Improving Real Estate Appraisal and Assessment using ArcGIS

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Auditor: George Kaitsa
AAA Bonded by Moodys & Standard & Poors

Population: 196,463
Annual Growth Rate: 13%
19 Townships
10 Cities and Villages

Part of the Columbus Metropolitan Area
Ohio Revised Code 5713.03

5713.03 County auditor to determine taxable value of real property.

The county auditor, from the best sources of information available, shall determine, as nearly as practicable, the true value of the fee simple estate, as if unencumbered but subject to any effects from the exercise of police powers or from other governmental actions, of each separate tract, lot, or parcel of real property and of buildings, structures, and improvements located thereon and the current agricultural use value of land valued for tax purposes in accordance with section 5713.31 of the Revised Code, in every district, according to the rules prescribed by this chapter and section 5715.01 of the Revised Code, and in accordance with the uniform rules and methods of valuing and assessing real property as adopted, prescribed, and promulgated by the tax commissioner. The auditor shall determine the taxable value of all real property by reducing its true or current agricultural use value by the percentage ordered by the commissioner. In determining the true value of any tract, lot, or parcel of real estate under this section, if such tract, lot, or parcel has been the subject of an arm’s length sale between a willing seller and a willing buyer within a reasonable length of time, either before or after the tax lien date, the auditor may consider the sale price of such tract, lot, or parcel to be the true value for taxation purposes. However, the sale price in an arm’s length transaction between a willing seller and a willing buyer shall not be considered the true value of the property sold if subsequent to the sale:
Ohio Sexennial (Reappraisal) Schedule
County Goals and Objectives

Increase Management Capabilities

➢ Previously paper – PRCs & spreadsheets
➢ Limited input / control / tracking

Increase Data Accuracy and Consistency

➢ Previously "Blind" data entry
➢ Manually overridden values on per parcel basis

Leverage GIS Infrastructure

➢ Utilize ArcGIS Enterprise
➢ Provision AGOL Apps
➢ Standard GIS Driven Workflows
Core Components

CAMA Files
- Thomson Reuters MVP
- XML, TXT, SVG

Microsoft SQL Server
- CAMA staging environment

ArcGIS Enterprise
- AGOL organization
- Map services
- Enterprise GDB
- Aerial tile cache
**System Prerequisites**

XML and text files are exported from CAMA database to feed Paperless Reappraisal System database. XML will allow import procedures as well.

**ArcGIS Enterprise (Server)** leverage the ability to publish map services.

**Tile Cache** has been built to provide a base map and reference features for the Mobile Property Record Card app (field appraisals).

**Microsoft SQL Server** is running on our internal GIS server cluster. SQL stores all the Paperless Reappraisal System tables that are import from our CAMA system and also generates the XML import file that is imports data from the PRS back into the CAMA system database.
Configurable Options

Editable Domains

[Image of Edit Window with fields for Card Number, Type, Stories, Area, Year Built, Rate, and Value]

[Image of Database Properties window with columns for Domain Owner, Domain Name, and Description]
MXD Templates

- Symbology
- Content Control
- Labeling
- Simplify User Experience
# AGOL Organization Specifics

![DelcoaPRS Group](https://delco.maps.arcgis.com/home/group.html?id=5e85fd303502425bb4cf5649456e7084)

## Group Content

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## Group Details

- **Owner**: delco
- **Status**: Private
- **Contributors**: Only group owner
- **Tags**: PRS

## Members

- delco
- byost_delco
- chunter_delco
- delco_mgoodman
- delco_mheliman
- Delco_marsons
- delco_wilsonla
- elc707appr@ciomai.co
- aricbrl_delco
- Bruce Harris & Associates, Inc.
Packet Builder

Packets criteria:

- Tax district
- Geographic location
- Property class
- Number of parcels.

The ordinal numbering of the parcels in each packet ensures efficient desktop review and routing of field appraisers.
Sketch Reviewer

- Sketch polygons were extracted from CAMA database.
- All buildings, including outbuildings were imported in a Sketch polygon geodatabase.
- Pre-placed polygons systematically dropped all polygons into referenced parcel polygon and attempted to rotate them into place.
The team used the PRS Sketch Reviewer app to review, place and ultimately pass or fail each parcel’s sketches.

Sketch components that don’t match visually can be measured.

CAMA sketch labels and dimensions are overlaid for additional comprehension.
Photo Reviewer

- Reviewers have access to all comments from Sketch Review.
- Reviewers also have a rich dashboard environment with CAMA Property Data, GIS layers, Aerial photography and street level photography.

[Image of Photo Reviewer software interface]
Photo Reviewer

- The ability to see improvements from multiple perspectives while reviewing the CAMA.
- Measuring tools, mark-up tools and the ability to edit the CAMA data provide the level of detail required for consistent assessments.
Mobile Property Record Card

- Tile Cache provides mobile map.
- Checkout all parcels that require field checks.
- Check in/checkout with no internet dependency in the field.
Mobile Property Record Card

- CAMA property database available in logical tab format in the field.
Quality Control Application

- Data Entry Review
- Import “Characteristics” prior to entry
- Fail parcels if edits do not need standards
Quality Control Application

- **Queue** – Submitted parcels from Photo Review and Mobile PRC.

- **Open** – Parcels that are open in review and have to be completed.

- **Approved** – Parcels that are entered into CAMA system and Accepted in PRS.

- **Declined** – Parcels that have to be reviewed by appraisers and possibly are field checks.
The details for each parcel are available in the Queue.

Comments, date, time and the reviewer are all visible.

The Queue in the last step in finalizing parcel changes into the CAMA system and ensuring that each parcel has gone through the PRS.
Executive Dashboard

- Monitor General Workflows
- Create Filters and Selections
- Review each workflow status
Executive Dashboard

➢ Review each workflow status
➢ Visualization tools make project meetings more productive
➢ Project Management statistics
➢ Being able to filter and select work by Taxing District makes managing every aspect of the project easy.

➢ This level of detail identifies areas for additional review (i.e. field checks, volume in Queue to be reviewed).
Adaptive Workflows

How do I keep the data updated?

Parcels

➢ Geometry is compared and updated nightly
➢ New Parcels **ALWAYS** override existing workflows

CAMA Data (Export / Import)

➢ XML and TXT run on nightly routine
➢ Imports can be turned on and off as needed (Log files)
➢ Characteristics are marked as “IS UPDATED” or “IS NEW”
CYCLE OVERVIEW

PRS DATABASE

LISTING (PHASE 1)

REVIEW (PHASE 2)

NEW CONSTRUCTION (PHASE 3)

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Listing Overview

1. Packet Builder
2. Sketch Reviewer
3. Photo Reviewer
4. Mobile Property Card
5. Quality Control Reviewer
6. Executive Dashboard
Cyclical Reappraisal

Daily Camera Update
1. Packet Builder
2. Sketch Reviewer
3. Photo Reviewer
4. Mobile Property Card
5. Quality Control Reviewer
6. Executive Dashboard

Daily Camera Update
1. Packet Builder
4. Mobile Property Card
5. Quality Control Reviewer
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Daily Camera Update
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Delaware County 1806
Overview

➢ Create efficiency from the desktop and management perspectives

➢ Mobile Challenge to replicate paper (time constraints w/ tabular data)

➢ Gain efficiencies through importing “Characteristic data”
Trials and Tribulations

Learning Curve

➢ The Digital World

Tablets in the Field

➢ Adverse Conditions
➢ Technical Assistance

Traditional Methodology

➢ ”Paper is Easier”
Benefits

Value-Added Benefits

➢ Efficient Desktop Review Methods

Return On Investment (ROI)

➢ Increase “Market Value” on buildings
➢ omitted and unpermitted structures
➢ validate both new and legacy data
➢ Negotiated Services (In-house vs. Contracted)
➢ ”Doing More with Less”