IOWA STATE UNIVERSITY
Extension and Outreach

GIS
Training and Services
**Geospatial Technology
Training Program**

Getting Started with ArcGIS ModelBuilder - Part 2

Welcome to the Essential ArcGIS Task Sheet Series. This series supplements the Iowa State University GIS Geospatial Technology Training Program short course series, "Essential ArcGIS Tutorial Series." The task sheets are designed to provide quick, easy instructions for performing specific tasks in GIS.

Creating model parameters allows you to turn your model into a useful tool that can be run like any other geoprocessing tool found in the ArcToolbox. This task sheet will build on *Getting Started with ArcGIS ModelBuilder - Part 1*, and step you through the process of creating variables and adding model parameters so that a model can be run as a tool.

1. Getting Started

a. This task sheet picks up where the previous task sheet, *Getting Started with ArcGIS ModelBuilder - Part 1*, left off.

b. Open the model editor for the **Highway Proximity** model by expanding **My Toolbox** in **ArcToolbox**. Right-click **Highway Proximity** and select **Edit**.

c. Right-click the arrow connecting the **highway** layer to the **Intersect** tool and select **Delete**.

d. Drag the **Select** tool from **ArcToolbox** into the **Highway Proximity** model window by expanding **Analysis Tools** > **Extract**.

e. Use the **Connect** tool to connect the **highway** layer to the **Select** tool, then connect the **Output Feature** to the **Intersect** tool. *Note: the name of the output feature will change to highway_select when the connection is made.*
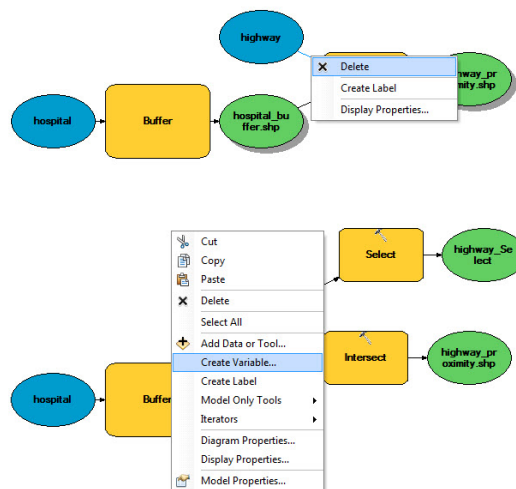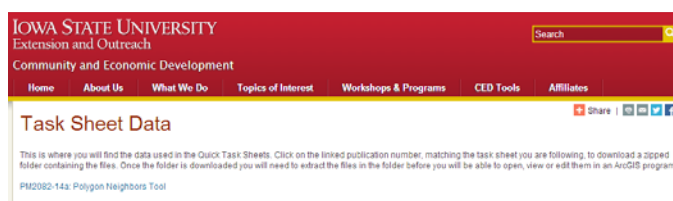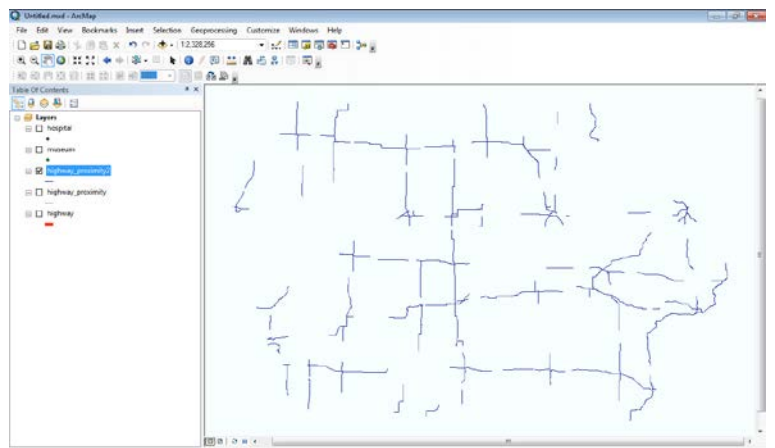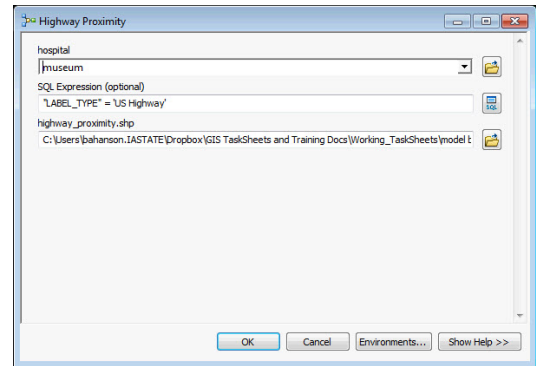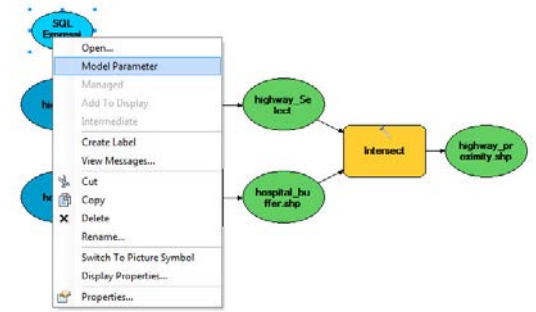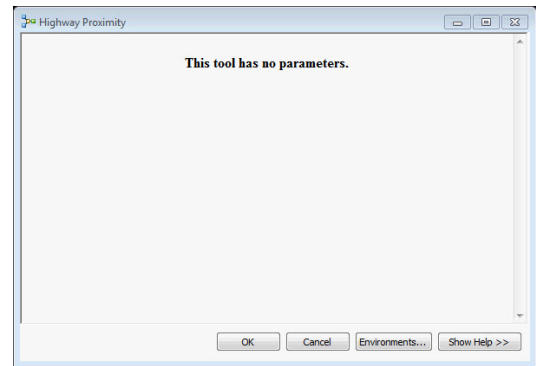

2. Creating Variables

f. Right-click on any white space in the model window and select **Create Variable**. In the **Create Variable** window, select **SQL Expression**, and click **OK**. Connect the **SQL Expression** to the **Select** tool using the **Connect** tool.

g. Right-click on the **SQL Expression** and select **Open**. Click on the **SQL** icon. In the **Query Builder** window, double-click **LABEL_TYPE**, and the **=** (equals sign). Click on **Get Unique Values**, then double-click on **US Highway**. Click **OK** to close the window.

h. Select **Model** > **Save** to save the model, then click **Model** > **Run Entire Model** to run the model. When the model is complete close the window. *Note: the coverage of the layer created by the model has decreased, since running it in the previous task sheet.*
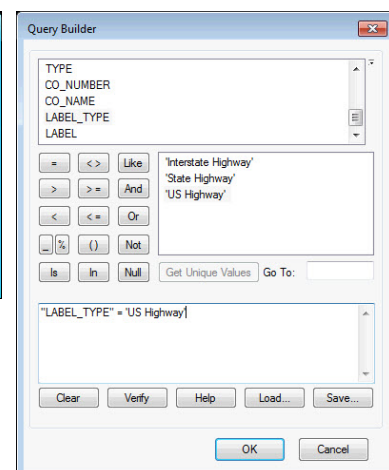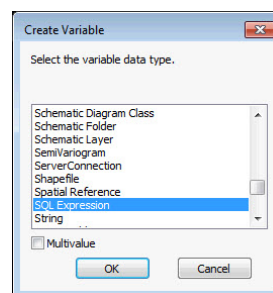
3. Creating Model Parameters

a. Double-click on the **Highway Proximity** model from the **ArcToolbox**. When the model tool dialog window opens, you will notice that it says **This tool has no parameters**. Click **OK** to close the window.

a. Right-click **Highway Proximity** and select **Edit** to open the **Highway Proximity** model window. Right-click **SQL Expression** and select **Model Parameter**. Do this again for the **hospital** layer, and **highway_proximity. shp** output layer. *Note: this will set the model parameters that are displayed in the model tool dialog window.*

b. Select **Model** > **Save** from the **Highway Proximity** model window, and close the window.

c. Double-click on the **Highway Proximity** model from the **ArcToolbox**. The model will open in the tool dialog window, just like any other geoprocessing tool from **ArcToolbox** would.

d. Fill in the parameters and run the tool. Under **hospital**, select **museum** from the drop-down menu. Under **SQL Expression** replace the text to say **"LABEL_TYPE" = "State Highway"**. Under **highway_proximity.shp**, type in **highway_proximity2.shp**. Click **OK** to run the model and click **Close** when it is complete. *Note: if you would like better descriptions for the parameters in the tool, go back to the model editor and right-click on a layer, and select Rename. Save the model and open the tool and the name of the parameter will be changed.*

e. The **highway_proximty2** output layer should have been add to your **ArcMap** document. Turn off the **highway_proximity** layer in the **Table Of Contents**, and notice the difference in the results.

Contact: