

## Selected GIS Guidelines for Business Students – Joseph Kerski, PhD GISP, Esri Education Manager

### What you need to get started:

An account with publisher role in ArcGIS Online ([www.arcgis.com](http://www.arcgis.com)) with access to Business Analyst Web.

### First steps:

- (1) <https://www.esri.com/videos/watch?v=LHDCRjAxpI0&title=what-is-gis-> To learn the basics of GIS
- (2) Consider the type of product or service that you are interested in siting. For example, go to Business Analyst Web (<https://bao.arcgis.com>) and sign into your account. Create a new project. Search for an add the San Bernardino County parcels layer. **Go to 1651 Orange Tree Lane, Redlands.** This neighborhood is your study area.
- (3) Change the base map to imagery and examine the landscape in your study area. What possible usage would be best in this area, in your judgment?
- (4) Use Create Maps > make color-coded maps of variables you think are appropriate to your desired product or service, such as median income and selected consumer preferences. Also consider mapping the Tapestry layer, which encapsulates consumer preferences and demographic characteristics in specific “neighborhood types” (such as Soccer Moms and Heartland Communities—more information is here: <https://www.esri.com/en-us/arcgis/products/tapestry-segmentation/overview>).
- (5) Think about whether raw numbers, percentages, or indexes are the best way for you to understand your data. Consider that the colors you choose and the classification method have a large influence on you and to your potential viewers of your map. Maps are powerful sources of information and need to be treated with respect and care when creating and when interpreting.
- (6) You have been mapping current information. Consider mapping population projections, rather than just current population.
- (7) Use the filter tool when mapping to narrow down the “most” or “least” of any variable you are mapping. You can also map more than one variable at a time; use Add Variable to add more variable.
- (8) Use Create Maps > Map businesses > Make a map of possible competitors or suppliers; you can type in business such as “clothing” or “hospitals”, or use the NAICS or SIC codes to map specific business types.
- (9) Once you decide on a few possible locations for your service or product, create a “site” for those selected locations. Consider the ideal drive and walk times for that product or service. A hospital has a much larger catchment area than a grocery store, for example. Click on your optimal sites and create drive, walk, or distance buffers for each.
- (10) For your optimal sites, create infographics. First, take the default demographic information that comes up. But realize that you can also customize the infographics with information that you need. Save your map.
- (11) For 1 optimal site, click on reports and create a report. What information do you gain from your report?

### Data Sources:

<https://livingatlas.arcgis.com> – The Living Atlas of the World. To learn more, see: <https://learn.arcgis.com/en/projects/get-started-with-arcgis-living-atlas-of-the-world/>

San Bernardino County parcels:

<https://www.arcgis.com/home/item.html?id=f19d71b41300498bbc2cc6c15e573ade> Examine the metadata. Then > Open in Map Viewer > enter “Redlands” in the search box and zoom in until you see the parcels. Under content, under layer name, use the table tool to open the table for parcels; the map should look like this, below. Examine the field names and values in the table. Use Filter to filter on OwnerName is CITY OF REDLANDS to reduce the number of parcels you are examining.

Other layers for San Bernardino County are listed here:

<https://www.arcgis.com/home/search.html?q=owner%3A%22County%20Of%20San%20Bernardino%22#content>

Including school sites, zoning, and other layers that may be relevant.

California AADT (Average Annual Daily Traffic) data is here:

<https://www.arcgis.com/home/item.html?id=f71f49fb87b3426e9688fe66039170bc>

### Tools:

- (1) ArcGIS Online: [www.arcgis.com](http://www.arcgis.com)  
To learn more about ArcGIS Online: <https://learn.arcgis.com/en/arcgis-book/>
- (2) Business Analyst Web: <https://bao.arcgis.com>  
To learn more about Business Analyst Web: <https://doc.arcgis.com/en/business-analyst/web/welcome.htm>
- (3) Story Maps: <https://storymaps.arcgis.com>  
To learn more about story maps: <https://storymaps.arcgis.com/stories/cea22a609a1d4cccb8d54c650b595bc4>
- (4) ArcGIS Insights: <https://insights.arcgis.com/#/>  
To learn more about ArcGIS Insights: <https://doc.arcgis.com/en/insights/latest/get-started/insights-overview.htm>

### Analytics:

Consider using the following tools:

- Creating color coded maps on demographics and consumer preferences inside Business Analyst Web.
- Creating drive/walk time and distance buffers for proposed store and services in Business Analyst Web.
- Filter (for parcels meeting specific criteria).
- Summarize within (summarizing areas or points meeting specific criteria).
- Hot spot analysis (to determine clustering of specific variables).
- Proximity buffers (to busy streets, for example).
- Routing (routing vehicles or connecting your sites to suppliers or distributors).

### Additional Investigation:

One possible workflow: You have already started with → Business Analyst Web → When done, create a Story Map. Then, ArcGIS Insights for further analysis.

Use Share > Create a story map. In your story map, consider adding photographs, an infographic, a map, and information about what your problem is, why it matters, and what your recommendations are.

Share your story map to your organization, a group within your organization, and possibly to the general public.

Export your data to an Excel spreadsheet, if you wish.

Add data to ArcGIS Insights for further analysis.

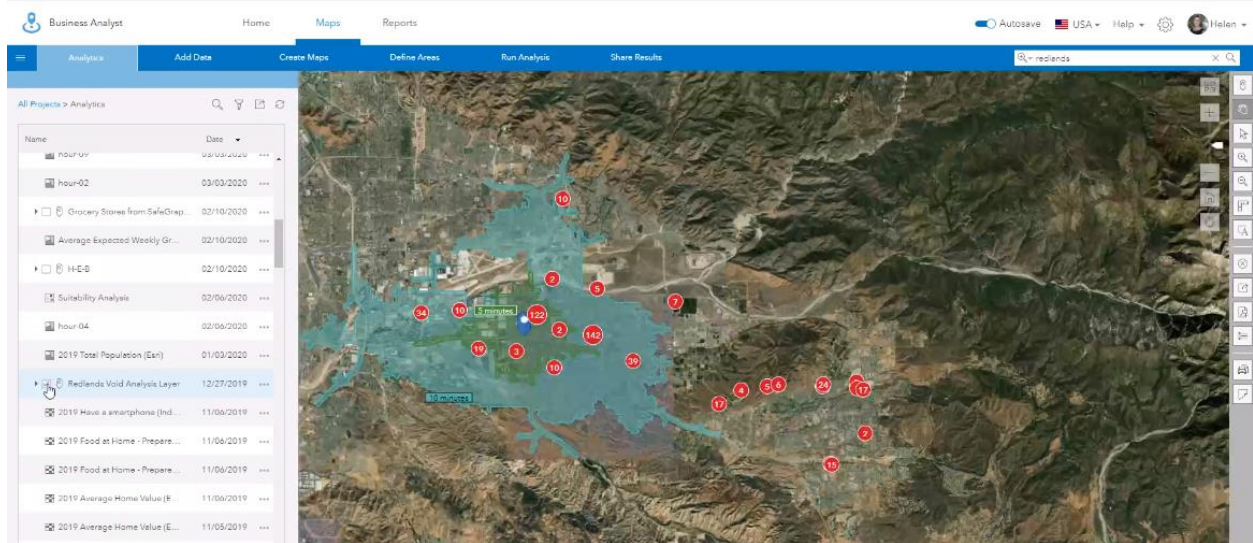
The screenshot displays the ArcGIS Online interface for San Bernardino County Parcels. The map shows a street grid with a popup window for APN 029206333. The popup contains the following information:

- APN: 029206333
- OWNER: D T M LAND COMPANY, LLC
- LAND VALUE: 1,882,620
- IMPROVEMENT VALUE: 6,375,146
- PERS PROP VALUE: 0
- EXEMPTION VALUE: 0
- HOX:
- ACREAGE: 4.12
- BASE YEAR: 2002
- TAX STATUS: 1
- TRA: 0005007
- TYPE USE: AUTO DEALERSHIP (SALES/SVC)

Below the map is a table titled "San Bernardino County Parcels - Parcels (Features: 827366, Selected: 1)".

ParcelNumber	OwnerName	LandValue	ImprovementValue	PersonalPropertyValue	ExemptionValue	HomeOwnerExemptio	ACREAGE
010848129	CITY OF ONTARIO	0	0	0	0		0.23
011335138	BELMONT & GROVE LAND HOLDINGS LLC	0	0	0	0		2.50
011327117	ONTARIO INTERNATIONAL AIRPORT AUTHOR	0	0	0	0		1.65

Screenshot of parcel data in ArcGIS Online.



*Screenshot of spatial data for study area in Business Analyst Web with buffers.*

**For More Information:**

<https://www.esri.com/videos/watch?videoid=IXYFhgntmjg> To learn more about Esri and location analytics.

<https://www.esri.com/en-us/industries/index> Esri industries: Examine retail, banking, and insurance, in particular.

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