Datafest Report

2022 National Crime Index of United States in Relations to Merced County

Engr 180 - Spatial Engineering

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Data recovery process

The objective of this project is to examine the crime index of Merced county which will correspond to the most updated national crime data index of the United States within the year 2022. My partner and I wanted to create a project with the opportunity to refine and expand upon the scope for the purpose of presenting informative and detailed data projection. For this project we have decided to collect the crime data within the US of the year 2022, and clip it to the county of Merced to show what kind of crime occurs in which part of the city. Thereby, it was imperative that the project should be conducted in an organized manner in order to achieve the objective.

The main resource in which the project employs derives from ArcGis online and Merced county open database; given the University credential, searching and retrieving index files was not an issue. The presentation has been decided to be composed of three layers in total - there will be a base map of Merced County with details to road names and public institutions, there will be a raster parcels of Merced for the account of computation of raster analysis and summarization, and the last layer will be the national crime index of the United States in the year of 2022. The process of gathering the data was at first extraneous because we did not use the appropriate jargon within the search engine to generate the desirable data. However, as we looked on Esri and Reddit forums, we found out that data can be acquired through Esri's ArcGis online's database if we have the appropriate credentials. Furthermore, as in regard to finding parcel data of Merced county, we were able to retrieve it from a website called 'www.countyofmerced.com' in which users can publicly access the database to retrieve survey information of merced county. The data collection process took approximately 2 days with

collaboration from both group members.

Critical review of data and sources used

There were three resources used within the composition of this project, two were directly from Esri's ArcGis database and another was from a website sponsored by Merced county; however, it is fair to note that the data collected from this website seems to be of origin derived by Esri. The reason being that when the data is presented on the website, the user can either download it or project it. The option to project will redirect the user to an online projection method using ArcGis servers.

The detailed map layer of Merced county was first published on the date of November 22, 2019 and was last updated by the publisher on the date of May 26, 2022. This data file has a public license and is permitted to be used by anyone. There are three aspects to consider when employing data to any projects; these are, the credibility of sources, the date of publication for means of relevance and the infrignese that may accompany the source when using it. Considering that this data is published by an official ArcGis hub, the data is relevant for it has been recently updated, and the fact that the source has a public license substantiates the value and credibility. Furthermore, this map layer portrays all the road names including highways and backroads of merced. The data also includes zones to describe what kind of public institution or business is present in that area; thus, allowing the analysis of what crime occurs in which vicinity of the city which further adds to the richness of data.

The Second layer of the map is found within the site sponsored by Merced county. From within the site, exits a 'Data' subcategory in which one can search for a desired map layout or data. For this project, we wanted to have a parcel data layer which would present us with the

opportunity to expand the scope of the project. More specifically, given that once the raster values within the parcels data correctly project to the base map of Merced, we may perform statistical analysis of the map if importation and clipping of the national crime index to the Merced base map is successful. The data discovered within the site was first published on November 6, 2019 and last updated on May 11, 2021; this specific feature layer also has a public license in which anyone may use it. Thereby, the trend is to collect and apply the most current data in order to project an accurate and up-to-date project in which viewers may benefit from.

The final layer applied to this project is the USA crime index which is found on the ArcGis online archive published by Esri, created on April 29, 2015 and was last updated on Jun 29, 2022. The resource is also open to public access and edits which is alike to the first two data employed within this project. The data is important because the result of this project is dependent on the success of importing the crime index and clipping it to the Merced county base map which will exclude all the extraneous crime location and only focus on the desired components.This map layer depicts crimes across the united states and categorized them as personal, property damage, theft and break-ins which are color coordinated. I find the credibility within this source conclusive enough to be applied to the project due to relevance and credibility of the publisher.

Team Contribution

For this project, I planned for the mission statement which is to make the connection between the US crime data of the year 2022 to the county of Merced. My partner refined this idea by suggesting that we employ parcel data in order to expand on the scope of the project by summarizing the data or measuring the distance of which crime has occurred given the opportunity. The work contribution for the datafest project done on ArcGis pro was split into equal parts. I did the clipping and buffering of the map while my partner imported and projected

the spatial reference of map layers to match each other in order to produce a precise projection of data. Also, the slide presentation was a joint effort with both my partner and I sharing ideas and mapping the layout of the slides in regards to materials to cover and how to present them within the presentation. Overall, this project was the result of a fifty-fifty contribution from both parties.

Work Citation:

- Austin, N. (2019, November 22). *Merced County Base Map Layers*. ArcGis Online. Retrieved June 20, 2022, from https://hub.arcgis.com/content/mcagov::merced-county-base-map-layers-public/about
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- Barrera, G. (2019, November 6). *Updated Merced County Assessors Parcels*. Countyofmerced.Com. Retrieved May 11, 2021, from https://geostack-mercedcounty.opendata.arcgis.com/search?q=parcel