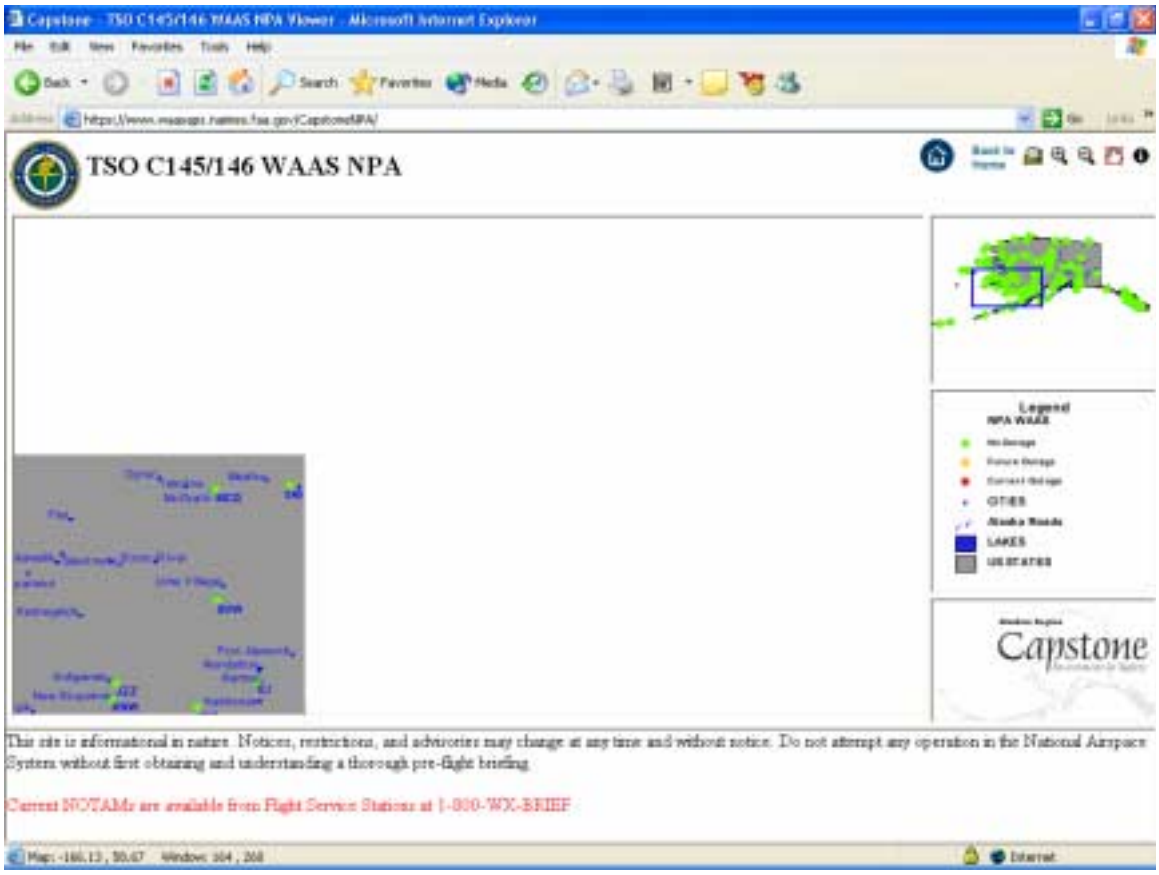
- The panning feature of the Capstone TSO C145/146 NPA viewer can be used through the Pan – Drag control buttons The Pan-Drag feature allows you to selectively move the display by selecting the button and then, using the mouse, move the map in what ever direction you desire.

Figure 20 – Pan-Drag Feature



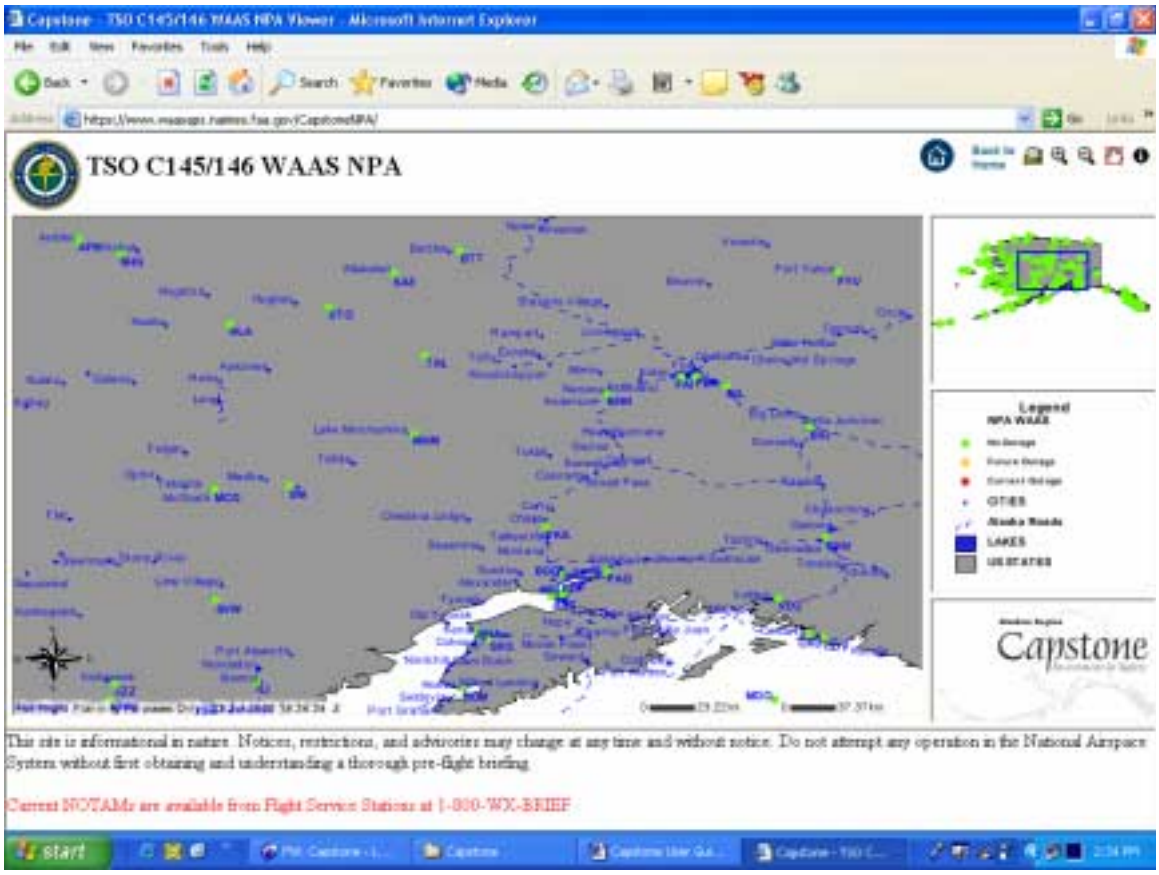
- To use the Pan-Drag Feature from the display that you are currently viewing select the Pan-Drag button (it will be highlighted in red once selected)

Figure 21 - Pan-Drag Feature Use



- Using your cursor drag the map in any direction you wish while holding the left mouse button down (in this example the map is dragged to the right approximately 2/3 of the width of the screen)

Figure 22 - Pan-Drag Feature Result



- When the left mouse button is release the map is repositioned and re-drawn based on the user's directional movement.

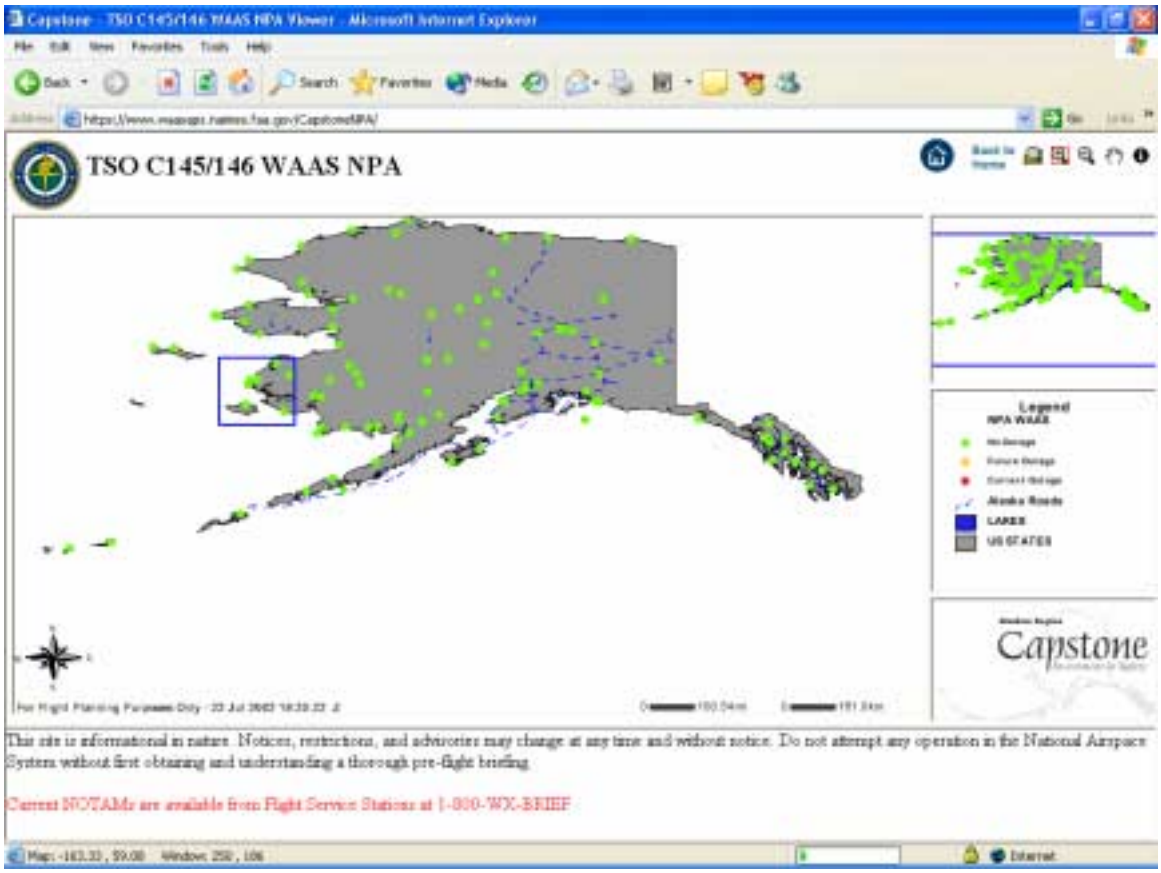
Information Feature

The information feature of the Capstone TSO C145/146 NPA viewer can be used through the Information control button.

This feature invokes the last Capstone feather with displays predicted outages on a bar-graph and optionally text displays for the precise times that outages are predicted to occur. To use this feature the button is selected and and then, using the mouse, clicking on the airport whose information is requested.

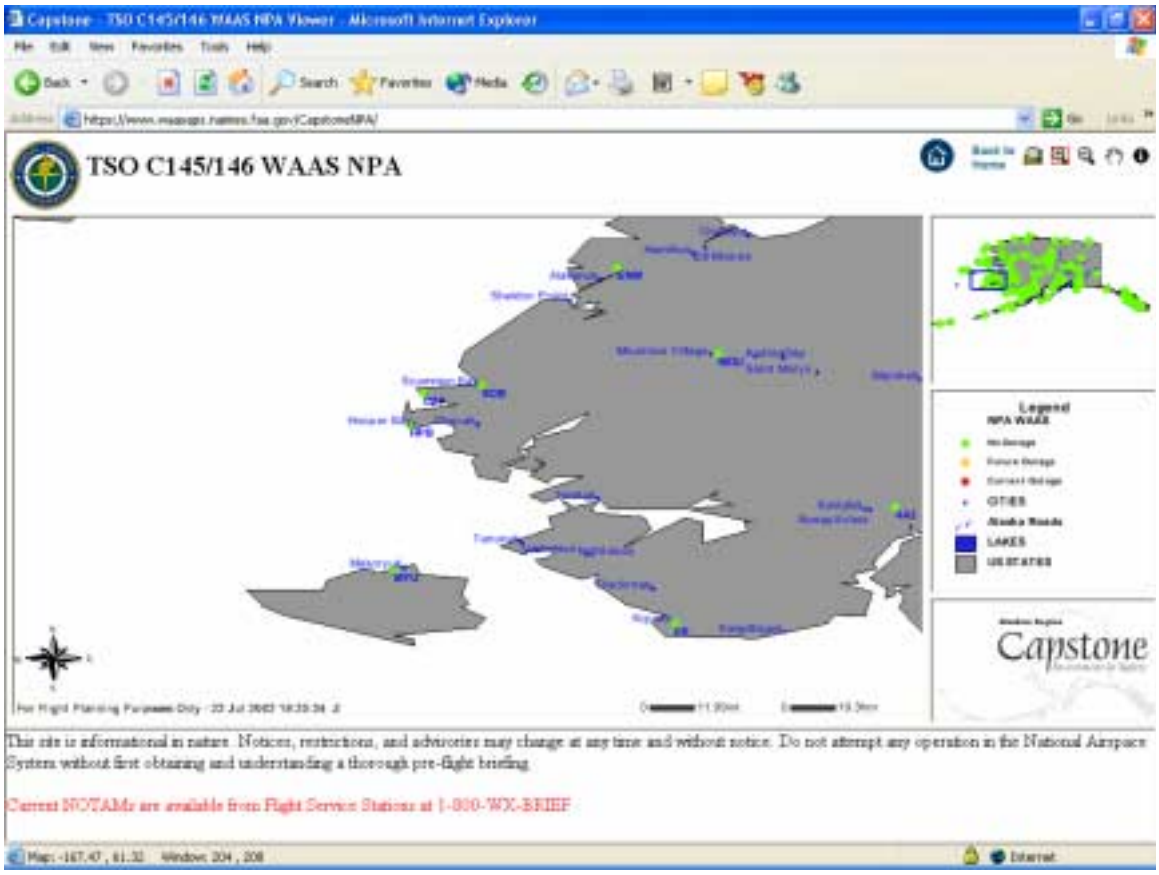
The resulting display will be a 24 hour projection of an NPA outage from current time and the next 24 hours.

Figure 23 – Information Display



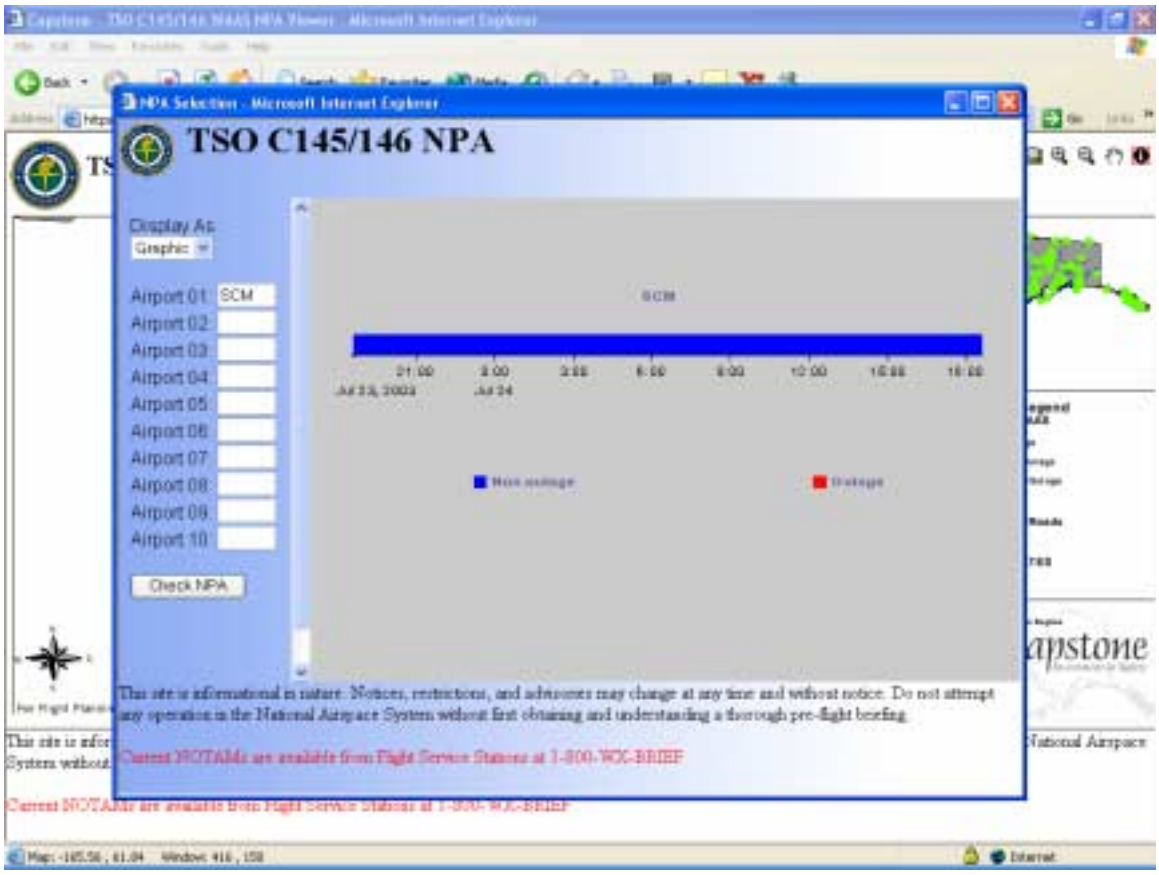
- To use this feature users must use the Zoom-In feature to locate and airport or airports that have outages as denoted by either a yellow or red code on the display. Figure 24 shows the area selected above.

Figure 24 – Information Display (continued)



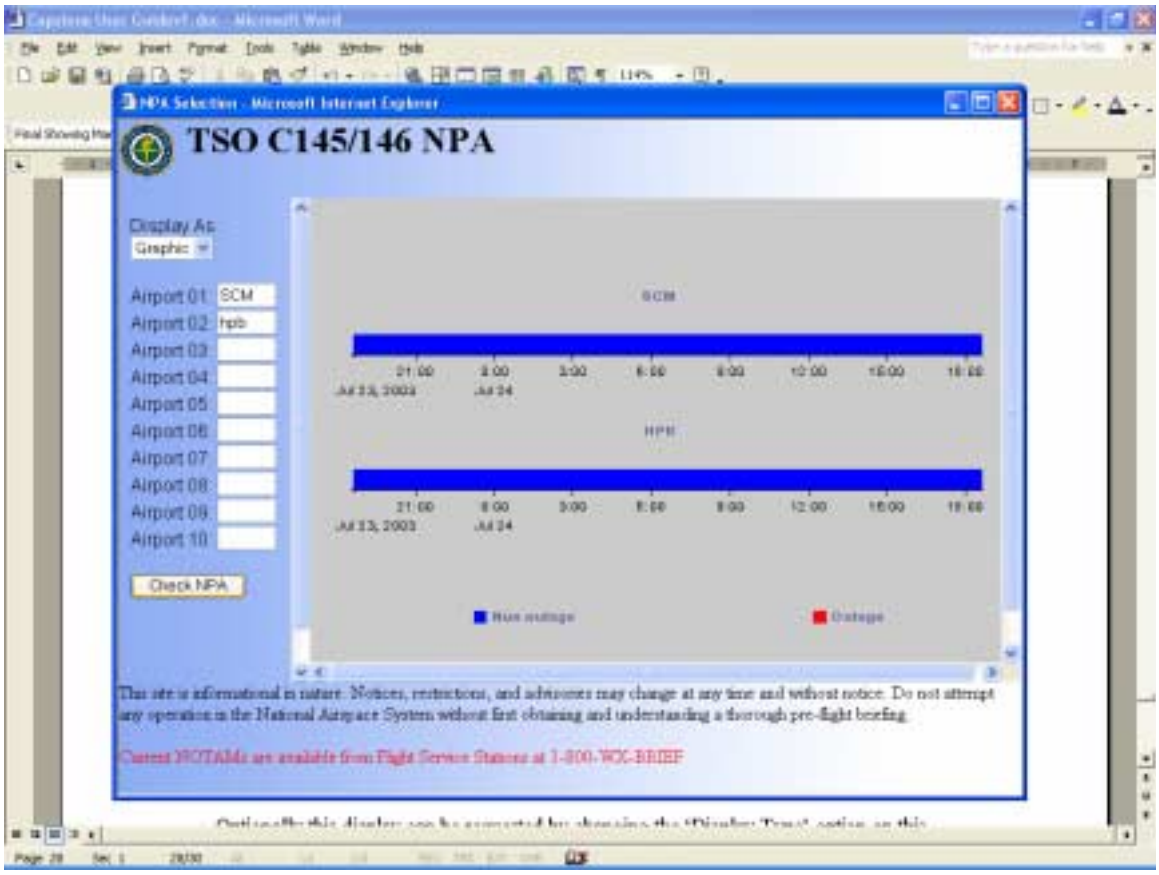
- Using your cursor, select the point on the map (in this example SCM) to open a site specific display for outages anticipated.

Figure 25 – Information Request Result



- A new window is opened with the results of the information request.
- If the user wishes, multiple airport codes may be selected from window with multiple displays resulting. Figure 26 below shows and example of multiple display requests.

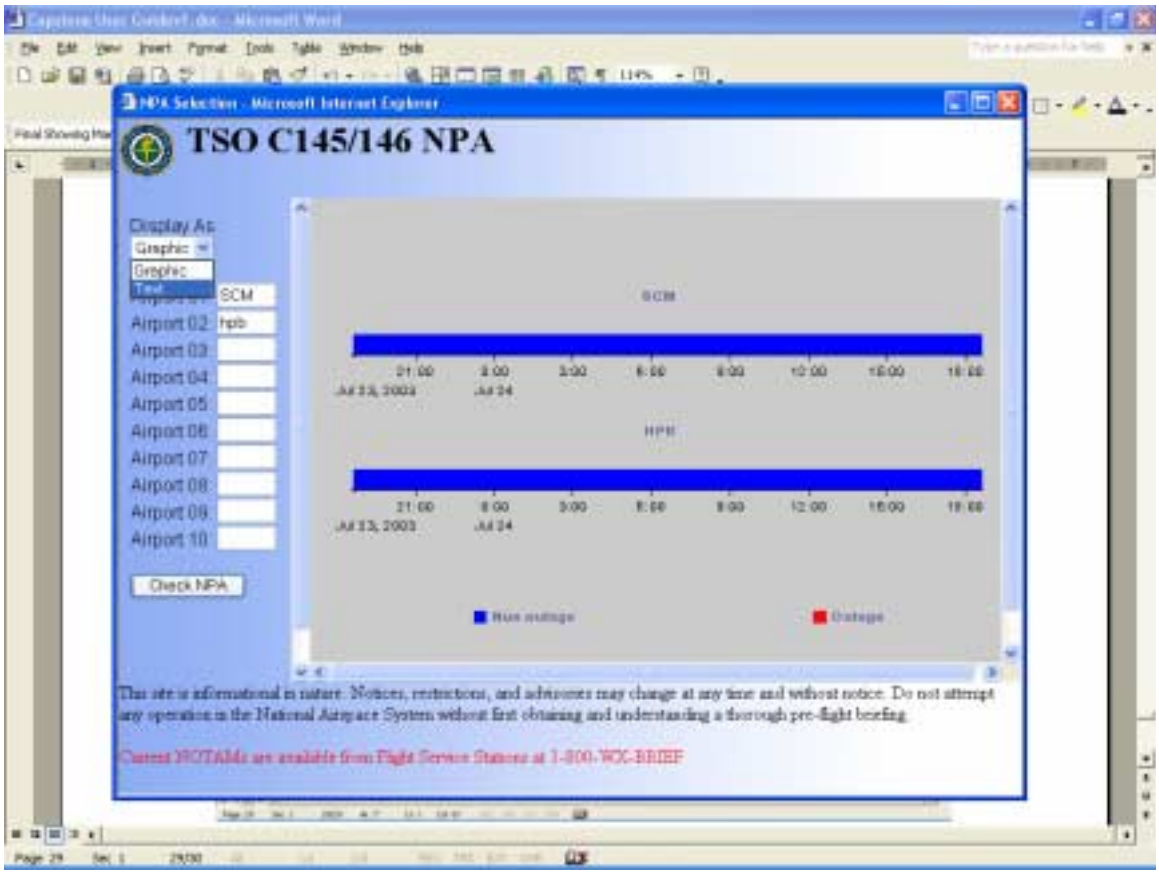
Figure 26 – Information Request Result (Multiple Requests)



Optionally this display can be requested by changing the ‘Display Type’ option on this screen to ‘Text’ from ‘Graphic’ (the default).

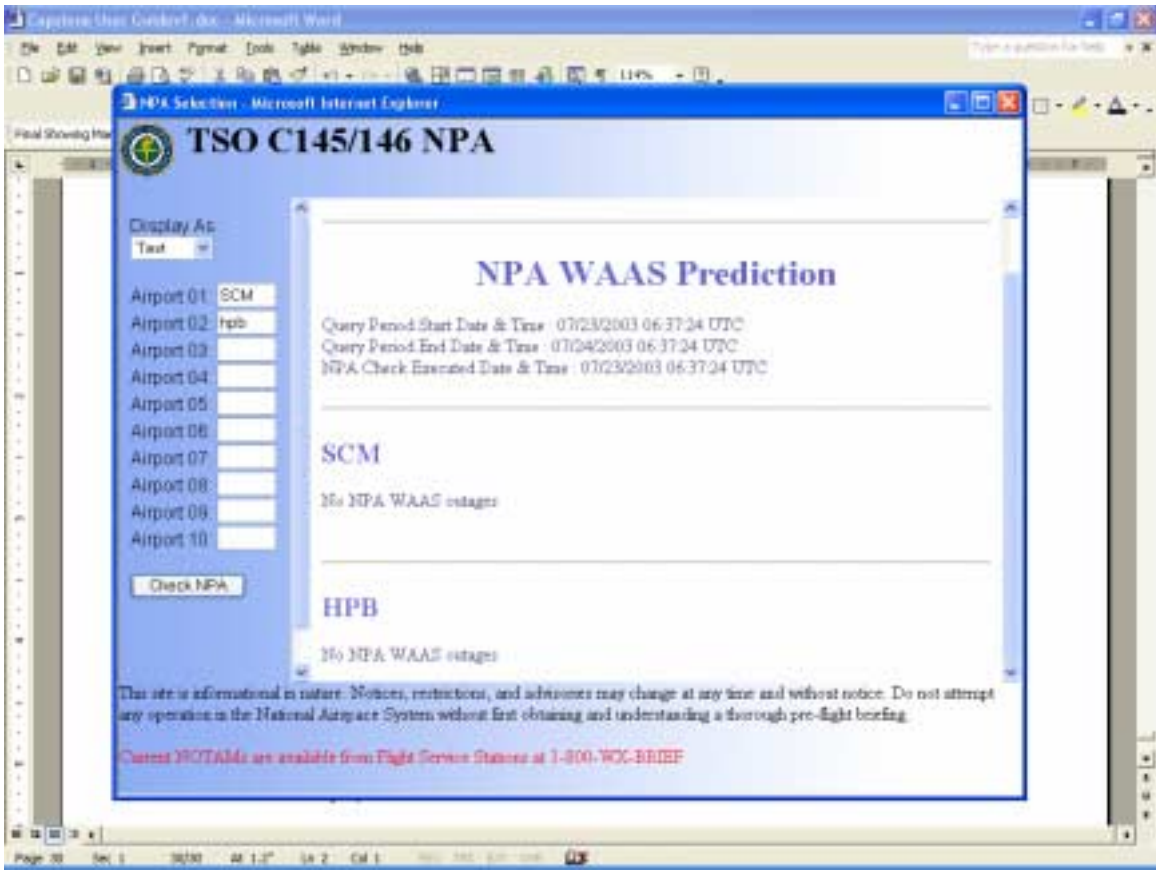
Figure 27 and 28 below show an example of this type of request.

Figure 27 – Information Request Result (Requesting Text Display)



In this example the same display as in Figure 26 is resubmitted with the display type changed to request text.

Figure 28 – Information Request Result (Text Display)



Each request is individual responded to with specific outage information, on a 1 minute resolution, displayed.

This display may also be directly requested from the Capstone Home Page, bypassing the NPA graphical display if necessary.