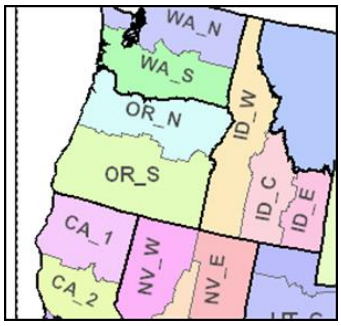
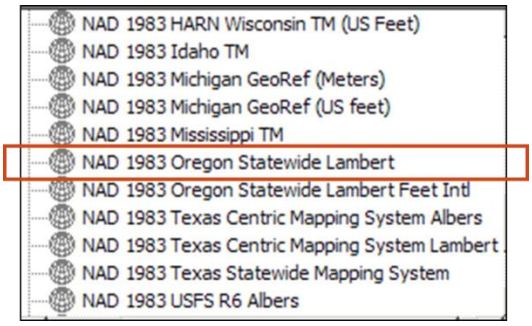
Troubleshooting Coordinate System Issues

A Place fits in multiple zones – Specialized CS

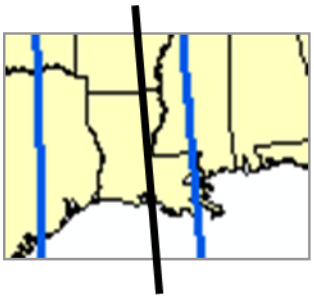




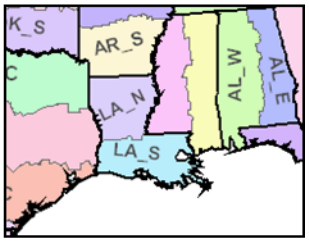
Oregon covers two UTM zones and two State Plane zones. No single zone is best. State has defined an Oregon Statewide Lambert coordinate system.

Some other states or countries have similar specialized coordinate systems.

A Place fits in multiple zones – Adjust parameters



Center of state
Is about -91.5°



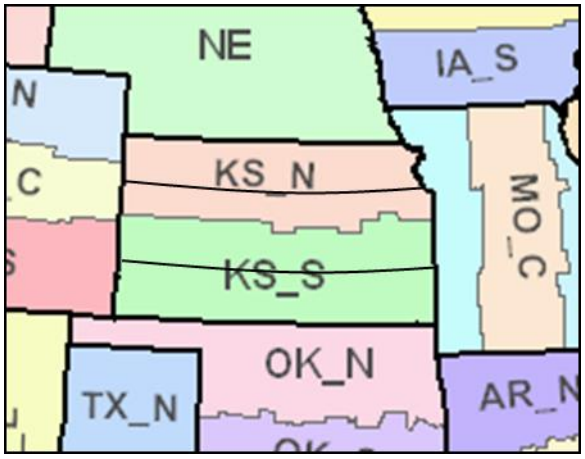
Louisiana is less than 6 degrees wide but not centered in UTM zone and it has two State Plane zones. Unlike Oregon, it doesn't have a special state projection defined that you can simply use.

NAD_1983_UTM_Zone_15N
Projection: Transverse_Mercator
False_Easting: 500000.000000
False_Northing: 0.000000
Central_Meridian: -93.000000
Scale_Factor: 0.999600
Latitude_Of_Origin: 0.000000
Linear Unit: Meter

GCS_North_American_1983
Datum: D_North_American_1983

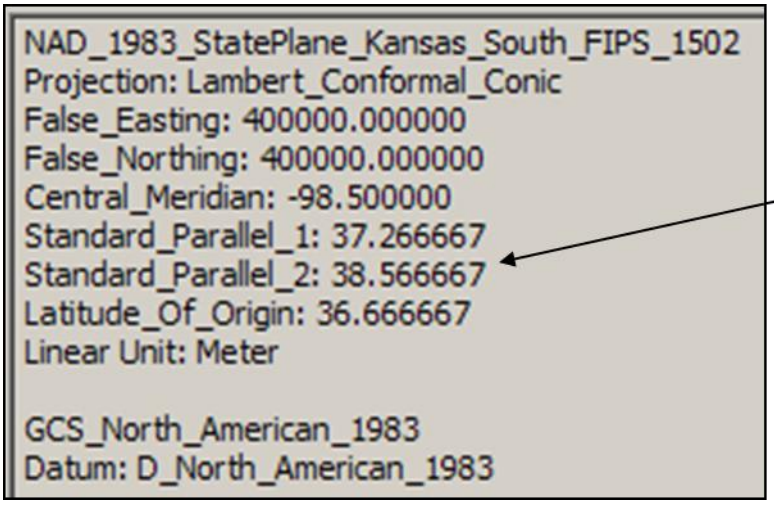
For the state map, use the UTM zone parameters, but adjust the **central meridian** of the zone.

Adjust to -91.5 to center the zone on LA



Kansas has two State Plane zones and is too wide for a UTM zone. It is oriented east-west so a conic projection is better.

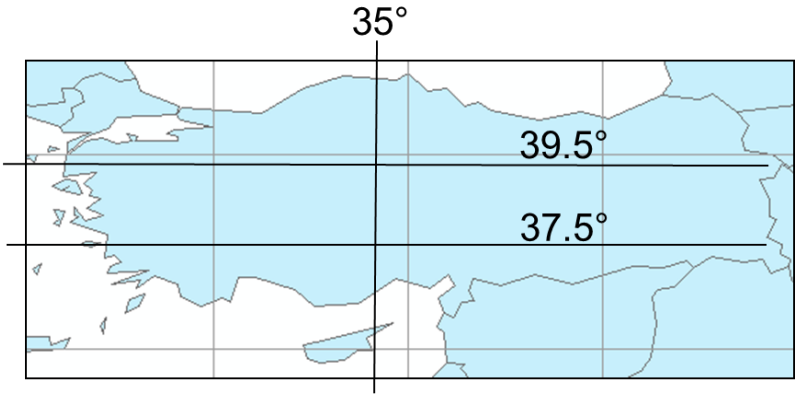
Modify the **standard parallels** of the State Plane zone so that they cut the state into approximate thirds.



Change to 37.8° and 39.2°

You cannot find a projection for a specific country

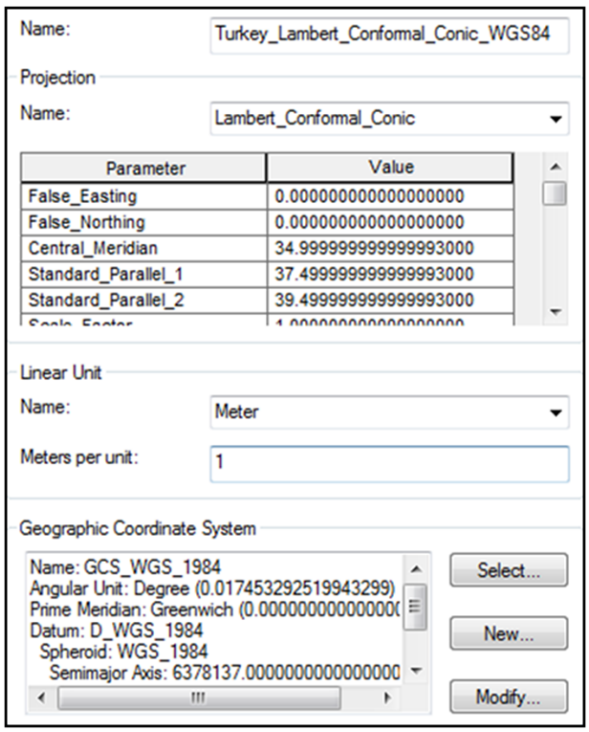
You need a map of Turkey, but cannot find a pre-defined projection to use in your GIS program. Turkey is east-west oriented, so you choose a Lambert Conformal Conic projection.

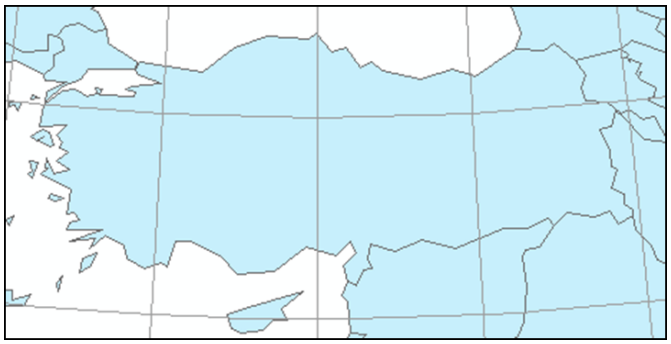


Find the central meridian of the country and then determine the latitude of the parallels, cutting the country into approximate thirds.

Your original data are in WGS84, so keep that datum.

We can create a new projection based on Lambert Conformal Conic, let's call it Turkey Lambert Conformal Conic and simply adjust the existing information with our new parameters.





CAUTION

These solutions will give you somewhat better accuracy for your maps, but there are some considerations.

1) You will need to take care to convert all data to your chosen coordinate system.
2) GPS units will not be able to collect data directly in your coordinate system.
3) When using non-standard projections you must be extra careful with your metadata so that users understand the differences.