



Address Based Geoauditing

The Key to Return on GIS Investment

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February, 2006

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What is Geoauditing?

- Geoauditing is a process of using addresses and other geographic information to evaluate whether all taxes, fees and revenues are being properly collected.
- Questions asked in a geoaudit:
 - Is every customer that receives a service paying for that service?
 - Is every parcel within our jurisdiction taxed, and is it taxed for the correct districts, cities, etc.?
 - Are companies that have franchises for services within our community paying the proper fees based on customers' locations?

What is Needed to Perform a Geoaudit?

- Addresses (more about these later)
 - Linked to parcels, buildings, other features
- Service areas, district and municipal boundaries (schools, fire protection, etc.)
- Customer lists and tax rolls

Why Addresses Matter

- Addresses are the most widely used identifier of people, places and events
- Addresses can be used to link information about land, buildings, infrastructure and events across the municipal or county enterprise
- Addresses are key to providing services efficiently, economically and quickly

What Needs to be Done?

- Existing address data must be cleaned up
 - Addresses are found in many databases in different departments, but no one has a 100% complete list
 - Mixture of mailing and physical addresses
 - Addresses may not be tied to geographic locations
 - Wide variations in spelling and format of addresses

Creating a Master Address List

- Start with best lists and combine
 - Often tax roll, E-911 (ALI database), voter lists
 - Standardize address elements
 - Street names, address ranges, place names
 - Develop as complete a list as possible
- Geocode addresses using GIS software
 - Helps locate what is not addressed and which addresses are incorrect

Master Address List

- Key to data throughout the organization
- Should be incorporated into an address repository used by all departments for validating addresses
 - Insures that services are provided to eligible citizens
 - Improves efficiency and economy of providing services

Next: Boundary Files

- Accurate boundaries for every municipality, district, or service area to be audited must be created in GIS
 - Taxing entities have legal boundary descriptions
 - Sometimes held by Secretary of State
 - Sometimes held by County Clerk or Recorder of Deeds
 - Service area boundaries may be documented in service agreements, contracts, etc.

Boundaries

- Be sure that the boundary descriptions are up to date.
- Accuracy matters! Be sure that boundary lines are correctly drawn in the GIS.
- When creating boundaries, each one should be a closed polygon.
 - If the boundary extends outside of your jurisdiction, get data from adjoining jurisdiction to complete the area.
 - Obtain addresses for extra-territorial areas if possible.

Obtain Customer and Taxpayer Lists

- Collect the existing lists of taxpayers and customers from:
 - Assessors
 - Franchisees (solid waste, cable TV, utility services, telephone services, etc.)
 - Utility billing lists
 - Business licenses
 - Voter Registration

Standardize Addresses in these Lists

- Once the lists are collected, addresses in them must be standardized sufficiently to match to the Master Address List
 - Standardize street names, street types (and abbreviations) and directionals, place names.
 - Quality review address numbers against block ranges.
 - Maintain original data and add standardized format addresses to it in database.

The Geoaudit Process

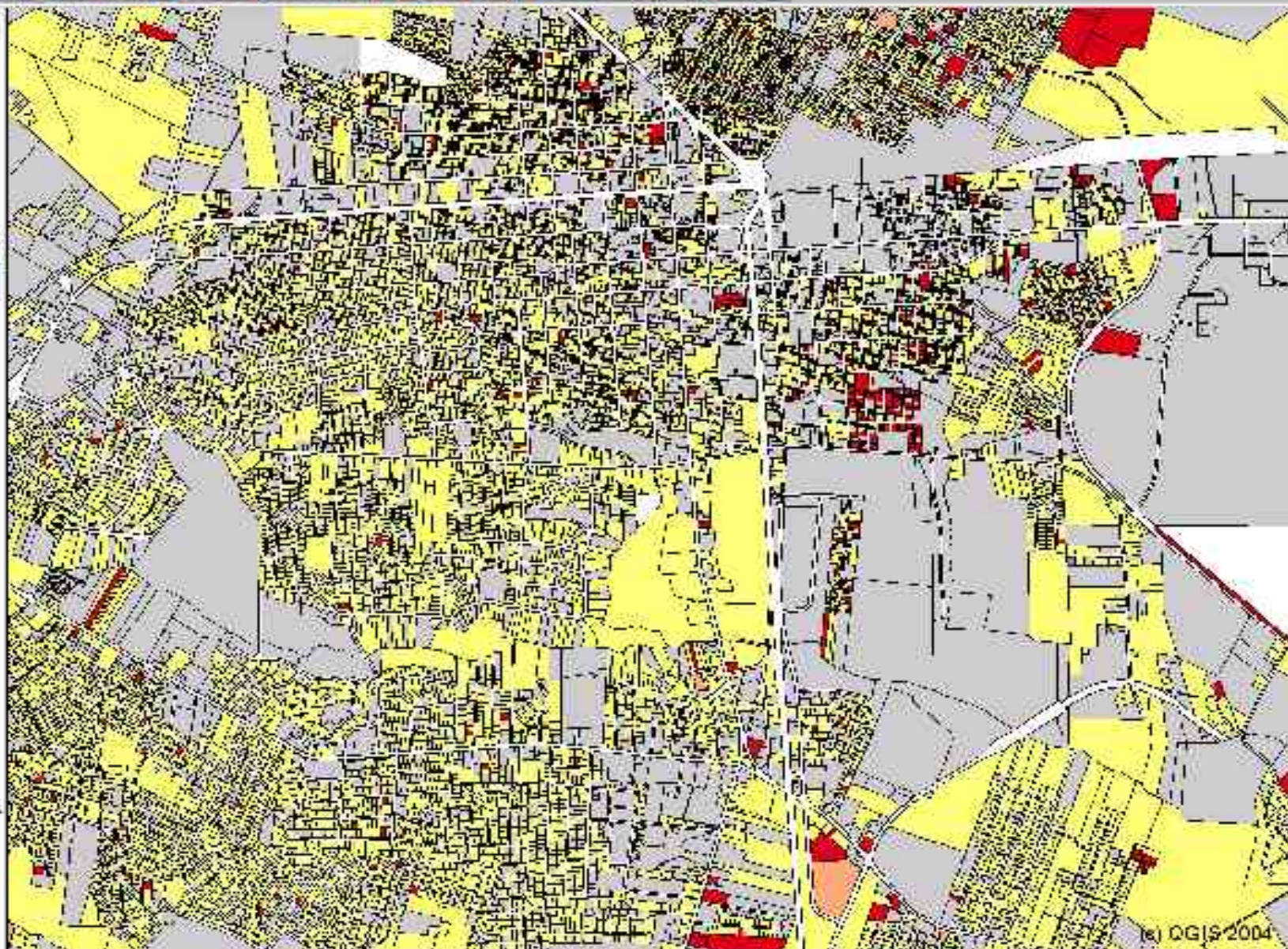
- Using the GIS, plot the addresses from the individual lists, and determine whether they are within the boundaries for the entity being audited.
 - See if any of the address points are outside the boundary.
 - Determine if there are known addresses within the boundary that are not on the customer or tax list.

The Geoaudit Process (continued)

- Document the missing or incorrect addresses for the entity.
- Repeat this process separately for each entity being audited.
- Review anomaly lists (missing, incorrect, outside boundary, etc.) for each jurisdiction
 - Check boundaries to be sure they are correct
 - Check address data to be sure there is no error
- Review results with data provider.



- Layers
- Parcels with addresses (junk)
 - Area - Jess
 - Buildings only
 - Canal address
 - Common only
 - Incomplete address
 - M.L. pie addresses in one file
 - Out of Landfill
 - Postal Information only
- M
- Parcels with all addresses



(c) QGIS 2004

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An Addressing Story

- In developing an addressing database for a County, about 100 addresses were found for which no parcel could be identified from County Tax Maps.
 - Review of the orthos and planimetric data showed homes and roads but no parcel lines in a certain area.
 - Field checks located the “missing” addresses in this area.

How Did This Happen?

- Land area was within a municipality
- City had approved the subdivision of the land into about 100 parcels with roads, etc.
- City assumed that developer would record the subdivision plat; developer thought that the City did this.
- City assumed it was recorded, and issued building permits.
- **Result:** Addressing audit added 100 residences valued at an average of \$200,000 to tax rolls.

Addressing and Customers

- The City of Cincinnati recovered over \$27 million (yes, that's million) in unpaid sewer fees through an address audit. Many citizens were receiving “free” sewer services.
- Orange County, FL, audited cell phone franchise lists and received an additional \$1 million in annual revenue. The phone companies were assuming that the postal/ mailing address was same as the physical location of the address. Those customers with a “city” address but outside the city boundaries were not being reported and franchise fees were not paid.

Revenue and Non-Revenue Geoauditing

- Revenue Audits
 - Taxes (cities, special districts, schools, etc.)
 - Customer billing (utilities, service fees, etc.)
 - Franchise fees (utilities, services)
 - Impacts on revenue allocations through Census and Federal/State Highway funds
- Non-Revenue Audits
 - Voters (are they voting in the right district?)
 - School attendance zones
 - Fire/police service areas

Benefits of Geoauditing

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- Transparency of government
 - Knowing that the right services are provided to those who are entitled to them
 - Knowing that everyone who should pay for the services is paying their fair share
- Increased efficiency of government
 - Master Address Repository

For Further Information

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