



MSDI Cadastral-Mapping Control Working Group

April 22, 2025, 10:00am – 12:00pm

Presentation Overview

- Welcome & Introductions
- Overview of Assessing MSDI Framework Data
- Cadastral Working Group
 - Review Data Improvement Matrix
 - Theme Updates
 - Next Steps
- Mapping Control Working Group
 - Review Data Improvement Matrix
 - Theme Updates
 - Next Steps
- Closing

Overview of Assessing MSDI Framework Data

- MSL's *GIS Coordination Strategic Plan (2022)*
- Goal 4:
 - "Improve the collection, maintenance, and dissemination of authoritative geospatial information, aiding the creation of better policies, more informed decisions, and providing value to Montana."
- Objective 3:
 - "Assess datasets and data themes using the data quality measures"
- Objective 4:
 - "Determine actions needed to improve the value of the selected datasets and data themes"
- Objective 5:
 - "Generalize the findings in Objective 4 to a program of data quality improvement"

Overview of Assessing MSDI Framework Data

- Data quality measures:
 - **Update Frequency:** an aspect of "Timeliness", specified in this assessment because it is usually an explicit part of data management workflows
 - **Archive Frequency:** an aspect of "Timeliness", specified in this assessment because it is usually an explicit part of data management workflows
 - **Precision / Accuracy:** a measure of the accuracy of the data. Is the accuracy stated? Does it match end user's needs?
 - **Consistency:** a measure of the similarities and differences between data stored in multiple datasets or databases
 - **Completeness:** a measure of how comprehensive the information in a dataset is. Are required or priority fields populated?
 - **Timeliness:** an assessment of the data's update cycles, and temporality to internal and external deadlines and reporting needs
 - **Integrity:** an assessment of whether the data's structure, schema and maintenance workflows meet end users needs
 - **Relevance:** an assessment of the accessibility and availability of the data required to inform business systems and answer business questions

Overview of Assessing MSDI Framework Data

1	Data Theme (<i>italic</i>) and dataset	Data Value and Quality Goals									
2		Update Frequency	Archive Frequency	Spatial Accuracy	Precision	Consistency	Completeness	Integrity	Timeliness	Business Relevance	Notes
3	<i>Cadastral</i>			1.) Varies across state (some areas known to be as much as 500+ feet in error); townsites based on scans and fitted to PLSS; accuracy based on original parcel creation, any CadNSDI adjustments since creation (+/- 1 meter) 2.) Rotation and distortion errors (from rubbersheeting adjustment techniques) 3.) a- Current adjustments occur based on local interest/prioritization; b - some smaller adjustments occur based on survey control that is submitted to the Mapping Control Framework Theme Lead (e.g., USFS control)	Varies across state (+/- 160 meters to +/- 0.1 meter)	1.) Geocode vs PropertyID issue (see <i>Integrity</i>) 2.) Most independent counties are not all using the state's standard coordinate system of NAD83 (2011) 3.) Parcels are not seamless at the county boundary line (overlaps and gaps persist). 4.) Property Address not always correct 5.) Parcels not managed in Parcel Fabric with CadNSDI (see <i>CadNSDI</i> below)	1.) Statewide full coverage, geometrically with on-going maintenance 2.) CAMA is missing data in large chunks of federal/state owned areas (i.e. northwest Montana in and around Flathead County) 3.) Parcel attribute validation concerns statewide	1.) CAMA linked to parcels on Geocode, this causes issues with parcel relation issues (better to link on PropertyID, contact DOR about terminology) 2.) Parcel gaps/overlaps exist at the county boundary line, data is not seamless, different boundaries are used or boundary misalignment exist 4.) CAMA attribution validation concerns	1) a - Monthly updates, based on counties that are submitted by DOR b- Three of the five "Independent" counties push a daily update to their parcel hosting service/website, the other two counties provide a monthly updates very frequently	1.) Geocode vs PropertyID issue (see <i>Integrity</i>) 2.) DOR Tax Year can be problematic for users looking for changes sooner	
4	<i>OwnerParcel - Current Practices</i>	Monthly, based on parcels that are submitted (see <i>Timeliness</i>)	Monthly updated archived, yearly snapshots are available for the public's use	1.) Identify areas in state most in need of adjustment 2.) Prioritize any available funding/resources to	Improved precision based on adjustments/fixes (see <i>Spatial</i>)	1.) Work with all providers to store and share data in NAD83 (2011) 2.) Work with DOR to QA/QC Property Addresses with official addresses 3.) Parcels managed in an enterprise database, statewide 4.) Work with providers to ensure the integrity needs of a seamless, statewide	Improvements made to validation of parcel data, several counties have missing/inactive parcel data is can be problematic	1.) Address the parcel seamless issues (see <i>Consistency</i>) 2.) Have a long-term plan to address the other current data	Weekly, pulled from DOR and county production dbs or web		

MSDI Cadastral Working Group



Review Data Improvement Matrix

Cadastral, What's Working

- **Completeness**, entire statewide coverage of the Parcels
- **Spatial Accuracy**, much of the state is good for mapping use
- **Timeliness** of updates, most counties have geometry updates every month
- Use of Mapping Control data in CadNSDI adjustment

Review Data Improvement Matrix

Cadastral: What Could be Improved?

- **Consistency**
 - CAMA data has large chunks of data missing up in Flathead County (exempt areas, i.e. Glacier National Park)
 - Property address in CAMA not always correct
- **Integrity**
 - Parcels are not seamless at county boundary lines
 - Geocode relationship issues with Property IDs, causing issues w/ parcel data when Property IDs are change
- **Spatial Accuracy (part II)**
 - Certain urban areas have distortion and rotation issues (downtown Bozeman or Whitefish)
 - Some rural areas have hundreds of feet of error
- **Feedback on What's Working & What could be Improved**

Cadastral Framework Theme Updates

- Publication of CadNSDI – February 2025
- Parcel Adjustments – nearing completion
- Future Adjustments
 - Stillwater MGIA FY23 & 24
 - Blaine MGIA FY24
 - Remainder of “other” priorities
- Migration of Data to Enterprise branch versioned
 - ArcGIS Portal Parcel Fabric Feature Service

User Feedback

- Questions, Suggestions, Feedback?
- Cadastral – Next Steps
 - Working Group Feedback will go into the Final Data Improvement Matrix
 - Approval by the MGIA Council in May
 - Quality Improvement Plans will be developed later this year
 - Working Group to meet again this fall to review plans
- Transition to Mapping Control Working Group

Mapping Control Working Group



Mapping Control Working Group

Mapping Control: What's Working

- Generally, processes are working well.
- Data distribution (internal and external)
- Control used for adjusting Montana Spatial Data Infrastructure themes
 - Conservation Easements, Boundaries, Parcels, PLSS, Public Lands
- Relationships with data providers

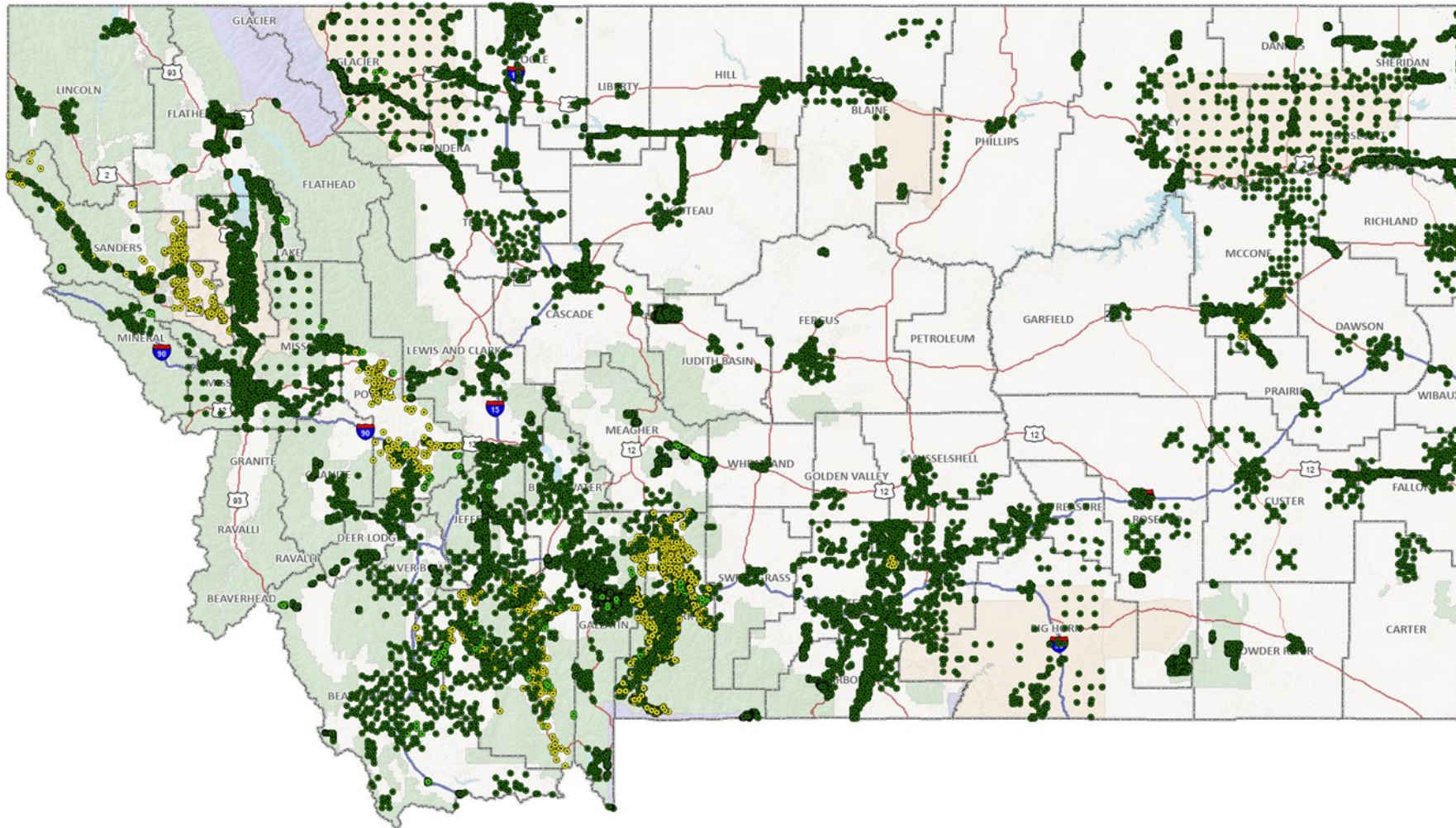
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Mapping Control: What Could be Improved?

- Theme is rather stagnant without an active grant program
- Reference document backlog
- Data submission methods
 - Data
 - Reference Documents
- Geographic distribution of control
- Web presence

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Mapping Control: Distribution



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Mapping Control Resources

- [ArcGIS Online Map](#)
- [ArcGIS Online Hosted Feature Layer](#)
- [Data Submission Spreadsheet](#)

Mapping Control Working Group

Closing

- Any Remaining Questions
- Next Steps

Thank you for attending

Our contact info:

Jeff Hedstrom, Cadastral Framework Theme Lead

jhedstrom@mt.gov

(406) 444-5371

Bob Holliday, Mapping Control Theme Lead

rholliday@mt.gov

(406) 444-0770

