

SIMSUITE TUTORIAL / USERS GUIDE

U.S. Army Corps of Engineers

The screenshot shows the SimSuite web application interface. At the top, there is a header with a world map background and the text "SimSuite" in the upper right. Below the map is a navigation bar with the US Army Corps of Engineers logo and the text "US Army Corps of Engineers". The navigation bar includes links for "Home", "Data", "My Favorites", "Activity", and "Resources", along with a search box labeled "Search viewers...".

The main content area displays a grid of 10 categories, each with a representative image, a title, and two action links: "Browse existing viewers..." and "Create a new viewer".

Category	Image Description	Action Links
EM Common Ops	EM logo with a red castle icon	Browse existing viewers... Create a new viewer
EM Mission Models	3D globe with a blue grid	Browse existing viewers... Create a new viewer
Environmental Protection and Restoration	White egret in a green field	Browse existing viewers... Create a new viewer
Military Support	Silhouettes of soldiers in a field	Browse existing viewers... Create a new viewer
Recreation & NRM	Two hikers on a trail	Browse existing viewers... Create a new viewer
EM Exercise	SimEx logo with a globe	Browse existing viewers... Create a new viewer
EM PRTs	Construction workers in a field	Browse existing viewers... Create a new viewer
Flood Risk Management	Cartoon bee character	Browse existing viewers... Create a new viewer
Planning (General)	Landscape with a sunset over water	Browse existing viewers... Create a new viewer
Regulatory	Scenic view of a river and forest	Browse existing viewers... Create a new viewer

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INTRODUCTION TO SIMSUITE

WHAT IS SIMSUITE?

SimSuite is a web-based, interactive and customizable application built by the U.S. Army Corps of Engineers (USACE) Readiness Support Center (RSC) in order to provide relevant mission area information and data. It is currently available for USACE users at <http://simsuite.usace.army.mil>.

SimSuite was originally created to support Emergency Management. However, it is now used across mission areas by planners, environmental specialists, engineers, and others. SimSuite provides an easy-to-use Geographical Information System (GIS) tool for team communication, planning, and basic analyses. The tool was designed does not require a formal background in GIS to use.

Some of the features of SimSuite include:

- User-friendly access to tools and data in one portal
- On-the-fly analyses and data summaries (including elevation profiles, tornado impacts, identifying invasive species, demographic summaries and more)
- A GIS-based view and platform that merges external data and resources with internally available data in order to provide a cohesive overview of mission relevant data.
- Users and teams can customize their viewer so that the data they need most often is easier to access in one place
- Data is easily added via uploads and web services
- Hundreds of existing layers to choose from with export and download capability
- Graphics, tables, and diagrams to visually represent data
- Snapshot, printing, and easy sharing options to communicate geographical features
- Templates and start-up tools to create a custom viewer
- Access to all viewers to learn from others and use their viewers for one's own analysis without impacting their work
- Portals for USACE communities to organize, gather and mark their favorite viewers

HOW DOES IT WORK?

There are three main parts to SimSuite: data layers, applications (“apps”) and the GIS platform.

First, SimSuite uses a variety of data sources (also known as web services, data layers or APIs) within the application. These data sources serve as “layers” that can be applied to a map view of a specific location. Data layers draw from state and federal agencies including but not limited to the Environmental Protection Agency (EPA), the National Weather Service (NWS), the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Geological Survey (USGS). SimSuite also draws data from HSIP (Homeland Security – Infrastructure Program) Gold. Data from these sources is updated in real-time and reflected in the SimSuite viewer when layers are applied. The platform has expanded since its original design and purpose in order to include a multitude of mission specific viewing panes, including viewers relating to emergency, environmental, flood risk management,

military support, recreation, regulatory, and planning missions. Each viewing pane works similarly, but, by design, will have suggested layers. Users are able to search for additional available layers, add data sets in order to use that information as a layer, save specific views with layers and tools applied, model events such as floods and hurricanes, as well as other functions. SimSuite features allow the users to customize the application to best serve organizational missions. These capabilities will be described in detail in later sections.

Next, SimSuite has several existing apps to help do various types of analysis using these data layers. Some of the existing apps include a downstream routing tool, identification of invasive or endangered species in an identified area and summarizing demographic information. When a new app is added, all users will have access to this app. The platform in SimSuite enables apps to be built more easily and quickly by advanced users and programmers. This capability permits communities to design their own apps easily to meet their needs in coordination with the SimSuite administrators and advanced users. One should click Contact Us if they are interested in adding apps or have ideas for new apps.

Finally, SimSuite is built on ArcGIS (ESRI) Flex Viewer Platform. This platform offers basic GIS tools and base map layers that almost any GIS system typically would have such as zoom, select, layer list, a key, and a general hosting platform. This platform enables many users to construct multiple viewers using the same base tools and to be able to share all tools, apps and data across viewers. An app that is built for one community or viewer can benefit other users. Likewise, data layers that are added into the system by an administrative user will also be available to all other users. The platform provides protection to the system by ensuring that a non-administrative user is able to use the tool without permanently impacting the system as a whole, other viewers or other users. As appropriate, higher privileges are available for more advanced users.

WHAT CAN I USE IT FOR?

The application is used in order to view data relevant to missions including, but not limited to emergency management, environmental, flood risk management, military support, recreation, regulatory, and navigation. More recently, planning is also using this tool for reconnaissance and feasibility studies. Users can access data relevant to their mission or task through one, integrated portal.

Not only can users view the data on the web application, but they can also export the data to share it with others, add additional data sets, and save specific viewers in order to access data without have to reapply each layer every time. These application capabilities make it easier for users to access, share, analyze and make use of available data relating to project missions and requirements.

NAVIGATING THE SIMSUITE PORTAL

HOW DO I GET TO SIMSUITE?

The tool can be accessed several ways. The most direct way to access SimSuite is to visit the following web address: <http://simsuite.usace.army.mil/simsuite/index.html>. The website is also accessible through the USACE Readiness Support Center website, which can be found at the following web address: <http://rsc.usace.army.mil/>. The main homepage will load, and will look similar to the image provided below in **Figure 1**:



FIGURE 1

SIMSUITE HOMEPAGE

The five tabs on the main page are as follows:

- Home: Returns the user to the main SimSuite page from another section such as “Activity” or “Data.” This method is preferred instead of using the browser’s “back” button.
- Data: Search for any SimSuite base layers or viewers that are available to the public. There is also the ability to narrow the search to specific groups or layer owners.
- My Favorites: This tab displays any viewers or layers that a user has bookmarked as a favorite over time, starting with the most recent.
- Activity: This tab uses displays when a layer or viewer has been created or modified. This is done through API’s in case more technical employees are interested.
- Resources: This tab provides additional information such as tutorials, frequently asked questions, and additional links.
- Contact Us: This is located in the upper right corner to email the Simsuite administrators.
- Login: This is located in the upper right. This allows new users to request admin rights to manage viewers and data. It also allows current admins to login.
- Dashboard: This is a new tool to keep maps and data further organized.

A few notes about the Data tab....:

While using SimSuite, the user can choose to create a Viewer or use an existing Viewer (discussed in detail later). Different Viewers contain different tools and apps already loaded into the the basemap, and the user can select the subject matter as appropriate. Each viewer customizes the extent, data, and apps for that specific viewer, but all have access to the same tools. Users should feel free to browse viewers and try out the various functions.

A type of viewer or layer can be easily searched by typing in a brief description at the top right corner search box. For example, to find the U.S. Geological Survey’s Stream Flow Stations, type “USGS” in the search box and it would bring up all of the USGS layers that are available in SimSuite. To narrow the search results, typing in “USGS stream” would bring the user directly to that layer. It is important to note the differences between a layer and a viewer. If “USGS Stream Flow Stations” is selected and “viewer” is selected, the search wouldn’t bring any results because this is a layer and not a viewer.

In order to narrow the groups within a layer first type in a search in the search box, **Figure 2**. For example, type in biodiesel in the search box which will bring up basic information about the “Biodiesel Stations” layer including the URL, the layer owner, and what group this layer can be found in. In the case of the Biodiesel Stations, it belongs to “Commodities & Supplies.” If the user clicks on the group “commodities & supplies” it will pull up all other layers that belong to that group. There are keywords that appear for each layer such as “Diesel, Alternative Fuels, Petroleum, Stations, etc...” which can be used when searching for a specific layer.



FIGURE 2

HOW DO I ACCESS VIEWERS?

To access a specific viewing panel and gain access to the GIS enabled map and associated features return to the “Home” page and select “Browse existing viewers” under the area of interest. Creating a new viewer will be discussed later in this tutorial. As is seen in the image below (**Figure 3**), the top page

banner has changed to show the features and components relating to the Environmental Protection and Restoration viewer.

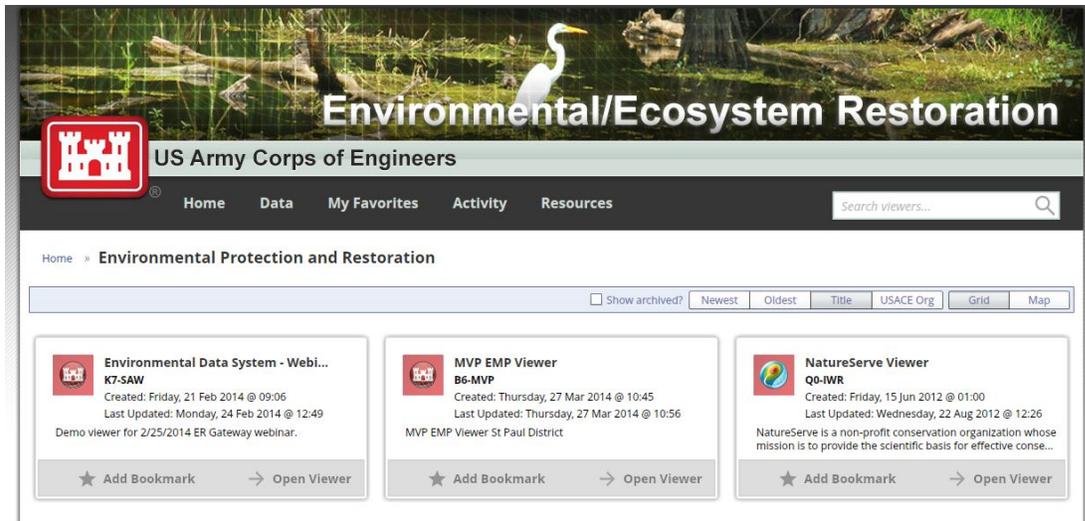


FIGURE 3

Each viewer displays basic information to allow a user to quickly determine if that viewer is of interest. In the case of the Environmental and Ecosystem Restoration viewer, there are a few viewers that display the type of viewer, when it was created and last updated, and a basic description of what the overall viewers purpose is.

In order to launch the viewer, select “Open Viewer”. There is also an option to bookmark frequently used viewers by selecting “Add Bookmark”. As mentioned above, viewers that are bookmarked are available under the “My Favorites” tab.

SIMSUITE BASICS

The following image is what the basic SimSuite interface looks like. This particular image is of the Environmental viewer and will have layers that are different from other viewers. However, these layers are available in other viewers, and layers not included in this viewer can be accessed as well. Viewers can be customized, accessing any available layer in the SimSuite application.

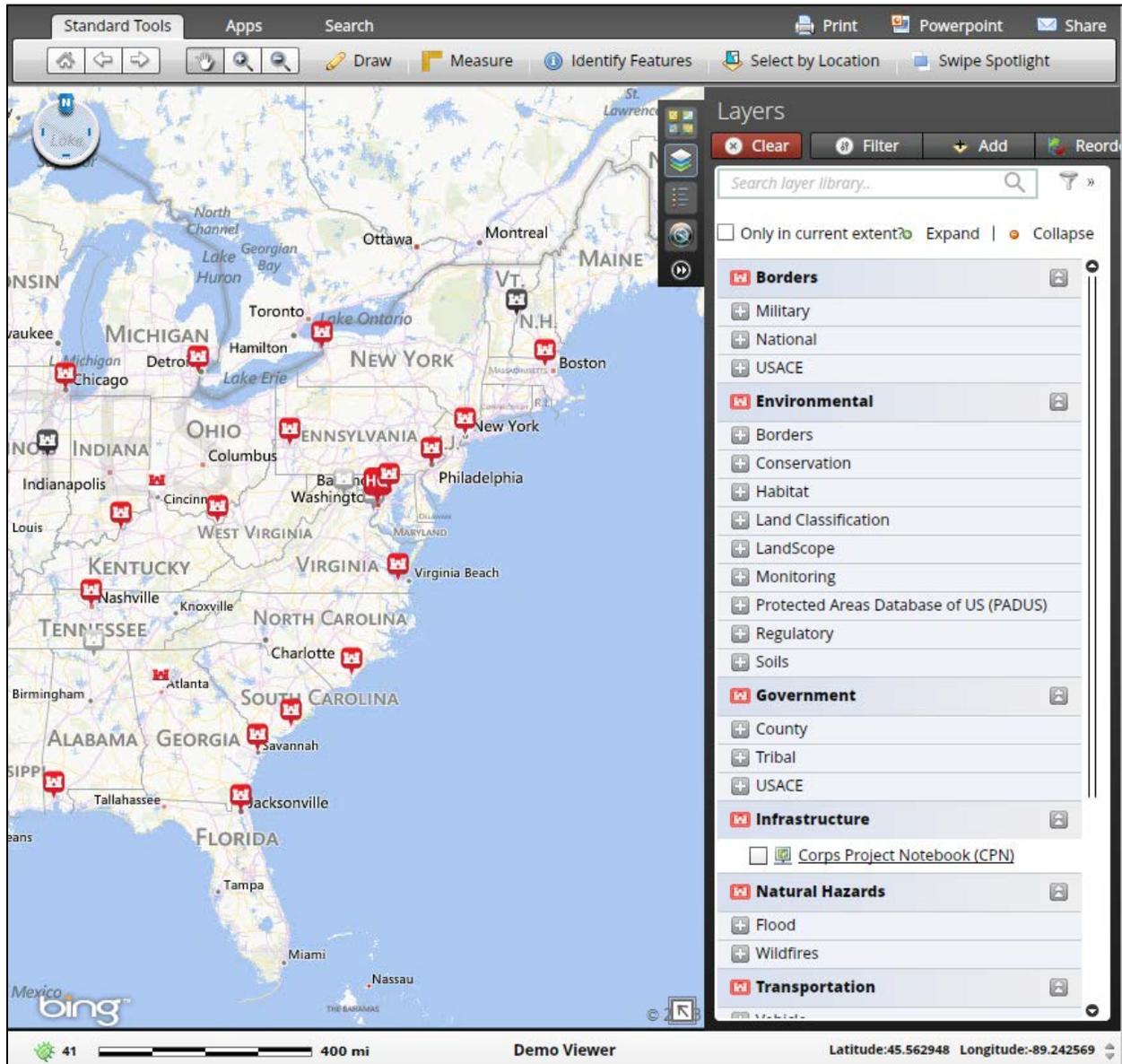


FIGURE 4

From the “Home” page there are options to either browse existing viewers or create a new viewer. When the user opens the SimSuite viewer, a large map with a gray navigation bar at the top of the page will appear, and a small black, rectangular layer tool on the right side of the window. As shown in the images

below (**Figure 5**); in order to expand this toolbar, click on the expand arrow located in the bottom of the tool bar.

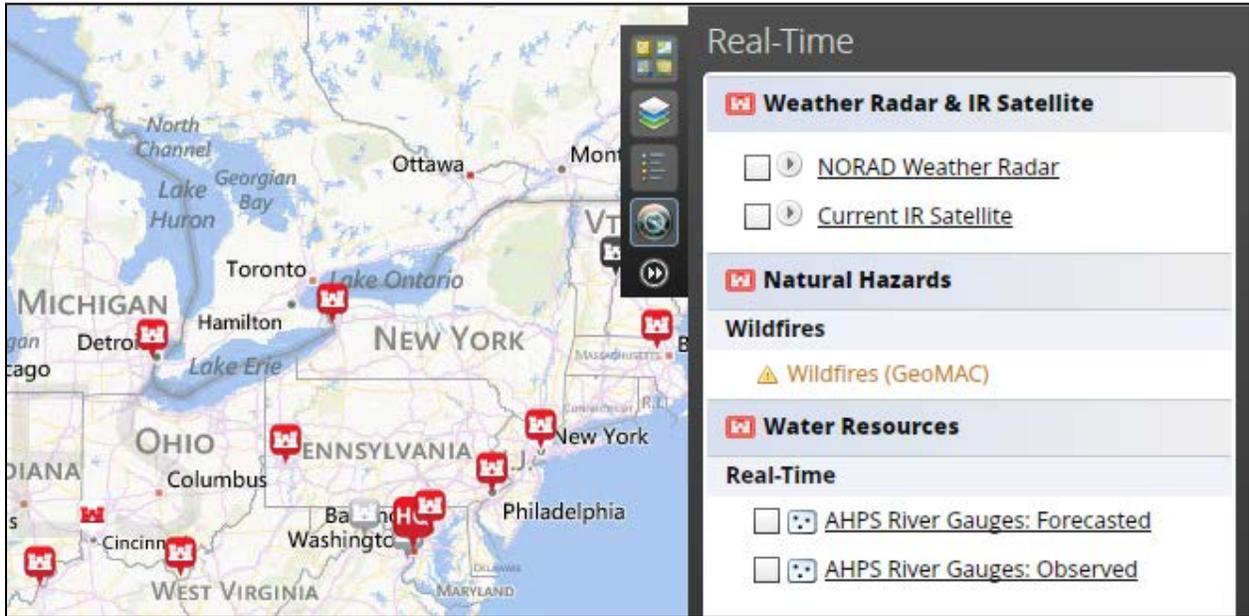


FIGURE 5

Under the rectangular layer tool, there are four main tools: Base Layers, Layers, Legend, and Real-Time.



FIGURE 6

By clicking on any of these icons, additional tools in the viewer that are used to change the aesthetics, data shown on the map, information on data display, and real-time information relating to weather, water and additional hazards are shown. These tools will be explained in the following sections.

Note the text around the borders of any viewer. All viewers will include these clickable options that allow the user to contact, go back to the main SimSuite entrance page, among other functions. These hyperlinked text options are listed below along with an explanation and an overview screenshot of where they are located.

- Return to Portal – Returns the user to the home portal.
- Viewer Name – Displays the name of the current viewer, for example in **Figure 7** below the current viewer is called “Environmental Data System – Webinar.”

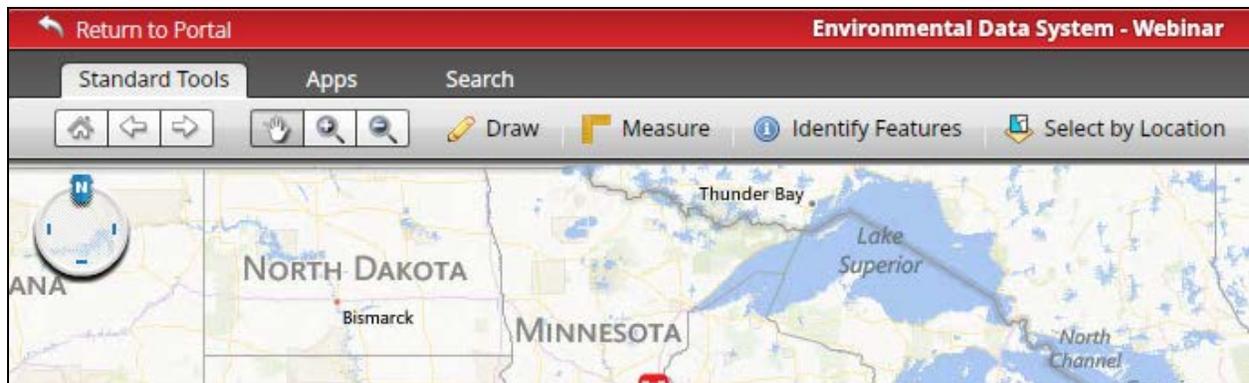


FIGURE 7

- Contact Us – Click this link to send an e-mail to SimSuite technical support.
- Login – Allows users to login to SimSuite to make administrative changes contingent on the user’s access privileges.

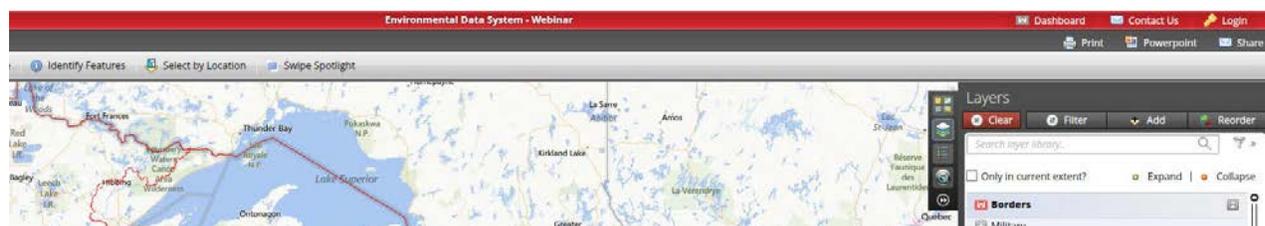


FIGURE 8

- Print – This allows the user to print the current map view.
- PowerPoint – Allows the user to export the current map view to a PowerPoint slide. After clicking on the linked text, click the “Capture” option in order to take a screenshot of the map view, then the “Download” option to access the screenshot. Clicking the “Download” option will open a dialogue box on the user’s computer to save the image, which will be a .zip of the .png image, including the map and legend. Once the file is saved, it can be added to a PowerPoint presentation.
- Share – Allows the user to email a link of the current viewer to a specific email address. The email will include a link that will take the recipient of the email to the viewer including layers and other items selected in the viewer. Click on this link to open the user’s email dialogue box (Outlook for U.S. Army Corps of Engineers employees).

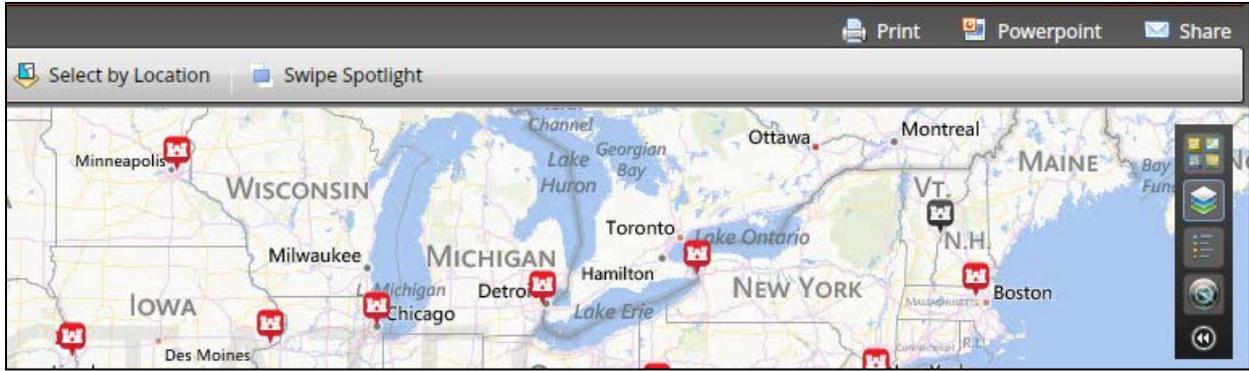


FIGURE 9

- Scale bar – Change as the user zooms in and out on the map. The scale bar displays the scale of the current view. For example in the image below (**Figure 10**) the scale is 500 miles.



FIGURE 10

- Latitude / Longitude – Displays the longitude and latitude based on where the location of the user's cursor on the map at any given time. The image below (**Figure 11**) displays the latitude and longitude coordinates based on where the user's cursor was at the time the screenshot was taken.



FIGURE 11

BASE LAYERS

SimSuite users can change their basic viewer to display data overtop a base layer. The user may choose a base layer that is most appealing and useful to view data most relevant to the mission. To access base layers click on the top icon in the right, floating layer toolbar, to display the 12 base layer options. Choosing one of these layers will change the background or base layer of the map view. The base layer options include Bing (default setting), Bing Aerial, Bing Aerial with labels, Bing Streets, Aeronautical Charts, MapQuest-OSM, National Geographic, Ocean Basemap, Open Street Map, Shaded Relief, Topo USA (detailed), and Topo World.

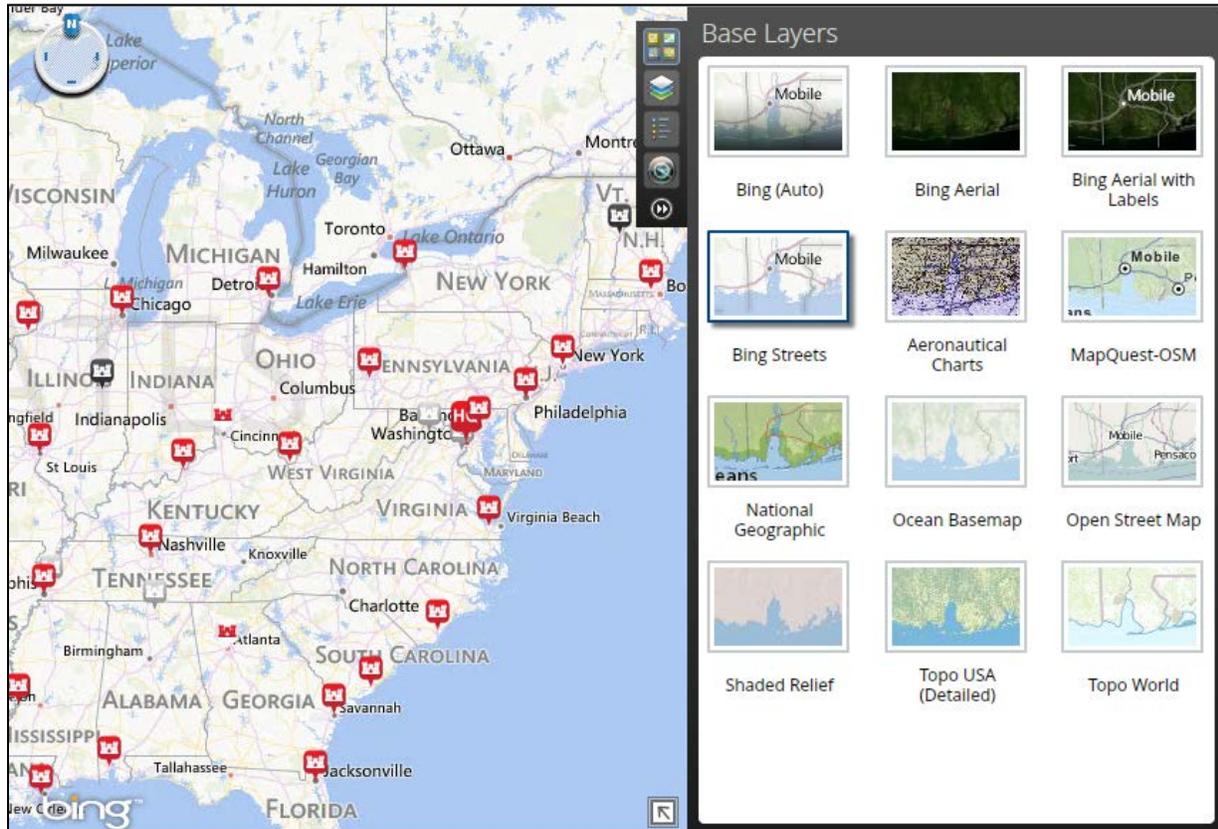


FIGURE 12

The user is able to change the base layer at any time while using SimSuite.

DATA LAYERS

Every viewer in SimSuite includes a set of layers that can be added to the map in to allow the user to view data sets relevant to the mission. Layers are accessed by clicking on the second icon down in the toolbar (circled in red) as is shown in the image below, **Figure 13**.

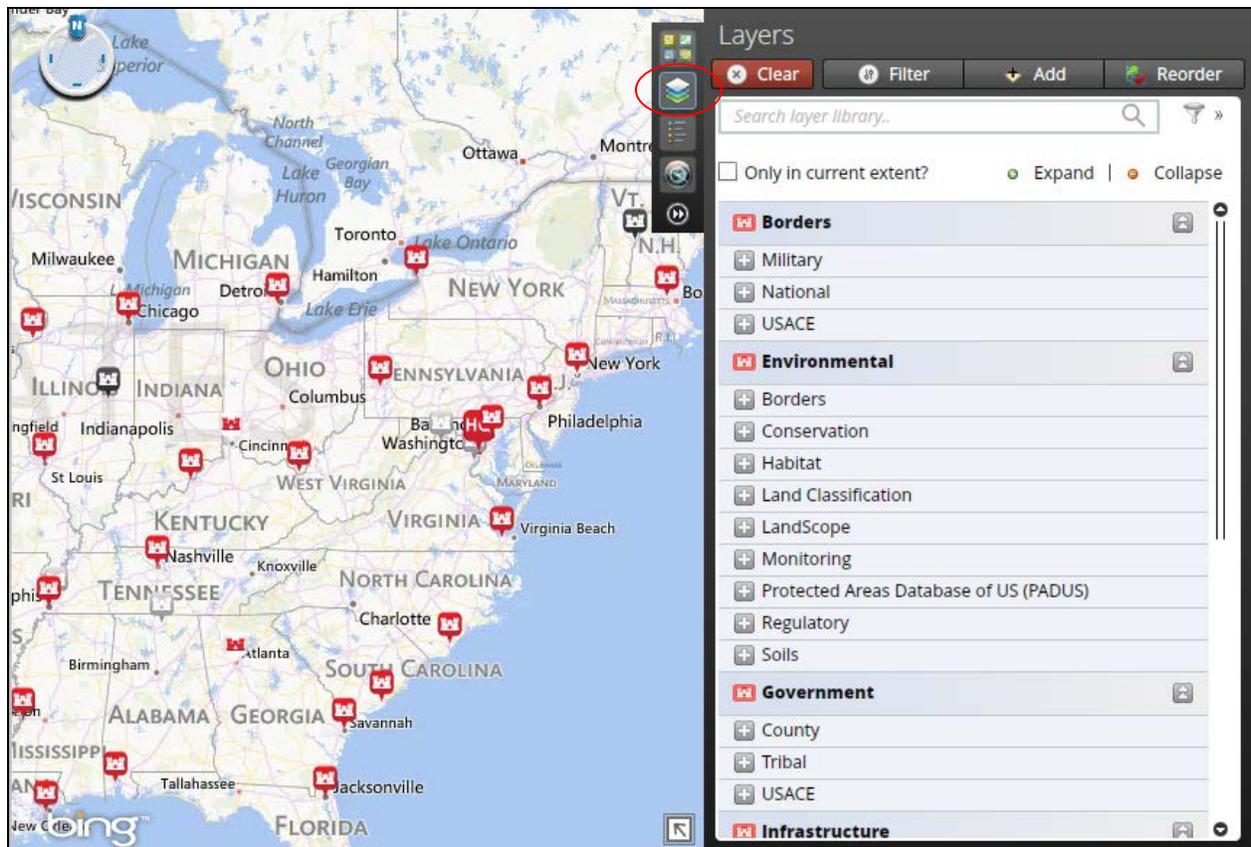


FIGURE 13

In the layers section, there is a menu of data sets available to apply to the user's viewer. This allows the user to view data in a specified area. For example; the Environmental viewer that is shown in Figure 13 above displays layers that provide information specific to conservation, habitat, land resources, landscape, monitoring, the protected area database, soil and additional datasets.

To view additional layers and sub-layers, click on the plus signs located to the left of each menu item, shown in the image below, Figure 14. If the user clicks on the layer itself, there will be a pop-up menu with options to change the opacity, look up the data source, update the layer library, or remove the layer.

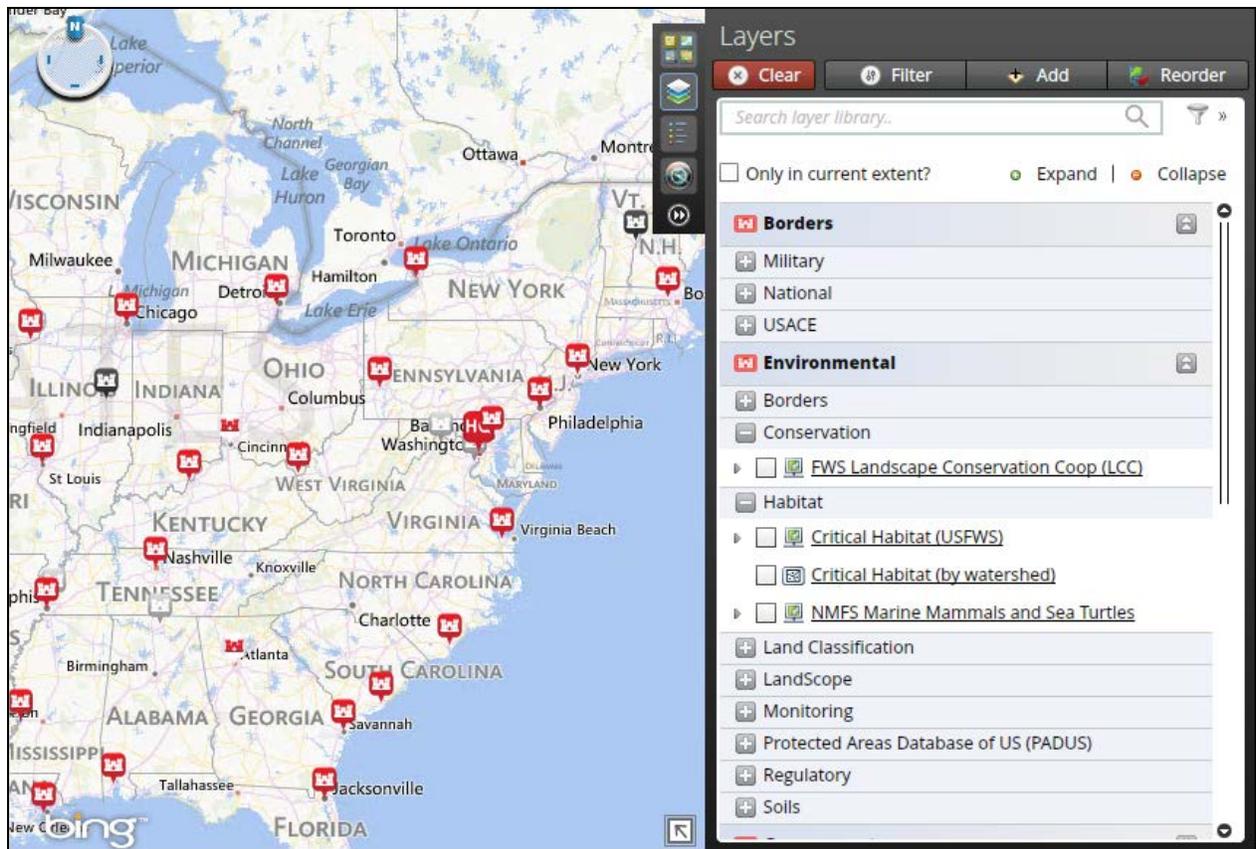


FIGURE 14

When opening layers, the plus sign will turn into a minus sign when clicked, and will be followed by additional list menu items. Some of these sub-items will include a gray arrow to the left. This is a sub-layer that has additional data layer options. In the image below (Figure 15) additional list items are available, which can be selected or de-selected to display data relevant to the user. Additionally, if the layer of interest is displayed in yellow font next to an exclamation point, then there is an issue with the data source URL for that layer. The user can click on the layer can correct the URL if it is known, or select a different layer with similar information. Sometimes these layers also take more time to connect or the server that the data is on is temporarily unavailable.

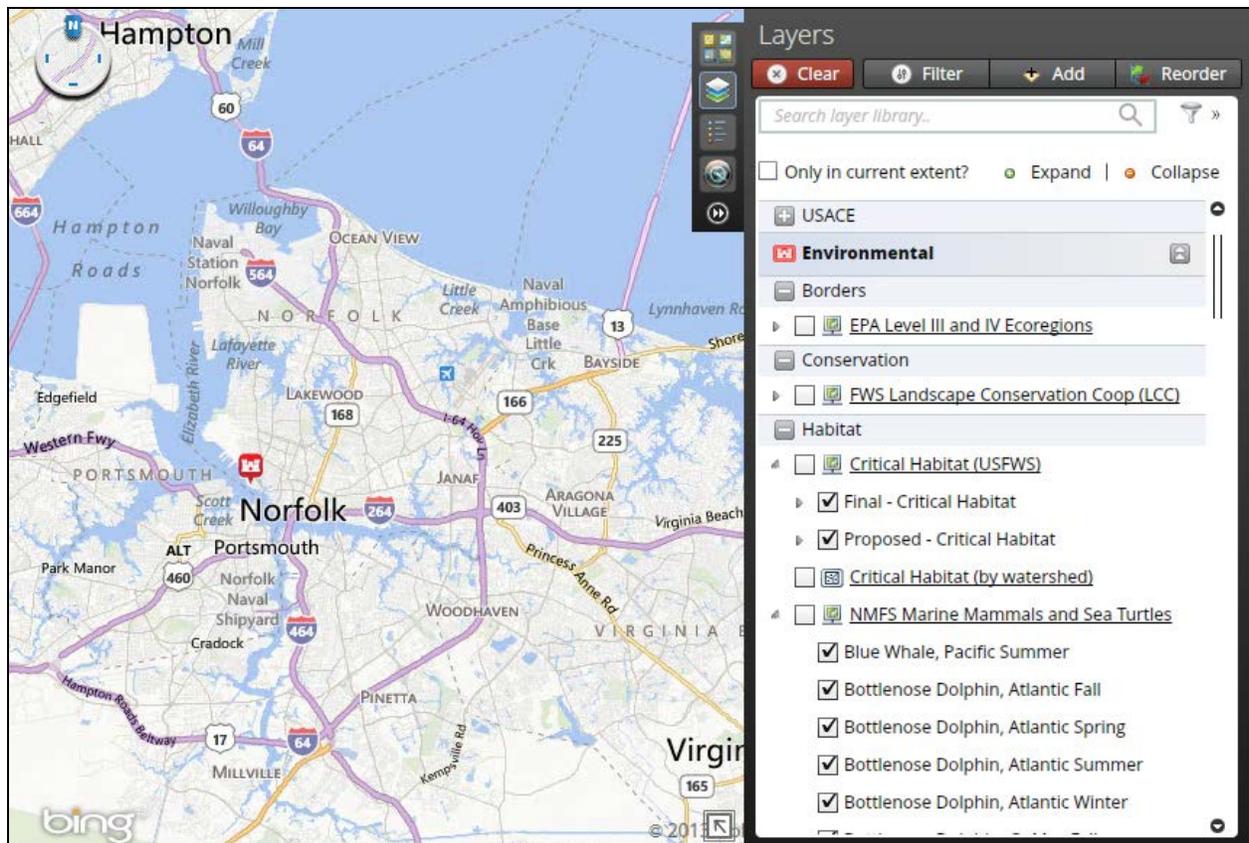


FIGURE 15

All of the additional sub-layers can be collapsed again by clicking on the arrow (up/down direction) located to the right of the main layer list items. When the user clicks this tool, the list will collapse to the simpler list. This can be done in all viewers to customize data relevant to the user. As is shown in the image below (Figure 16) some list items are listed in italicized gray. When a list item displays in italicized gray, it is necessary to zoom closer into the desired location in order to view the data. If this occurs for a list item there is simply too much data to display for the size of the area the user is querying data for.

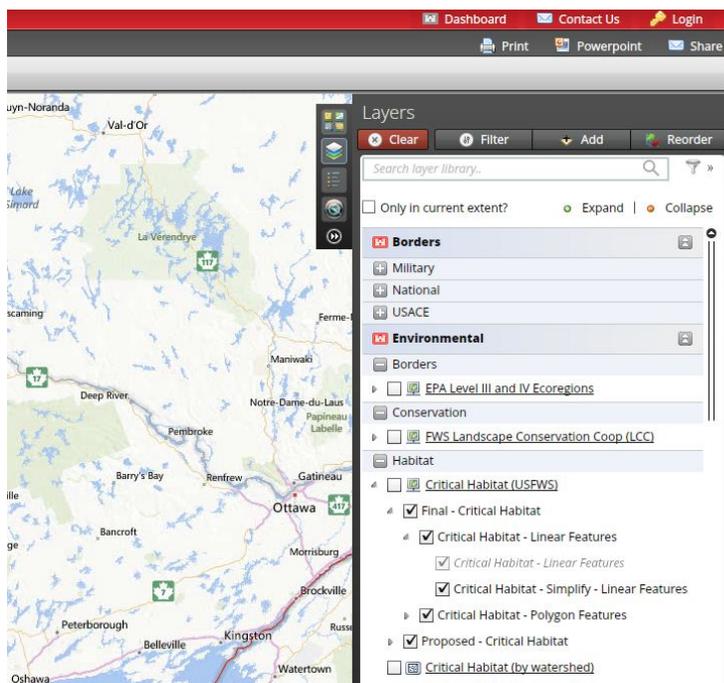


FIGURE 16

In order to apply data layers, check the box located to the left of each menu list item. SimSuite will apply that data set to the user's viewer. Each data set is displayed differently and will appear with a different color/shape/design. If no graphics show up on the map following applying a layer, zoom in prior to taking any other actions. It is often the case that the viewing zone needs to be relatively close in order to display the relevant information. If the layer still does not load, take steps described in the troubleshooting section of this guide.

LEGEND AND OPACITY

As mentioned in the previous section, for each layer, there is a related legend that assists the user to clarify the data shown on the viewer. The legend for each layer can be viewed by clicking on the third icon down in the main toolbar on the right of the map viewer. Clicking the third icon on the toolbar, will display a viewing pane that has a color/shape/image coded key related to the data the user is viewing. The colors and images that are displayed with data sets are often based on the original data source. For example, if data from the Environmental Protection Agency (EPA) is displayed with red circles, the data that will be shown on the SimSuite viewer and in the key will match this. In the image below (Figure 17), the legend is for a zoomed in area near Suffolk, VA with the FWS Landscape Conservation Coop (LCC) layer applied. Although unable to see all of the colors listed in the legend in this specific view, there is a color coordinated with each area. The legend feature becomes especially important when viewing areas in more detail and with more data.

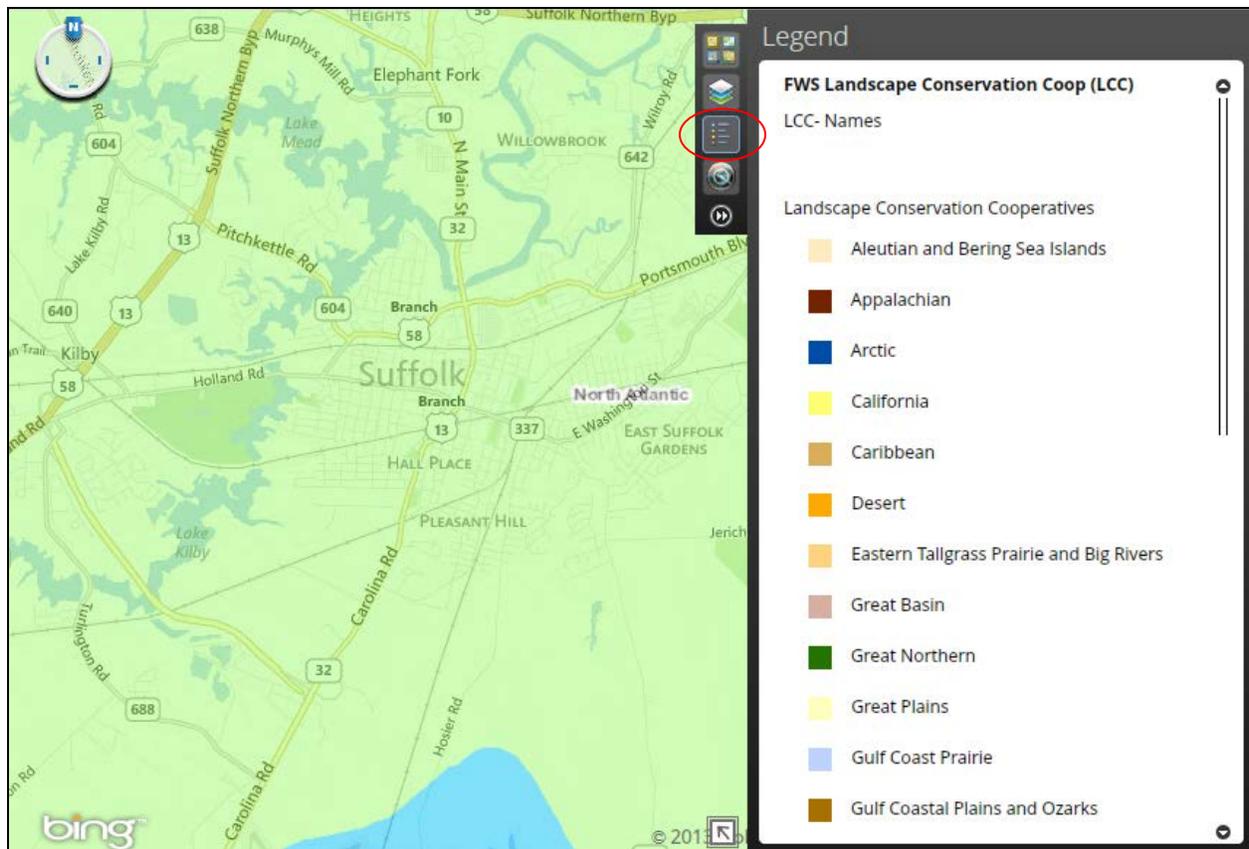


FIGURE 17

Some layers will be easier to view overtop other data if the opacity of the layer is changed. To do this click over top of the specific layer that needs to be changed. This is done in the layers toolbar, not the legend toolbar. Click on Layers menu icon, click on the specific layer, after which a menu dialogue box will pop up (Figure 18). Click back and forth on the opacity scale to change the layer view, as shown in the image below. To remove the layer, zoom, see the source for the data, and access and download the specific data files that are used for the viewer. To download the files, click on ArcMap, which provides a link to the Layer file where the user can download, save and export the data.

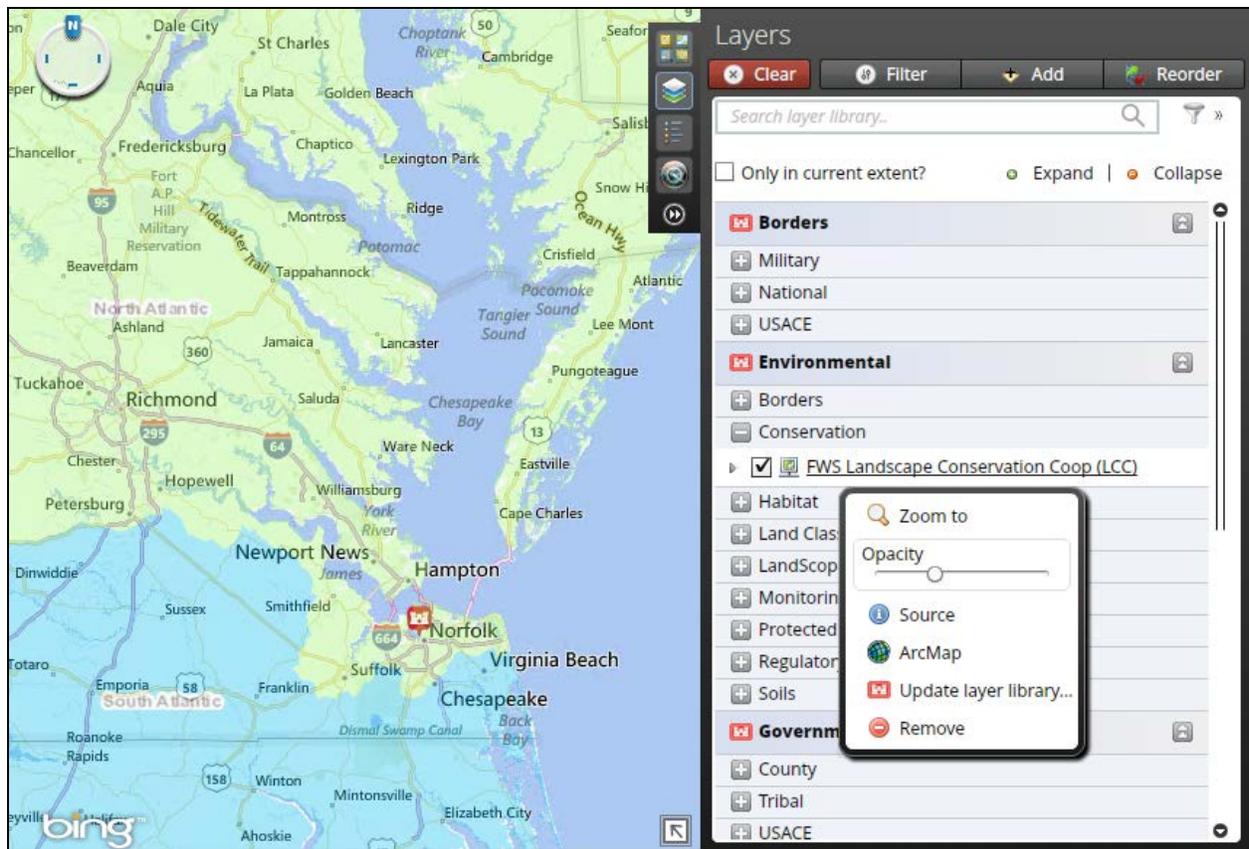


FIGURE 18

REAL TIME LAYERS

The fourth icon included on the main layer toolbar is for real-time layers. Real-time layers include weather radar and IR satellite, wildfires and water resources forecasts. These layers can also be added in the main Layers tab, but are all duplicated under this tab for quick and easy access.

Under the weather radar and IR satellite menu option, there are layers for NORAD Weather Radar and Current IR Satellite. These layers can be used in combination with base data layers.

The image (Figure 19) below gives an example of what the NORAD layer looks like when applied. The user can view the legend for this layer in the same way described above (by using the third icon on the main toolbar). The user can also zoom to see more micro patterns.

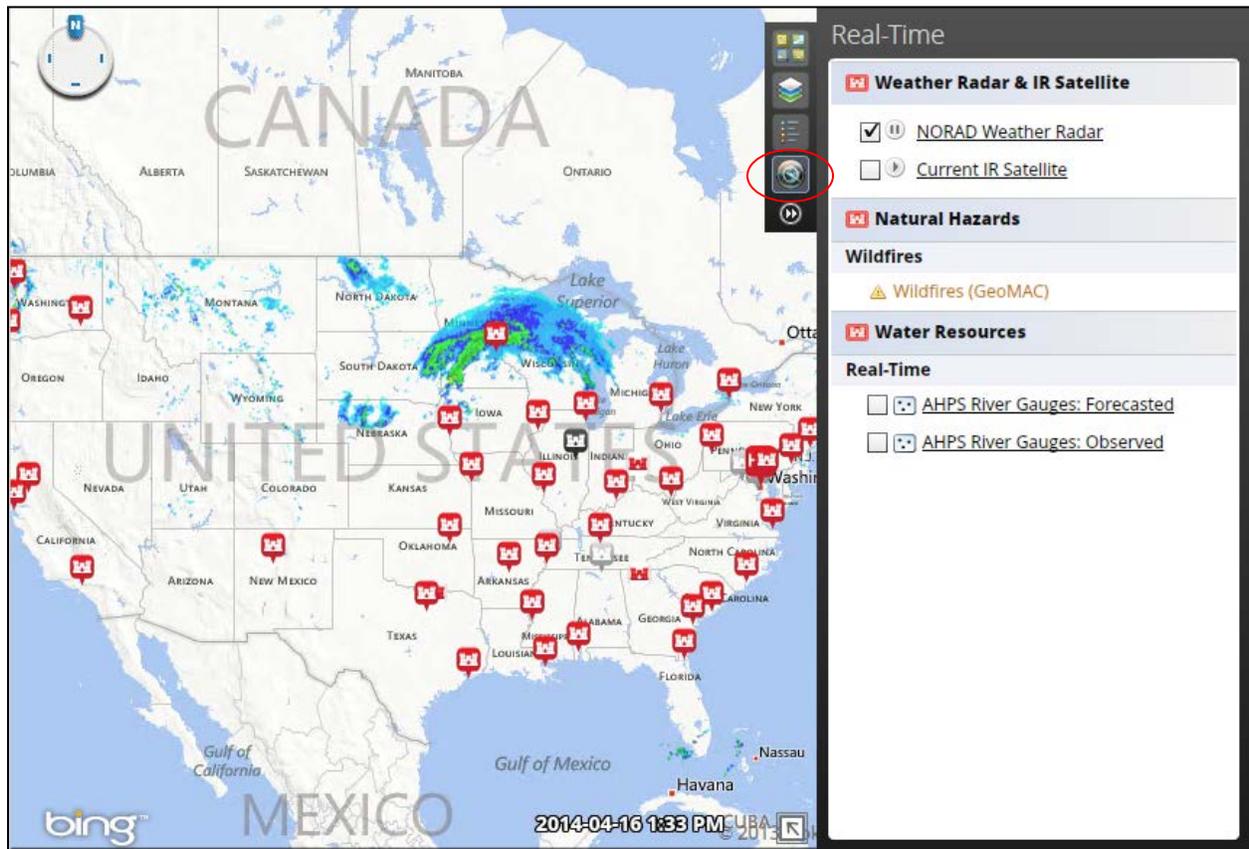


FIGURE 19

The following image (Figure 20) depicts the IR Satellite layer when applied to the map. This layer can also be viewed at a more micro level, and has a legend available in the same section of the toolbar as mentioned above.

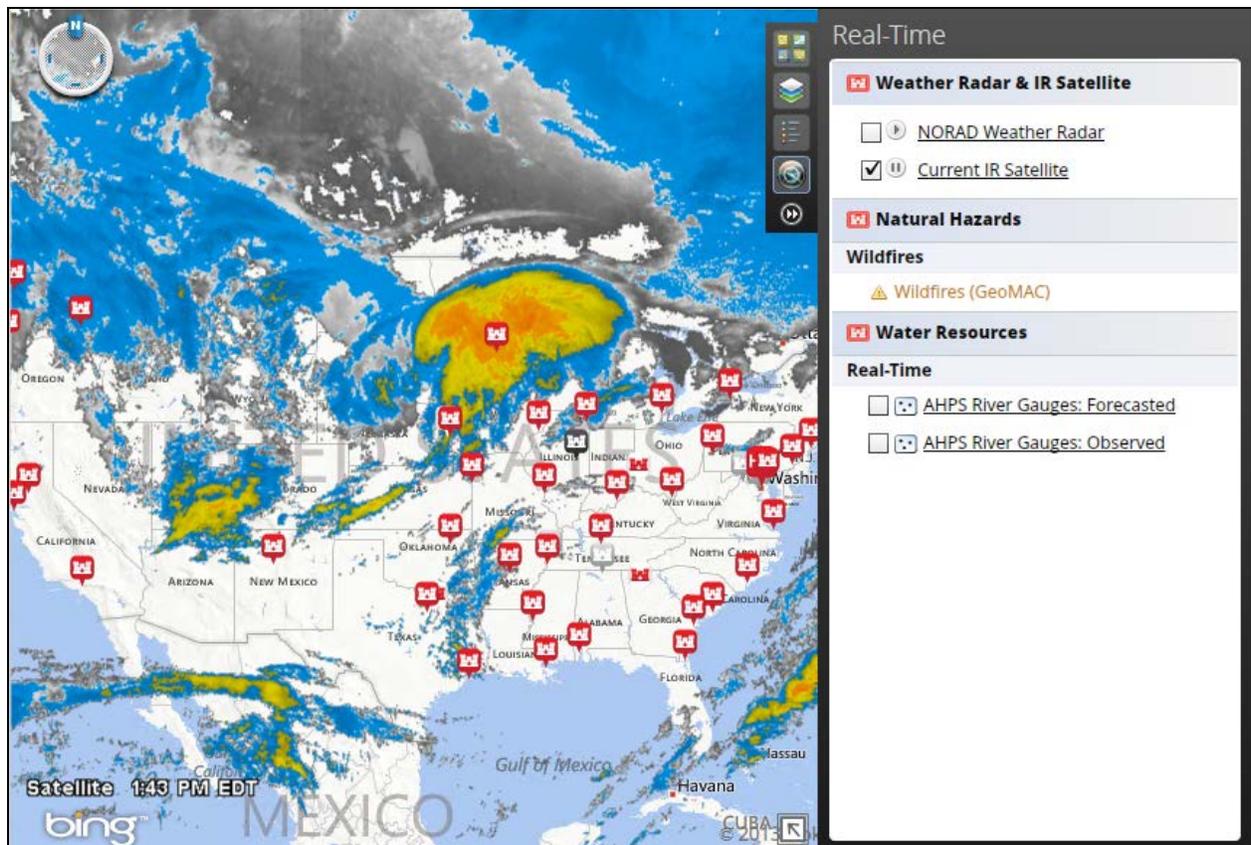


FIGURE 20

The layer for Wildfires has to be viewed at a much closer zoom level than the weather and IR layers. The following image is of wildfire activity in New Mexico. In this image (Figure 21) the layer legend is open to show how the data is reflected on the map. If the user is not able to see any data when the wildfire layer is first applied, zoom in to a specific area until the data appears. If the area is zoomed in and troubleshoot, and the user still cannot see any areas reflecting wildfire data, there likely is not a current wildfire in that specific area. Common problems and troubleshooting are discussed later in the guide.

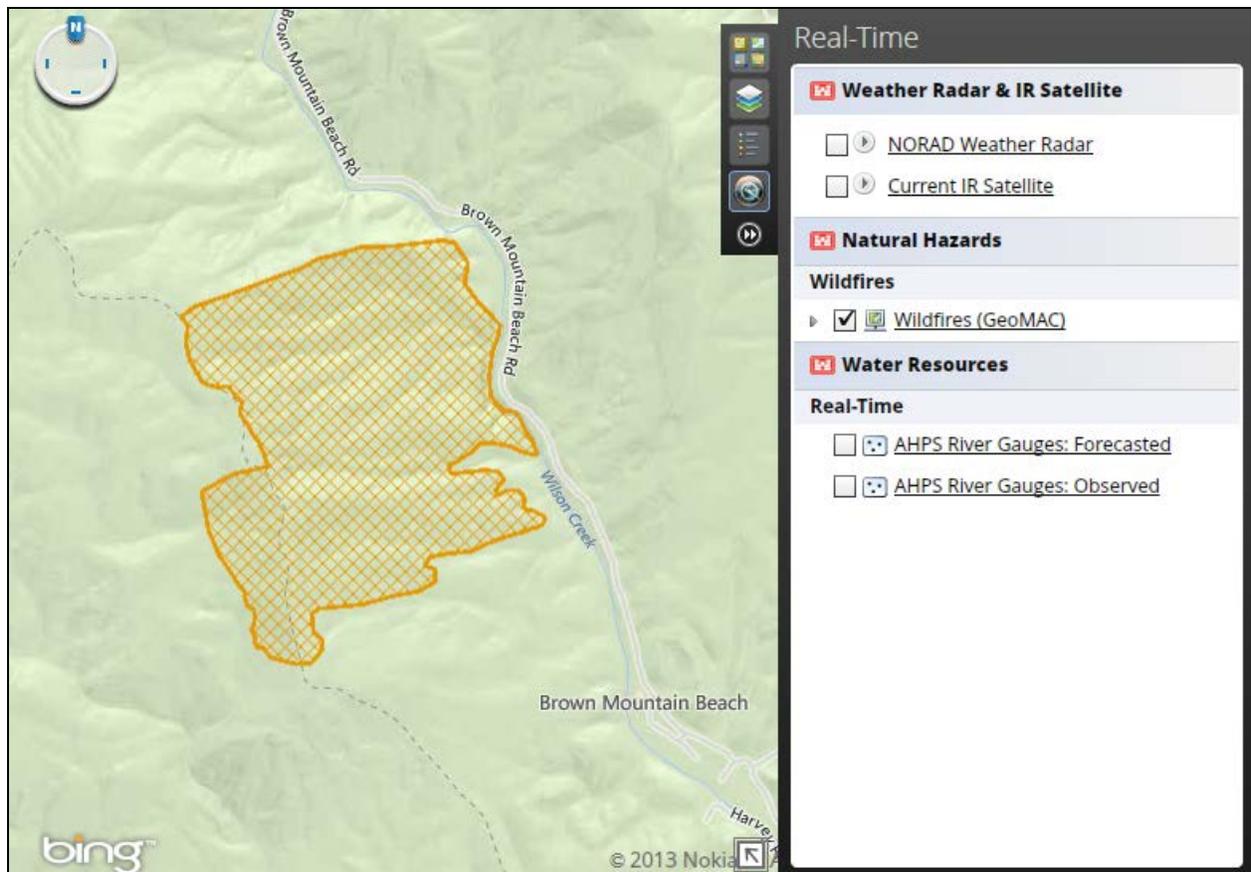


FIGURE 21

The River Gauge Forecasted and Observed layers are located under the Water Resources section. This layer, similar to the wildfire layer, must be viewed relatively close to the area of interest. In the image (Figure 22) below, the legend suggests there is action and minor action in the area with the circular orange and yellow images.

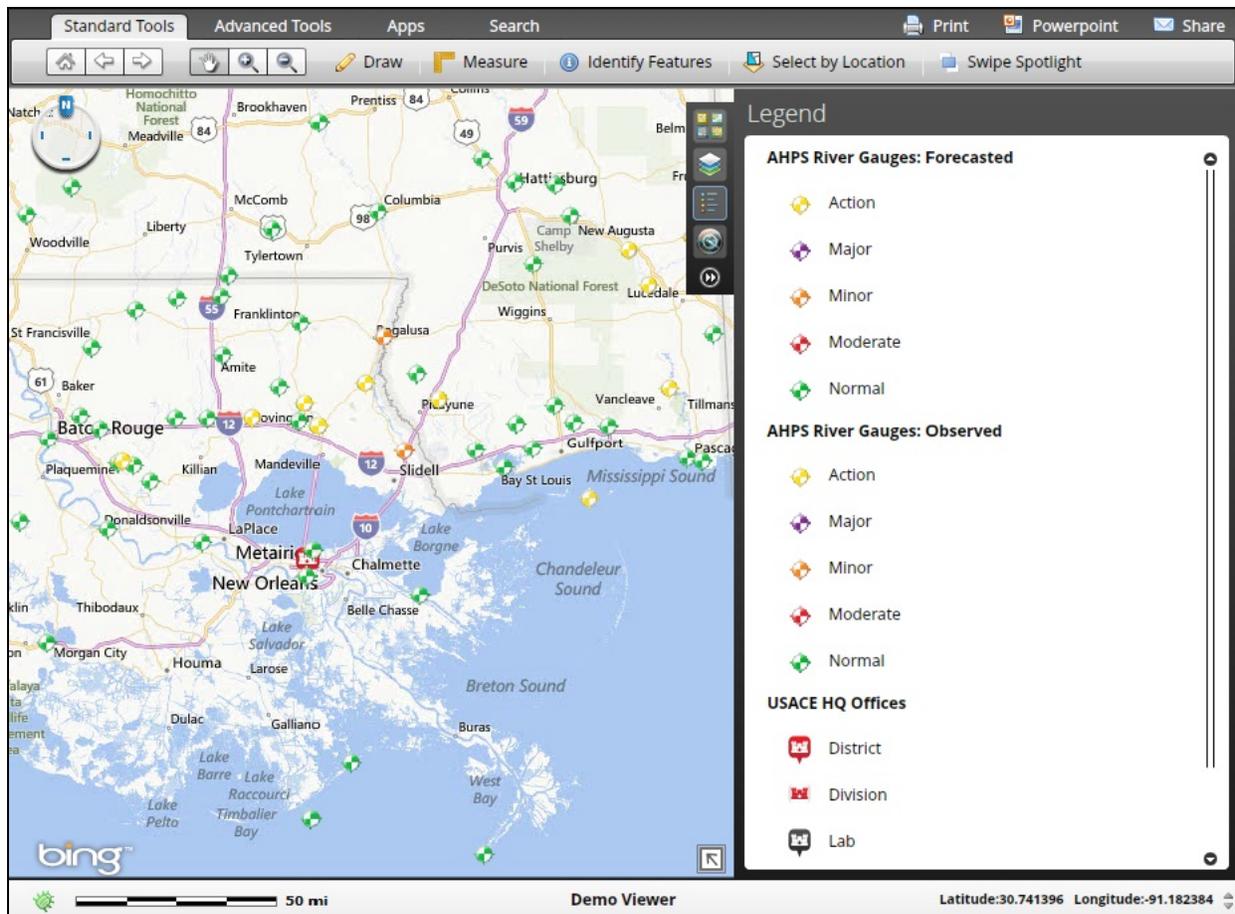


FIGURE 22

If there is trouble viewing any data, it may be necessary to zoom in on the map to a more specific area or troubleshoot using the methods described in this user guide. Additionally, the gauges may show up green and white depending on the gauge level. This color is hard to see when the topographic base layer is turned on. Try changing base layers if items are hard to see or seem invisible.

SIMSUITE TOOLS

SimSuite comes equipped with a variety of different tools to help manage the viewer. There are layer tools that appear on the right side bar with the layer tree and legend window. In addition there are standard tools that reside on the main toolbar on the top of each viewer. The standard tools have to be activated by clicking the “Standard Tools” tab on the top toolbar. The following sections will explain these two types of tools.

LAYER TOOLS

Notice that on the same tool bar that contains layers, legend, and all of the capabilities discussed in the prior sections, there are also icons to clear, filter, add and reorder the data. This is shown in Figure 23.



FIGURE 23

- Clicking the Clear icon will clear any layers, information or data on the map restoring the SimSuite viewer to the base map.
- The Filter icon allows the user to select an area of interest and apply a spatial filter to all layers applied to the map. For example, the user could filter data to a specific region such as the state of New York, then down to a specific county, etc.
- The Add icon (Figure 24) allows the user to add data to the map in the following formats:
 - Delimited CSV, Shapefile, ArcGIS Service, WMS Service, or a KML.
 - To add a shapefile, all files must be in a .zip file and projected to WGS 1984 Web Mercator. Data that is added to the map will remain in the viewer until the viewer is closed or the user returns to the SimSuite homepage. For information on how to permanently add layers please see the “Admin Section” of this document.



FIGURE24

- The Reorder icon allows the user to arrange layers in the order the user sets them to draw on the map. In the ArcGIS platform that SimSuite is built on, the appearance of data layers will depend on the order in which they are drawn. Changing the order allows certain layers to display on top of others. For example, a flood zone may be displayed in one dark color, and on top of that show land use type in an opaque color. In the Reorder menu, these would need to be arranged in this manner. Layers with more transparency, and point layers, should be arranged from top down.

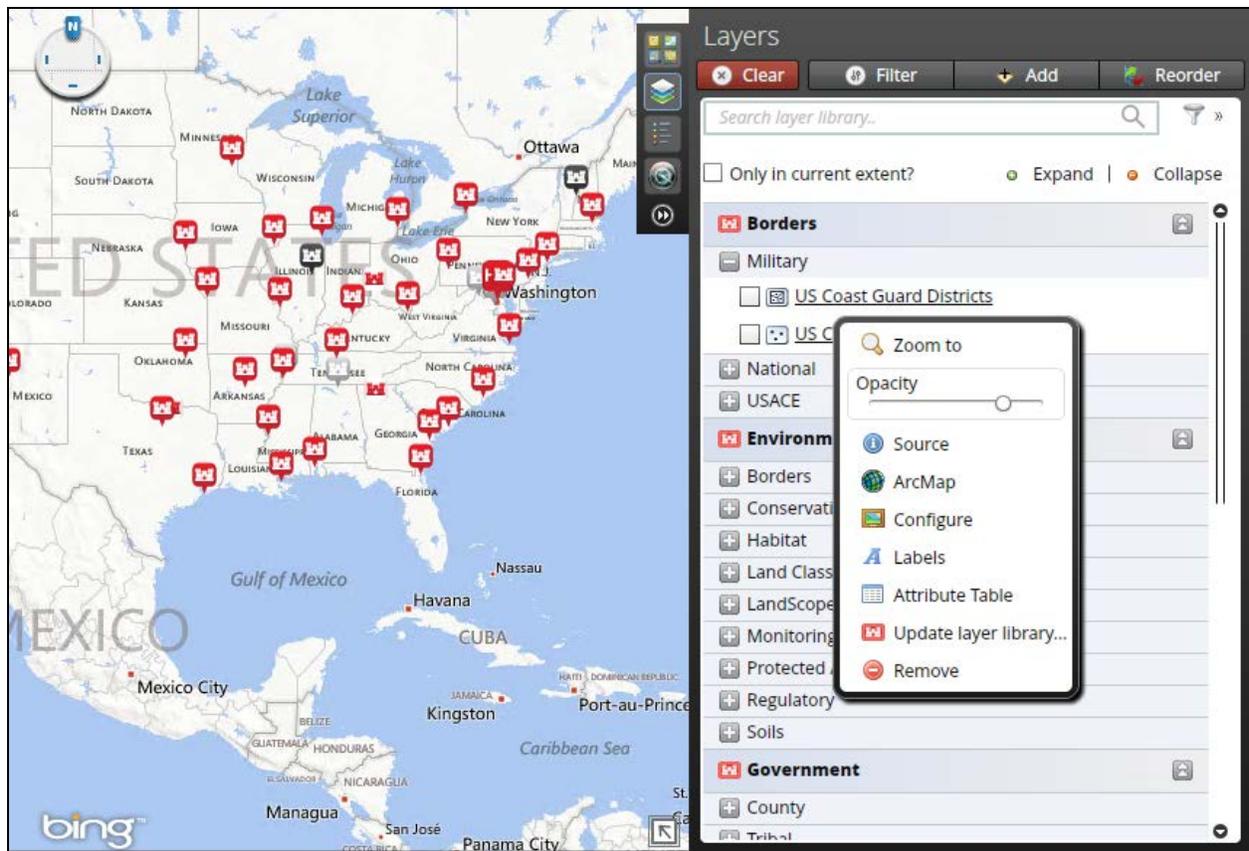


FIGURE 25

- To Export data to a layer file; choose any layer in the layer tree and a dialog will drop down (Figure 25). Choose the ArcMap icon and then select Layer File. This will download the appropriate layer file.
- Viewing the Source for Data Layers may be useful. In order to view the source of the Data layer, click on any layer in the Layer tab, then navigate down to the link called “Source”. This will direct the user to the source directory for the data.

STANDARD TOOLS

The standard tools are located on the top, gray navigation bar. Click on the standard tools tab to see several icons and options that can apply more specific functions in addition to any layers overlaid on the map.

HOME, FORWARD, BACKWARD VIEW

On the standard tools bar, there is a home icon located to the far left. When clicked, this icon will take the user back to the original, home view of the existing SimSuite viewer, by zooming out and resetting the layers tool bar on the left side of the viewer. Right next to the home icon, there are two arrows: forward and backward as shown in image on the right below, **Figure 26**. These icons will allow you to step backward to a map view prior to the current view. For example, the user may apply a layer and click back and forth between before and after the layer was added.



FIGURE 26

ZOOM AND PAN

Next to the home and arrow icons, there are zoom and pan icons (Figure 27). The zoom (magnifying glass with a plus and minus) can be used to move closer or farther away in the viewing pane, while the pan icon allows you to pan/slide side to side on the viewer. This is done by left clicking and holding, then moving left to right, or up and down. This standard tool allows you to move to the area of focus on the map.



FIGURE 27

DRAW

The next icon to the right of the zoom and grab icons is a draw icon (Figure 28). When you click on the draw icon, a small menu box will appear on screen with several menu items including an eraser, a floppy disk save icon, and a folder icon used to open files from your computer or network. You can see this menu in Figure 29. On the first box on the left side of the draw menu, there is a drop down bar used to choose a shape to draw or use in order to create a focal point to aggregate data. This tool is useful for those that need to examine a very specific planned project area.

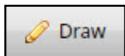


FIGURE 28 - DRAW ICON

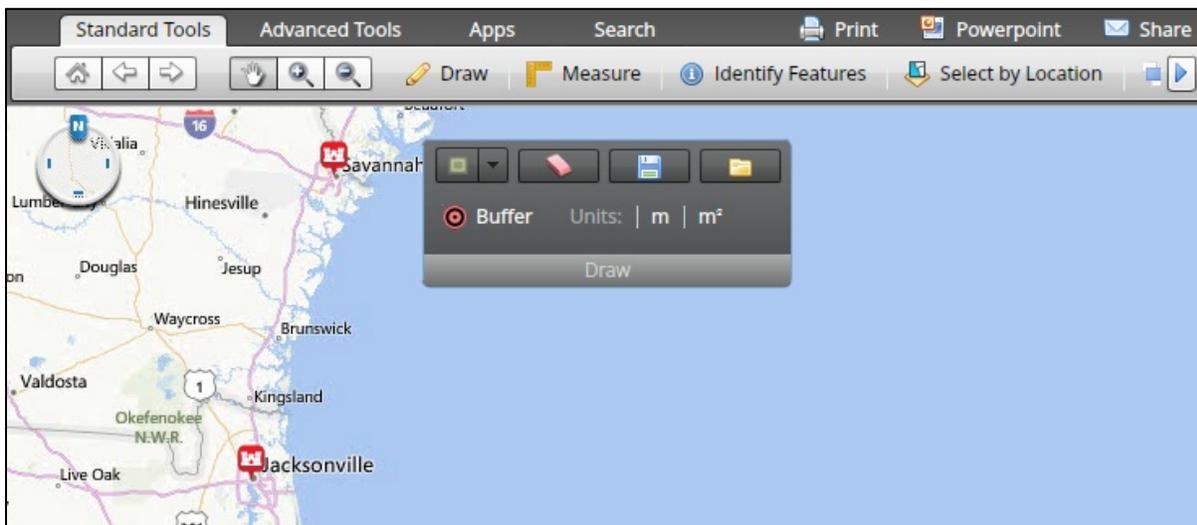


FIGURE 29 - DRAW UTILITY

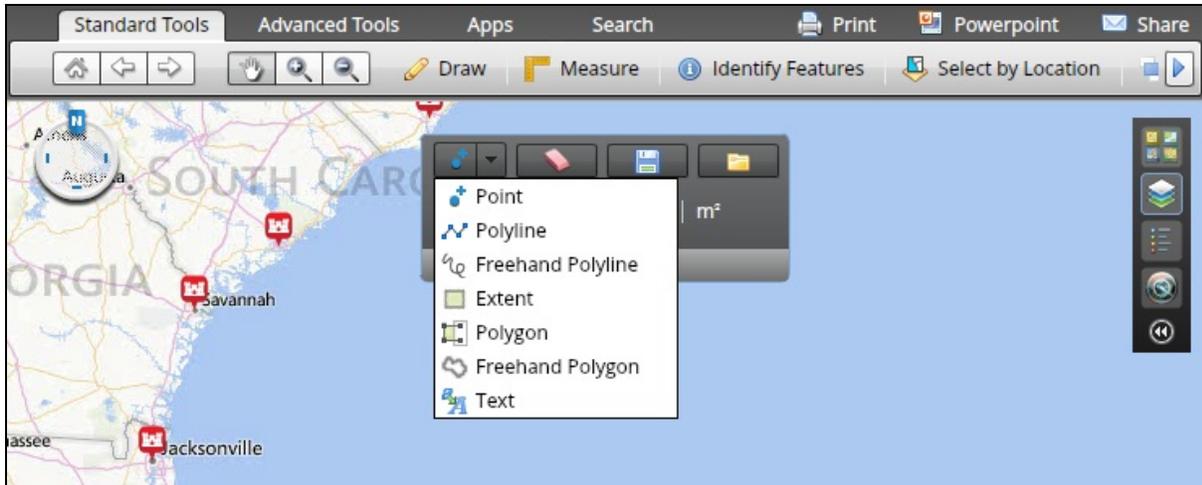


FIGURE 30 - DRAW DROPDOWN

The first option on the drop down list is a point (Figure 30). The point is used to create a graphic point on the map. This point will have x,y coordinates assigned to it based on an identified location. This tool is applied by selecting the point icon off the drop down menu, and then clicking on a specific part of the map. Once this is done, you will see a green spot on the map, which can then be named, saved, deleted, and zoomed to, as shown in the left image below (Figure 31).

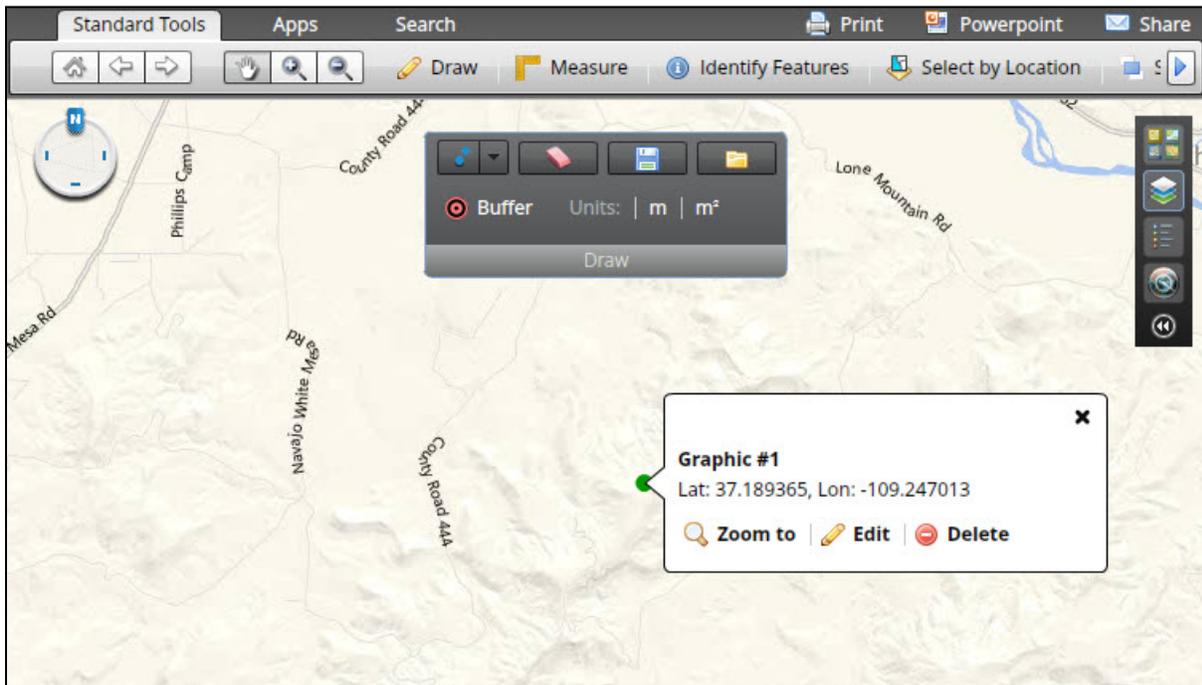


FIGURE 31

The buffer icon (Figure 32) is used to change the buffer information; click the point created to increase the size of the point and add a buffer ring. This icon is used to look at a specific area in great detail. This point is a graphic and does not save to the map viewer.

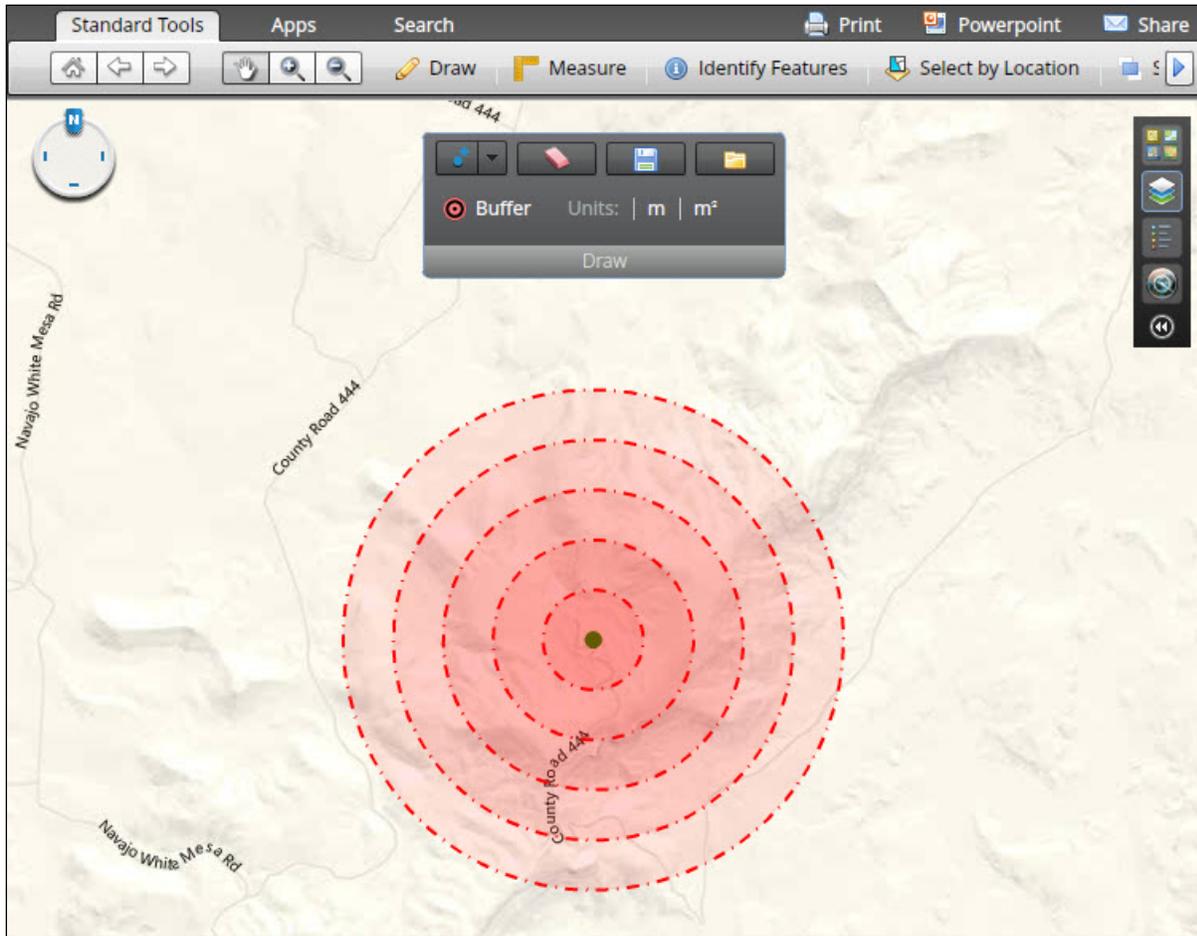


FIGURE 32

The next option available on the drop down draw menu is the polyline. This can be applied by clicking on a spot on the map, then moving to the next desired point and clicking again. Repeat until the user is ready to close the figure. Double click to close the figure. The polyline will appear on the map similarly to the image below (Figure 33). Any action performed in the draw function is a graphic and does not save to the viewer.

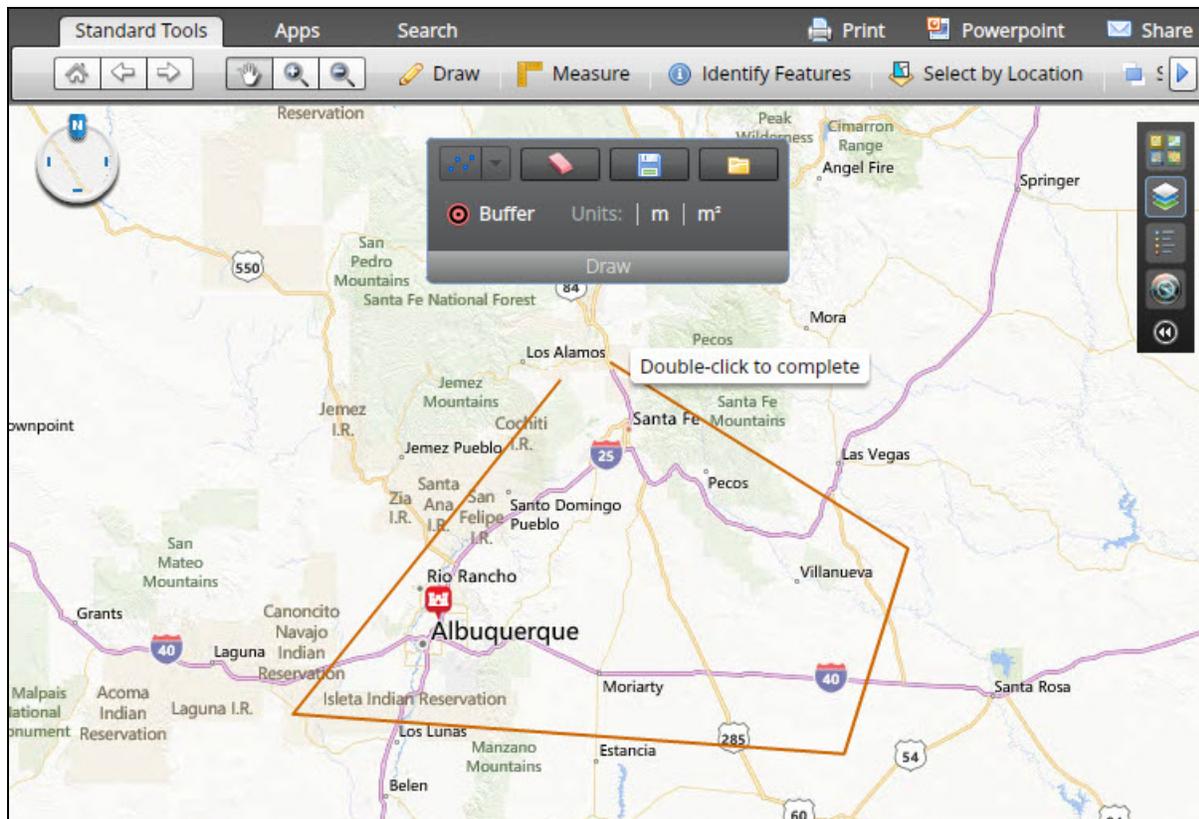


FIGURE33

The freehand polyline is the next menu item that allows the user to draw an area of focus more freely than the polyline tool. To use the freehand tool, click down and hold the cursor and move it to the desired area. When finished the polyline will close and appear as it was drawn, as shown in the image below (Figure 34). The resulting drawing does not save to the viewer.

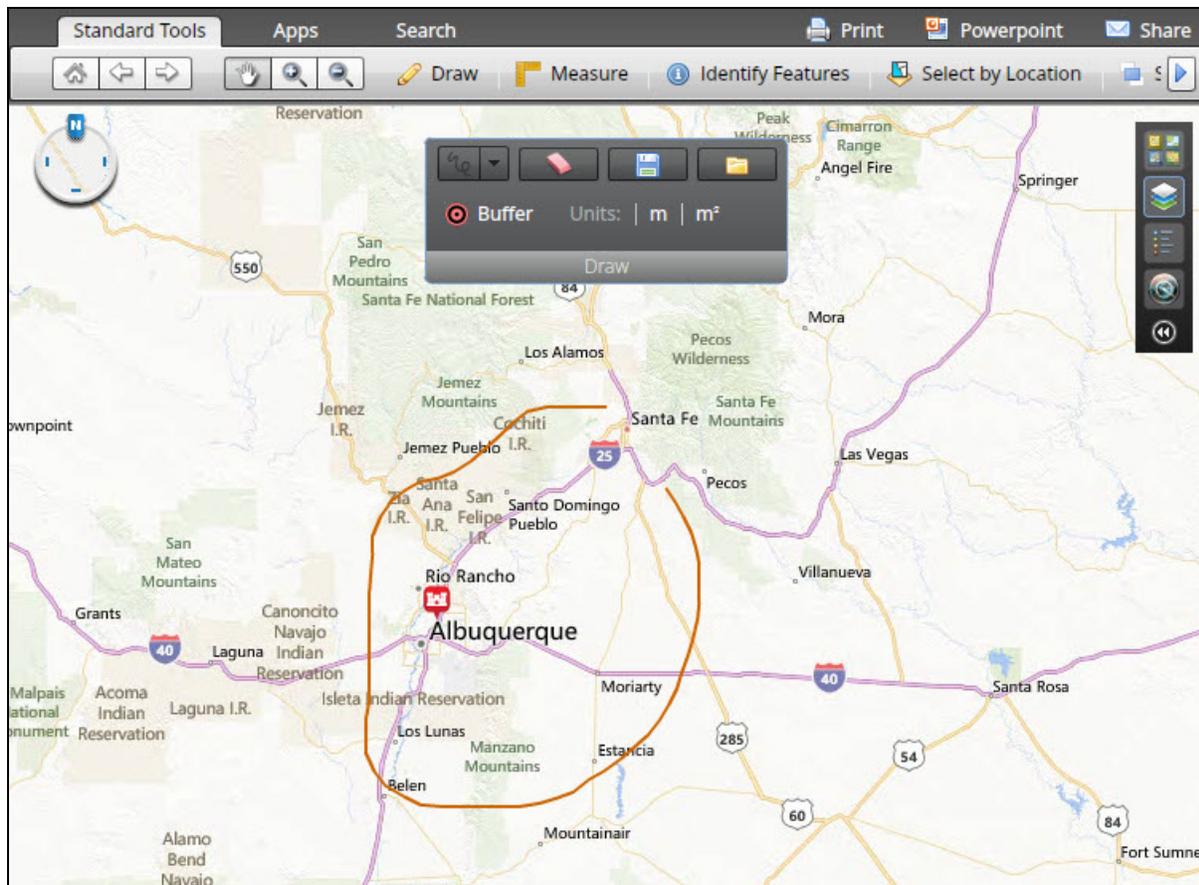


FIGURE 34

The extent option on the draw drop down menu is used to draw an exact rectangular area (Figure 35). Once the tool is selected; click on the area to view by holding down the mouse and dragging from one side to the other. The figure will appear as it is drawn. Click on the image to change the color of the figure. A white message box will pop up with options to zoom, edit and delete. Under edit there is an option to change the symbol color, opacity and similar choices, as well as an option to move the figure.

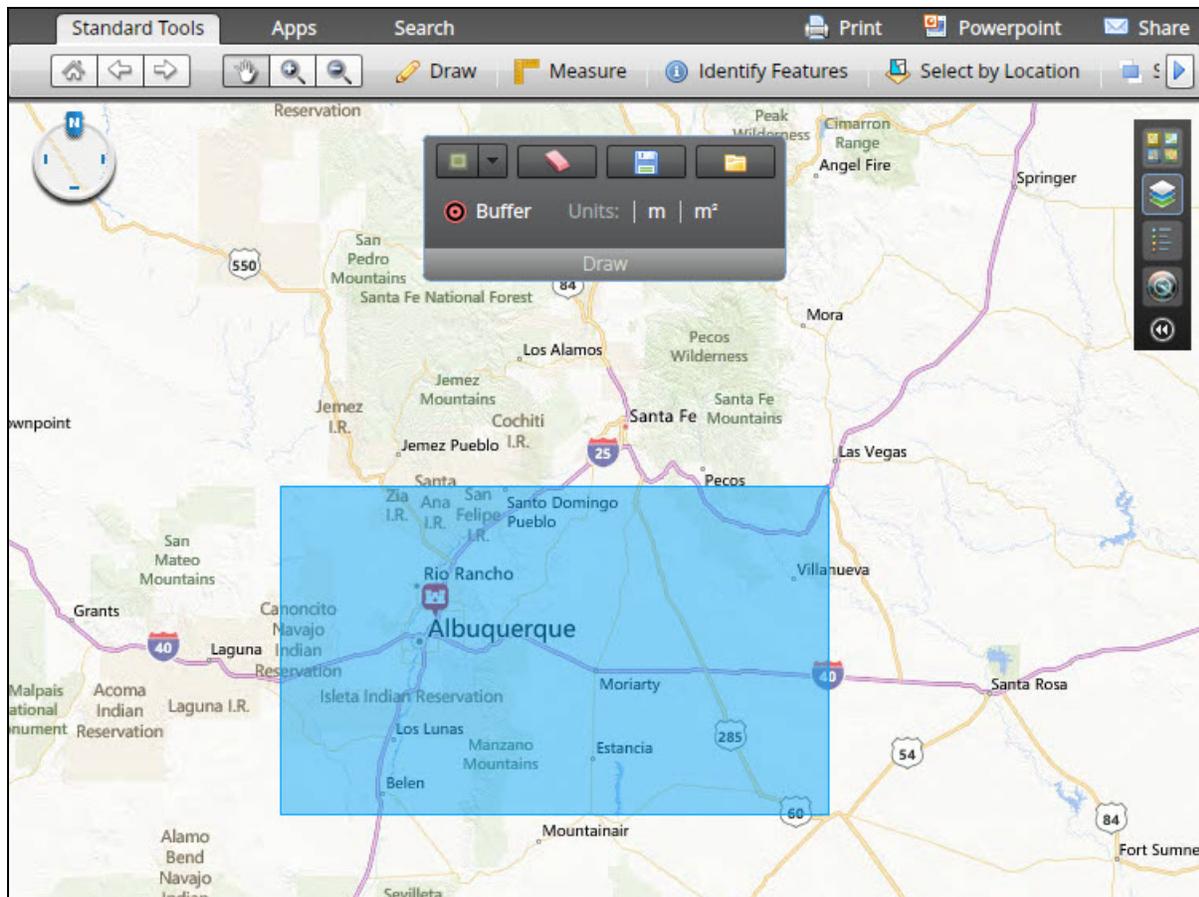


FIGURE 35

The images below (Figure 36) show the polygon draw tool (left) and the freehand polygon tool (right). These tools are applied by following similar steps. For the polygon tool, click on the map, and then click on each of the points of the figure to draw, and double click to close the figure. This will create a shape with sharp corners and straight edges. The freehand polygon can be very useful if looking at an area with a less structured shape. It is applied by clicking on the map once and holding it down and move the mouse to draw the desired shape.

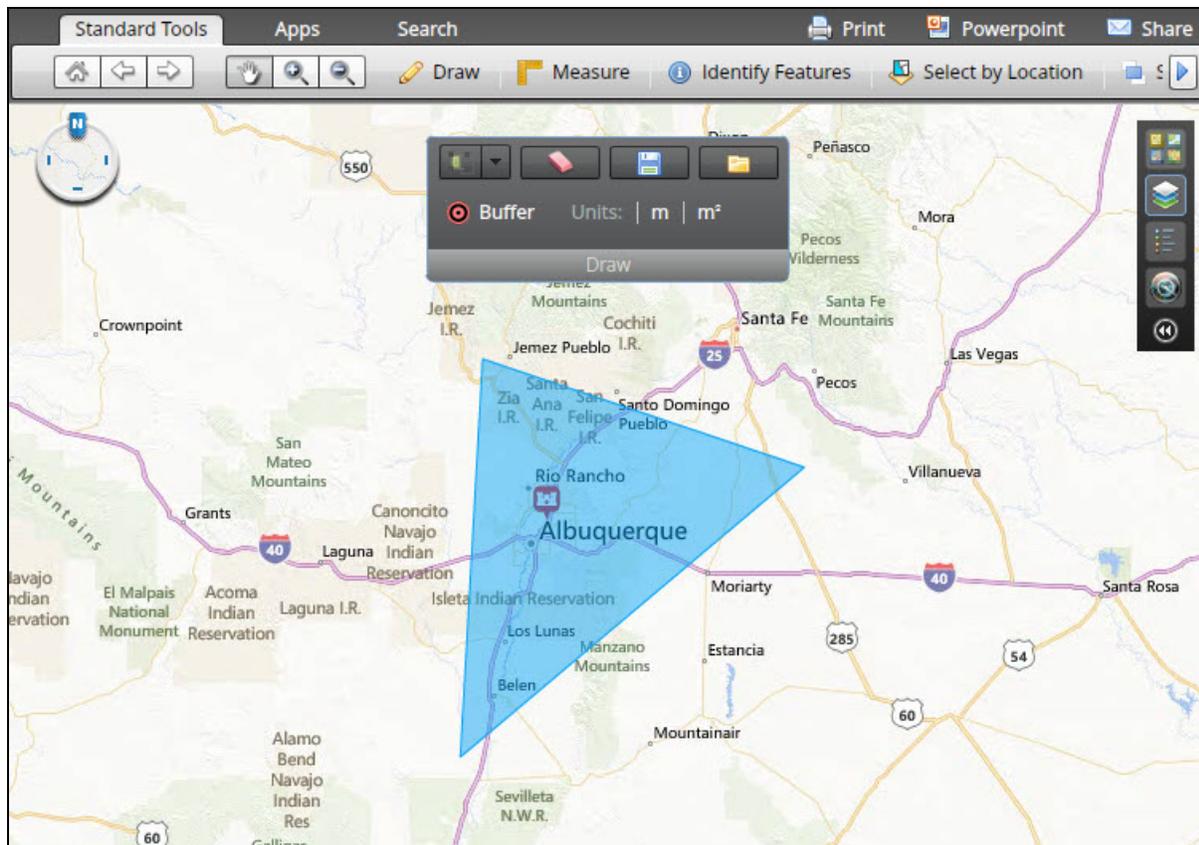


FIGURE 36

The last tool included under the draw drop down menu is the typing tool, which is used to label any area on the map as shown in image below, Figure 37. This is done by clicking on the desired spot, and entering the desired text, then saving it.

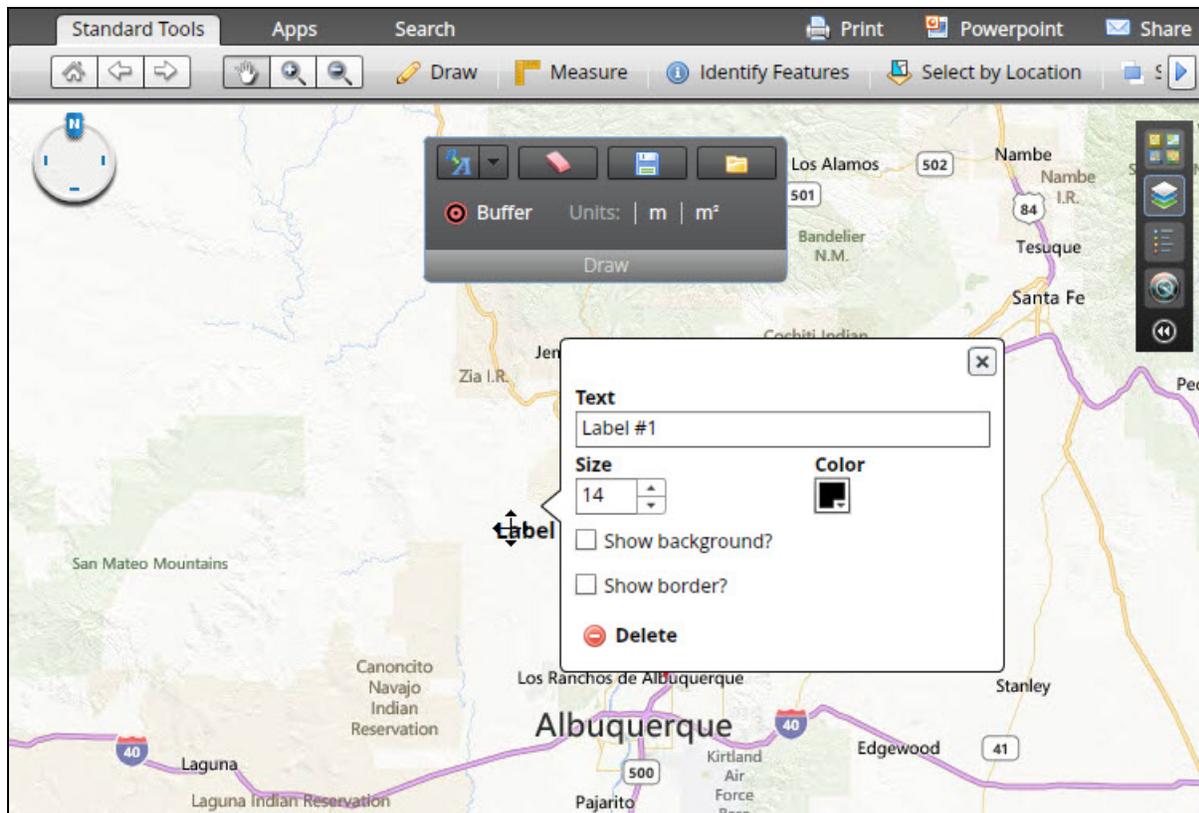


FIGURE 37

MEASURE

Another tool available under standard tools is the measure tool (Figure 38). Once the user selects the Measure tool, any of the graphics produced using the Draw tool can be measured. This is done by clicking the graphic, and a white box will appear that includes the area and perimeter of the drawn graphic.

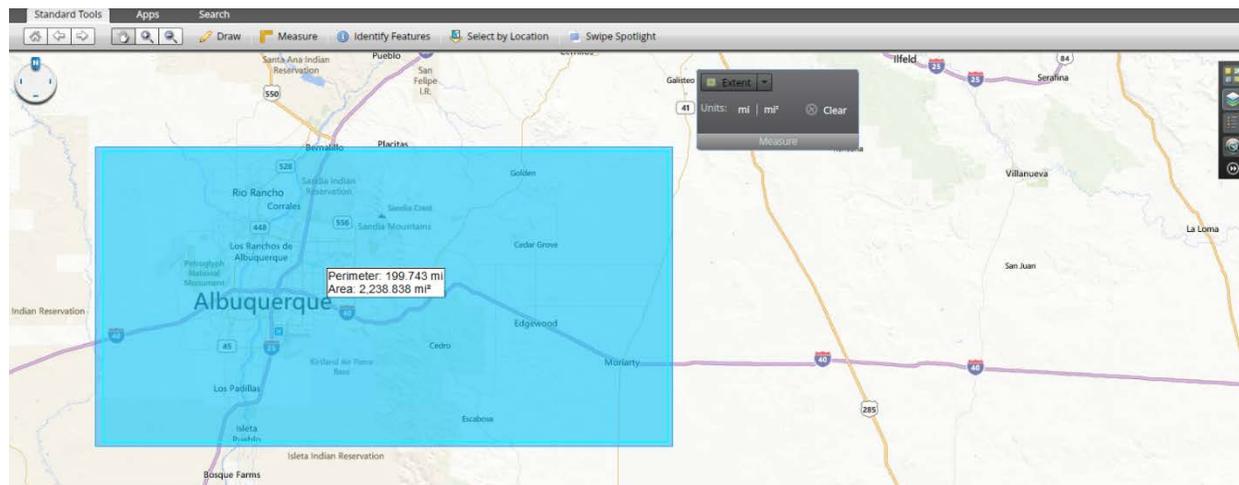


FIGURE 38.

IDENTIFY FEATURES

Another tool available under standard tools is the Identify Features icon. Once clicked, the Identify Features box will appear. The feature will have either a green “on” or red “off” button indicated in the box. The green “on” button must be activated for the tool to work. The user can then click a spot on the map and the tool will bring up information about that specific point such as the location, county and related information. This tool may take time to query the information for the position clicked. Once the information is available a box will appear on the left with relevant information. If no information loads, the selected location does not have an available feature layer.

SELECT BY LOCATION

Another tool available under standard tools is Select by Location (Figure 39). Clicking this tool allows the user to select features based on their location relative to features in another layer. A buffer distance can be selected in miles or kilometers as the user sees fit. The source layer and selectable layer information is based off of what is present in the right-hand Layers menu. Under the source layer dropdown, the user can choose the spatial selection method from which the features will be selected. Once the information is populated, a selection results tab will pop up on the left side displaying information from the selection.

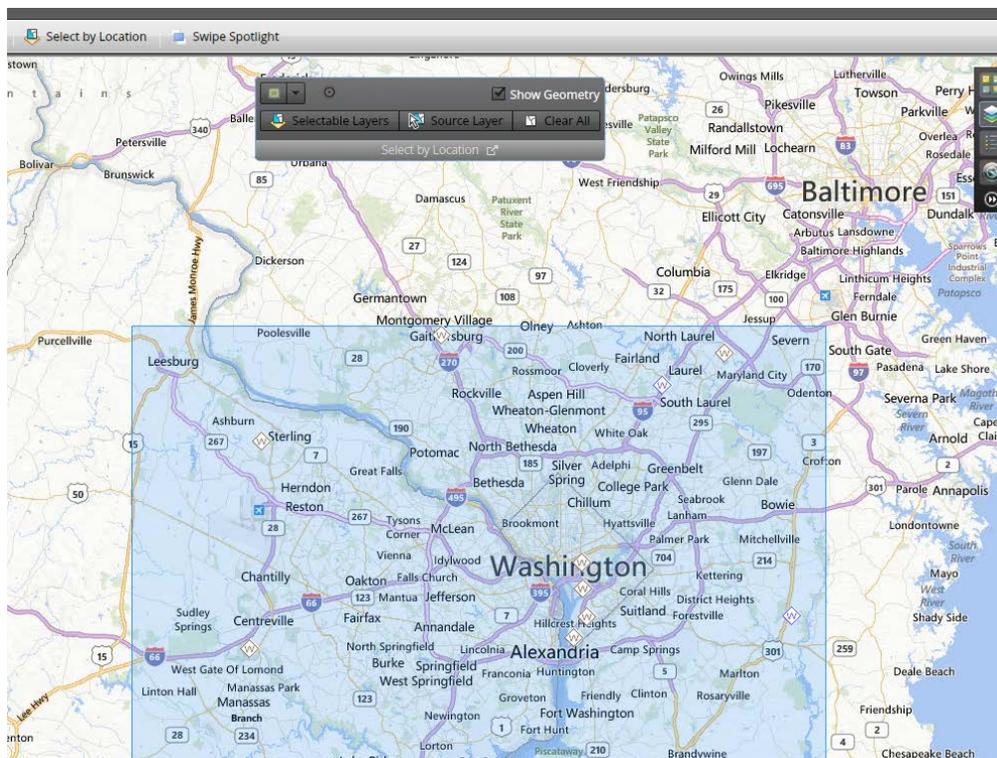


FIGURE 39.

SWIPE SPOTLIGHT

The last tool available under standard tools is the Swipe Spotlight tool. This tool allows the user to hover the cursor over added layers without switching them off. Once the user selects the Swipe Spotlight tool, click “Select Layer”. This will be the layer that moves with the cursor. For viewing purposes, the user can choose to set the cursor at Swipe or Spotlight. Using Swipe, hold down the cursor and use it to pan across the screen to view the layers. An example using Swipe is shown in Figure 40 with the SSURGO Soils layer. Using Spotlight, select the radius, and then hold down the cursor over the area of interest.

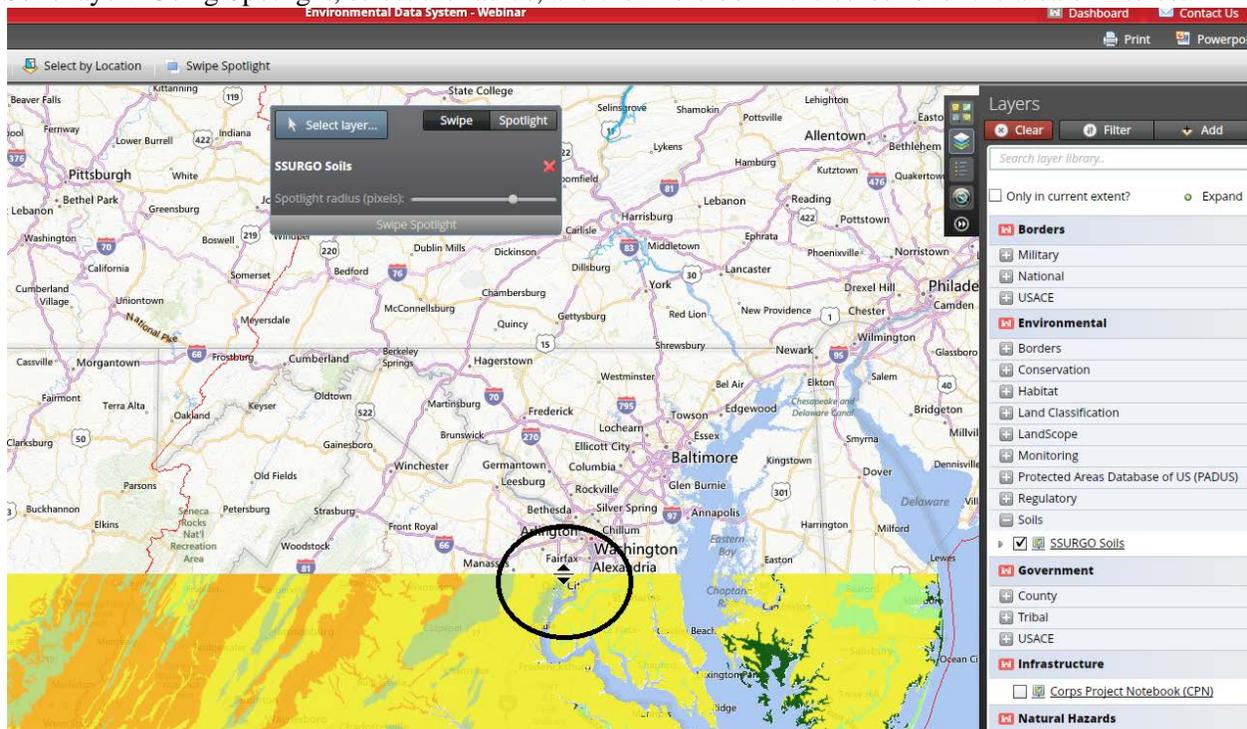


FIGURE 40.

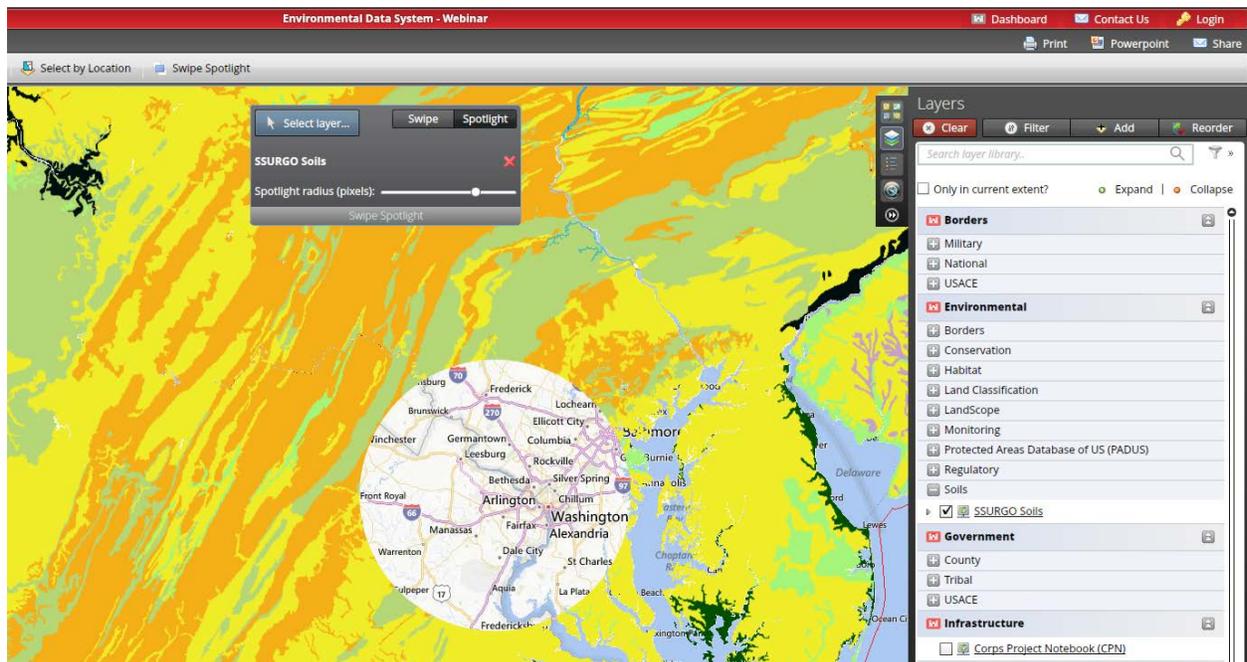


FIGURE 41.

ADMIN TOOLS

SimSuite allows advance users the opportunity to create, modify, and enhance individual viewers to meet the specific needs of a business line and/or mission. This section will go through all the available Admin Tools and give a brief overview of how to use them. In order to access the Admin Tools you will need to use the “Contact Us” field. Once approved the advance user will receive a login / password plus some rules and requirements for adding and making changes to viewers.

LOGIN

To access the SimSuite Admin Tool the user must first login to the application by clicking on the “Login” link at the top right of the viewer as shown in the image below, Figure 42. The “Login” option is available in an individual viewer as well as the main SimSuite webpage.

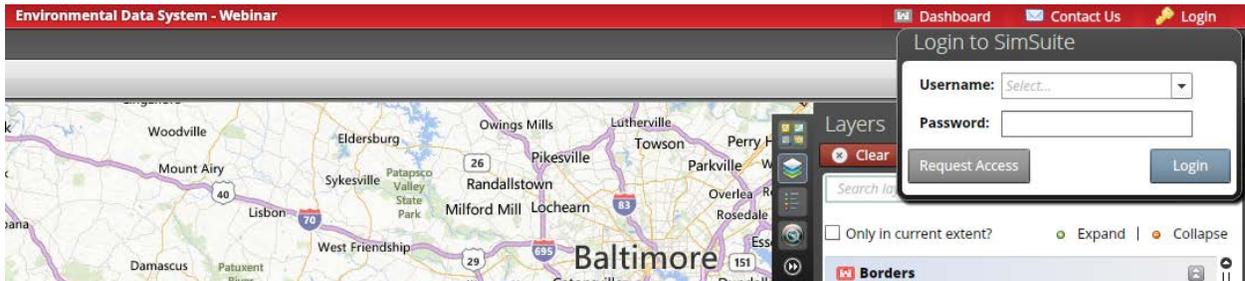


FIGURE 42

To Login enter the username and password that is provided by IWR. As is stated in the previous section, use the “Contact Us” link to contact the administrator for the login information. A username and password is not needed to use the basics of SimSuite. Login is for advanced users to manage viewers and data. Once logged in the username will appear at the top right corner of the viewer. The “Admin Tools” toolbar will now be available for use, shown below in Figure 43. This toolbar shows all the available Admin Tools. The following sections review how to use each of these tools.

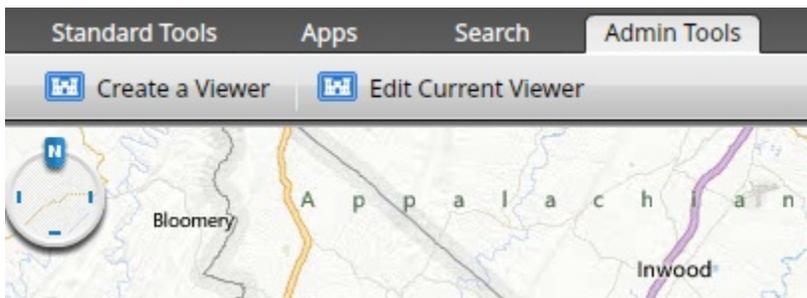


FIGURE 43

CREATE VIEWER

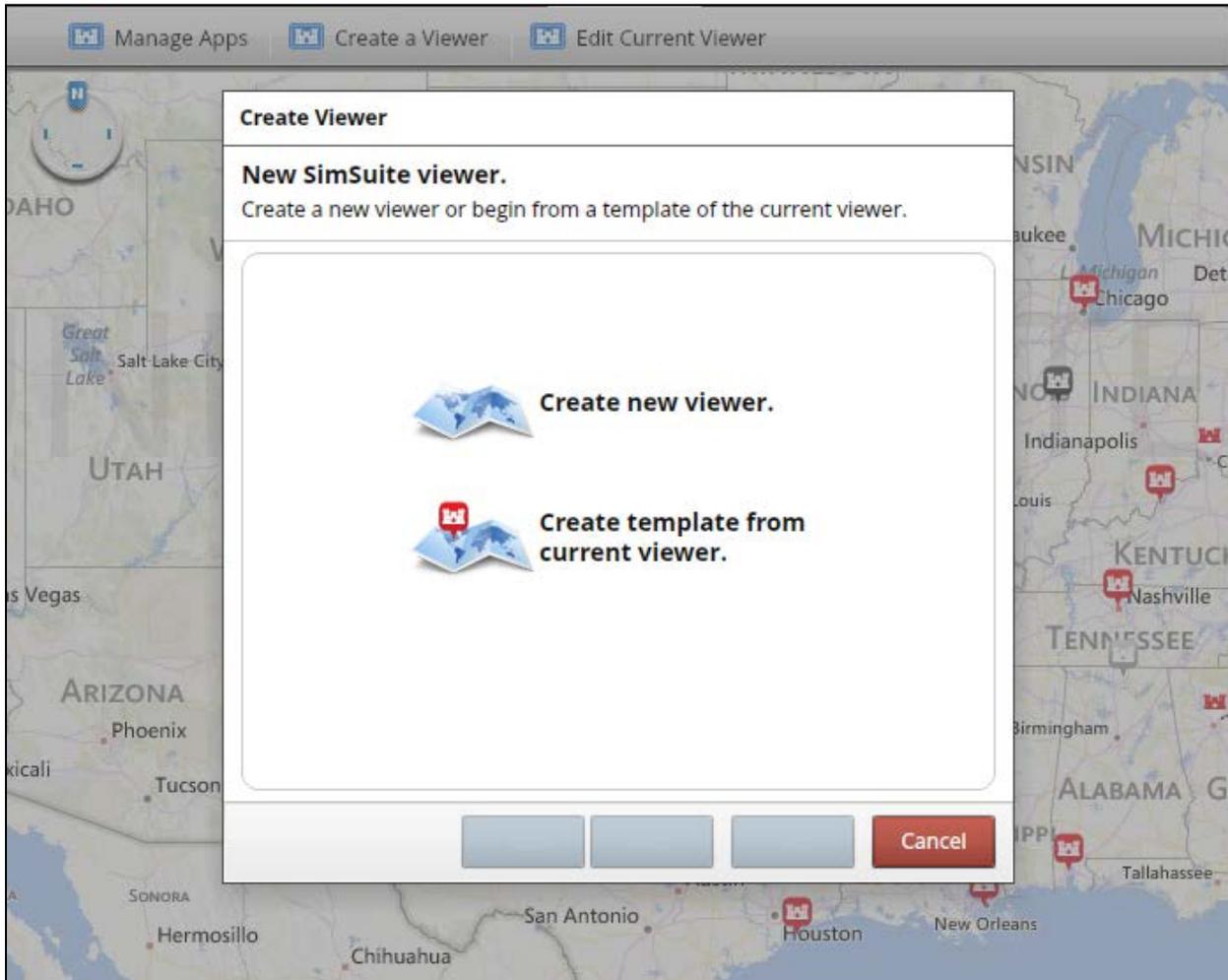


FIGURE 44.

In order to create a new viewer, select the Create a Viewer tab. Once activated, a command prompt will appear asking whether or not the user would like to create a new viewer, or Create template from the current viewer. The first option will create a new viewer that will load completely empty. It is then up to the user to add all data layers and set the zoom extent. The second option allows a user to create a new viewer that will have the same layers and parameters loaded as the current viewer. This option is usually the easiest one to use. Once created the user can add / remove layers as needed. Creating a template from the current viewer does not lock the viewer in, it pre-loads layers and parameters to make the creation quicker. Once created, the viewer can be customized to fit the needs of the user. The next three steps of the process are discussed below.

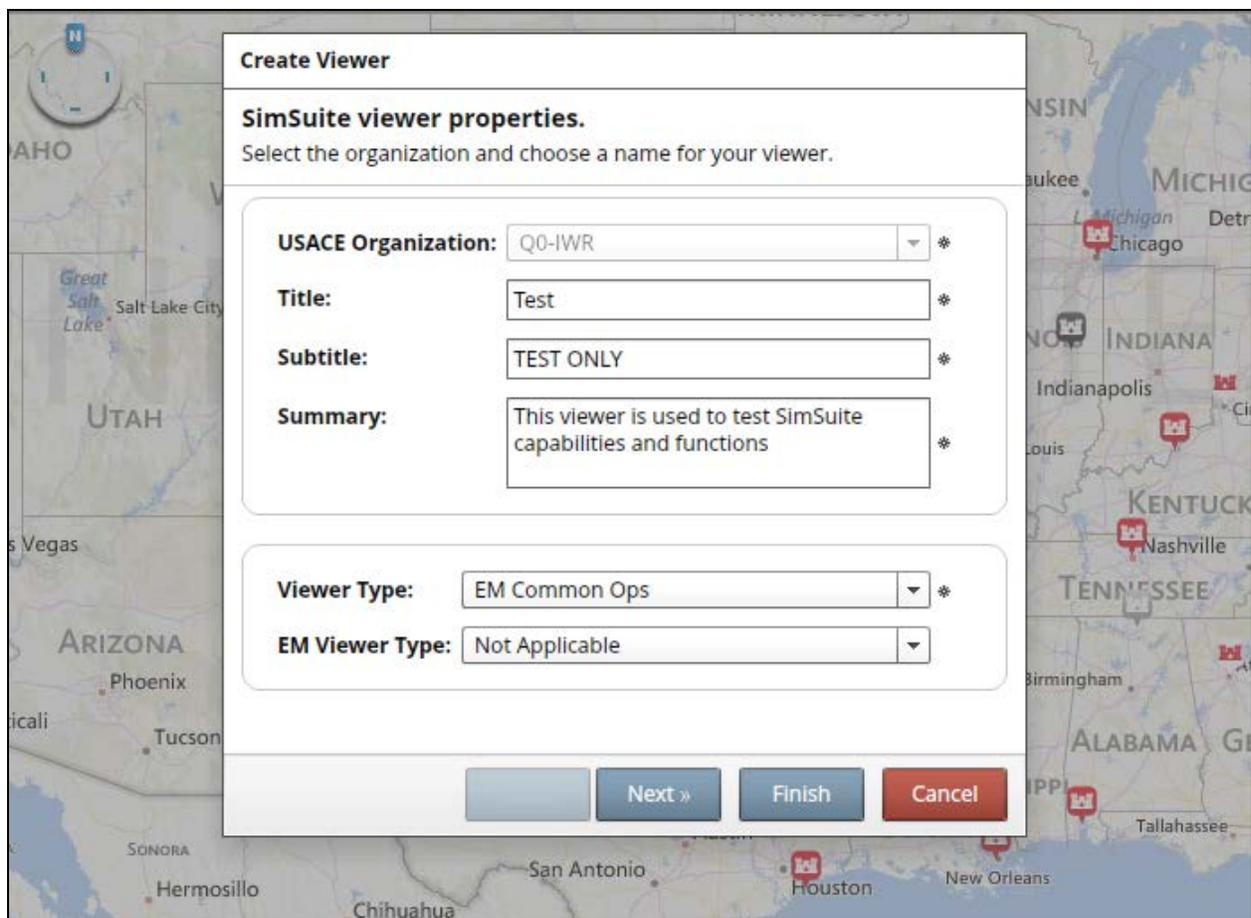


FIGURE 45.

The first step is to name the viewer, give it a subtitle, and a brief summary. These in addition to the Viewer Type are required fields. The viewer type should be chosen based on the use of the viewer. If the user is uncertain of what category to add a viewer to, use the “Contact Us” option to contact IWR.

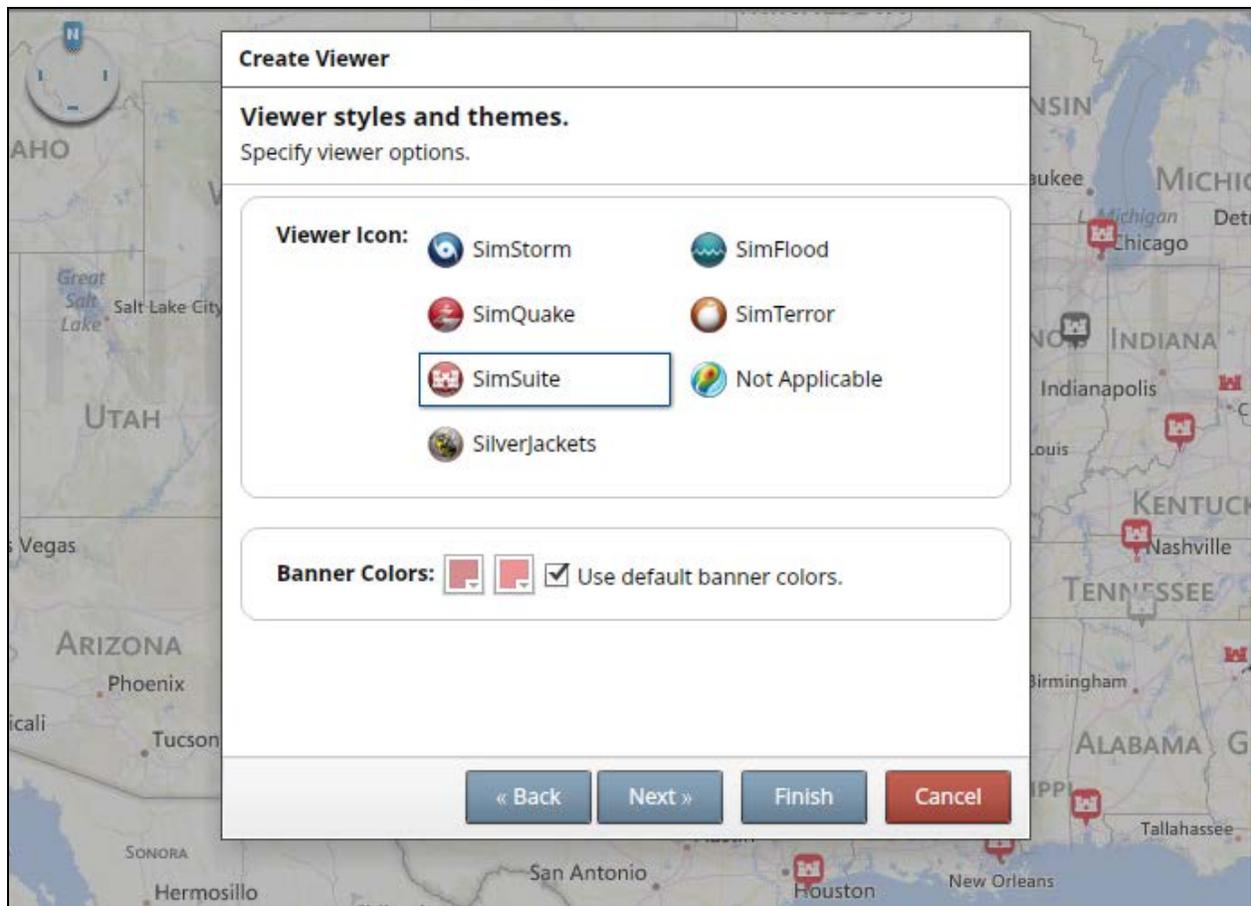


FIGURE 46

The second step of the creation process allows the user to select a viewer icon. This should be based on the type of viewer created. Most viewers will use the SimSuite viewer icon.

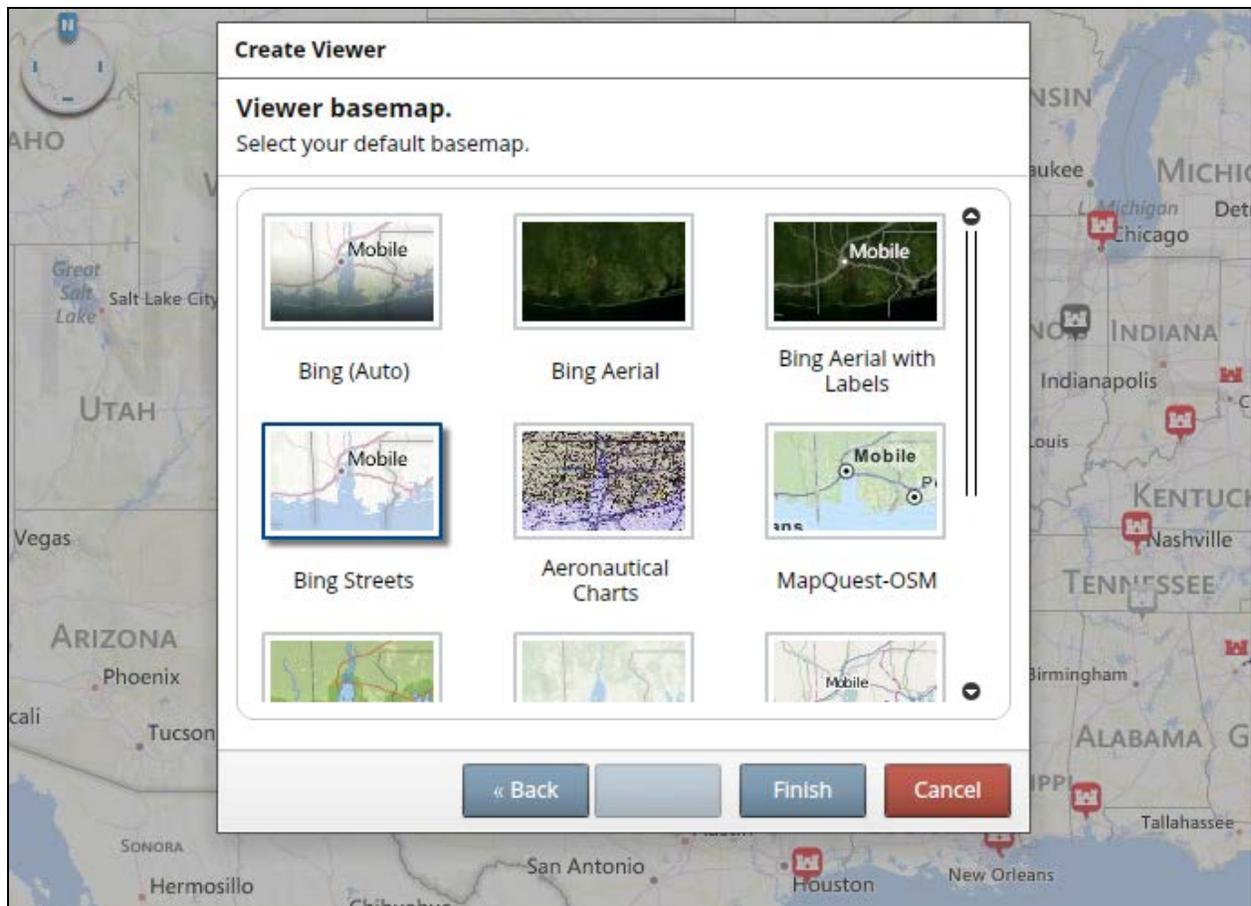


FIGURE 47

The last step of the Create Viewer is to select a base map. This will become the default Base Map until the user changes it in the “Edit Current Viewer” section. After choosing a base map and clicking finish the user will be taken to the new viewer.

EDIT CURRENT VIEWER

The Edit Current Viewer tab allows the user to edit the viewer. This should only be done when the user is the responsible party for that particular viewer. During the Edit Current Viewer session, a user can make changes to the viewers layers, zoom extent, activate apps, etc and then use the save button to save the changes. When an admin user clicks save in the Edit Current Viewer menu, any and all changes that have been made to the viewer will be saved. For example even the simplest change such as zooming in and panning will be saved once the Save option is selected. Inside the Edit Current Viewer pane users can make changes to all information that was assigned when a viewer was created. The user can also Archive this map viewer so that it is not seen in the home screen of SimSuite. At the bottom of the Edit Current Viewer there are Apps. Apps may be loaded in the Apps toolbar and activated when the viewer loads. The shadow box behind an app name represents that it has been loaded to the App toolbar for the viewer. If there is a check mark in the box, right of the name, then it has been activated to load by default with the viewer. The more apps that are pre-activated the slower the viewer will load. The user should only activate apps that are specific to the viewer. There are two ways to make an app accessible. It can either be added to the App menu or if a check is placed in the box on the “Edit Current Viewer” then it will

open immediately when a user opens the viewer. When finished inside the Edit Current Viewer tab simply click Save (if applicable) and then click the Close button.

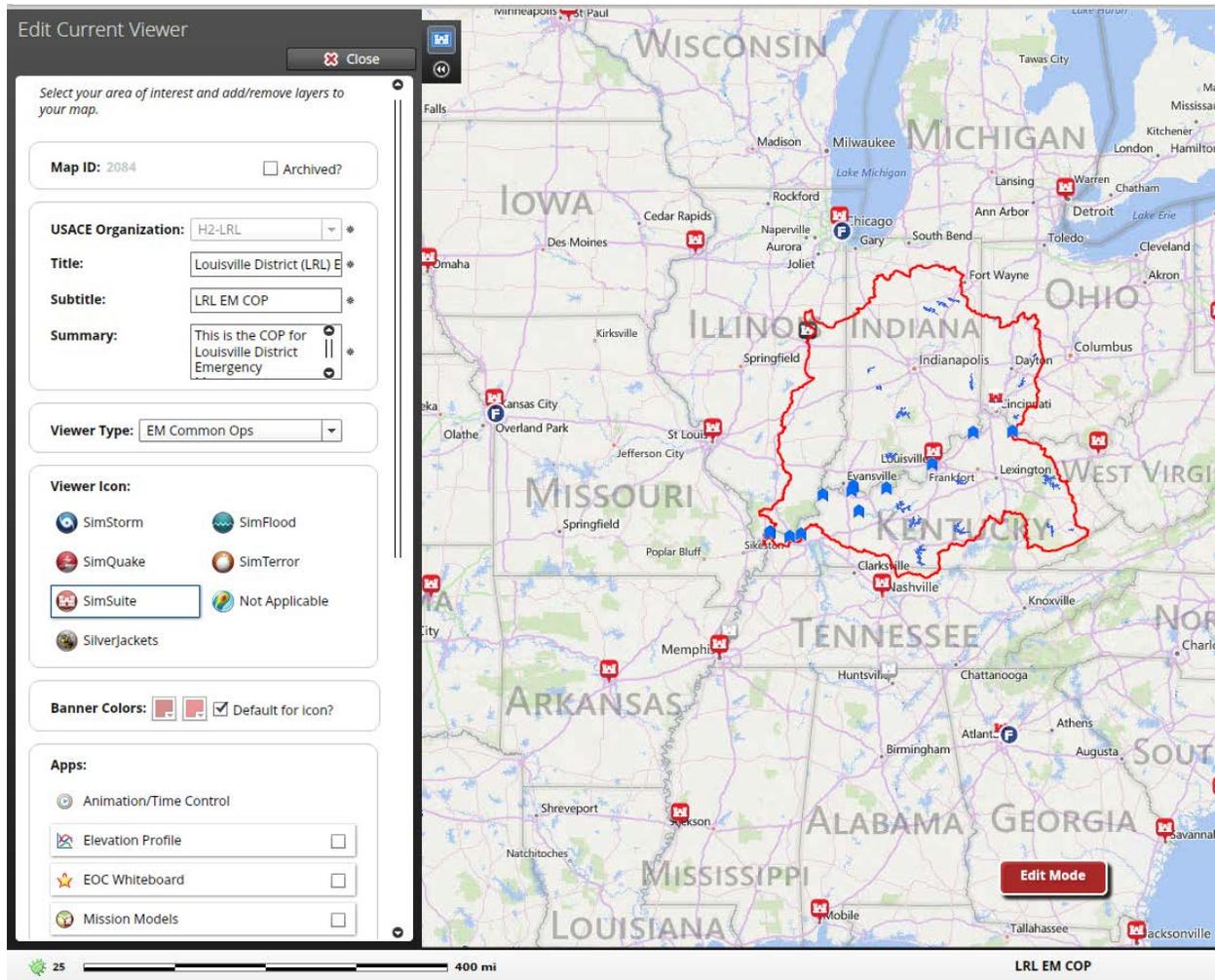


FIGURE 48

MANAGE SIMSUITE LAYER LIBRARY

Admin users have the ability to manage the SimSuite Layer Library. This allows users to add layers to the library permanently, unlike the add feature described earlier in the document. This tool also allows users to manage the Layers that they have previously added under their admin account. A user cannot make changes to layers that another user created. One way to access the Layer Library is to go to the SimSuite Home page, then click on Data. Clicking on View Details will add the layer to the Library. Figure 49 shows this process.

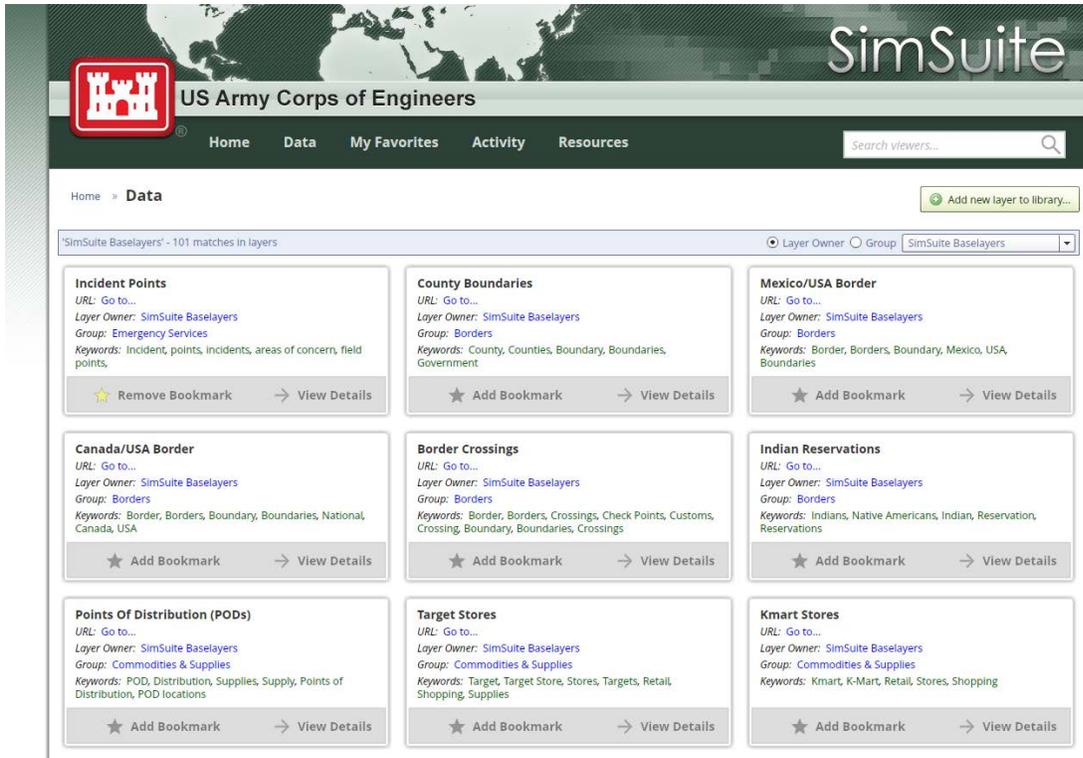


FIGURE 49.

To add a new layer to the library, click the Add new layer to library icon. If you are not logged in, the system will prompt you to do so. Once the icon is clicked, it will take you to a new page where the user can add information to build the new layer. This is shown in Figure 50 below.

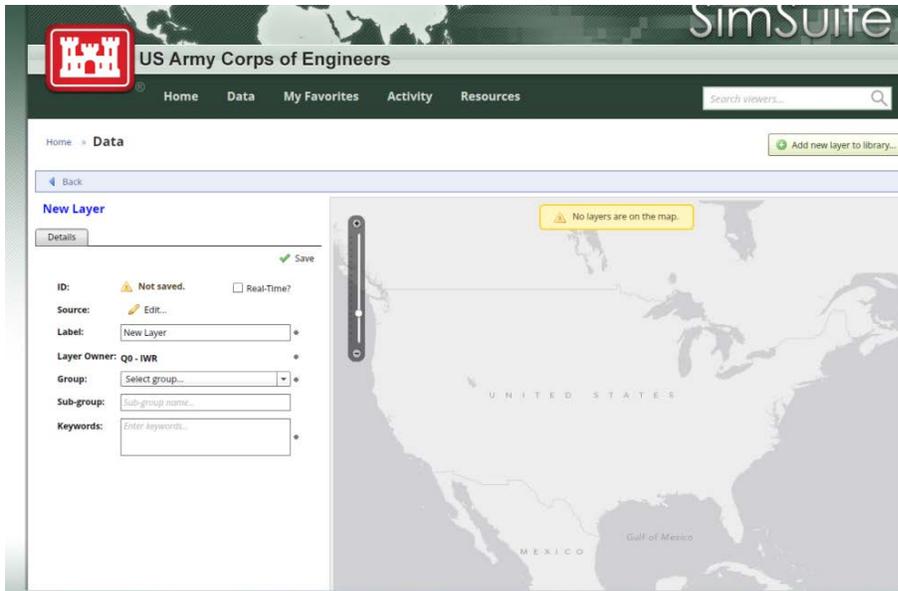


FIGURE 50.

At this point the user can click on the layer and edit its parameters such as URL, Label, Group, Sub-group, and Keywords. Each of the parameters are very important to fill out. The URL should already be the same as the one that was entered to create the service. The label should be changed to whatever name suits the data layer. The group should represent where the data should be stored. For example; if the layer is a border then Borders would be the group. The sub-group can be specified and is recommended. For example; under Government there is a sub-layer that already exist called National. The user should keep this file structure if possible. Keywords for the layer should be chosen carefully and should be entered to best describe the layer. For example a layer for the Louisville District Flooding should have keywords like; Louisville, LRL, flood. Keywords should be very specific and if necessary descriptive words can be used.

Questions regarding any of the admin tools should be directed to the system admin and can be contacted using the “contact us” link at the top right of any viewer.

SIMSUITE APPS

SimSuite Apps are tools that can be used and run using SimSuite as a common interface. Some of the available apps include Google Streetview, Elevation Profile, and Structure Inventory, among others. Specific viewers often have suggested apps to use and include those apps when the viewer loads. They are located on the main toolbar under the apps option on the top navigation pane. However, the user can access all available apps from any viewer simply by clicking App Library. A menu will then pop up to select and apply any available viewer, as seen below in Figure 51. The red or green circle in the top right corner of each app indicates if it has been added to the current viewer.

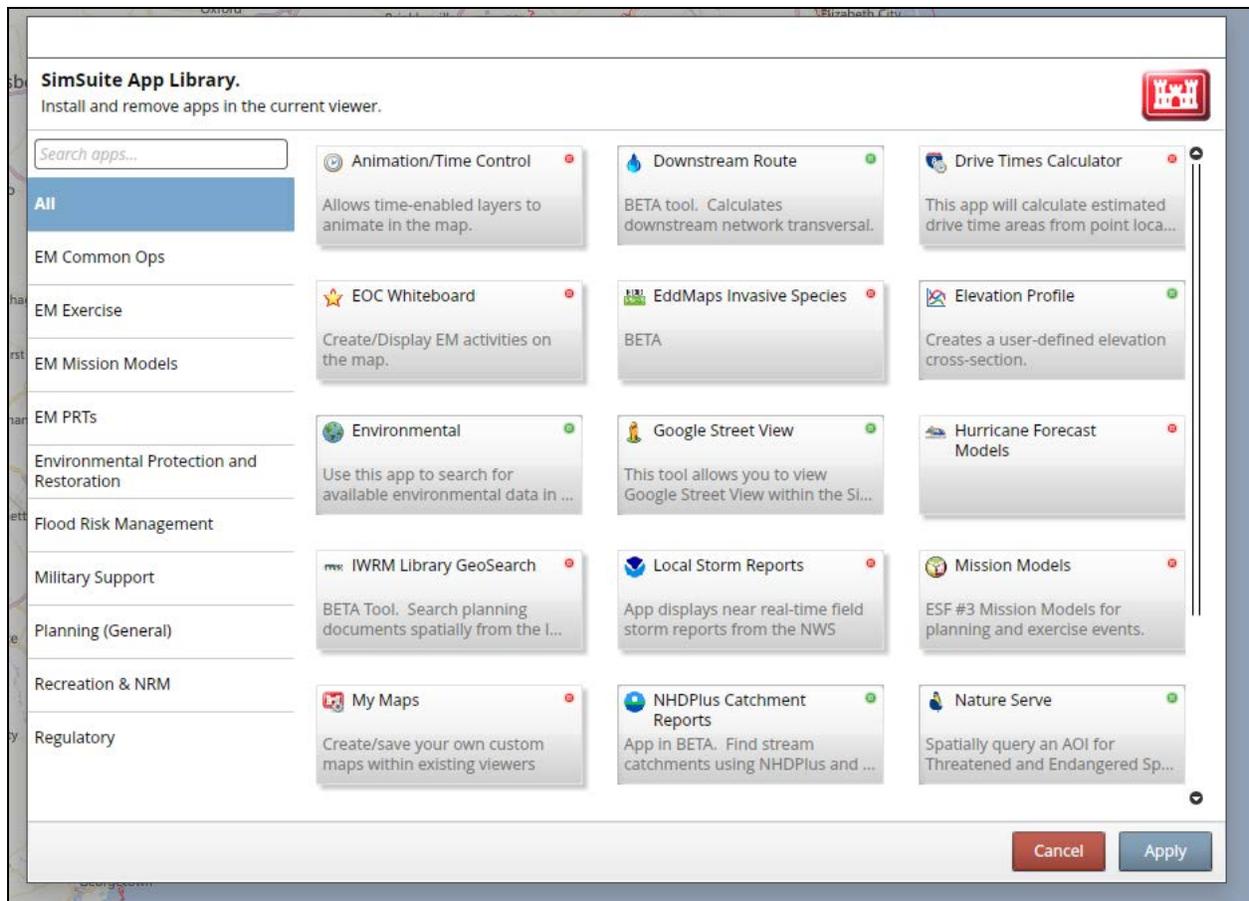


FIGURE 51

ANIMATION / TIME CONTROL

This app allows time-enabled layers to animate in the map. Most data will not have the ability to be time enabled. Data layers that are time enabled will have to be created this way by the author and are usually specific to a location or event.

DRIVE TIME CALCULATOR

This app calculates estimated drive time areas from point locations. The app allows a user to select a point on the map and then it will return the drive times in a color coded shading. This app uses ArcGIS geoprocessing to determine the estimated time from a source location out to other areas. This app could be useful for emergency planners in order to determine where response teams should be placed and at what time. The app could also be used to plan various inspection trips.

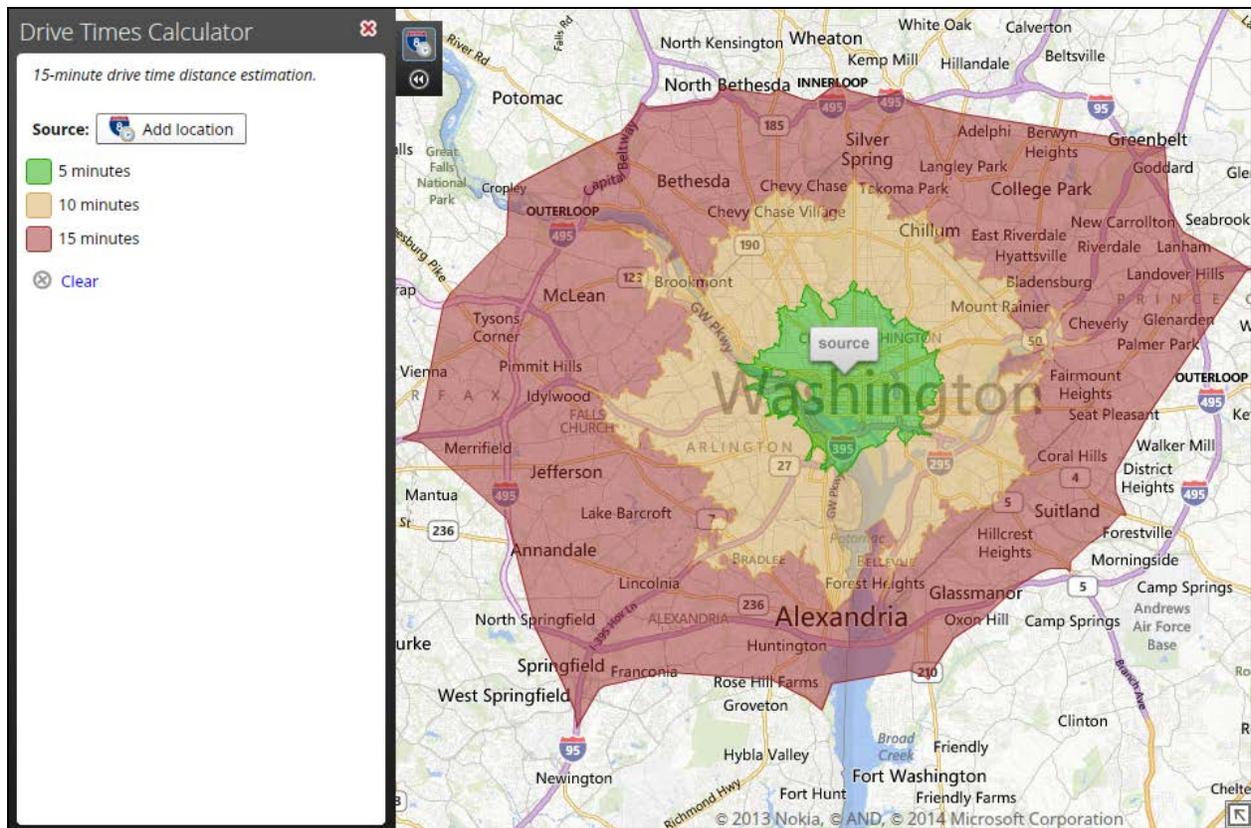


FIGURE52 – DRIVE TIME CALCULATOR

ROUTE CALCULATOR

Route Calculator is similar to Google Maps or Mapquest. This will give the user driving directions from one point to another. Users can either enter the starting and ending address, or choose the mouse click option to select two points on the map. This will find the nearest address for each click and load it into the start and finish locations. Turn by turn directions will then be returned along with total distance and estimated time. There is also an option to print the directions. If a user scrolls over each step in the direction, it will show on the map where that turn will take place.

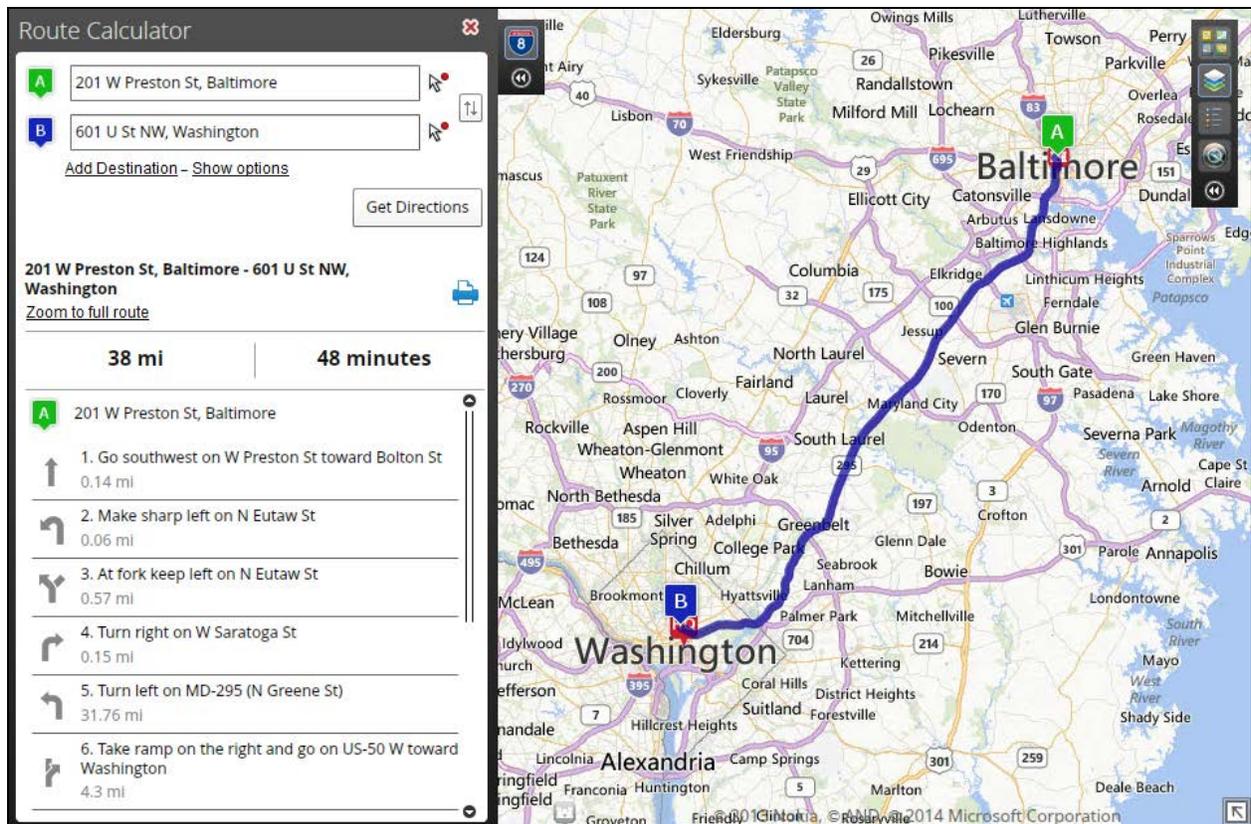


FIGURE 53 - ROUTE CALCULATOR

EOC WHITEBOARD

This app allows the emergency management community users to create and display mission related activities on the map.

GOOGLE STREET VIEW

Google Street View app allows users to view the Google Earth Street View within the SimSuite application. Simply launch the app and place the Google Street View man on the SimSuite interface map. The app will then find the nearest available street view location and launch it in a window on the bottom of the viewer.

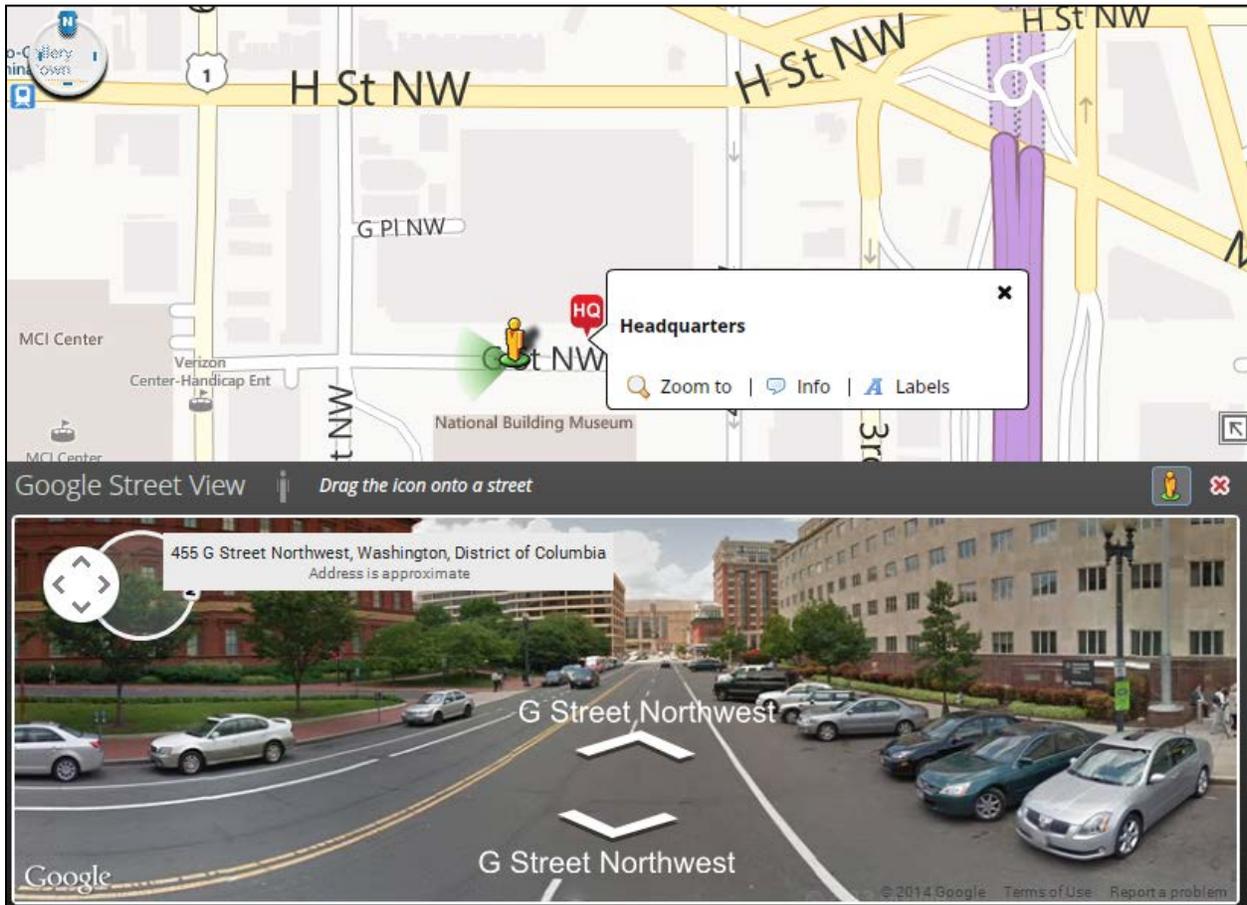


FIGURE 54 - GOOGLE STREET VIEW

MISSION MODELS

This app is used for ESF #3 Mission Models for planning and response to events. This app continues to be updated and modified. At this time, it is used for hurricanes only. Users can use a freehand polygon to create a shape. Once created the app will perform analysis to determine the affected area and type of damage to be expected based on USACE ESF #3 missions. The results can be rendered based on different items such as debris, commodities, temp roofing, population, and households affected. The intensity can also be changed. Please contact SimSuite administrators with any questions regarding this application.

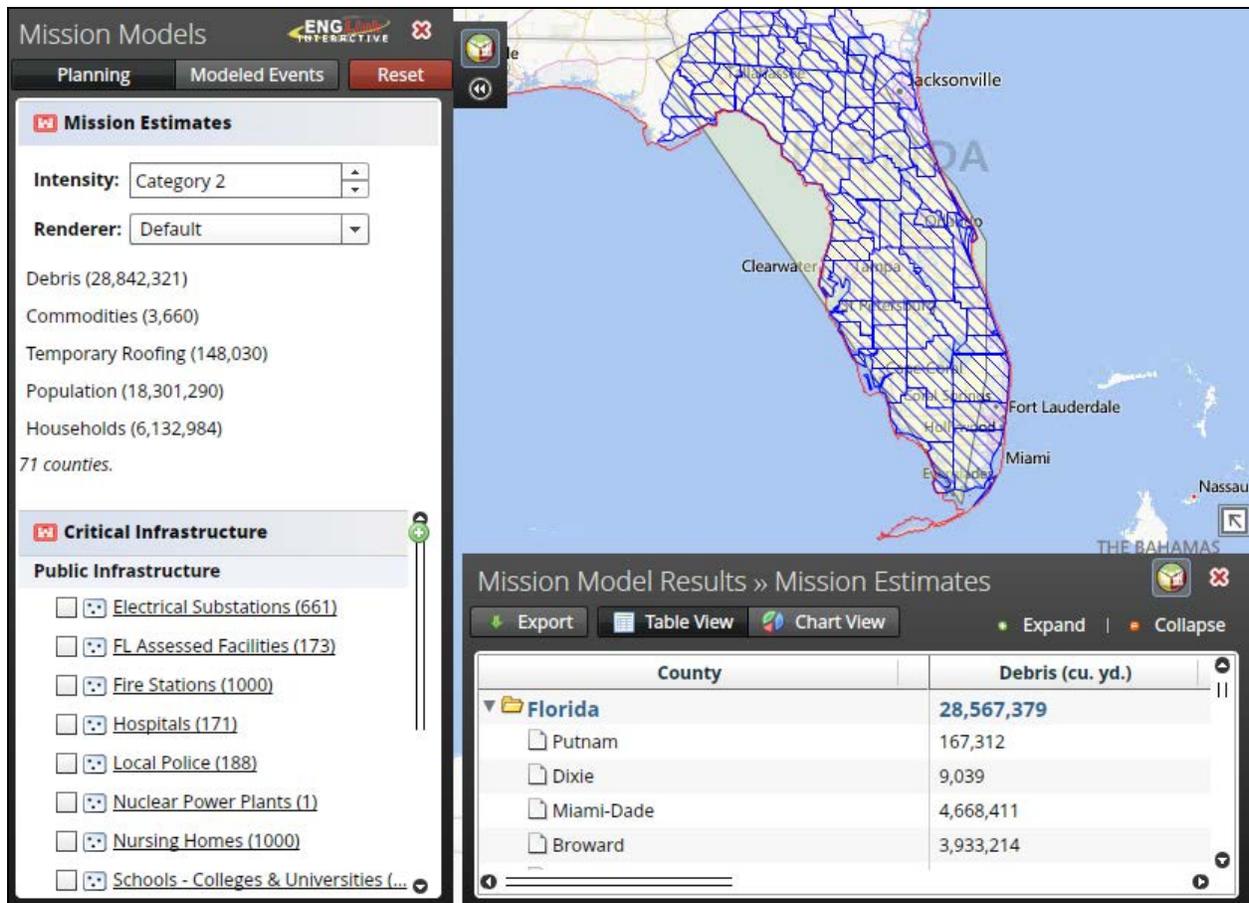


FIGURE 55 - MISSION MODELS

MY MAPS

My Maps allows a user to save current map views. This can be helpful if a user wants to show customers many different areas and layers very quickly without having to zoom, pan, or add/remove layers. Each view can be saved and then when the user clicks through the saved maps, they will be able to switch to that previously created view.

STRUCTURE INVENTORY (BETA)

The Structure Inventory app is currently in a beta phase. When complete, the app will allow users to select a point, or area on the map and the result will be a visual and tabular view of all structures inside that query. These will be broken down based on structure type. Contact SimSuite administrators for questions regarding this app.

TRAFFIC INCIDENTS

This app allows users to run on and off traffic related issues to include areas of lane closures, road closures, lane restrictions, or accidents. Once activated, the app will show major construction issues

nationwide. By clicking on a construction icon on the map, the user can access information about traffic incidents being displayed.

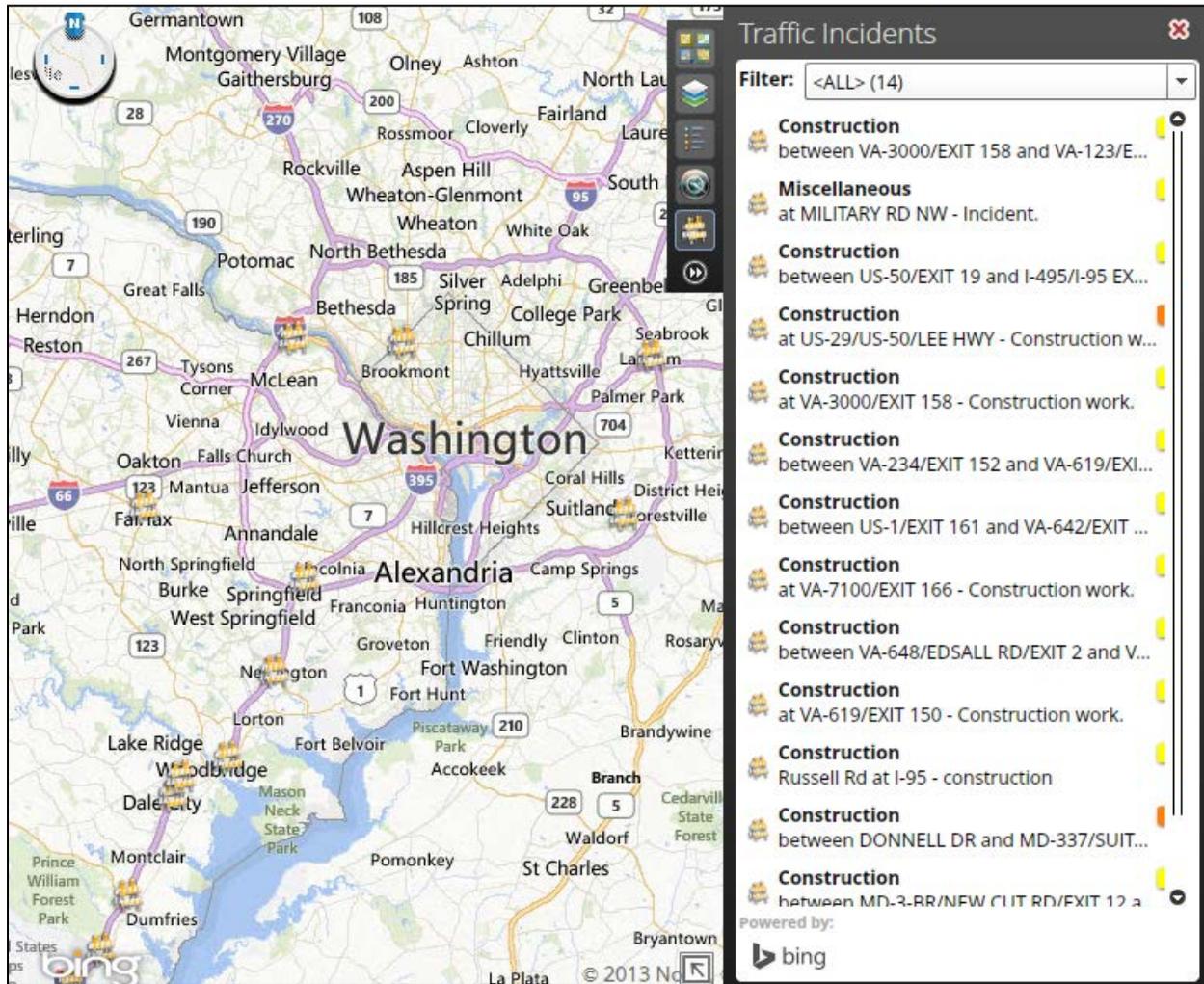


FIGURE 56

IWRM LIBRARY GEOSEARCH (BETA)

Users will be able to search planning documents spatially from the IWRM Library when the app is complete. Once activated, users will be able to select how their method for performing data queries: polygons, hydrologic unit codes (HUC) or Corps district. After selecting the method to use, the user then defines the area and hits submit. All planning documents in that area will be returned. These documents can be viewed from the left side panel in the IWRM Library App.

NATURESERVE

The NatureServe app allows users to engage with NatureServe directly through SimSuite. When launched, the user will need a NatureServe ID and password. To register for an account visit the NatureServe webpage or contact SimSuite support. Once logged in, the user can query the NatureServe

data by a point, polygon, county, or watershed. Select the method of query and then select a location. Once a location is selected, the app will begin to query the NatureServe database. This may take up to two minutes. Results are displayed in the left sidebar and have tabs for listed endangered, listed threatened, etc.

NHD PLUS CATCHMENT REPORTS

The NHD Catchment Reports app is used to aggregate related reports based on location. To use the app click on it from the top navigation bar. After selecting it, zoom in to the target area until purple lines begin to show up on the map. The user can then select a flowline. The app pulls information from the Environmental Protection Agency’s website and lists all of the related reports in that particular flowline. You can view a report by clicking on the “view report” icon in blue font. A web browser will then open to the address where the report is located. There is an export icon located above the available reports column which allows the user to export the related reports and data to a desktop or network.

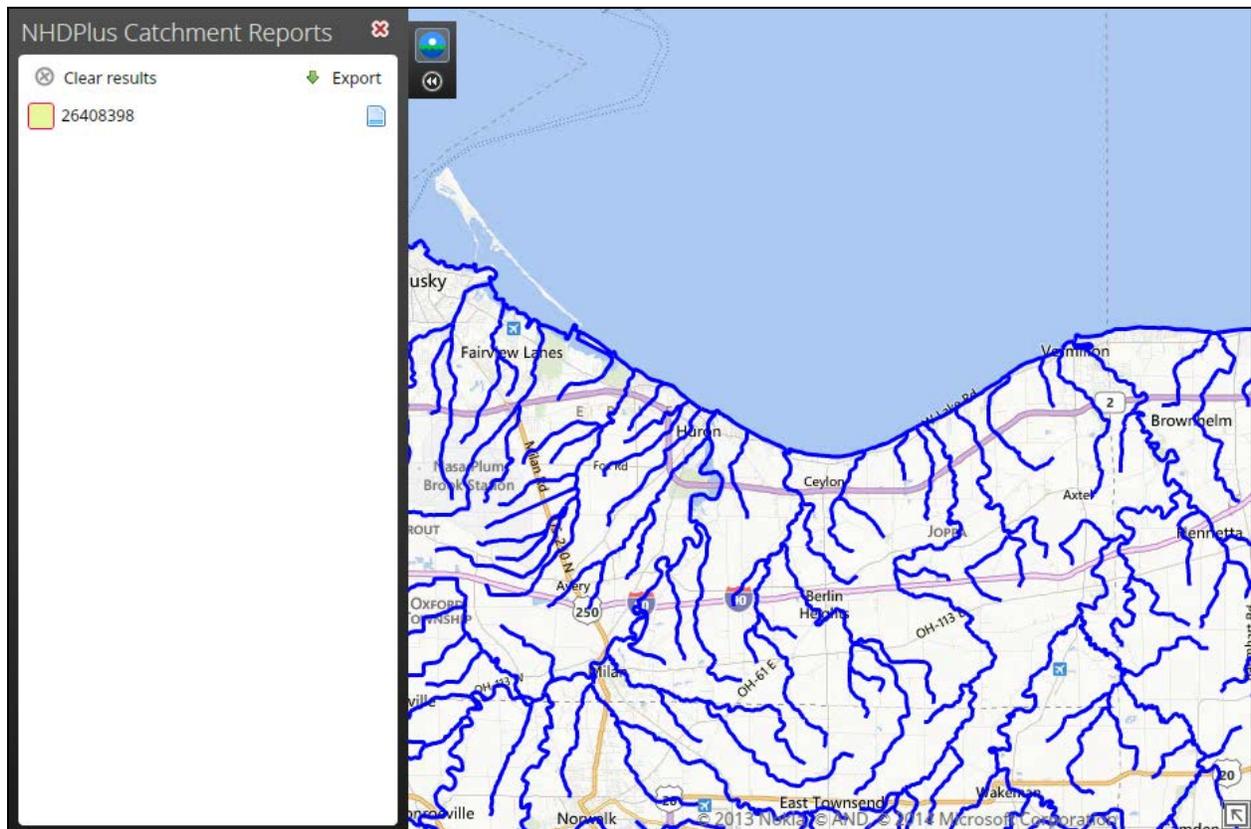


FIGURE 57.

DOWNSTREAM ROUTE

The Downstream Route app is located on the far right of the top toolbar under the Apps option. The app can be used in order to determine where water outflow leads to. To use the app, first select if off the menu bar. Zoom in until the app provides an option to click the map to begin routing. Once the blue icon shows up to click a point on the map, click that icon and select an area within the waterway. The app will then

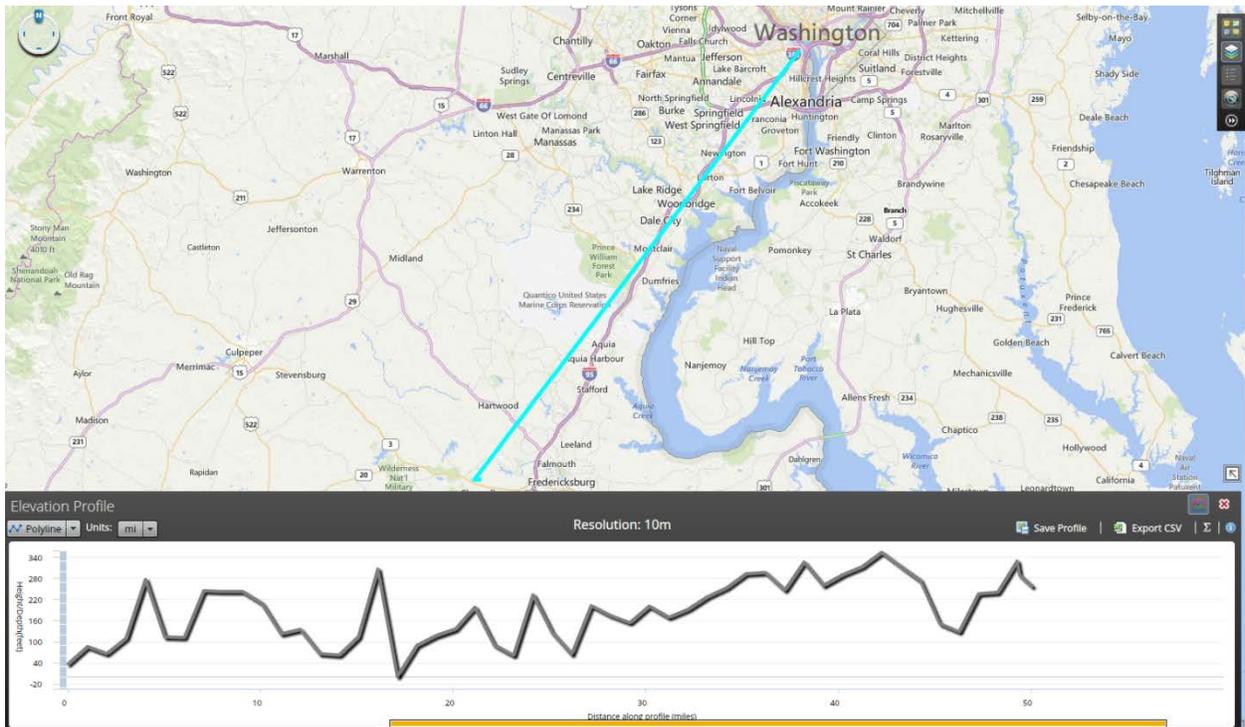


FIGURE 59

ENVIRONMENTAL APP

The Environmental App is designed to help customers involved in the Environmental Business line, in addition to all SimSuite users. The concept behind this app is to provide users with a one stop shop for environmental data available in SimSuite. Layers have been pre-loaded into the app and will be queried based on a selection. To activate the environmental app, navigate to the “Apps” tab inside any viewer. Click the “App Library” tab to enter the library of SimSuite Apps. Scroll down until “Environmental App” is visible. Click the tab to turn the app on. Exit the library and click “Environmental” on the Apps toolbar. The app will appear on the left portion of the screen.

The first step to using the Environmental App is to choose a selections mode. The options in the drop down are: Point, Buffer, Extent Polygon, and Freehand Polygon. Choose a preferred method of selection and zoom into the area of concern on the map. Use the mouse to select the area of data interest based on the chosen selection method. When complete, the application will begin to query the pre-loaded Environmental Data in that area. The available data will appear in the left toolbar like the view of layers in the layer toolbar. From here the data layers can be turned on and off. There is an information tab for each dataset that is represented by a “?”. Click the question mark to get detailed information about the dataset. In addition to viewing the data, it can also be exported to a .shp file. To export, left click the layer and a drop down will appear. Choose “export to SHP”. The data will save as a .zip file.

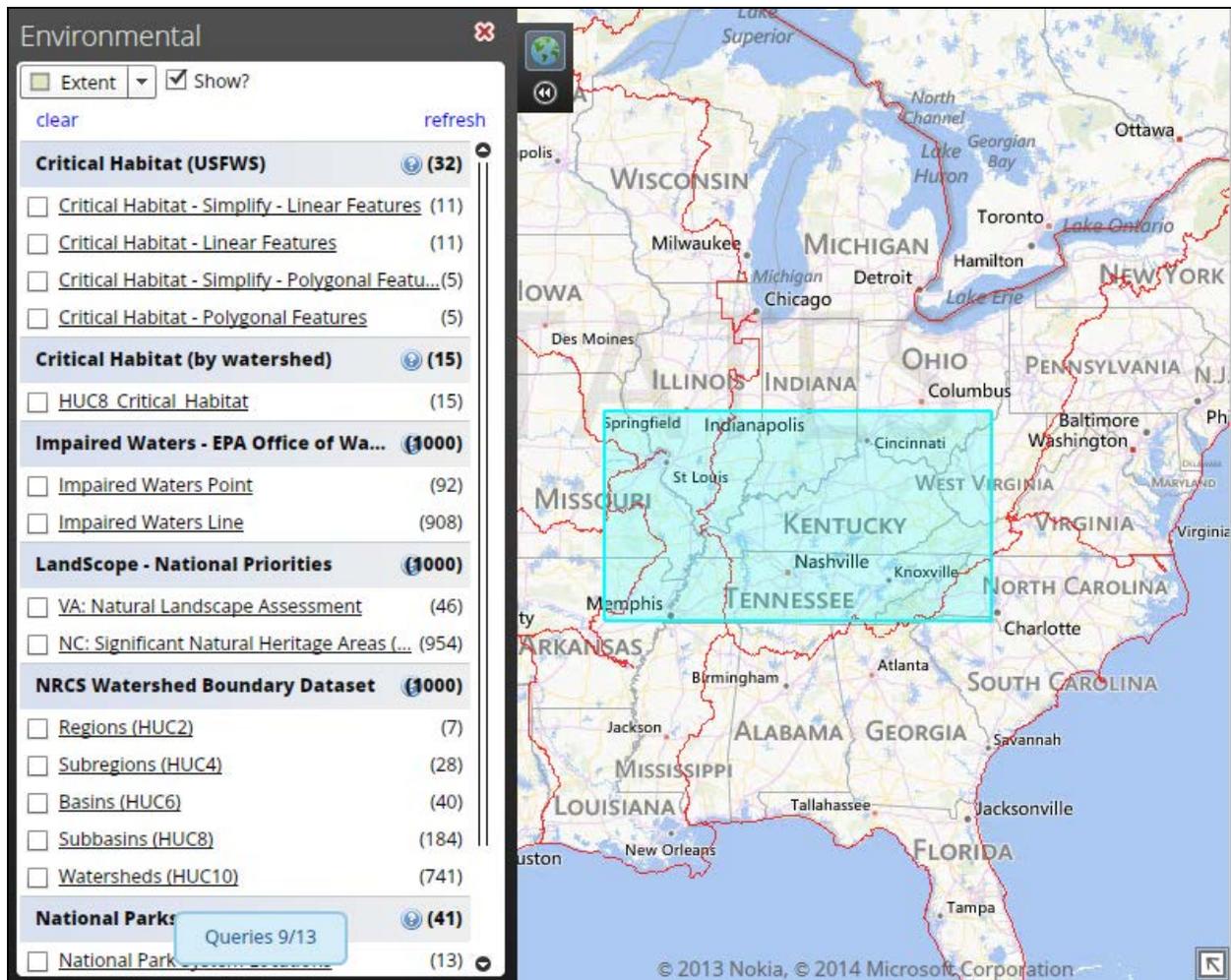


FIGURE 60

PLANNING KICK-START APP

The Planning Kick-Start App was developed to allow users in SimSuite to query a specific set of data and then create a .pdf document showing the data queried at the location on a map. To find the Kick-Start app, navigate to the apps tab and go into the App Library to the “Planning Kick-Start App”. Turn the app on and return to the map. Once selected in the toolbar the app appears on the left side of the screen as is shown on the image below, Figure 61.

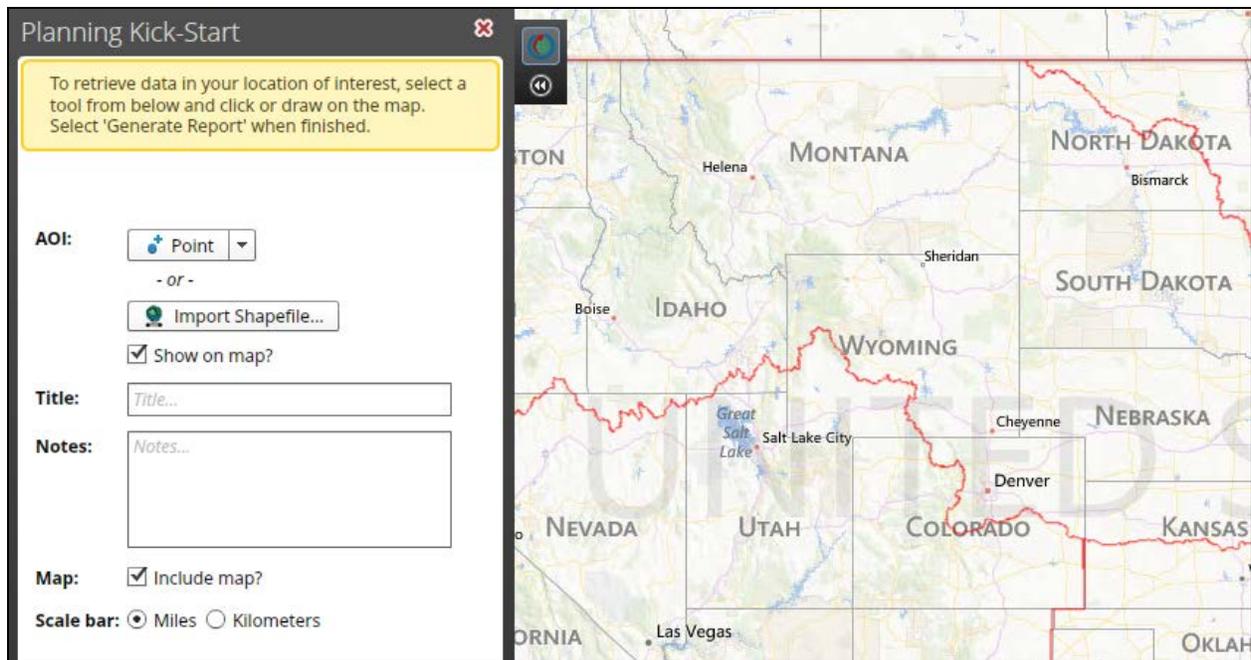


FIGURE 61

The user can now select how to query the data such as, Point, Buffer, Extent, Freehand Polygon, or Import Shapefile. After running the app, the user can use the show on the map function which sets the data to display on the map.. Next the user will enter a title add any necessary notes, click on Include Map, and choose the scale bar reference to miles or kilometers. After all this is complete, return to the AOI selection and choose the query tool to use. In the example below (Figure 62), the Extent was used to perform the query. Select the query area and the app will begin to run. The end result should be similar to the image below.

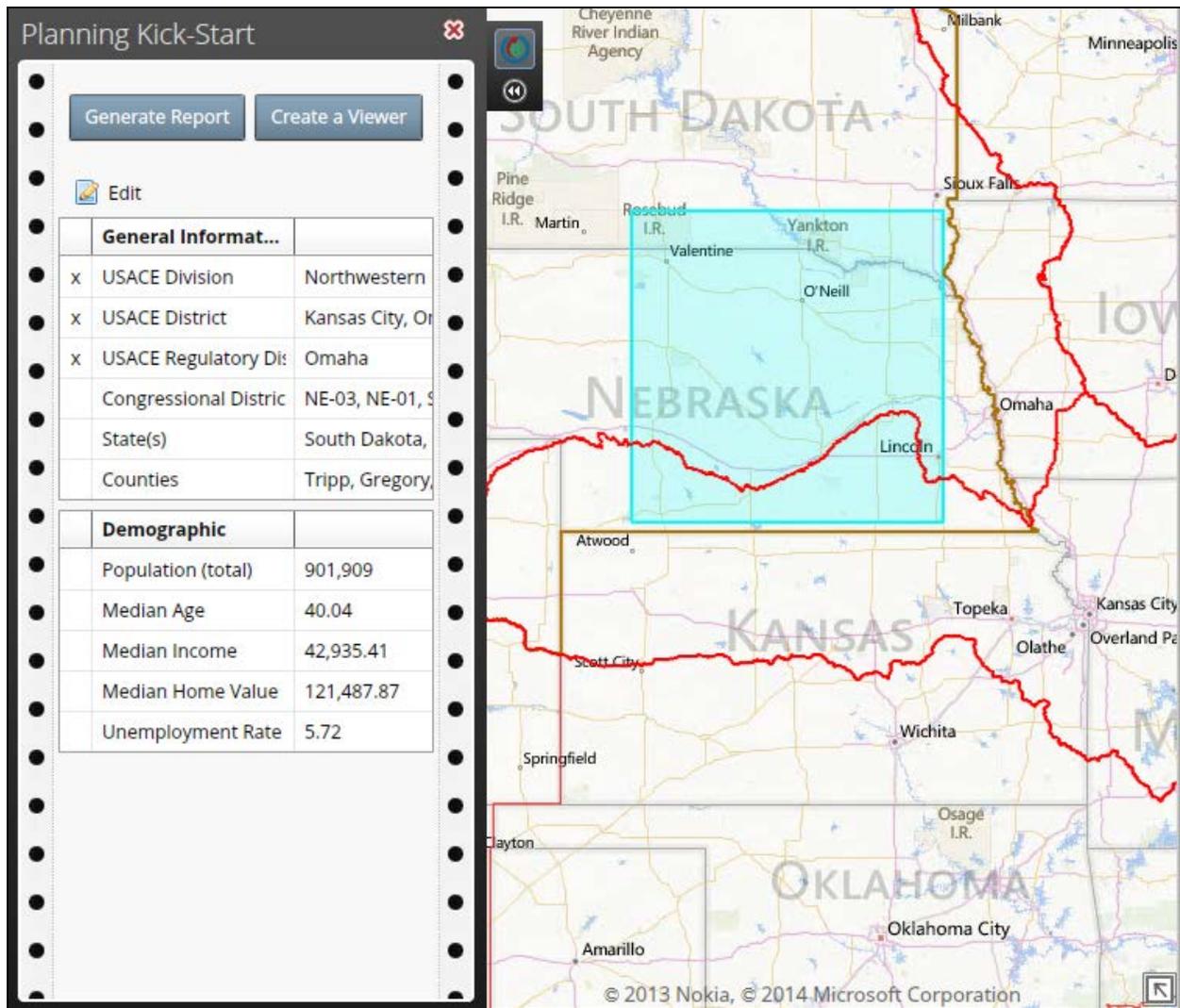


FIGURE 62

After the query finishes and the result displays it is time to generate the report. The edit function can be used to return to the map and perform a new query to change the area. Data can be turned on and off just to the left of the data name. The “X” displayed represents that the layer is currently turned on and viewable on the map. Only data that has an “X” will be displayed on the generated map. When everything is setup select “Generate Report”. The user will be prompted at this time to save the .pdf document. A .pdf report will be generated and saved to the user designated file location. The first page should be similar to the image below, Figure 63. The next two pages of the report contain a map and legend



US Army Corps of Engineers

Project Area:
92,399 sq mi

General Information:

USACE Division	Northwestern Division
USACE District	Kansas City, Omaha
USACE Regulatory District	Omaha
Congressional Districts	NE-03, NE-01, SD-00
State(s)	South Dakota, Nebraska
Counties	Tripp, Gregory, Charles Mix, Turner, Lincoln, Douglas, Hutchinson, Todd, Yankton, Bon Homme, Union, Clay, Keya Paha, Boyd, Cherry, Holt, Knox, Cedar, Brown, Rock, Dixon, Dakota, Pierce, Antelope, Wayne, Thurston, Cuming, Stanton, Madison, Loup, Hooker, Garfield,

FIGURE63

EDDMAPS INVASIVE SPECIES

To access this app, click on Apps then click on App Library and select EddMaps Invasive Species. Once activated (as signified with a green circle) you can close the app library and the app will appear in the list. This app will list the invasive species for the area of interest. Click on the app then choose point, buffer, or extent then click on the map and a list of invasive species will appear to the left as is shown in Figure 64.

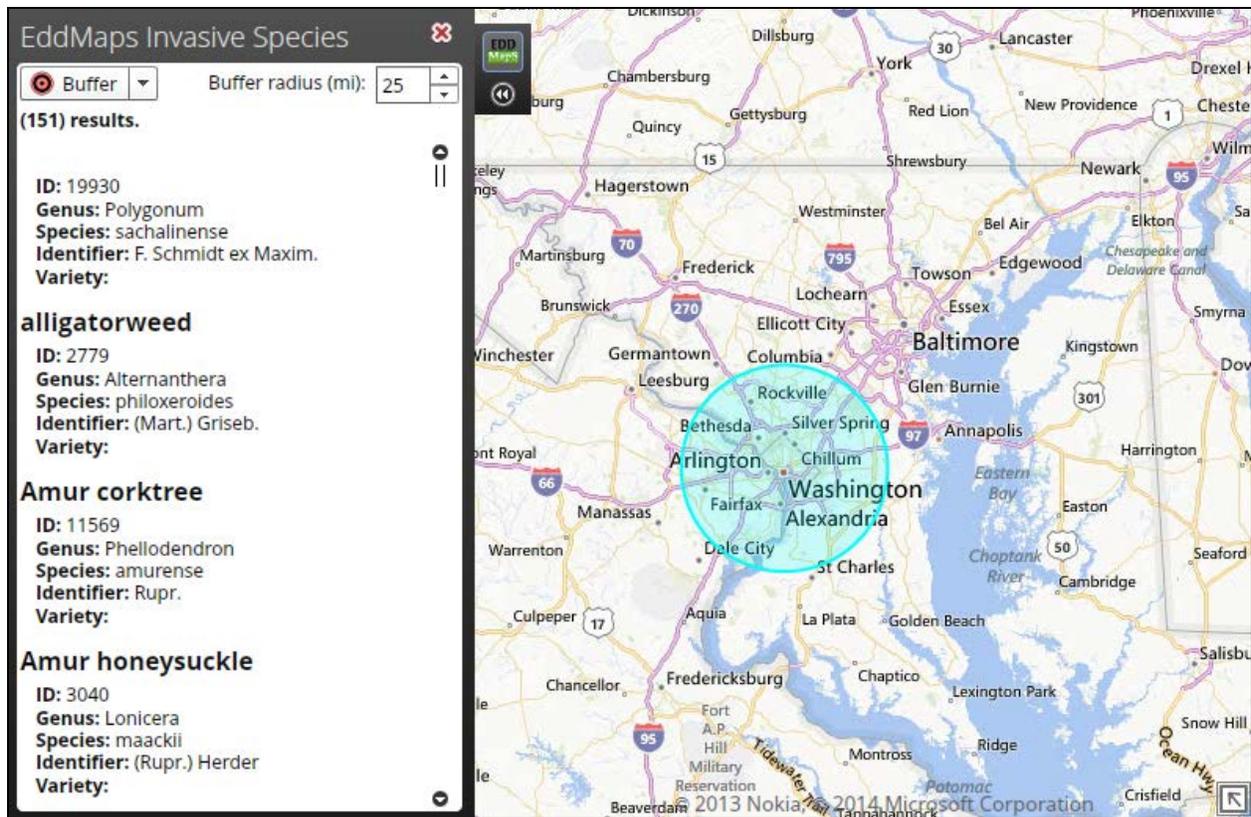


FIGURE 64

HURRICANE FORECAST MODELS

To access this app, click on Apps then click on App Library and select Hurricane Forecast Models. Once activated (as signified with a green circle) you can close the app library and the app will appear in the list. This app provides information on any forecasted storms, simply click on an area on the map, as shown in Figure 65. If no storms are projected at the time the app will state “There are currently no models to display.”

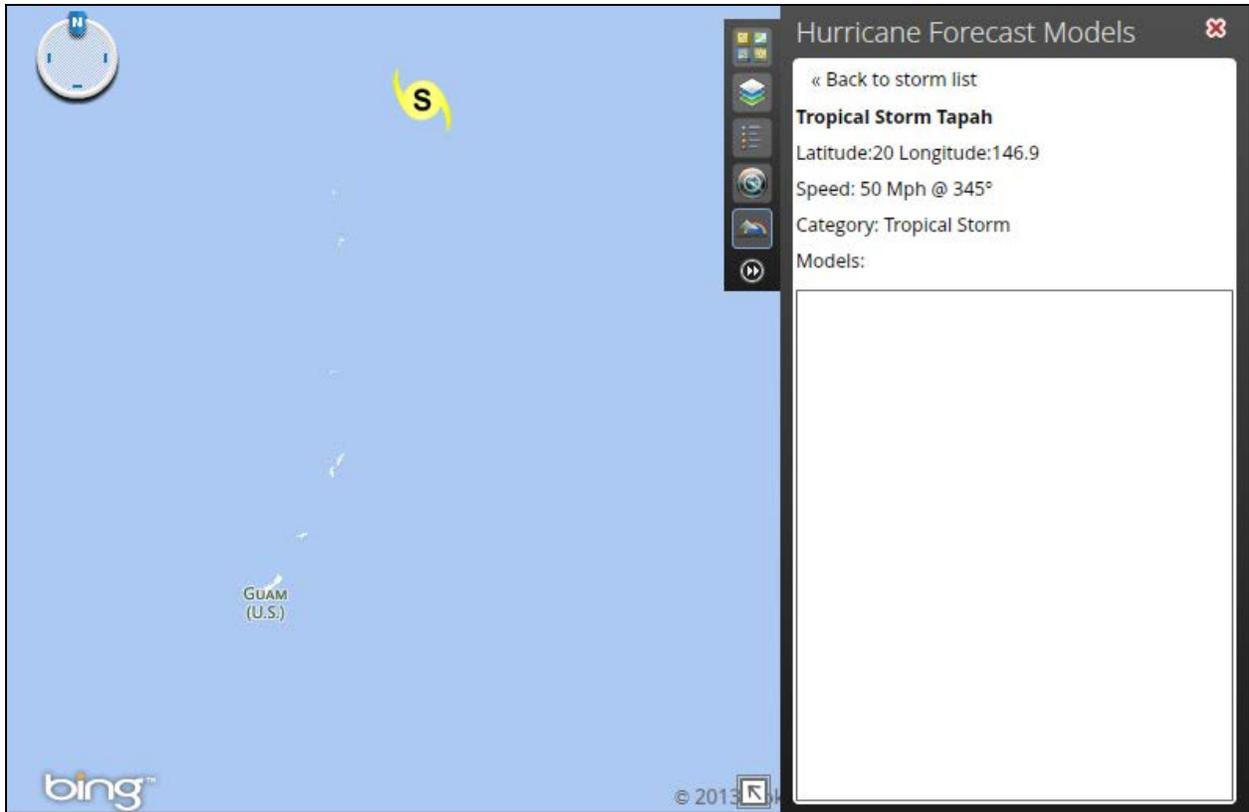


Figure 65

LOCAL STORM REPORTS

This app will pull information from weather reports.

TORNADO IMPACTS

To access this app, click on Apps then click on App Library and select Tornado Impacts. Once activated (as signified with a green circle) you can close the app library and the app will appear in the list. Once the Tornado Impacts App is loaded, navigate to the area of interest on the map. Select “Create” or “Import Shapefiles...” Click an area on the map and double click when the selection is complete.

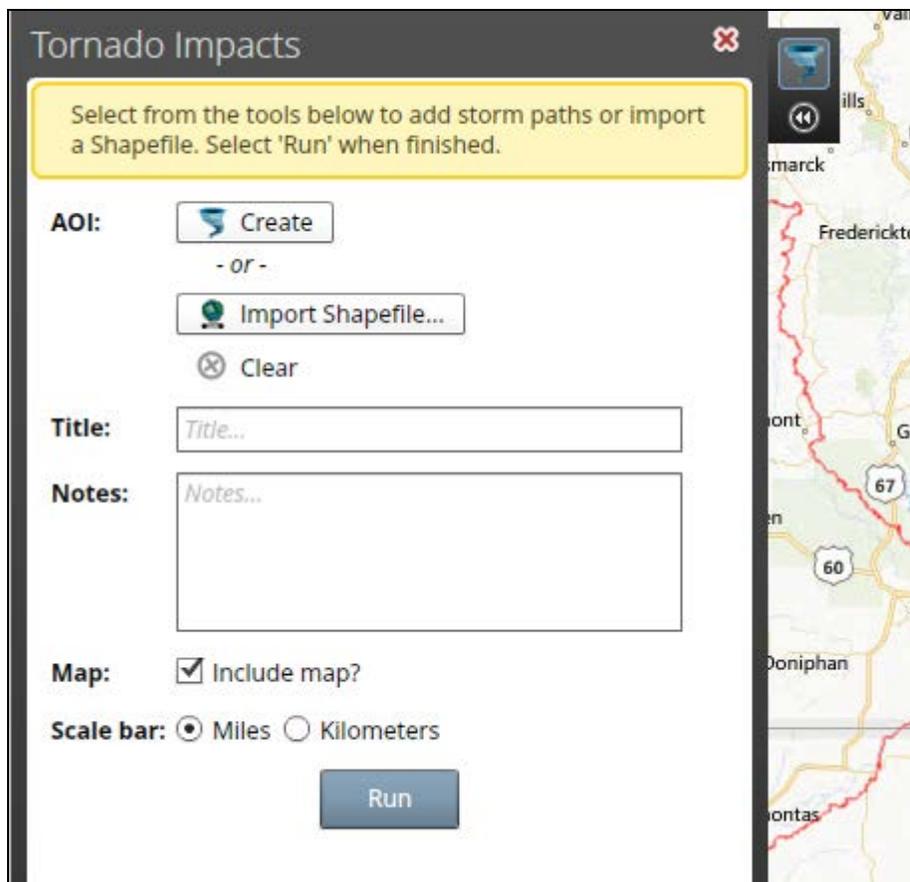


FIGURE 66

A popup box will appear on the screen that will allow the user to designate the type of intensity (i.e, F2, F3, etc) and select a width (miles or kilometers).

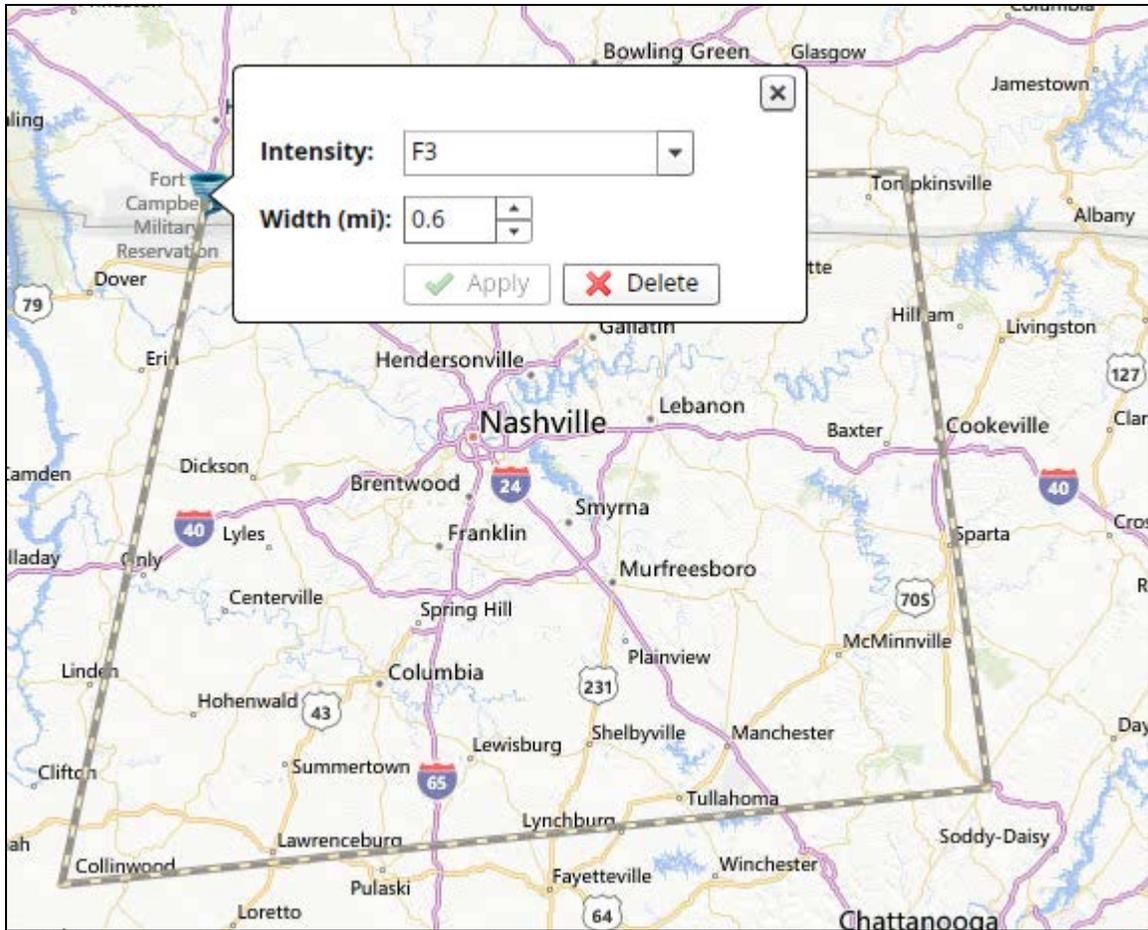


FIGURE 67

Select “Run” to start the App. Depending on how large the area of selection is, it may take a few minutes to gather the data. A blue box will appear at the bottom of the screen that shows how many possible queries are in the selected area.

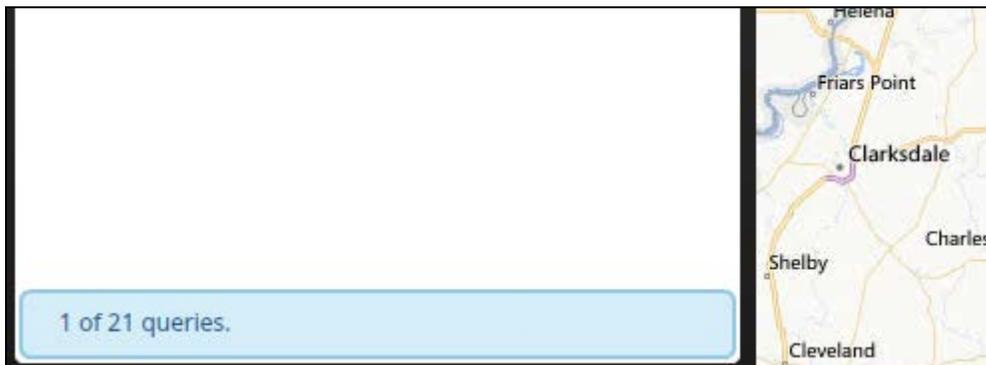


FIGURE 68.

Once SimSuite has completed the query process, the data will be displayed on the left hand side of the screen.

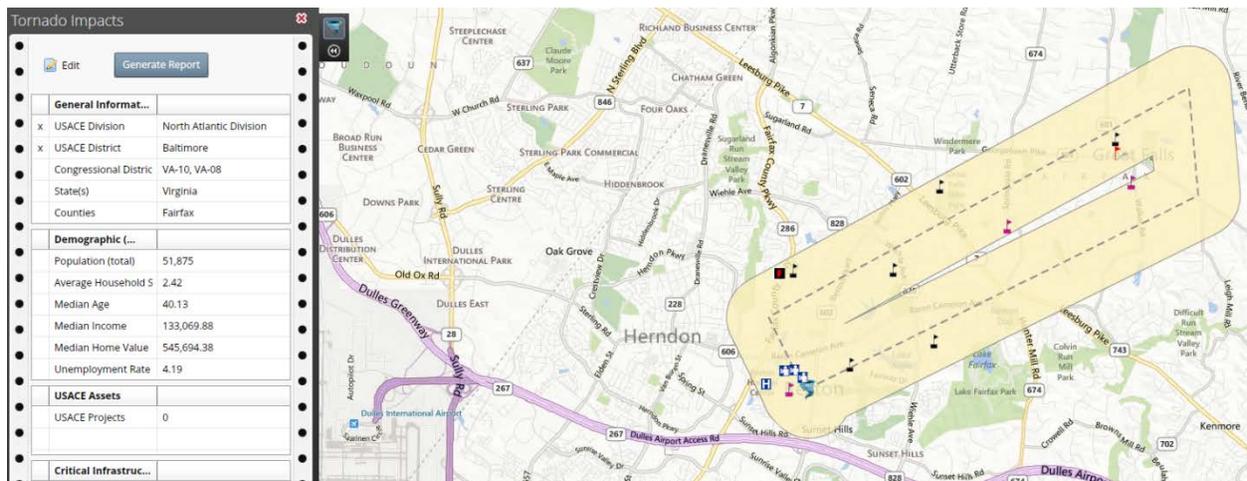


FIGURE 69

SimSuite has the ability to generate a PDF file of the captured data for the area of interest. By selecting “Generate Report”, SimSuite will load all of the information that is displayed on the map into an easy to read document.



US Army Corps of Engineers

General Information:

USACE Division	Great Lakes and Ohio River Division, South Atlantic Division
USACE District	Mobile, Nashville
Congressional Districts	AL-05, AL-04, AL-07, AL-03, AL-02, AL-01, FL-02, FL-01, GA-09, GA-11, GA-03, GA-02, MS-01
State(s)	Alabama, Mississippi, Georgia, Florida
Counties	Lauderdale, Limestone, Tishomingo, Madison, Jackson, Dade, Walker, Colbert, DeKalb, Floyd, Chattooga, Franklin, Cherokee, Itawamba, Marion, Polk, Lamar, Haralson, Carroll, Pickens, Heard, Troup, Sumter, Harris, Lee, Muscogee, Chattahoochee, Russell, Choctaw, Barbour, Henry, Clay, Washington, Covington, Early, Houston, Baldwin, Escambia, Geneva, Mobile, Seminole, Holmes, Walton, Okaloosa, Santa Rosa

Demographic (2012):

Population (total)	404,793
Average Household Size	2.53
Median Age	41.15
Median Income	35,935.29
Median Home Value	120,768.58
Unemployment Rate	12.62

FIGURE 70.

COMMON PROBLEMS / TROUBLESHOOTING

SimSuite is a web-based application. It does not house data as an application; therefore, each time data is queried, the tool pulls data in from external sources. This can cause the tool to seem a bit slow, but it often only needs a few moments to load.

It is possible that after waiting a few moments, the data may still not load as it should. If this occurs, there are a couple of steps to take prior to contacting the web master that may fix the problem.

First, check to see if the layer being applied is in grayed out font, or in the darker font all other text is in. If the font is gray, it means you are trying to view the data from too far out. Zoom in to the necessary level of closeness on the map, the layer title should then change color and begin to display data on the map.

If the viewer layer you are trying to access is not grayed out, then there are several other steps to take to see if the data will reload. These include the following:

- Refresh your browser page.

- Clear the history of your browser.
- Check the browser that is running the application.

If refreshing the page, refreshing your cache, and removing webpage history does not help display the data. Check to see which browser is being used. U.S. Army Corps of Engineers computers typically have Internet Explorer 9 (IE9) and sometimes FireFox. It is possible that an update has been pushed through for IE9 and that SimSuite has not synced yet. If this is the case, the problem will be widespread and should be resolved shortly. Adobe Flash is necessary to run SimSuite. FireFox on USACE computers does not always have Flash enabled, which will not allow the map to load properly.

In summary, if you are having issues with viewing SimSuite, try some of the following mitigation steps:

- Check what browser you are using.
- Refresh the webpage.
- Clear browser history/cache.
- Zoom in on the map.

If these steps do not help, contact the webmaster using the Contact Us link at the top right of the main SimSuite page.

Some viewers on SimSuite have apps that can be applied. If these specific apps are not functioning correctly, it may be necessary to contact the specific provider. For example, for issues with Nature Serve login, the user may need to contact Nature Serve directly. Prior to contacting a specific provider, it is recommended to go through the Contact Us link so all issues are documented and resolved through the proper chain of command.