Parcel Update Strategy

Incorporating ArcGIS 9.3 tools, Web Based Assessor Data, and Map Scanning Technology to Improve the Speed and Accuracy of the Parcel Geodatabase Maintenance

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Background Information

Waterbury, CT
Population: 107,000
Founded 1674
Area: 27 Square miles
Roads: 320 miles
Industry: Former Brass Manufacturing Capital of the World

- Distressed City
- Neglect of municipal infrastructure
- 1 billion dollar unfunded liability
- 2001-2007 State Financial Takeover
GIS project - History / Timeline

City of Waterbury, CT – Engineering Technology Upgrade Project

- Initial Project – Began groundwork and contracts 1989
- Aerial Flight and Topographic Mapping 1990
- Field Editing and GIS coverage building
- Y2K upgrade 1999 (last monies allocated to GIS)
- 2006 - Develop strategic plan, present to administration and budget director
- 2007 - $250,000 Capital Improvement fund approved, initialize technology purchases
- 2008 - Implement Technology Upgrade
- 2009 – Utilize technologies to improve GIS parcel base accuracy
- 2010 – Integrate GIS with other Enterprise wide software (Citywide one-stop permit center)
Master plan: improve services to Departments and Public

- Implement ArcGIS Server – Host GIS Applications for all Departments and Bureaus
- Large Format Scanning Project (100,000+ maps) Create searchable Digital Map Vault, FTP
- Upgrade Survey Equipment – integration with modern tools and technologies
- Implement Survey Grade GPS technology
- Upgrade Hardware and Engineering Software
- Create internal Web based PDF application – to serve over 2,000 static and record GIS maps
- Improve network Plotting and low cost, large format printing options
- Develop Parcel Management Strategy to Improve GIS parcel base accuracy
- Integrate GIS technology with other enterprise software
Initial Parcel Digitizing

The Days of Arc and Info...

DXFOUT Import DXF Clean Build

CAD Topographic Base Maps (NAD83 Ref)

Assessor Base Maps (Mylar Overlay)
Initial Geocoding of Assessor Data

- Geocode to Centerline File
- Offset 75'
- Combine Attributes of Address Points within Polygons
Web based connection to the Live Assessor Database is a key factor when filling in empty data fields during the process. It also helps to determine if a questionable parcel exists in the database.
Assessor Mapping Links

The availability of a live network link to Assessor Mapping helps to answer many questions during the Update Process.
Live Link to Town Clerk Map Vault

All new subdivisions and property boundary changes are recorded in the public land records, a live network link enables the ability to georeference the survey maps to verify new boundaries.
Live Link to House Numbering Maps

A live network link to engineering maps, including NUMBERING MAPS, allow for easy verification or Georeferencing of the maps designated as the official building numbers.
Visually Represent
Inconsistencies between
Geodatabase and Assessor Database
Manually check each Parcel for Inconsistancies between GIS and paper maps. (number errors, splits, joins, subdivisions)
Georeference Existing Maps

This becomes a key factor in visual overlays of paper maps within the GIS environment. The inclusion of Aerial Photography along with the scanned maps and GIS data make updating parcel boundaries a much less cumbersome task than in earlier releases.
Adjust Map Topology

Utilize Topology Tools to create an improved representation of the boundaries. Adjusting common polygon boundaries to help reduce and correct digitizing and rubber-sheeting errors.
Edit Polygon features (merge, split, new)

The current set of Editing Tools make it quick and easy to maintain parcel changes within the GIS environment. Merging parcels, splitting parcels, and digitizing new subdivisions is done effortlessly.
Edit Attribute Features
(Map-Block-Lot, Unique-ID, Address)

Altering the associated attribute data is helped along by calling up the Assessor Valuation Data Web site. Copying and pasting the appropriate data fields improves the speed at which updates are performed.
The most important command of all: SAVE

The result of verifying and updating all 30,000 parcels significantly enhances the overall capabilities of the entire GIS System. The Parcel Base contains the basic data that many other databases tie to. It becomes the strong foundation of a successful GIS system.
Live Progress Reporting

The resulting updates are viewable live in all ArcGIS Desktop and Server Applications that include the Assessor Parcel GDB and Assessor Map Link data.
Practical Applications: 500' Buffer Notification

500' Buffer Zone - Watertown Ave - Falls Ave Properties

500' Buffer Area

Swap Area

Parcels within 500' of Swap
Practical Applications: ArgGIS Server
Integrate PDF static map application as hyperlink in enterprise wide ArcGIS Server Applications

Interactive application of over 2,000 of the most used static maps