Population and Demand Allocation Using Polygon Overlay Techniques

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The Polygon Overlay Technique

The polygon overlay technique is the process that links the land use and demographics prior to demand calculation. at the end of the process, the population or housing units (our example uses housing units) will be re-aggregated for a total for each service area.

The process is completed in 6 steps:

1. The demographics polygon coverage is intersected with the land use polygon coverage.

2. The population or housing unit density is calculated for each demographics polygon in the demographics polygon coverage, after excluding land uses for which demand is based on other assumptions (commercial, industrial, recreational).

3. The resulting demographics/land use coverage is intersected with the service area polygon coverage. The resulting demographics/land use/service area coverage contains smaller polygons; each attributed with a population or housing unit density, a land use, and a service area identification.

4. The population or housing unit count is restored to each polygon by multiplying the density by the area. At this step additional processing may be applied to “enhance” the results, such as proportional redistribution.

5. Demand is estimated for each polygon based on the specific mathematical relationship between land use and demand. At this step, formulas are supplied for the areas excluded in step 1, sometimes on a business by business basis.

6. Finally demand is aggregated (summarized) by service area polygon.