



SUITABLE LOCATION FOR A NEW UNIVERSITY IN LOS ANGELES COUNTY BY USING GIS AND NETWORK ANALYSIS

INTRODUCTION

This analysis was aimed to find the most suitable site for a new university in Los Angeles County. The Network Analysis was deployed. The analysis was modeled by considering the 15 minutes service coverage area based on the universities data layer and the demand points layer. Ages of demanded population between 20 and 34 were taken into account. Location-allocation and Service Area Analysis Tools were employed to determine the location best fit for the new university in the area.

QUESTIONS

Where would be the most suitable site for the new university in Los Angeles County when the coverage area for 15 minutes was taken into consideration?

STUDY AREA

The area chosen for this analysis is located in Los Angeles County, California. The focused area is laid on the southern part of the County where the demand and universities are dense and reliable.

METHODOLOGY

Data Preparation:

DEM: 6-Mosaiced DEMs were used to execute elevation. A raster layer with two classes, above 430 and below 430 meters generated. **Streets data layer:** deployed to create a network analysis dataset in geodatabase. **Universities data layer:** used to select a set of polygons that universities located in. For calculate average size of all university parcels — initial size for proposed locations. **Parcels data layer:** be diminished in amount by executing the areas which situated around the average size of university parcels. **Census tracts:** used to create a tracts demand layer. Focused on age of population between 20 to 34. **Zoning data layer:** used to condition the parcels which are in unsuitable areas for locating a new university for example heavy industry, watershed, etc.



Data Analysis:

Location-Allocation; Maximize Attendance: To determine the demand weight decreased in relation to the distance between the universities and the demand points. **Service Area Analysis:** To find service areas around a specific location and encircle all accessible streets with a specified impedance (time to reach destinations), and also how many population (aged 20-34) have settled within the area.



Location Allocation Analysis without proposed locations and one redundant location appeared



Location Allocation Analysis with proposed locations. A suitable location shown as 'Chosen'

CA

RESULTS

As shown in the visualization, the outcome exhibits that the southern area of Los Angeles County is the most suitable site for a new university with the highest demand of 33,259. The coverage of 15

minutes service area occupied 117 square miles of Los Angeles County (shown in orange polygon). It was also found that 141,446 or 6.3% of population aged 20-34 living within the area.

CONCLUSIONS

Regarding to the finding, the best location for the new university is at West Covina, on the right side of Los Angeles downtown. This is the location where it reaches the highest facility demand. However, the location and its service area should be refined for the precision.

DATA SOURCES

- ESRI Data 2013 (T:Drive)
- Street map of California
- Census Tracts
- CASIL (T:Drive)
- Facilities — Universities
- Parcels (T:Drive)
- Parcels of California
- DEM
- www.brenorbrophy.com
- Zoning Data
- http://egis3.lacounty.gov