

Methods

In order to develop the map of City of Kent residential developments, several aspects of information need to be considered, including pre-processing information, what the existing data is like, characteristics of the study area, and the logical steps to complete the work.

Pre-processing Information: All of the outside data needed for this project was created and provided by the City of Kent. This data is already in the same projection and the data created for the project was converted into the same projection as well. Because many of the layers extended beyond city limits, clips were performed on these layers to obtain a proper level of uniformity, allowing the layers to only extend out to the Kent city limits. The data acquired was also converted to feature classes and stored in a personal geodatabase.

Description of Data Collected: The datasets needed for this project include roads, major water bodies, Kent city limits, and parcels. The roads layer contains all major and minor roads within the city and is in line format. The major water bodies layer contains the major lakes and rivers, but does not include minor hydrological features, such as small streams. This layer exists in polygon format. The Kent city limits layer simply shows the extent of the city and where the city boundaries lay. These three layers will primarily be used for cartographic purposes and will play no major role in any of the analysis. The parcels layer contains information regarding all the parcels within the City of Kent and exists in polygon format. This layer is the key to performing the analyses in creating the residential developments layer, and will be used mostly for this purpose.

Description of the Study Area: The City of Kent is a fast-growing city, located in the southwest area of King County, Washington. It is the largest city in South King County, with a population of over 84,000 people, which is projected to increase to over 100,000 people in the next few years. Covering approximately 29 square miles, Kent serves as a hub for many different services, both industrial and commercial, and is experiencing a large growth in residential neighborhoods. See Figure 2 for a map of the City of Kent.

Steps Performed to Complete Analysis: For this project, a Microsoft Access database and a residential developments shapefile was created. The Access database was produced using an existing Microsoft Excel spreadsheet. I created this spreadsheet using information given to me by the City of Kent and from information gathered from the city's computerized permitting system called KIVA. This spreadsheet contains all the information needed for the final shapefile, including project name, KIVA number, file number, address, parcel, number of lots, zoning, planner, and contact information for all 137 current residential development projects. I converted this Excel spreadsheet into an Access database. This database was then used to help create the residential development layer.

Using the Access database and the parcels layer supplied by the City of Kent, a join was performed in ArcMap to link the two sets of data together. A new layer was then created from the joined information and the information in the attribute table was edited

and finalized. A large-format map with all the necessary cartographic elements was made using this layer (along with the roads, major water bodies, and city limits layer).

To further the project, an Access form will be made, allowing planners in the City of Kent Planning Services to update the Access database in the event of a new residential project in the city. This updated database will then update the shapefile, keeping the layer from becoming outdated. The shapefile will also be converted to KML format to be used in GoogleEarth.

In order to allow the City of Kent to recreate all these steps and update the map themselves, a step-by-step tutorial will be made to serve this purpose.

See Figure 2 for a data-flow diagram outlaying all the analysis processes mentioned above.

Figure 1. Study Area



