

- 1) SOURCES: There are three source road layers participating in this analysis:
 - a. Dane County Roads (accessed through: <http://maps.sco.wisc.edu/opengeoportal/>)
 - b. Dane County Bike Paths (accessed through: <http://maps.sco.wisc.edu/opengeoportal/>)
 - c. NAVTEQ Streetscarto (for any streets residing within a 1 mile buffer outside of Dane County) (accessed through: <http://www.lic.wisc.edu/>)
- 2) METHODOLOGY: Follows the concept outlined in this article (retrieved 11/9/15), unless otherwise noted:
 - a. <http://remotefootprints.org/project-remote/calculating-remote>
- 3) PROCESSING – REQUIRED TOOLS:
 - a. ArcGIS: Project
 - b. ArcGIS: Merge
 - c. ArcGIS: Add Field
 - d. ArcGIS: Calculate Field
 - e. ArcGIS: Polyline to Raster
 - f. ArcGIS: Euclidean Distance
 - g. ArcGIS: ArcMap
- 4) PROCESSING – SEQUENCE AND MODELS:
 - a. **Model #1**, Creating network of input sources. This step involves aggregating GIS data from three sources so as to ensure that coverage is achieved for all known roads and bike paths across Dane County:
 - i. **Dane County Roads** – Considered the authoritative source for road information in Dane County.
 - ii. **Dane County Bike Paths** – Considered the authoritative source for bike path information in Dane County, this layer is used to supplement the streets layer with bike paths.
 - iii. **NAVTEQ Streets Carto** – the most complete known dataset for road coverage in the areas surrounding Dane County. This layer is used as a supplemental layer to the Dane County layer engaging this layer in the analysis allows us to include a 1 mile buffer for inclusion of roads around Dane County. It is important to do this so as to not have false positives along the county boundaries.
 - b. **Model #2**, Rasterize the vector data. This step prepares the data for the Euclidean Distance tool, which consumes a raster dataset. The data is currently in vector form and this model will achieve a raster rendering of the data.
 - c. **Model #3**, Euclidean Distance analysis. This step executes the Euclidean Distance analysis tool¹, which achieves Euclidean distance measurements for all (1 Square Meter) cells participating in the analysis.
 - d. **Model #4**, clip hydro and county boundary. It may not be appropriate to include hydro in the remoteness index. For this reason it was clipped out of the raster produced in Model #3. Also, in the process of the analysis, some extra raster was added along the fringe of the county, this step accomplishes the removal of this extra raster space.
 - e. **Model #5**, classify highest value in raster. This is the final step, the cell values of the raster are classified to identify the single most remote spot in the county (the highest value in the raster).

¹ <http://resources.arcgis.com/EN/HELP/MAIN/10.1/index.html#//009z0000001p000000>