**Enhancement Tools**

Description: These tools automate various tasks involved with data creation and perform various checks to enhance the quality of the data.

*Add KSPID:* If your PSAP/county has GIS parcels, this tool will automatically determine, calculate and import the KSPID into the address points. The tool can use 16 or 19 digit PIDs, and the 19 digit version will be added to the address points.

*Assign Unique Identifier*: creates a unique ID for all null features in a feature class.

*Calculate Label:* calculates the label field of either an address point file or the road centerline file. For address points, the fields used for the calculation are: HNO, HNS, PRD, STP, RD, STS, POD, POM, BLD, FLR, UNIT, ROOM and SEAT. For road centerlines, the fields used for the calculation are: PRD, STP, RD, STS, POD and POM.

*Check Road Elevation Direction*: makes sure the ELEV\_F and ELEV\_T attributes correctly depict the elevation rise and fall of road segments.

*Compare Road Names:* compares the road names in the road layer against the road names used in the address point layer. Differences are reported in FieldValuesCheckResults.

*Create Road Alias Records:* creates new road alias records based on road segments matching a user-provided road name.

*Find Address Range Overlaps*: finds areas where address ranges overlaps. Overlapping address ranges can negatively affect geocoding accuracy.

*Geocode Address Points*: geocodes the address points against the road centerline data. This test respects exceptions created in the GeocodeExceptions table.

*US National Grid Calculator:* generates US National Grid coordinates. If the Lat and Long fields are filled out, the USNG coordinates will be based on those fields. If the fields are not populated, the tool will calculate Lat/Long values, populated the Lat/Long fields and calculated USNG coordinates.

*Verify Road Alias:* checks the road alias name against an approved highway name list.

Running “Add KSPID”:

1. Open ArcCatalog and navigate to the toolbox called “Kansas NG911 GIS Tools” > “Enhancement Tools” > “Add KSPID”.
2. In the “County” parameter, enter the name of the county where the PSAP is.
3. In the “Address Point Layer” parameter, enter the full path to the NG911 Address Point layer that needs KSPIDs added.
4. In the “Parcel Layer” parameter, enter the full path to the GIS parcel layer for the county.
5. In the “Parcel ID Column” parameter, enter the field name where the county parcel ID is stored. This can be either the 16 or 19 digit version of the parcel number. The 19 digit version will be stored in the address point file.
6. Run the tool.
7. Please note that this tool runs a spatial join between the address points and parcels, so address points that do not sit inside a parcel will not be updated with a KSPID.

Running “Assign Unique Identifier” and “Assign Unique Identifier Road Alias Table”:

1. Open ArcCatalog and navigate to the toolbox called “Kansas NG911 GIS Tools” > “Enhancement Tools” > “Assign Unique Identifier” or “Assign Unique Identifier Road Alias Table”.
2. In the “Feature Class” or “Alias Table” input box, select the layer or table to have its unique ID’s updated.
3. In the “Unique ID Field” parameter, select the field that contains unique ID’s.
4. Run the tool.

Running “Calculate Label”:

1. Open ArcCatalog and navigate to the toolbox called “Kansas NG911 GIS Tools” > “Enhancement Tools” > “Calculate Label”.
2. In the “Feature Class to Receive Label” input box, select the layer (Address Points or Road Centerline, any other layer will not process) that you want to create labels for.
3. If you only want to update labels where records are blank, check the box.
4. Run the tool.

Running “Check Road Elevation Direction”:

1. Open ArcCatalog and navigate to the toolbox called “Kansas NG911 GIS Tools” > “Enhancement Tools” > “Check Road Elevation Direction”.
2. In the “NG911 Geodatabase” input box, put in the full path of the NG911 geodatabase.
3. Run the tool.
4. Results will be reported in the “FieldValuesCheckResults” table.

Running “Compare Road Names”:

1. Open ArcCatalog and navigate to the toolbox called “Kansas NG911 GIS Tools” > “Enhancement Tools” > “Compare Road Names”.
2. In the “NG911 Geodatabase” box, select the appropriate NG911 geodatabase.
3. Run the tool.
4. Road names differences between the road layer and address point layer are reported in FieldValuesCheckResults.

Running “Create Road Alias Records”:

1. Open ArcCatalog and navigate to the toolbox called “Kansas NG911 GIS Tools” > “Enhancement Tools” > “Create Road Alias Records”.
2. In the “NG911 Geodatabase” box, select the appropriate NG911 geodatabase.
3. In the “Road Name” box, enter the value of the RD column (the road name) for the road centerline segment you wish to add records for. Example: the road segments you need alias records for have a road centerline RD field value of IOWA. Enter IOWA here.
4. In the “Road Type” box, enter the road type. This will narrow down road segments that receive road alias records. Example: if 6TH ST and 6TH AVE both exist and you only want 6TH AVE to receive alias records, choose AVE here.
5. In the “Alias Road Name” box, enter the alias name you want created. Example: if IOWA segments need the alias name of US59, enter US59 here.
6. In the “Alias Road Type (optional)” box, enter the street suffix for the new alias road name. Pick from the list. If your option is not available, enter nothing and edit the records after the tool runs.
7. In the “Alias Road Label (optional)” box, enter the optional label for the new alias road records. Example: if you want the alias name of US59 to show up at US-59 on the label field, enter US-59 here.
8. Run the tool.
9. Double-check the newly created records in ArcMap. This tool will create a road alias record for every road segment that matches the value of “Road Name”, so records may be created outside your intended range or for incorrect road types.

Running “Find Address Range Overlaps”:

1. Open ArcCatalog and navigate to the toolbox called “Kansas NG911 GIS Tools” > “Enhancement Tools” > “Find Address Range Overlaps”.
2. In the “NG911 Geodatabase” box, select the appropriate NG911 geodatabase.
3. Run the tool.
4. If overlapping address ranges exist, they will be exported to a feature class in the NG911 geodatabase called “AddressRange\_Overlap”.

Running “Geocode Address Points”:

1. Open ArcCatalog and navigate to the toolbox called “Kansas NG911 GIS Tools” > “Enhancement Tools” > “Geocode Address Points”.
2. In the “NG911 Geodatabase” box, select the appropriate NG911 geodatabase.
3. Run the tool.
4. If geocoding errors exist, they will be recorded in FieldValuesCheckResults.
5. Geocoding exceptions can be added using the “Create Geocoding Exceptions” tool in the Adjustment Tools toolset.

Running “US National Grid Calculator”:

1. Open ArcCatalog and navigate to the toolbox called “Kansas NG911 GIS Tools” > “Enhancement Tools” > “US National Grid Calculator”.
2. In the “Address Points Layer” input box, select the address point layer that needs US National Grid Coordinates updated.
3. Check the box next to “Update only blank USNG (optional)” if you want to only update records with blank values in the USNG column.
4. Run the tool.

Running “Verify Road Alias”:

1. Open ArcCatalog and navigate to the toolbox called “Kansas NG911 GIS Tools” > “Enhancement Tools” > “Verify Road Alias”.
2. In the “NG911 Geodatabase” box, select the appropriate NG911 geodatabase.
3. In the “Domains Folder” box, select the appropriate NG911 domain folder.
4. Run the tool.
5. Results will be in the “FieldValuesCheckResults” table.

The enhancement tools require:

* Python scripts:
  + Enhancement\_AddKSPID.py
  + Enhancement\_AssignID.py
  + Enhancement\_CalculateLabel.py
  + Enhancement\_CheckRoadElevationDirection.py
  + Enhancement\_CreateRoadAliasRecords.py
  + Enhancement\_FindAddressRangeOverlaps.py
  + Enhancement\_GeocodeAddressPoints.py
  + Enhancement\_RoadNameComparison.py
  + Enhancement\_XYUSNGCal.py
  + Enhancement\_VerifyRoadAlias.py
  + CoordConvertor.py

Support Contact:

For issues or questions, please contact Kristen Jordan Koenig with the Kansas Data Access and Support Center. Email Kristen at [Kristen@kgs.ku.edu](mailto:Kristen@kgs.ku.edu) and please include in the email which script you were running, any error messages, and a zipped copy of your geodatabase (change the file extension from zip to piz so it gets through the email server).

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