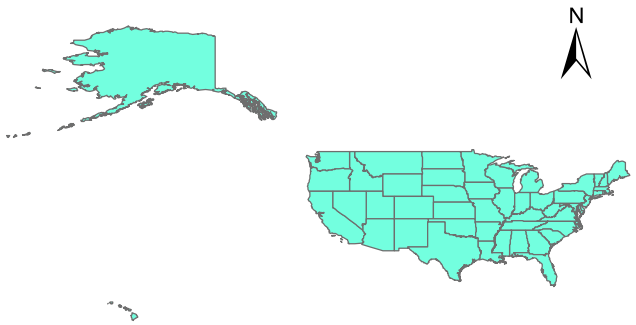
US States



0 1,000 2,000 Miles

1:150,000,000

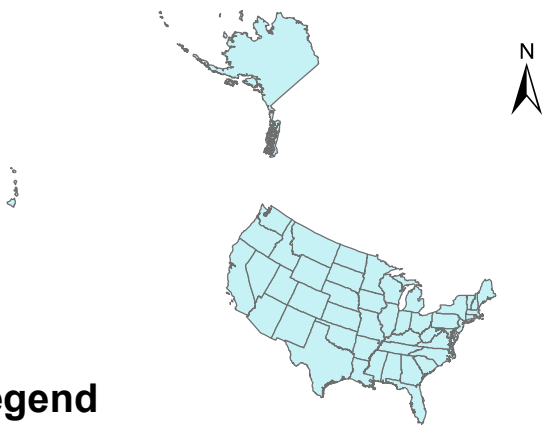
Legend

states

Source: ESRI

Layout By:
L. Fomenko

Lambert Conformal Conic



Legend

states

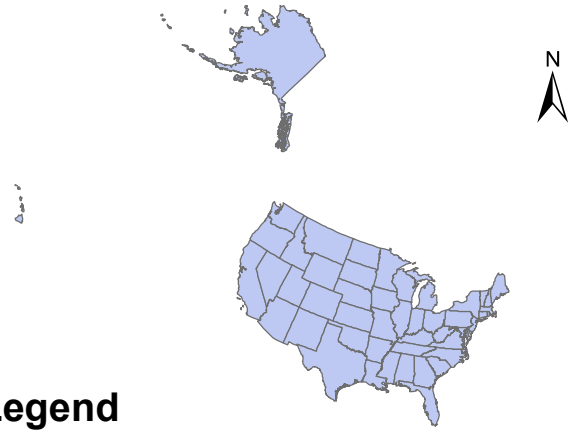
Source: ESRI

Layout By:
L. Fomenko

0 1,000 2,000 Miles

1:125,000,000

Albers Equal-Area Conic



Legend

states

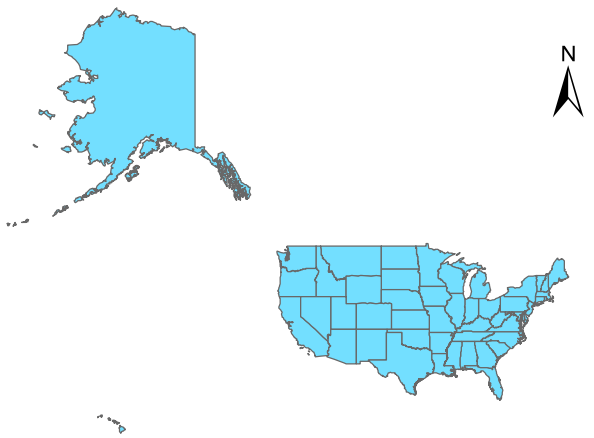
Source: ESRI

Layout By:
L. Fomenko

0 1,000 2,000 Miles

1:125,000,000

Mercator



0 1,000 2,000 Miles

1:125,000,000

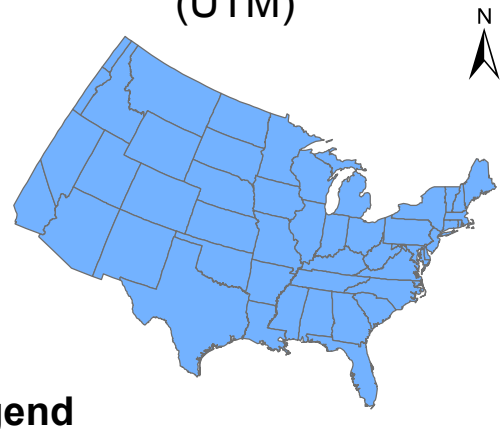
Legend

states

Source: ESRI

Layout By:
L. Fomenko

Universal Transverse Mercator (UTM)



Legend

states

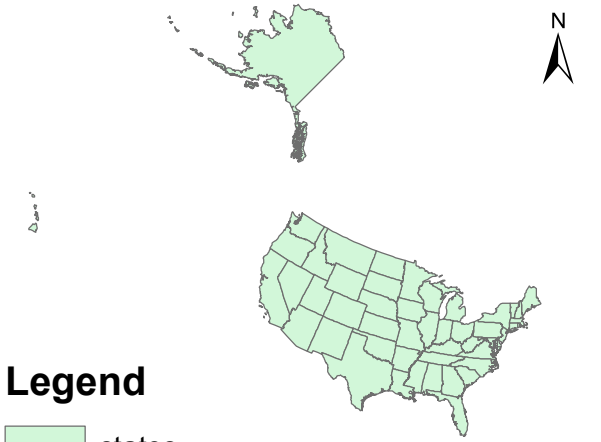
Source: ESRI

Layout By:
L. Fomenko

0 750 1,500 Miles

1:75,000,000

Connecticut State Plane



Legend

states

Source: ESRI

Layout By:
L. Fomenko

0 1,000 2,000 Miles

1:125,000,000

1.

Geographic coordinates are based on locations measured from angles at the center of the Earth. They are reported in latitude (North to South, 0-90 degrees) and longitude (East to West, 0-180 degrees). Projected Coordinates utilize a Cartesian coordinate system with locations referenced relative to distances along perpendicular X and Y axes measured from the origin. Geographic coordinates might be most appropriate when looking at a 3-D globe, whereas projected (Cartesian) coordinates might be most appropriate when dealing with maps in 2-D.

2.

Mystery1 is a Transverse Mercator Projection in the WGS 1984 UTM Zone 17N Projected Coordinate System. Mystery2 is a Lambert Conformal Conic Projection in the NAD 1927 Connecticut State Plane Projected Coordinate System.

3.

The longitude of origin parameter defines the origin of the x-coordinates for the projection, which, in turn, determines the y-axis for other parameters and coordinates within the projected area to be based on. It is synonymous with central meridian. The central parallel parameter defines the origin for the projection, which sets the x-axis for coordinates within the projected area to be based on.

False easting and northing values are generally used to make sure that all x and y values are positive. They can also be used to constrict the range of x and y coordinate values.

4.

Projection	Area (meters squared)	
	Connecticut	Mainland Alaska
Albers Equal-Area	12889061094.34	1428923605985.37
Lambert Conformal	11786378411.00	1469656566973.13
CT State Plane	138734254113.12	18731894994989.60
Mercator	12937426661.47	4427981322535.91
UTM	12879500304.21	

There are differences in areas among the projections because some projections distort the shapes in order to maintain the correct areas while other projections distort the areas to maintain the shapes. For example, the area of Mainland Alaska is much larger than other projections because the area is distorted in order to maintain the overall shape.

5.

The projection that makes the most sense for the spatial data identified in my research question is the Albers Equal Area Conic Projection for the United States. This is because this projection will

represent the areas correctly, but distort the shapes a little bit. The features on the map such as the various transit oriented developed areas are kept proportional to their areas on the reference surface of Earth. In this case, having the relative size and area accuracy of map features is important especially for showing the population and geological thematic features.