

ABSTRACT

One of the major responsibilities of a city government is management of real property, both public and private, within its jurisdiction. Classically, land is described by parcel (an aerial geospatial feature) while structures are referenced by address (a pseudo-spatial text string). Handwritten, typed, and computerized address lists in spreadsheets and non-geospatial databases have been and continue to be used by the various departments within city governments. Inevitably, these lists are unevenly updated and inconsistent in various ways. Modern data management systems, specifically Microsoft Excel, contain tools for standardizing tabular data, including addresses. Geographic information systems (GIS), which can be used to manage parcel and address data directly, have traditionally relied upon street centerline or parcel geocoding to spatialize an address and determine its location. Utilizing Excel and geocoders together, to create a complete and reliable master address file (MAF), can help a city government operate more efficiently. Explicitly spatializing the relationship between addresses and parcels by converting textual addresses to address points (APs) in a GIS database, is critical for many aspects of city business operations, because doing so allows the points to be mapped. This thesis demonstrates that an accurate and complete set of APs is a superior solution to street centerline or parcel geocoding. APs can be created from a city government's multiple, internal spreadsheets and databases, utilizing Microsoft Excel and GIS in combination with street centerline and parcel geocoding, resulting in an MAF and APs that can be used citywide.