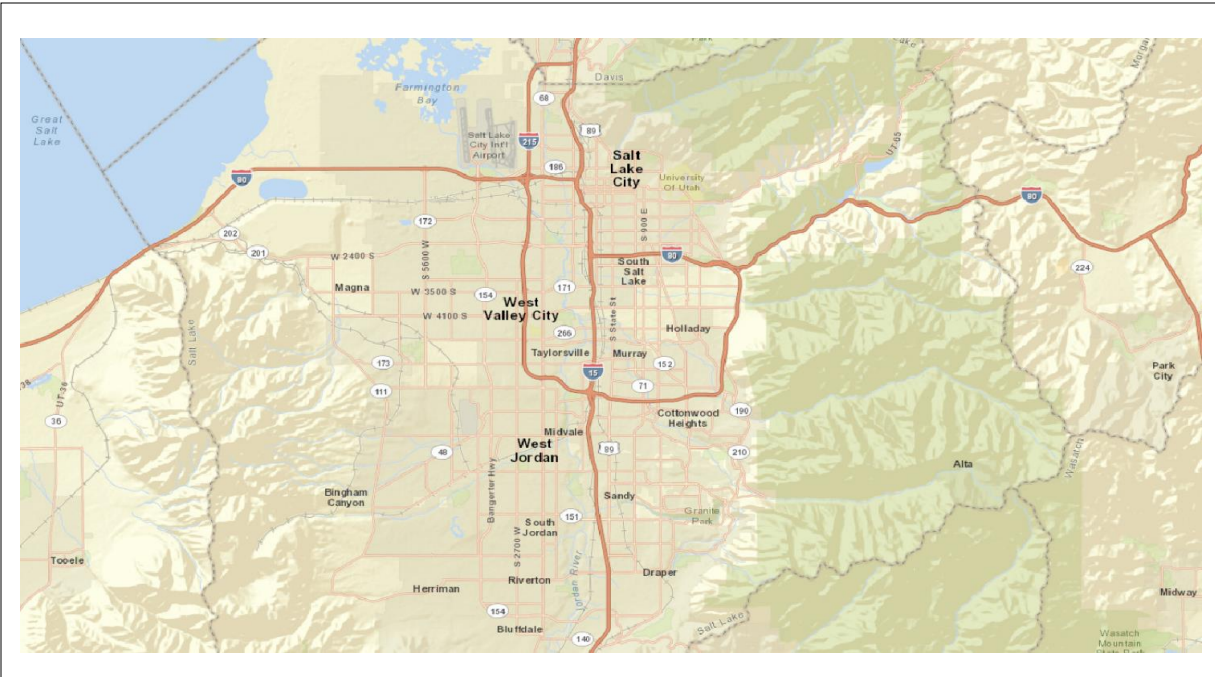


SMS 13.1 Tutorial

Online Data – Dynamic Images



Objectives

This tutorial instructs on the basic skills concerning how to use the dynamic image option offered by SMS. This option connects SMS through an internet connection to a web-based program that allows accessing satellite photographs easily and quickly.

Prerequisites

- None

Requirements

- Internet Connection

Time

- 15–30 minutes

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1 Introduction

The Dynamic Image option adds an easier way to obtain images from the internet to use as backgrounds for SMS projects. SMS is able to connect to online resources and retrieve selected photographs or maps of just about any location desired. It is important to note that when using online maps, an internet connection must be maintained while working on the project, as the images imported from Online Maps are dynamic, and rely on an internet connection.

2 Importing a Dynamic Image Aerial Photo

A Dynamic Image aerial photo can be imported into SMS as an image to serve as a background for a project. This section shows how to import and save an aerial photo.

2.1 Selecting the Location of the Aerial Photo

First, open a new project in SMS by doing the following:

1. Select *File* | **New**.

This deletes all information from SMS and gives a fresh screen.

2. If asked to save data, click **No**.
3. Select *File* | **Add Online Maps...** to open the *Virtual Earth Map Locator* dialog (Figure 1).
4. In the Search section, enter “Utah” as the *Place to search for* and click **Jump to Search Location**.
5. Select “Imagery” from the drop-down at the top right of the map.
6. Click **OK** to exit the *Virtual Earth Map Locator* dialog.

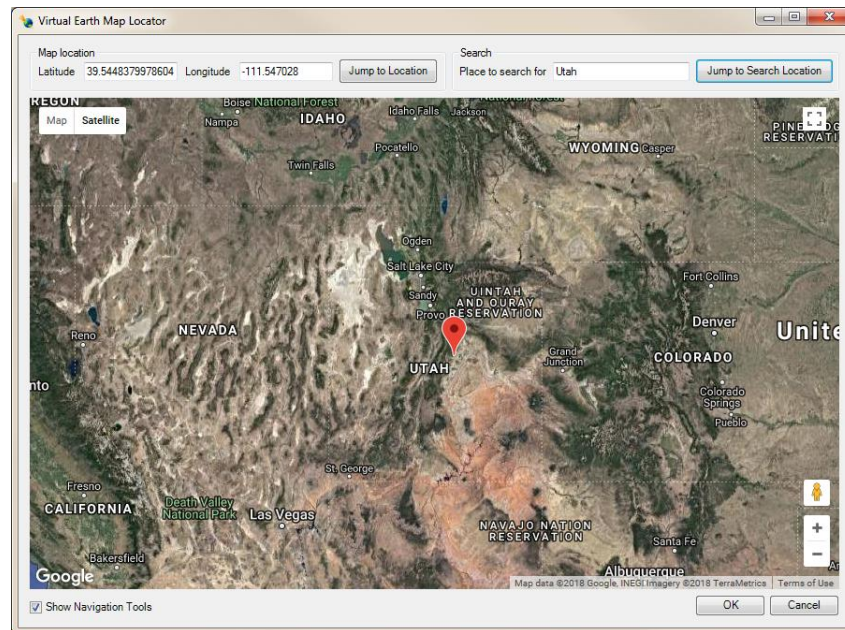


Figure 1 Virtual Earth Map Locator dialog

7. Click **OK** when advised a new projection needs to be set. The *Display Projection* dialog will appear.
8. Click **OK** to accept the defaults, close the *Display Projection* dialog, and bring up the *Get Online Maps* dialog (Figure 2).

The *Get Online Maps* dialog gives a few different options on what type of image to look for. Depending on the option selected, it may take longer to retrieve the image due to resolution of the image(s).

9. For this tutorial, select “World Street Map” (Figure 2) and click **OK** to close the *Get Online Maps* dialog.

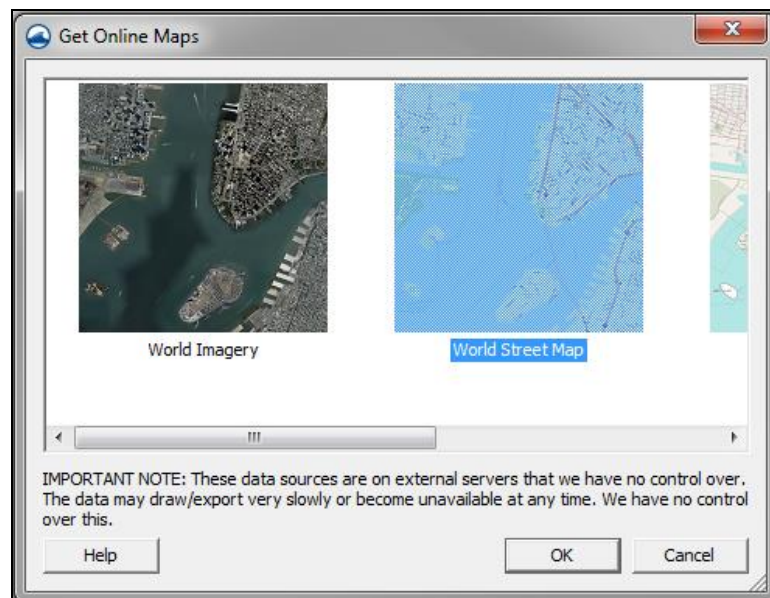




Figure 2 Get Online Maps dialog

SMS may take a few minutes to retrieve the image (indicated by the “(processing)” next to “ GIS Data” in the Project Explorer), depending on the available connection speed. Once the image has finished loading, it will appear in the Main Graphics Window.

10. Using the **Zoom**  tool, drag a box around the area marked “Salt Lake City” on the map.



While SMS processes the request for a closer view, “(processing)” will appear again next to “ GIS Data” in the Project Explorer. This indicates that SMS is retrieving updated data from the World Street Map database. Once SMS is done processing, the Graphics Window should appear similar to Figure 3.




Figure 3 World Street Map of Salt Lake City and the surrounding area

2.2 Saving the Image

Once the particular region desired is located, it is possible to make this image a static image to use as a background image for the project by doing the following:

1. Right-click “ World Street Map” and select **Export...** to bring up the *Resample and Export Raster* dialog.
2. Enter “2” as the *Resampling ratio*.
3. Turn on *Add to project after saving*.
4. Click **OK** to close the *Resample and Export Raster* dialog and bring up the *Save As* dialog.
5. Browse to the *data files* folder for this tutorial.
6. Select “Geo TIFF Files (*.tif)” from the *Save as type* drop-down.
7. Enter “World_Imagery.tif” as the *File name*.
8. Click **Save** to close the *Save As* dialog.

SMS will then save the image as a TIFF file. This may take a few minutes, depending on the speed of the computer being used and the speed of the internet connection. Once SMS

is finished saving the image file, “ World_Imagery.tif” will appear in the Project Explorer.

3 Importing a World Topographic Image

A topographic image can be imported into SMS to serve as a background for a project. This section provides instruction on how to import and save a topographic image.

3.1 Selecting the Location for the Topographic Image

Open a new project in SMS by doing the following:

1. Press *Ctrl + N* to create a new SMS project.
2. If asked to save changes, click **Don't Save**.
3. Select *File | Import from Web...* to bring up the *Virtual Earth Map Locator* dialog.
4. In the *Search* section, enter “Hampton Bays, New York” as the *Place to search for*.
5. Click **Jump to Search Location** to zoom in on Shinnecock Bay.
6. Center the bay in the window and zoom in to a comfortable view where the entire bay fits the screen nicely (Figure 4).
7. Click **OK** to close the *Virtual Earth Map Locator* dialog.

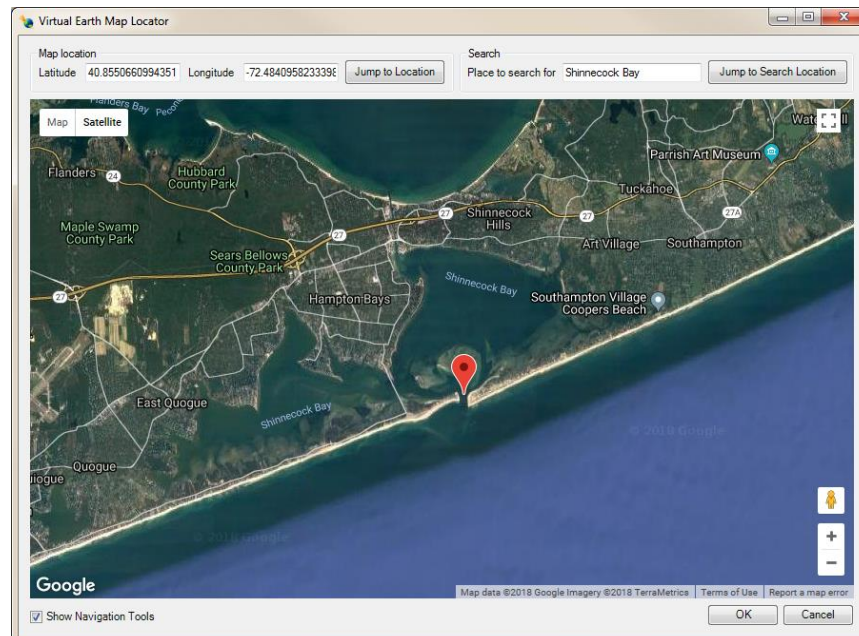


Figure 4 Shinnecock Bay in the Virtual Earth Map Locator dialog

8. Click **OK** when advised a new projection needs to be set. The *Display Projection* dialog will appear.

- Click **OK** to accept the defaults, close the *Display Projection* dialog, and bring up the *Data Service Options* dialog

3.2 Saving the Image

The *Data Service Options* dialog allows selection of the type of map desired for a background image in the project.

- Select “World Topo Map” from the horizontal list of *Web Services* (Figure 5).

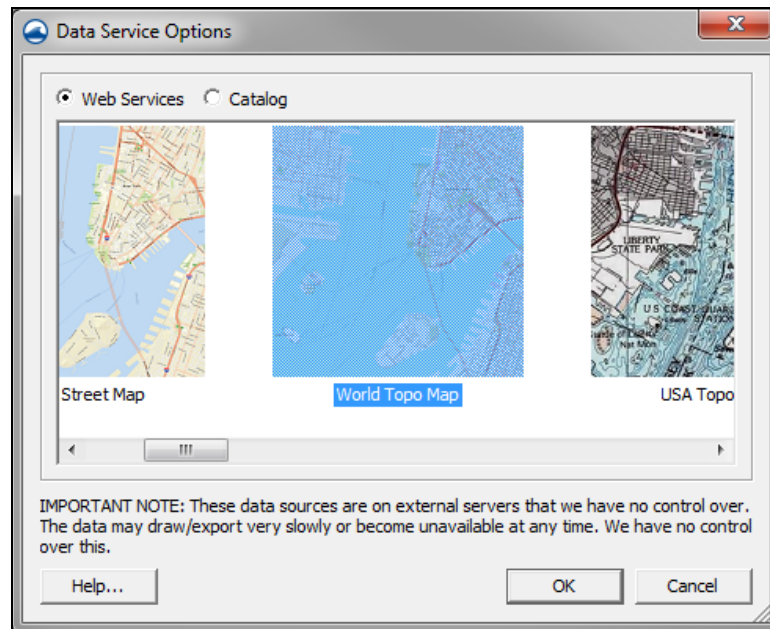




Figure 5 Data Service Options dialog

- Click **OK** to close the *Data Service Options* dialog and open the *Save Web Services Data File(s)* dialog.
- Browse to the *data file* folder for this tutorial.
- Select “Web Services Files (*.tif;*.gml;*.zip)” from the *Save as type* drop-down.
- Enter “shinnecock_bay” as the *File name*.
- Click **Save** to close the *Save Web Services Data File(s)* dialog.
- When asked to create the file (the full path to where the file will be saved will appear), click **Yes** to bring up the *Raster Cell Size* dialog.

Please note that since this file is a topographical image, it ends with the extension “*.gm_w_topo.web.tif.” The other image types have their own unique file extensions to help differentiate between them all.

The *Raster Cell Size* dialog asks the scale (in arc degrees) at which to save the file. There will be a suggested scale already given in the dialog, but a different scale can be selected if desired. Remember that the lower the scale, the more detailed the image will be, and the more time it will take to save.



- Accept the default scale and click **OK** to exit the *Raster Cell Size* dialog.

SMS will create the file and import it as “ shinnecock_bay_w_topo.tif” under the “ GIS Data” folder in the Project Explorer.

Notice that by zooming in on the image, it appears pixelated (blurry) because it has already been converted into a static image. This is a significant difference between the **Import from Web** and **Get Online Data** commands.

4 Changing the Display Order

Images are displayed in the order they are loaded into the Project Explorer, with images on top getting drawn last.

1. Right-click on “ shinnecock_bay_w_topo.tif” and select **Remove** to delete the image.
2. Click **Yes** to delete the selected image.
3. Click **Open**  to bring up the *Open* dialog.
4. Browse to the *data files* folder for this tutorial and select “Aerial_Map.tif” and “Street_Map.tif” by pressing the *Shift* key when selecting them.
5. Click **Open** to import the images and exit the *Open* dialog.

The project should appear similar to Figure 6.





Figure 6 An aerial map and a street map overlaid

These images are samples of two maps obtained from different online databases. “Aerial_Map.tif” was obtained using the “World Imagery” option and the “Street Map.tif” came from using the “World Street Map” option in the *Get Online Maps* dialog.


6. In the Project Explorer, under “ GIS Data”, drag “ Aerial_Map.tif” so that it is underneath “ Street_Map.tif”.

Notice that the aerial photo is no longer visible in the Graphics Window.

7. Return “ Aerial_Map.tif” to the top by dragging it in the Project Explorer so that it is above “ Street_Map.tif”.

5 Transparency

The transparency of online maps can be set just as it can with normal images.

1. Right-click on “ Aerial_Map.tif” in the Project Explorer and select **Transparency...** to bring up the *Layer Transparency* dialog.
2. Use the slider to change the transparency to “40%” and click **OK** to close the *Layer Transparency* dialog.

The Street Map image is now bleeding through the Aerial image (Figure 7).

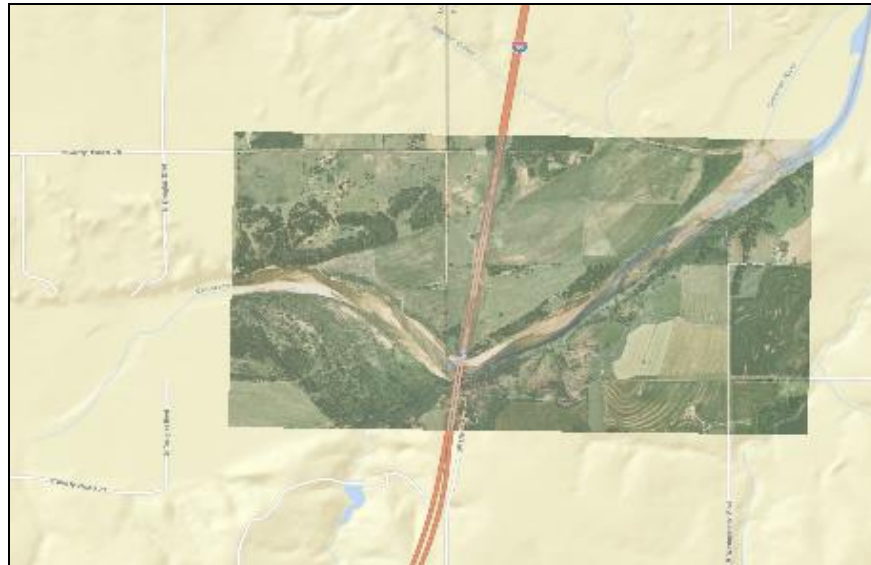


Figure 7 Example of a layer transparency applied to an image

6 Conclusion

This concludes the “Online Data” tutorial. Continue to experiment with this part of SMS or continue on to the next tutorial.