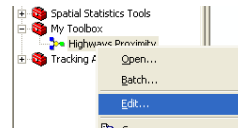# IOWA STATE UNIVERSITY
University Extension

ArcMap Geoprocessing: Introduction to Model Builder - 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.
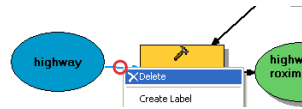
Model Builder is a feature that allows multiple ArcToolbox tools to be integrated into one process. Model Builder is useful to streamline and show multiple geoprocesses. To follow along on this task sheet, see task sheet PM2082-09v on Arc-Map Geoprocessing: Introduction to Model Builder.

1. Creating Variables

1. Open the model editor for the **Highways Proximity** model by expanding **My Toolbox** from the ArcToolbox table of contents. Right click **Highways Proximity** and select **Edit...**.
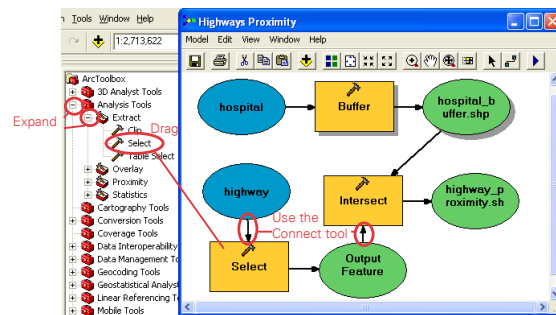
2. Right click the arrow connecting the **highway** oval and the **Intersect** box and select **delete**.
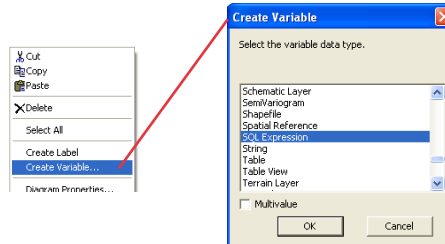
3. Drag the **Select** tool from ArcToolbox into the **Highway Proximity** model window by expanding **Analysis Tools** > **Extract**.

   - Connect the **highway** oval with the **Select** box then the **Output Feature** oval to the **Intersect** box using the **Add Connection** tool.
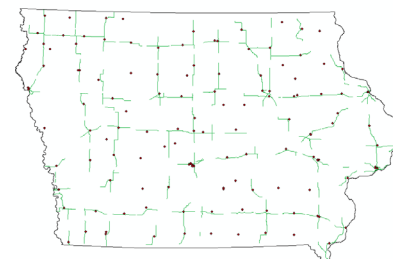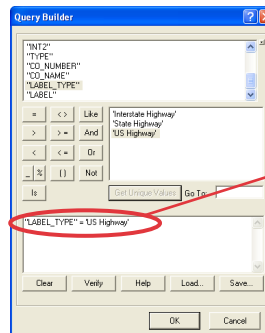
4. Right click on any white space in the model window and select **Create Variable**.

   - In the **Create Variable** window, select **SQL Expression** then click **OK**.

   - Connect the **SQL Expression** oval with the **Select** box using the **Add Connection** tool.
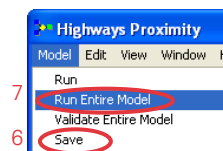
5. Right click the **SQL Expression** oval and select **Open**.

   - Click the **SQL** icon below **SQL Expression**.

   - In the **Query Builder** window, double click **"LABEL_TYPE"**. Click the **=** icon. Click **Get Unique Values**, then double click **'US Highway'**.
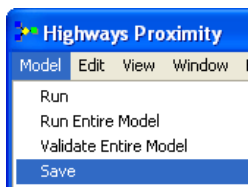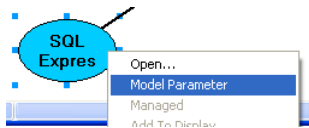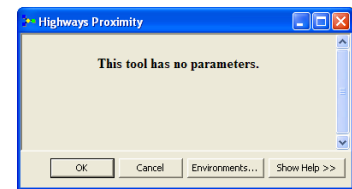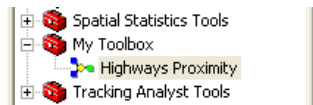
   - Click **OK** twice to close both windows.

6. Select **Model** > **Save**.

7. Select **Model** > **Run Entire Model**. Notice that the coverage of the layer created by the model has decreased.
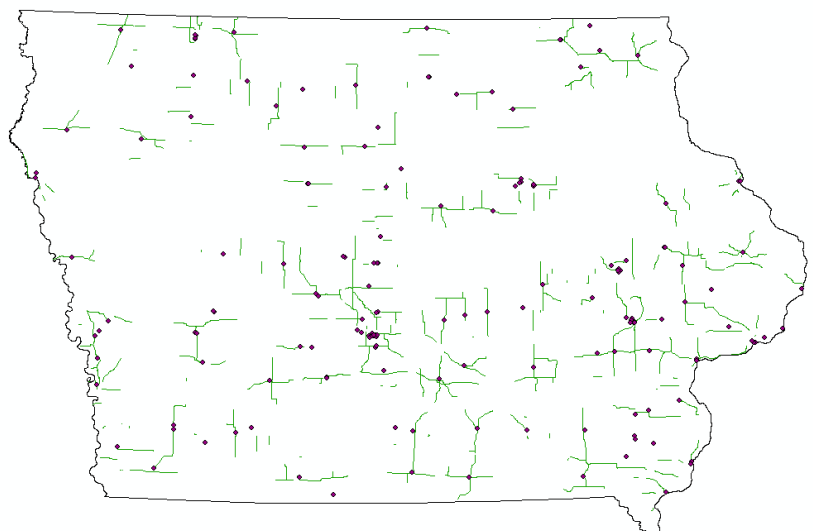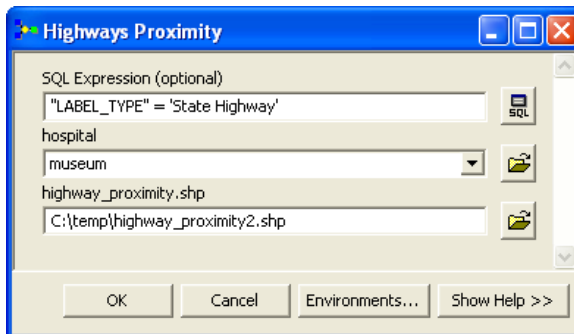
2. Modeling Parameters

1. Double click **Highways Proximity**, by expanding **My Toolbox** from the ArcToolbox table of contents. Notice that there are no parameters. Close the window.

2. In the **Highway Proximity** model window, right click **SQL Expression** and select **Model Parameter**. Repeat for the **hospital** and **highway_proximity.shp** ovals.

3. Select **Model** > **Save** from the **Highways Proximity** model window.

4. Reopen **Highways Proximity** from the ArcToolbox table of contents. Notice that there are now parameters.

   • Under **SQL Expression** replace the text to say **"LABEL_TYPE" = 'State Highway'**.

   • From the drop down menu, select **museum**.

   • Under **highway_proximity.shp**, replace **highway_proximity.shp** with **highway_proximity2.shp**.

   • Click **OK** to run the model and click **Close** when it has completed.

   • Turn off the **highway_proximity** layer from the **Layers** table of contents. Notice the buffers and intersect were created for **highway_proximity2** using the different criteria set.

Contacts

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This task sheet and more are available for free download at www.extension.iastate.edu/gis.