

Creation of .PRJ file via ArcView 3.3's Projection Utility Wizard:

- 1) Downloaded zipped shapefile from OGDC website (e.g. quadindx.zip).
- 2) Unzipped the file, creating shapefile that can be read by ArcView 3.3 on a local drive (i.e., quadindx.dbf, quadindx.shp, and quadindx.shx).
- 3) Opened ArcView 3.3, checking to be certain that the Projection Utility Wizard extension is checked (File | Extensions | Projection Utility Wizard check box).
- 4) In a new View, added the shapefile to the ArcView project.
- 5) Selected the Projection Utility Wizard (File | ArcView Projection Utility...).
- 6) In the "ArcView Projection Utility – Step 1" window, selected the shapefile (e.g., quadindx.shp), then clicked the "Next >" button.
- 7) In the "ArcView Projection Utility – Step 2" window, there are four tabs: Name, Parameters, Datum, Ellipsoid. The "Show Advanced Options" box is checked.
 - a. Name – Selected the "Projected" button under "Coordinate System Type", "Custom" under "Name", and Foot [9002] under "Units".
 - b. Parameters – Specified "GCS_North_American_1983 [4269]" under "Geographic Coordinate System", "1312335.958" under "False Easting", "0.0" under "False Northing", "Greenwich [8901]" under "Prime Meridian", "Lambert_Conformal_Conic [43020]" under "Base Projection", "-120.5" under "Central_Meridian", "41.75" under "Central_Parallel", "43.0" under "Standard_Parallel_1", and "45.5" under "Standard_Parallel_2".
 - c. Datum – Left the "Geographic Transformation" as ""GEOTRANSFORMATION_UNSET".
 - d. Ellipsoid – No data changes required.
 - e. Reviewed and verified all parameters.
 Clicked the "Next >" button.
- 8) In the "ArcView Projection Utility" pop-up window, where it states: "You have just specified a coordinate system for your shapefile(s). Would you like to save the coordinate system information now? Press Yes to save this new information you're your input shapefile(s)," clicked on the "Yes" button.
- 9) In the "ArcView Projection Utility – Step 3" window, clicked "Cancel".

The resulting .PRJ file contains:

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PROJCS["Custom",GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS_1980",6378137,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Lambert_Conformal_Conic"],PARAMETER["False_Easting",1312335.958],PARAMETER["False_Northing",0.0],PARAMETER["Central_Meridian",-120.5],PARAMETER["Standard_Parallel_1",43.0],PARAMETER["Standard_Parallel_2",45.5],PARAMETER["Central_Parallel",41.75],UNIT["Foot",0.3048]]
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Creation of .PRJ file via ArcToolbox 8.2:

- 1) Downloaded and unzipped shapefile from OGDC website (e.g. quadindx.zip) as above.
- 2) Opened the ArcToolbox 8.2 application. Clicked on the “Data Management Tools” icon, and then the “Projections” icon, before selecting “Define Projection Wizard (shapefiles, geodatabase)”. This opened a “Define Projection Wizard (shapefiles, geodatabase)” window, where I clicked on the “Open folder” icon and navigated to the unzipped shapefile (“Quadindx”), which added it into the “Define Projection Wizard (shapefiles, geodatabase)” window.
- 3) Selected the theme (which then became highlighted in dark blue on my screen), and clicked the “Next” button.
- 4) Clicked on the “Select Coordinate System...” button, which popped-up a “Spatial Reference Properties” window.
- 5) In the “Spatial Reference Properties” window, clicked on the “New” button and specified “Projected Coordinate System...” in the small popup box.
- 6) In the “New Projected Coordinate System” box, performed the following:
 - a. Typed “OGICdefaultAG82” in the “Name:” field;
 - b. Selected “Lambert_Conformal_Conic” for the “Projection Name:”;
 - c. Selected “Foot” for the “Linear Unit Name:”;
 - d. Set the “Projection parameters:” (all without quotes) to exactly:
 - i. “1312335.958” for “False_Easting”
 - ii. “0.0” for “False_Northing”
 - iii. “-120.5” for “Central_Meridian”
 - iv. “43.0” for “Standard_Parallel_1”
 - v. “45.5” for “Standard_Parallel_2”
 - vi. “1.0” for “Scale_Factor”
 - vii. “41.75” for “Latitude_of_Origin”
 - e. Selected “Select...” under the “Geographic Coordinate System:”, navigated to the “North America” folder, and chose “North American Datum 1983” (which automatically populated the “Geographic Coordinate System:” box with the appropriate data about the spheroid).
 - f. Clicked “OK”, returning to the “Spatial Reference Properties...” window.
- 7) In the “Spatial Reference Properties...” window, clicked the “Apply” button, and then the “OK” button, which returned me to the “Define Projection Wizard (shapefiles, geodatabase)” window. Then clicked the “Next” button.
- 8) In the next “Define Projection Wizard (shapefiles, geodatabase)” window, reviewed the projection summary information for correctness and clicked on the “Finish” button. This wrote the following information to the “quadindx.prj” file:

```
PROJCS["OGICdefaultAG82",GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Lambert_Conformal_Conic"],PARAMETER["False_Easting",1312335.958],PARAMETER["False_Northing",0.0],PARAMETER["Central_Meridian",-120.5],PARAMETER["Standard_Parallel_1",43.0],PARAMETER["Standard_Parallel_2",45.5],PARAMETER["Scale_Factor",1.0],PARAMETER["Latitude_Of_Origin",41.75],UNIT["Foot",0.3048]]
```