

Middle School Geospatial Technology 2016-2017 Design Brief

Problem

ABC Land Management, a real estate development company, requests one to three property recommendations for a mixed-use commercial retail and apartments building.

Mixed use spaces consist of one or two store fronts on the ground level of a building, with apartments on the upper floors. Others spaces may feature tall buildings, or sprawling shopping spaces with many stores and apartments. Your local economic development group wants you to submit a proposal to ABC Land Management to build this project in your community.

Challenge

Utilize geospatial technology to aid in your research and development of a proposal to persuade ABC Land Management to develop the project in your community.

Use GIS to show numerous indicators, such as those below, to validate your findings.

- Current available space
- Specific needs of your community (related to size, retail needs, office space available, and number of apartments available)
- Proximity of:
 - Public transportation
 - Traffic patterns
 - Schools (elementary, middle, high) and colleges/universities
 - Food, retail, services, supplies, fuel
 - Parks/recreation
 - Restaurants
 - Other specific needs (such as, parking for residents, customers, employees, and business loading areas)

Note: Some of the above may impact the development (e.g., Is, in fact, space needed for a restaurant?)
- DEM (Digital Elevation Model)

Your GIS proposal should identify one to three locations supported by advantages and disadvantages based on your research. An analysis of the selected locations – the result of identified relationships within the community – should be described in the proposal.

Teams should show proficiency in using GIS tools such as Buffer, Density, Slope, Hillshade, Interpolation, and others deemed necessary to substantiate you argument.

NOTES

1. Data may come from numerous sources, including geocoding of local addresses that you know of or have downloaded from any state, or local economic development sources that are available to your community. The USGS and/or USDA may also provide useful geology data. In addition, be sure to check the links on the [Geospatial Technology PowerPoint help presentation](#).

2. It is highly recommended that teams use the resource practice lessons provided at <http://www.digitalquest.com/tsa.html>.
3. Also recommended is free training from ESRI. Schools may contact ESRI to obtain student copies of ArcGIS; the license is good for one year via the 60-day trial version. <https://www.esri.com/training/catalog/search/>