Course Outline

Mark Paulat, Wisconsin Department of Revenue
• IAAO standards to be followed
• WPAM Compliance Requirements
• Why desktop review, why now?

Steve Miner, City of Milwaukee, and IAAO Rep. for Wisconsin
• Technology needs for Assessors and the Wisconsin Land Information Assc.
• IAAO Standards
• Purpose of desktop review for Milwaukee
• Performing assessment/appraisal review and valuation
• Defending assessments / Technology required
Course Outline - continued

Jason Fetch, Esri

Arcgis for Assessment, Tax and Land Records

- System Types
- System of Record
- System of Insight
- System of Engagement
- Use of ALL- Apps & Maps

- Parcel Data Management
- Field GIS *
- Value Analytics *
- Public relations
Course Outline - continued

Dean Larson, Eagle View Technologies

• Hands on applications
  • Measurements for defensible valuations (distance, area, height, etc)
  • Query GIS Layers (state wide parcels)
  • Saved workspaces
  • Workflows; browser, mobile, integrations into everything else
  • Who else consumes obliques?
Course Outline – Adam Dorn Oshkosh

Adam Dorn-Oshkosh

- Assessment Data Integration
- CAMA's
- Classification, Housing styles, influence codes, foreclosures
- County applications: Ascent,
- ArcGIS, AGOL
- GCS
- M Power Innovations
- WG Extreme
- R & M
- Data resources: WLIA, MUGG
Putting it all together –

• Desktop review applications
  • Data driven applications
  • Supportable valuations
  • Examples
Course Outline – Discussion

• Timelines
• Costs
  • Grants
  • Consortiums
• Technology
  • Consumption of data
• Founded in 1987, WLIA is a grassroots organization representing a collection of concerned professionals working to develop, maintain, and apply a network of statewide land information systems.

• WLIA is united by an interest in land records modernization, GIS, and related technologies, and by the need for government policies and programs that support their efficient and effective application.
Technology Upgrades Support WLIA Purpose

• ...to foster the understanding, development, operation and maintenance of a network of statewide land information systems.
• ...require the spatial registration of various layers of land data that are maintained independently in various offices, agencies and organization...
• ...mission is focused on promoting sound policy, promoting interaction and cooperation, technical research and education.

• [https://www.wlia.org/about/](https://www.wlia.org/about/)
Required Standards for Assessors

• IAAO Technical Standards - Available on IAAO web site at www.iaao.org (14 of them) including:

• Standard on Mass Appraisal, Section 3.3.5 Alternative to Periodic On-Site Inspections, AKA Desktop Review

• Wisconsin Property Assessment Manual (WPAM) – Chapter 4
IAAO Technical Standards

• 1) Standard on Assessment Appeal
• 2) Standard on Automated Valuation Models (AVMs)
• 3) Standard on Contracting for Assessment Services
• 4) Standard on Digital Cadastral Maps and Parcel Identifiers
• 5) Standard on Manual Cadastral Maps and Parcel Identifiers
• 6) Standard on Mass Appraisal of Real Property
• 7) Standard on Oversight Agency Responsibilities
IAAO Technical Standards - continued

• 8) Standard on Professional Development
• 9) Standard on Property Tax Policy
• 10) Standard on Public Relations
• 11) Standard on Ratio Studies
• 12) Standard on Valuation of Personal Property
• 13) Standard on the Valuation of Properties Affected by Environmental Contamination
• 14) Standard on Verification and Adjustment of Sales
"3.3.5 Alternative to Periodic On-site Inspections"

- Provided that initial physical inspections are timely completed and that an effective system of building permits or other methods of routinely identifying physical changes is in place, jurisdictions may employ a set of digital imaging technology tools to supplement field reinspections with a computer-assisted office review. These imaging tools should include the following:
  - Current high-resolution street-view images (at a sub-inch pixel resolution that enables quality grade and physical condition to be verified)
  - Orthophoto images (minimum 6” pixel resolution in urban/suburban and 12” resolution in rural areas, updated every 2 years in rapid growth areas, or 6–10 years in slow growth areas).
"3.3.5 Alternative to Periodic On-site Inspections“ - continued

- These imaging tools should include the following:
- **Low level oblique images** capable of being used for measurement verification (four cardinal directions, minimum 6-inch pixel resolution in urban/suburban and 12-inch pixel resolution in rural areas, updated every 2 years in rapid growth areas or, 6–10 years in slow growth areas).
- These tool sets may incorporate change detection techniques that compare building dimension data (footprints) in the CAMA system to georeferenced imagery or remote sensing data from sources (such as LiDAR [light detection and ranging]) and identify potential CAMA sketch discrepancies for further investigation.
"3.3.5 Alternative to Periodic On-site Inspections“ - continued

• These imaging tools should include the following:
• Assessment jurisdictions and oversight agencies must ensure that images meet expected quality standards. Standards required for vendor-supplied images should be spelled out in the Request for Proposal (RFP) and contract for services, and images should be checked for compliance with specified requirements. For general guidance on preparing RFPs and contracting for vendor-supplied services, see the Standard on Contracting for Assessment Services [IAAO 2008].
In addition, appraisers should visit assigned areas on an annual basis to observe changes in neighborhood condition, trends, and property characteristics. An onsite physical review is recommended when significant construction changes are detected, a property is sold, or an area is affected by catastrophic damage. Building permits should be regularly monitored and properties that have significant change should be inspected when work is complete."
What technologies are involved?

- Digital Sketches that are Georeferenced
- High Quality Street level imagery
- Ortho / Oblique Imagery
- Desktop Review software
- Change Detection reports
- Mobile PCs
• Current high-resolution street-view images (at a sub-inch pixel resolution that enables quality grade and physical condition to be verified)
• Orthophoto images (minimum 6” pixel resolution in urban/suburban and 12” resolution in rural areas, updated every 2 years in rapid growth areas, or 6–10 years in slow growth areas).
• High-resolution metric oblique images capable of being used for measurement verification
These tool sets may incorporate change detection techniques that compare building dimension data (footprints) in the CAMA system to georeferenced imagery or remote sensing data from sources (such as LiDAR [light detection and ranging]) and identify potential CAMA sketch discrepancies for further investigation.
• Digital Sketches that are Georeferenced
• Change Detection based on building outlines
Minimal Requirements before implementing Desktop Reviews

• Initial physical Inspection – completed timely
• Effective system of Building Permits or
• Other methods of routinely identifying physical changes
How will Milwaukee implement Desktop Review and the use of Oblique Imagery?

- Understand the technologies that are involved
- Learn from current users
- Create an implementation plan - including a budget and timeline
- Develop your funding mechanism
- Recalibrate technology upgrade plans as often as needed
- Milwaukee: went from 86 staff to 46 staff over the last 30 years, asked to do the same and more
Sample desktop from ESRI Canada
Sample desktop from iLOOKABOUT
Incremental Approach to the Reappraisal

- Desktop Review
  - With the new photography, interns verified property characteristics, Grade & Condition, etc.
  - Properties were Quality Controlled by in-house appraisers.
Learn from others (so you know what is possible)

• Attend IAAO GIS/CAMA conference – learn from the best

• Learn from vendors

• Learn from other Assessors that have implemented these solutions

• Ask lots of questions
Oblique Imagery Vendors

- ControlCam
- EagleView Technologies (Pictometry)
- NearMap
- Sanbourn Map Company Inc.
- Woolpert
- Others
Create a technology implementation plan

• Plan will be modified as you:
  - learn more information from vendors and current users
  - work through budgeting constraints
  - determine who your partners are
  - find new uses for the data (who may help pay for the data)
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<td>Sketch creation, editing</td>
<td>Adm Budget - ITMD</td>
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<td>Yes</td>
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**Total from above: $0**
### Wisconsin Property Assessment Manual

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<td>Development of RFP for Sketch creation</td>
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<td>Install Appeals &amp; Litigation Management software from Patriot</td>
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<td>Development of RFP for new Street Level Imagery</td>
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<td>IAAO Certificate of Excellence in Assessment Administration (CEAA)</td>
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<td>2020</td>
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<td>Demos and selection of Vendor for Desktop Reviews</td>
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<td>Contract negotiation for Desktop Review software</td>
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<td>Install Management application for Desktop Reviews &amp; use for Sale reviews &amp; permit reviews</td>
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<td>Demos and selection of Vendor for Change Detection software</td>
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<td>2021</td>
<td>Begin Desktop Reviews for Permits and up to 10% of all properties</td>
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<td>Purchase Spatialiaest software</td>
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<td>2022</td>
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<td>Purchase &amp; configure mobile pcs</td>
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<td>Continue with Desktop Reviews for Permits and up to 10% of all properties</td>
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Takeaways

• If there’s no end-goal in mind

• There will never be a timeline

• Or movement – you have to start somewhere
Jason Fetch, Account Manager Local Government Team, ESRI

• System Types
• System of Record
• System of Insight
• System of Engagement
• Use of ALL- Apps & Maps
• Parcel Data Management
• Field GIS *
• Value Analytics *
• Public relations
Dean Larson, EagleView Technologies

Demonstration
Consumption of Obliques (beyond Assessors)

- Imagery integrates into 911 CAD software to verify cell phone locations
- Situational awareness, planning, location intelligence & training exercises
- Imagery can be used in court

- View property details to assess accurate value and determine tax rates
- Rely on imagery when processing appeals

- Pre-planning before onsite work (manholes, drainage, valves)
- Determine runoff patterns with oblique imagery

- Imagery layered on GIS data aids in planning
- Georeferenced ortho and oblique imagery provides accuracy
Consumption of Obliques

**PLANNING & ZONING**
- Code enforcement
- Imagery can determine how a parcel will be used and if permits are granted

**FIRE DEPARTMENTS**
- Wildfire control using wide-area imagery
- Planning and emergency drills

**EMERGENCY MANAGEMENT**
- Disaster preparedness, mitigation, response, and recovery planning

**SURVEYOR**
- Determines property boundaries
Consumption of Obliques

Also....

• Public
• State Agencies
• Elected Officials
Consumption of Obliques

Emergency Management / Disasters
• Rock River, Ft. Atkinson 2008
Consumption of Obliques

Emergency Management / Disasters

- Douglas County, 2013
Mobile
911 Dispatch
Sketches and other data from imagery
EagleView Property Information Card (EPIC)
Methodologies, Availability, What’s Next?
Oblique imagery
Availability in WI

EagleView WI Customers 2018
Assessment methodology in WI

• Everyone is doing their own thing in their own unique way in every county
• Not sustainable
Some Neighboring States...