



CEE 5190/6190: GIS for Civil Engineers

Instructor: Jeffery Horsburgh

Assignment 1 Introduction to ARCGIS and Coordinate Systems.

Submitted by
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Problem: To evaluate potential sites for the construction of a warehouse in Brigham city, Utah.

1. The shapefile provided was created by The State of Utah Automated Geographic Reference Center. (AGRC).
2. The shapefile was last updated on October, 2018.
3. The shapefile was to be projected into the NAD 1983 UTM Zone 12N coordinate system. The following figure shows the shapefile properties of XY coordinate system.

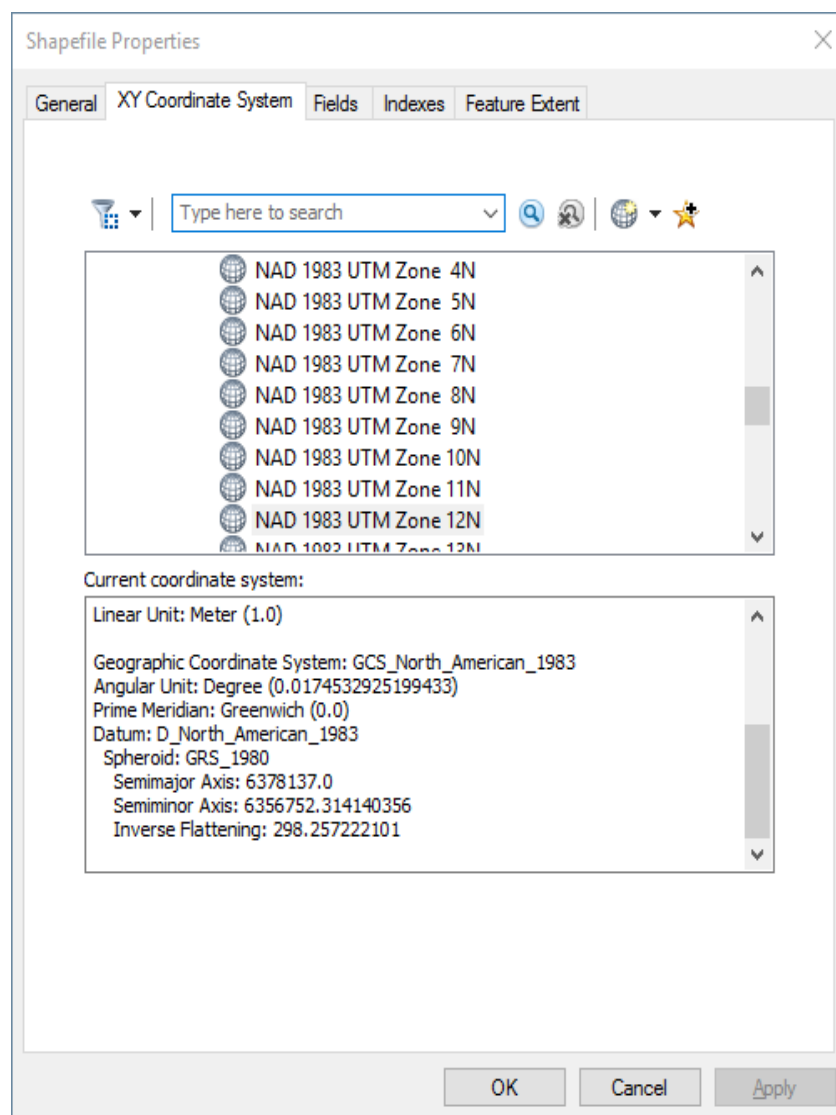


Fig 1: Shape file properties showing the coordinate system of projected layer.

- Here, we were required to modify the properties of Data Frame to ensure that Data Frame is also using NAD 1983 UTM Zone 12N coordinate system.

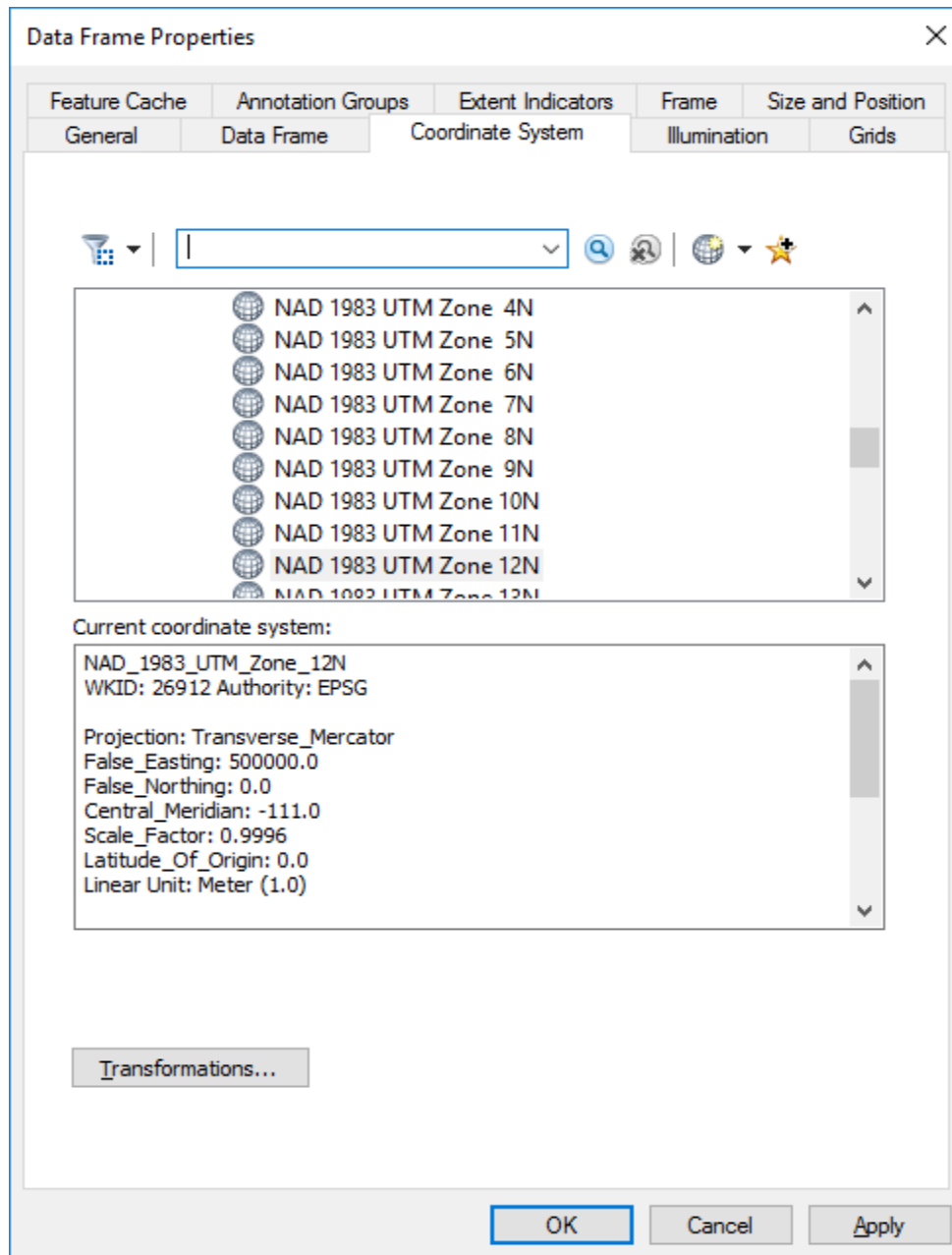


Fig 2: Data frame properties showing the Coordinate system.

5. A basemap was added to the projected shapefile to check the shapefile plots were at correct location. Following is a screenshot of the ArcGis window.

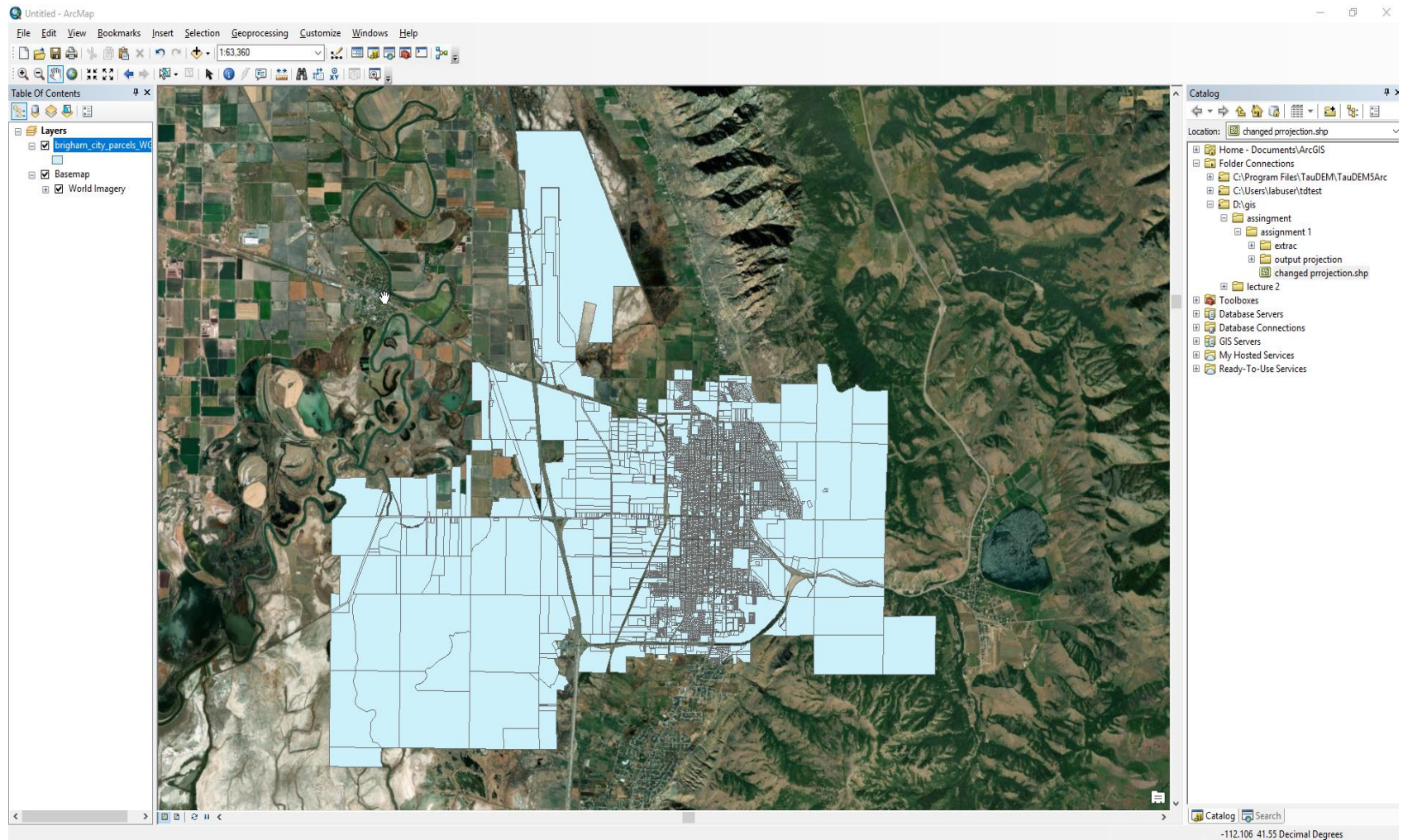


Fig 3: Projected shapefile with Basemap

6. Here is the zoomed view on map with modified symbology of the polygons for the parcels.

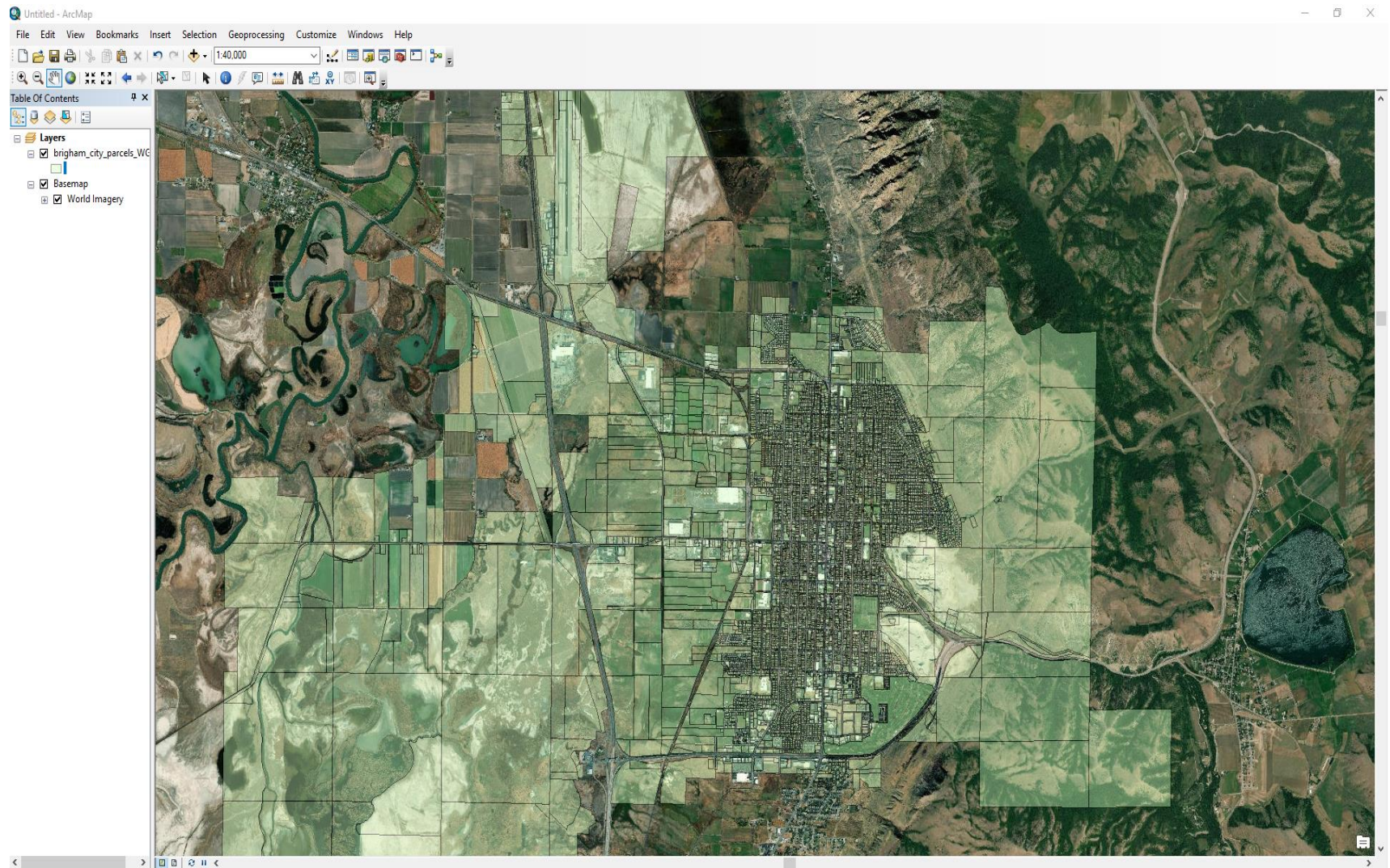


Fig 4: Modified Symbology of the polygon of parcels.

7. Here is the list of ten available for purchase of ware house shorted by area. The shaded part in the table shows the ten list available for ware house.

Table													
brigham_city_parcel_WGS84													
ID	Shape *	FIPS	PARCEL_ID	PARCEL_ADD	PARCEL_CIT	PARCEL_ZIP	OWN_TYPE	RECORDER	ParcelsCur	ParcelsRec	ParcelsPub	ParcelYear	Parc
7000	Polygon	49003	04-002-0027			84302	Private	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
15	Polygon	49003	03-003-0016		Brigham City	84302	Federal	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
16	Polygon	49003	03-003-0021		Brigham City	84302	Federal	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
6555	Polygon	49003	03-003-0049		Brigham City	84302	Private	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
6554	Polygon	49003	03-003-0048		Brigham City	84302	Private	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
21	Polygon	49003	03-003-0043		Brigham City	84302	Private	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
904	Polygon	49003	03-062-0003			84324	Federal	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
8	Polygon	49003	03-002-0024			84324	State	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
22	Polygon	49003	03-003-0045		Brigham City	84302	Private	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
11	Polygon	49003	03-002-0050		Brigham City	84302	Private	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
3	Polygon	49003	03-002-0014		Brigham City	84302	Private	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
7	Polygon	49003	03-002-0023		Brigham City	84302	State	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
14	Polygon	49003	03-003-0015	2155 W FOREST ST	Brigham City	84302	Federal	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
23	Polygon	49003	03-003-0046		Brigham City	84302	Private	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
4	Polygon	49003	03-002-0016		Brigham City	84302	Federal	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county
7039	Polygon	49003	03-002-0018		Brigham City	84302	Private	1-435-734-3391	9/27/2018	9/27/2018	10/23/2018	2018	Supplied by county

Fig 5: Table showing ten largest and available sites.

8. This section includes the screen shot of ten available and largest sites suitable for ware house. The sites are marked 1 to 10 from largest to smallest in area.

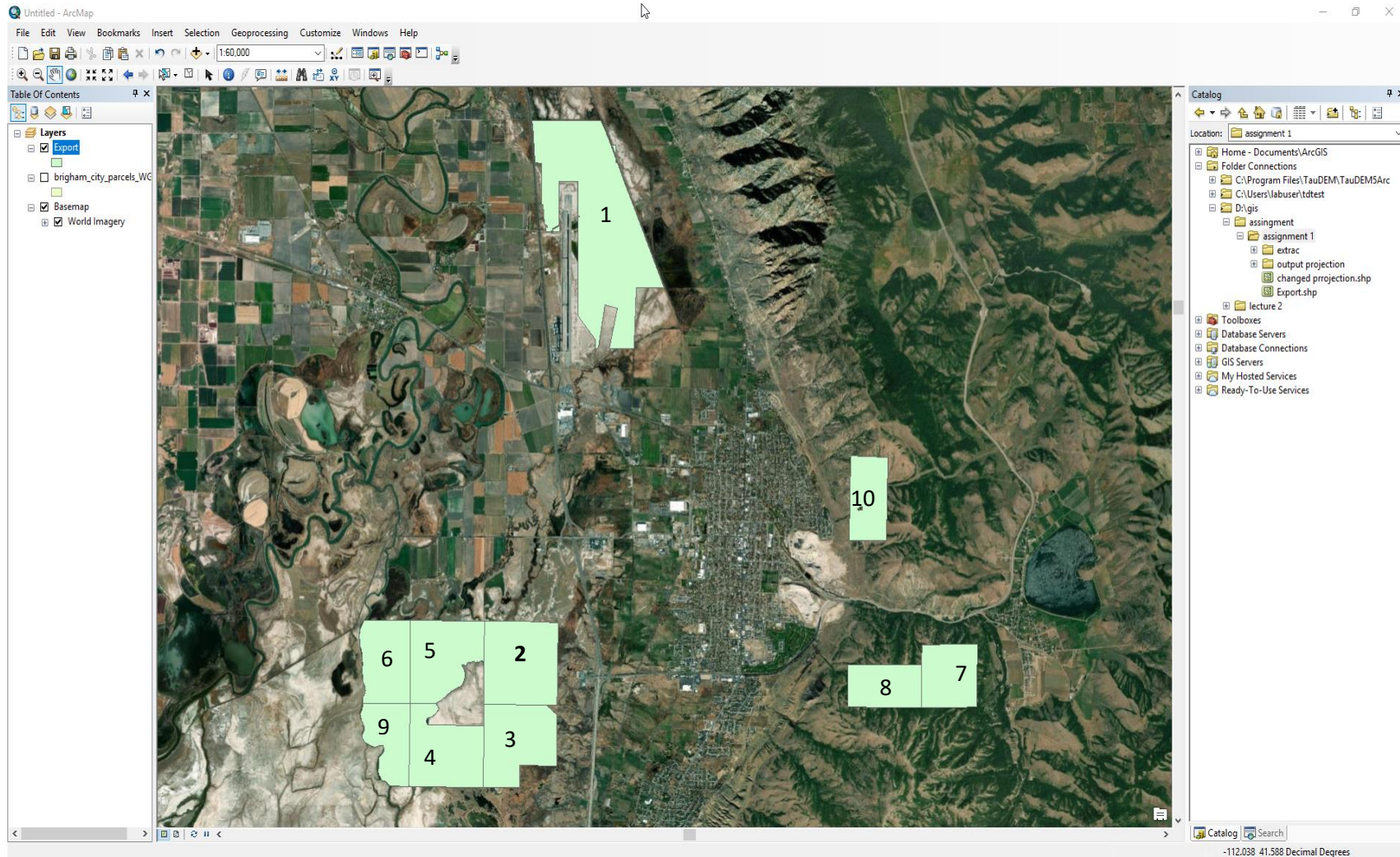


Fig 6: Ten possible sites for ware house.

9. There are many factors which should be considered for the construction of ware house. Some of the factors are availability of skilled manpower, proximity to major places, size of the area, transportation accessibility and so on.

- **Site 1** is located near to the airport, if the company is okay with the noise from airport and to transport goods from air it might be a viable option.
- **Site 4,5,6,9** seems to be far from highways and it might be expensive to construct new roads so, these are not viable options.
- **Site 7,8,10** are located in sloppy lands which are not good options.
- **Site 2,3** seems like they are near to highways and flat terrain, and somewhat located near city.

So, I think site 1, 2 and 3 seems like more viable options for construction of ware house.

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Assignment 1
Grading Rubric

Item	Standard	Points Available	Points Awarded
Formatting	Submission conforms to formatting requirements in the Syllabus, including title page.	5	
1	Provides the full name for the agency that created the shapefile	5	
2	Supplies the correct date of last update	5	
3	Correct projection of the shapefile with the correct screenshot of the XY coordinate system	20	
4	Screen shot showing correct data frame coordinate system	10	
5	Screen shot showing a map with the parcels correctly aligned on top of the base map and zoomed to extent of parcels	10	
6	Screen shot showing a map with parcels correctly symbolized on top of a base map and zoomed to an extent that shows individual parcels	10	
7	Screen shot showing the attribute table with top 10 parcels by area selected and sorted by area	10	
8	Screen shot of a map zoomed to the extent of the top 10 parcels by area	10	
9	Description of the appropriateness of the top 10 parcels by area for a warehouse location	15	
Total		100	