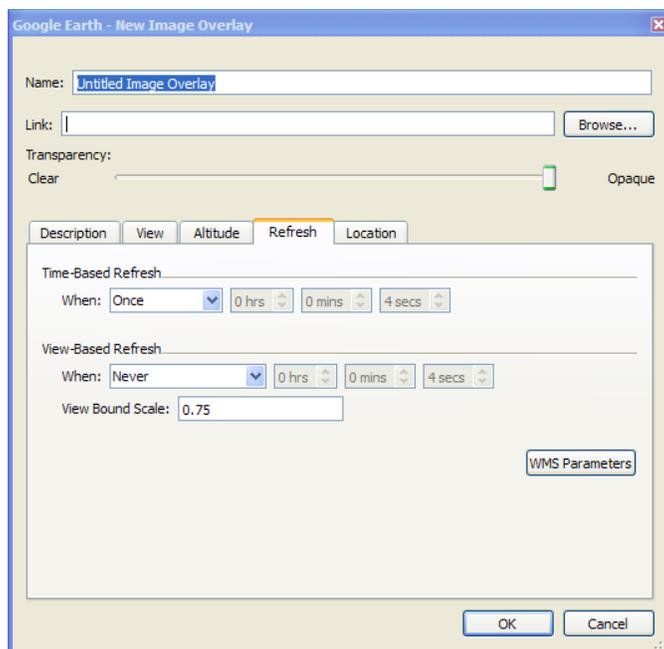
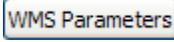


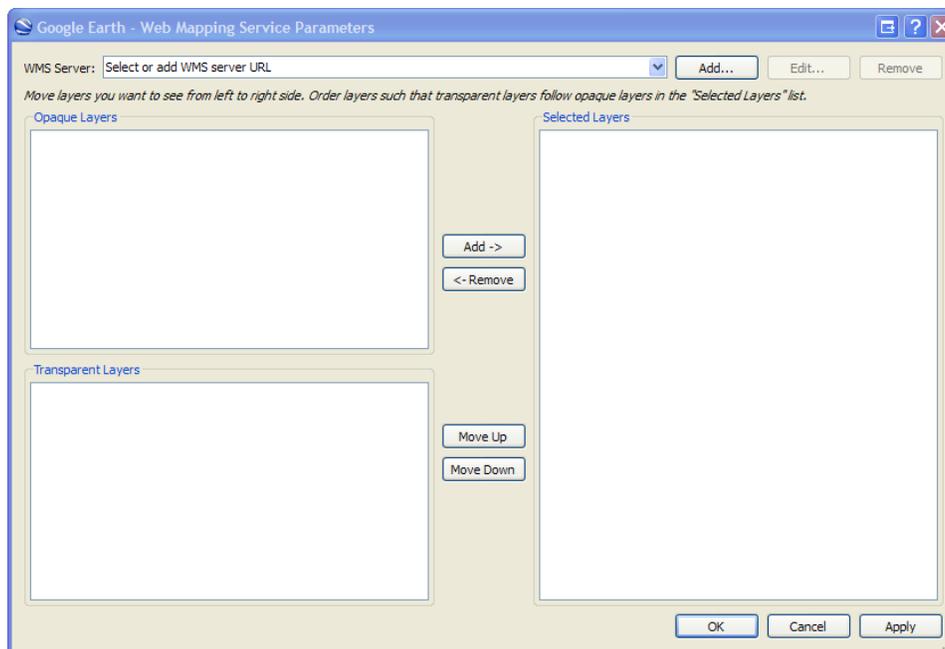
## MarylandView Consortium

### Steps to View Overlays in Google Earth

- 1) Download and install the latest version (5.2) of Google Earth. Once it is installed, open Google Earth
- 2) Choose where you want to add USGS layers in the Places panel (left side of Google Earth window). For this tutorial, we will be adding U.S. Geological Survey National Land Cover Data (NLCD) layers to **My Places**. To select My Places, click on the words “My Places” and it should become highlighted in blue.
  - a) Deleting the “Sightseeing” place is recommended for this tutorial. You can do this by right-clicking on the word “Sightseeing” in the Places panel and clicking “Delete.”
- 3) Right click on **My Places**, hover your cursor over **Add**, and then click on **Image Overlay**. You can also click the **Add Image Overlay** icon (  ) at the top of the screen, or you can use the Add > Image Overlay dropdown menu.
- 4) A window titled **Google Earth – New Image Overlay** should open. Click the “Refresh” tab:



- 5) Click the  button. You should now see this screen:



6) Click the  button at the top of the screen.

7) Enter URL from USGS Cumulus portal. In this case, use:

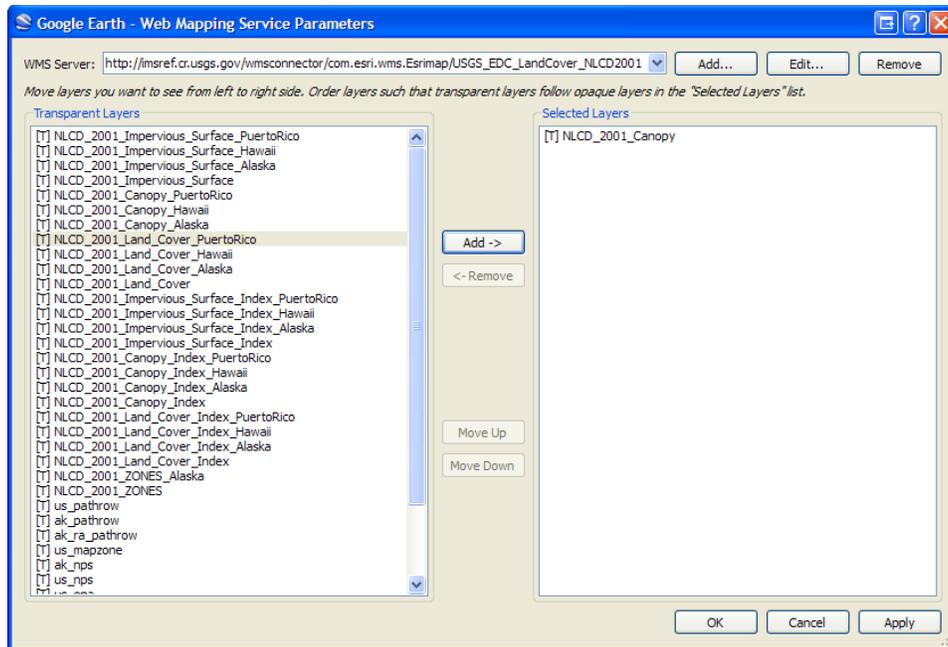
[http://imsref.cr.usgs.gov:80/wmsconnector/com.esri.wms.Esrimap/USGS\\_EDC\\_LandCover\\_NLCD2001](http://imsref.cr.usgs.gov:80/wmsconnector/com.esri.wms.Esrimap/USGS_EDC_LandCover_NLCD2001)

Click the  button.

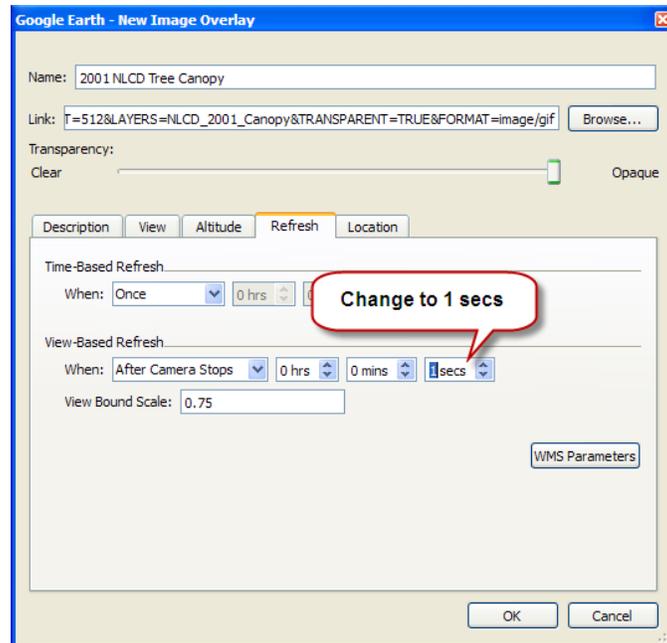
8) The left side of the “Web Mapping Service Parameters” dialogue box should have a frame labeled **Transparent Layers**. This frame should now be populated with layers. Click on a layer to select it. In this case, we will select:

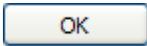
a) [T] NLCD\_2001\_Canopy (**do not** select the Canopy\_Index layer).

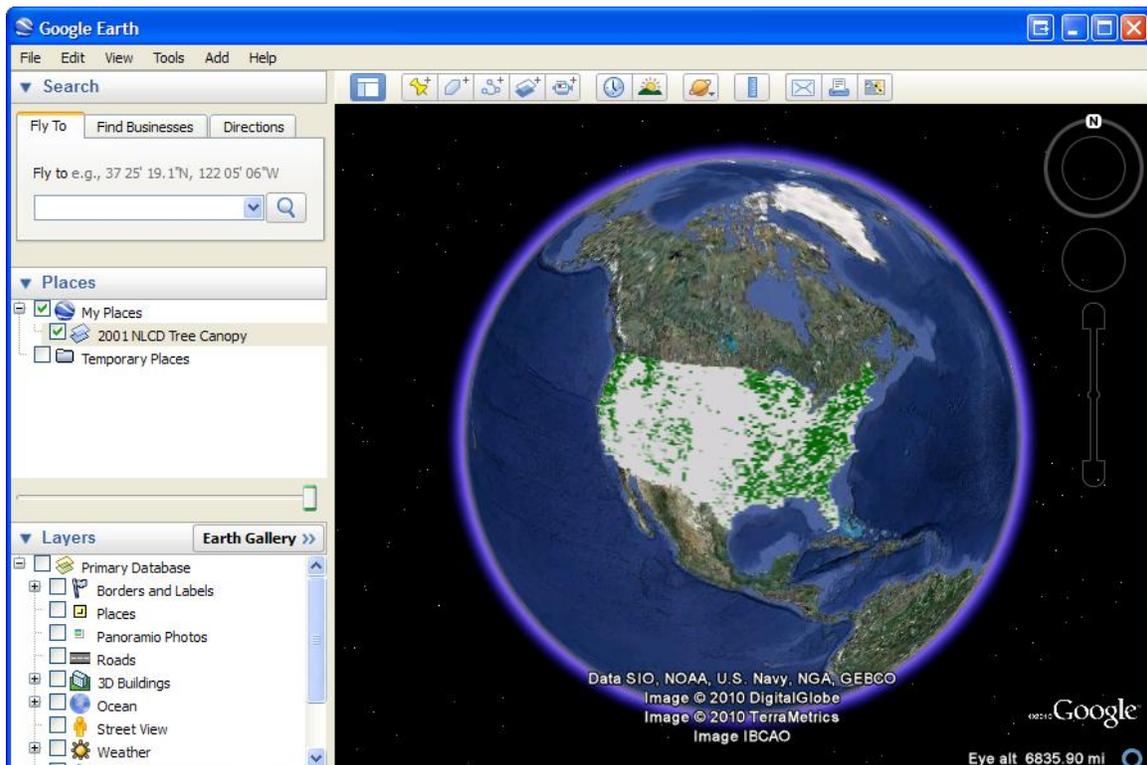
9) When you click on the layer, it should become highlighted. Click the  button in the center of the screen to add the layer to the **Selected Layers** frame. Your screen should look something like this:

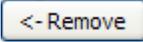
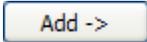
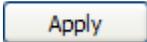


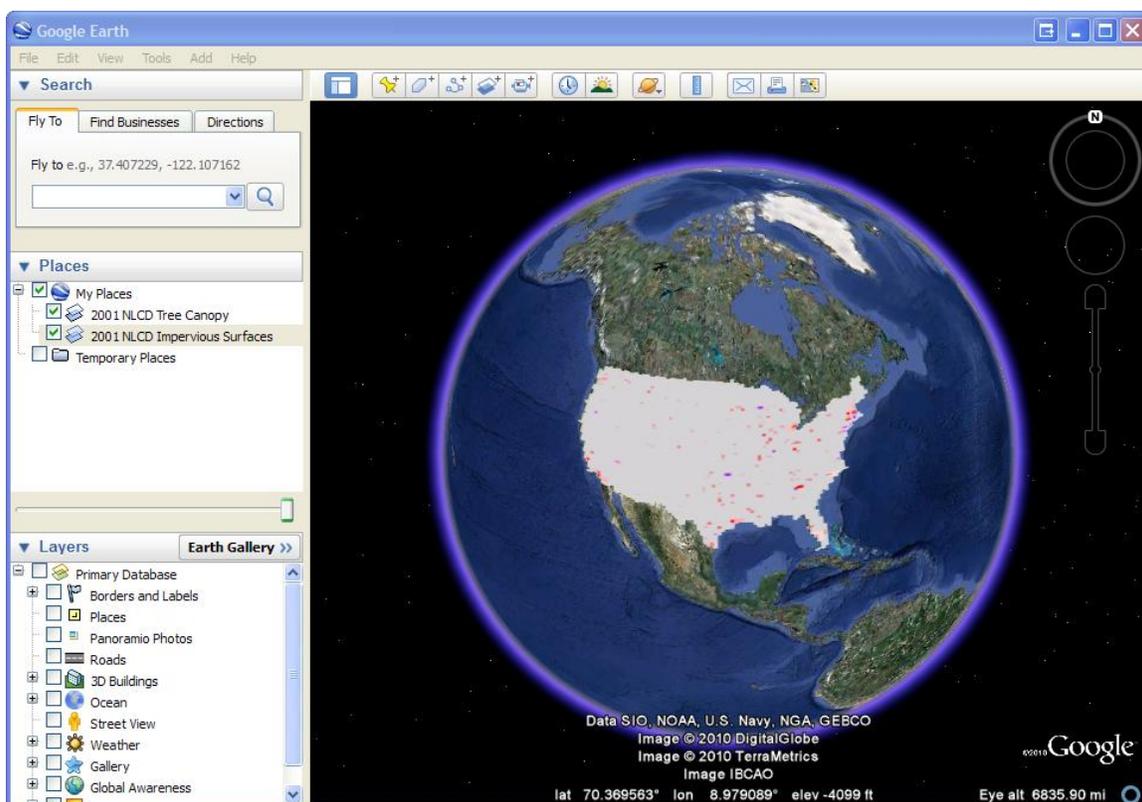
- 10) Click the  button at the bottom right corner of the screen.
- 11) Click the  button.
- 12) Now you should be back to the "New Image Overlay" dialogue box. The "Name" field should say "Untitled Image Overlay." Change this to something that described the layer you just chose to add to the globe. In this case, we will type in "2001 NLCD Tree Canopy."
- 13) In the **Refresh** tab, find the options for **View-Based Refresh**. Change the parameters from "4 secs" to "1 secs". Your screen should look something like this:



- 14) Click the  button.
- 15) In the “Places” frame on the left side of your screen, you should now see a layer named “2001 NLCD Tree Canopy” underneath “My Places.” You should also see a green and white overlay that covers the contiguous 48 states of the United States:



- 16) To add more layers, right click on “My Places,” hover your cursor over “Add,” and click on “Image Overlay.”
- 17) Click the **Refresh** tab.
- 18) Click the  button.
- 19) You should be back at the “Web Mapping Service Parameters” dialogue box. The Canopy layer should still present in the “Selected Layers” frame on the right side of the dialogue box. Remove it by clicking on it and then clicking the  button.
- 20) Find a new layer to add from the “Transparent Layers” frame on the left side of the dialogue box and click on it. In this case, select:
  - a)  [T] NLCD\_2001\_Impervious\_Surface (again, make sure you are **not** selecting the Impervious\_Surface\_Index layer)
- 21) Click the  button in the center of the screen.
- 22) Click the  button.
- 23) Click the  button.
- 24) Now you should be back to the “New Image Overlay” dialogue box. The “Name” field should say “Untitled Image Overlay.” Change this to something that described the layer you just chose to add to the globe. In this case, we will type in “2001 NLCD Impervious Surfaces.”
- 25) In the **Refresh** tab, find the options for **View-Based Refresh**. Change the parameters from “4 secs” to “1 secs”.
- 26) Click the button labeled “OK.”
- 27) In the “Places” frame on the left side of your screen, you should now see both the Tree Canopy and Impervious Surfaces layers underneath of “My Places.” You should also see a new white, red, and purple overlay on top of the contiguous states of the United States.
  - a) If you would like to add more layers to the map, repeat steps 15 through 24 for each additional layer you want to add.
- 28) The layer that you added most recently--in this case, the Impervious Surfaces layer--should now be the layer that you see on the globe:



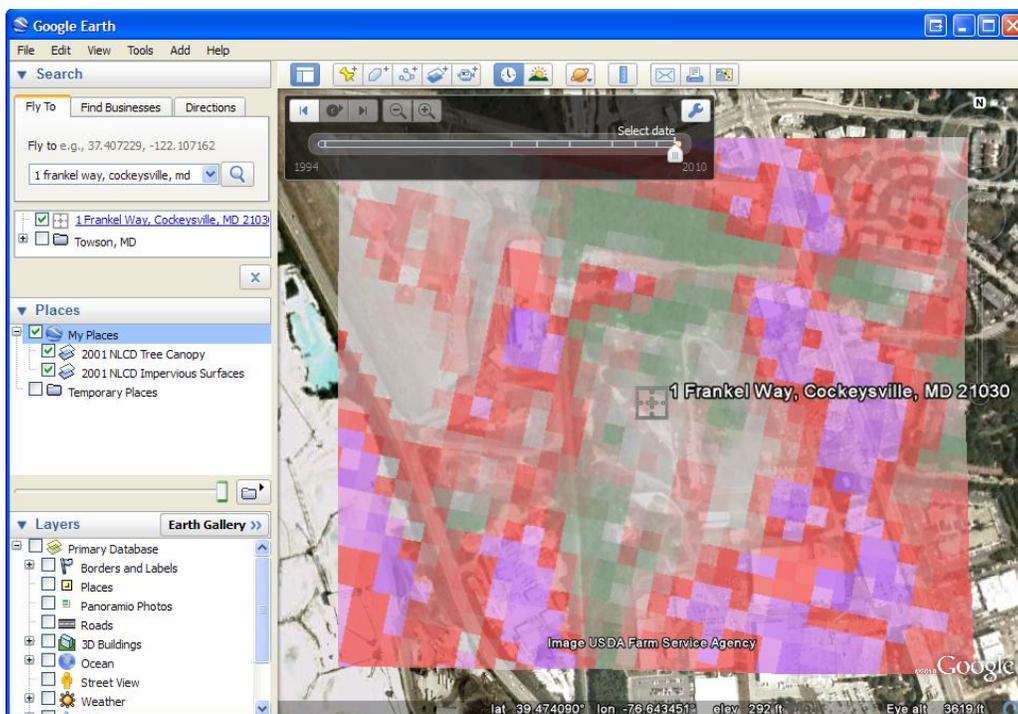
- 29) Both layers should both have a green checkmark in the checkbox (  ) next to them in the “Places” panel.
- a) Clicking a layer’s checkbox will either add the layer to the globe or remove the layer from the globe. In our case, both layers have been added to the globe and their checkboxes are checked, but the Impervious Surfaces layer has been placed on top of the tree canopy layer because we clicked  in step 22.
- 30) To see the Tree Canopy layer once again, click the Impervious Surfaces checkbox. This should “uncheck” the checkbox and remove the Impervious Surfaces layer from the globe. To add the Impervious Surfaces layer back to the globe, click the empty checkbox and the Impervious Surfaces layer will reappear over top of the Tree Canopy layer.
- a) The order of the layers in the My Places panel does NOT indicate the order of the layers on the globe. Google Earth has a slightly different behavior than you may be used to with other GIS programs: the layer checkbox that you most recently “check” will become the topmost visible layer on the globe. TRY THIS:

- 1) Uncheck both layer checkboxes. Neither layer should be visible on the globe.
  - 2) Check the Impervious Surfaces checkbox. You should now see the Impervious Surfaces layer on the globe.
  - 3) Check the Tree Canopy Checkbox. You should now see the Tree Canopy layer and not the Impervious Surfaces layer.
  - 4) Uncheck the Impervious Surfaces checkbox. Your view of the globe should not change.
  - 5) Check the Impervious Surfaces checkbox. The Impervious Surfaces layer should now be the topmost visible layer.
- 31) In the “Search” panel on the top left side of your screen, type “Towson, MD” into the “Fly To” field and click the Search Button (it is the button with the magnifying glass on it, and should look like this:  ). The “camera”--your point of view--should zoom in to Towson, MD. Wait a few seconds after the camera stops moving for the image layers to refresh to fit the new zoom level.
- 32) You should now see the Impervious Surfaces layer on top of the default Google Earth satellite imagery, but you should be unable to see the Tree Canopy layer or any satellite imagery underneath the Impervious Surfaces layer.
- 33) To see both layers simultaneously, you can adjust the transparency of the layers by using the Transparency Adjustment slider on the left side of your screen, below the Places panel and above the Layers panel:



- 34) Highlight the Impervious Surfaces layer by clicking on the label, which should read “2001 NLCD Impervious Surfaces.”

- 35) Use the Transparency Adjustment slider to increase the transparency of the layer. The slider's default position should be all the way to the right – this means the layer is completely opaque. Click and hold the slider and drag it all the way to the left. The Impervious Surfaces layer should now be completely transparent and you should clearly see the Tree Canopy layer.
- 36) Click and drag the slider to the middle of the slider bar, which should be somewhere between completely transparent and completely opaque. You should now be able to see both layers at once, but you still cannot see through the layers to see the satellite imagery below them.
- 37) Repeat steps 29 through 31 for the Tree Canopy layer. Once you are finished, you should now be able to see both layers as well as the satellite imagery of the Earth beneath the layers.
- 38) In the “Search” panel on the top left side of your screen, type “1 Frankel Way, Cockeysville, MD” into the “Fly To” field and click Search () button. The camera should shift northwest and focus on what appears to be a wooded area located in between highly impervious areas.
- 39) The default Google Earth satellite imagery is “the best available imagery,” but is not always the most up-to-date imagery that you have available to you. In our case, the default satellite imagery is from 2005. Google Earth includes access to historical imagery, which includes imagery from the past as well as the most up-to-date imagery for all locations. For our location, a lot may have changed since 2005. To find out if any changes have taken place, access the historical imagery tool by clicking on the Historical Imagery icon () at the top of the screen. A slider bar should appear in the top left corner of the viewing pane. Your screen should look something like this:



- 40) For the current location, historical imagery is available for as far back as 1994 and as recent as October 2009. This historical imagery slider should be at the far right of the slider bar and it should say “Select Date.” Click and hold the slider and drag it slightly to the left until you see “October 19, 2009.”
- 41) Notice that the satellite imagery beneath the Impervious Surfaces layer and the Tree Canopy layer has changed – the wooded area has been transformed into a Walmart Supercenter with a large parking lot. If you cannot see the Walmart clearly, adjust the opacity of the USGS layers, or turn them off to get a better look, and then turn them back on. The Walmart you see here had not been built in 2001 when the USGS layers were created, which is why the Walmart is not classified as impervious (red or purple). An up-to-date Impervious Surfaces layer would most likely identify the entire area as impervious or highly impervious.