

ABSTRACT

Park planners make long-term land acquisition and capital improvement plans based in part on population growth and gap analysis of existing facilities. This study demonstrates a new cadastral-based technique to measure park access for residents in Wake County, NC. Based on road network and cadastral data, the technique uses the Origin-to-Destination Matrix Tool within Esri's Network Analyst extension in conjunction with dasymetric mapping of US Census Data to the cadastral data. The demonstrated workflow provides for a highly detailed assessment of walking distance between parcels and parks, that when linked with the population data, provides a gap analysis based on the amount of parkland and number of parks available at each parcel. Successful completion of an analysis at this level of detail illustrates a very different view of park coverage for Wake County, NC compared to traditional methods, revealing how hard edges created by major thoroughfares and soft edges created by property ownership impact pedestrian accessibility. Using the cadastral-based method, 19.85% fewer parcels have 1/4-mile park access than compared to a buffer based method (6.72% versus 26.27%). The use of this type of technique will allow for a more comprehensive assessment of the peoples served by the park system and when coupled with demographic information, may prove more effective in assessing grants and monitoring the impact of public initiatives promoting equality and uniformity of access to public parks.