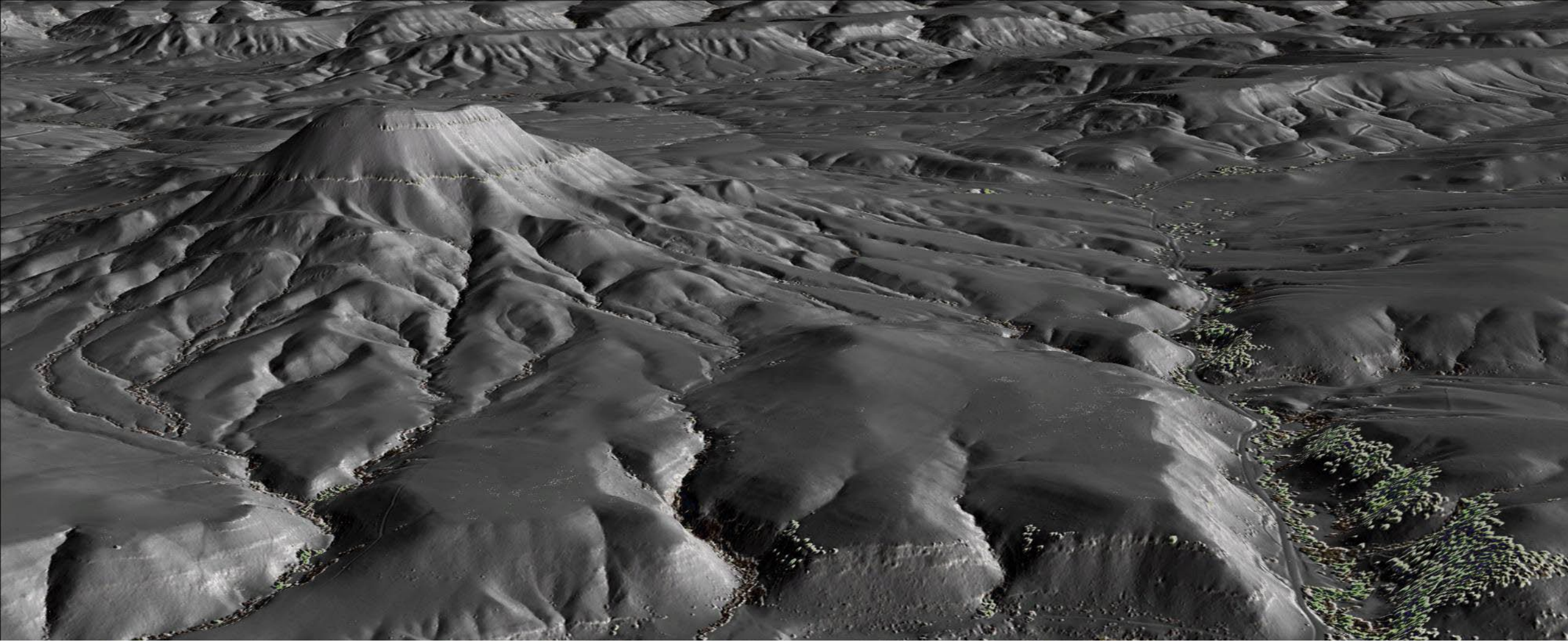

Montana DPHHS – GIS User Group

2026 Montana State Library GIS Resources

Thursday April 23, 2026

MONTANA STATE LIBRARY
GIS COORDINATION

Intros

Michael Fashoway, GIS Lead

Mini Bio

- Structures & Addresses
- Transportation
- Land Information
- NG-9-1-1

Meghan Burns, GIS Analyst,

Mini Bio

- MSDI Boundary Steward
- Water Information
- M.S. GIScience
- B.S. Biology

MONTANA STATE LIBRARY
A GREATER STATE OF KNOWLEDGE

Agenda

- MSL GIS Resources
  - Montana Spatial Data Infrastructure (MSDI)
  - MSL Web Maps, Apps, and Services
  - Administrative Boundaries
  - Structures & Addresses
    - Addresses Geocoding
  -
- Wrap Up
- Questions

Montana State Library – Montana Geographic Information

The Montana State Library, through the Montana Geospatial Information Act, is empowered to develop standardized, sustainable methods for the collection, maintenance, and dissemination of geospatial information. These are organized into fifteen Montana Spatial Data Infrastructure (MSDI) Framework geospatial datasets; they are foundational for Montanans to work, plan, play, and do business.

The Montana State Library has long partnered with federal, tribal, state, local, university, nonprofit, and private partners to collect this data and turn into powerful geospatial information. For example, the MSDI Administrative Boundary and Addressing help geo-enable Montana's Elections and support Next-Generation 9-1-1. In addition, Lidar data collection will be used to transform the National Hydrography Datasets to Elevation Derived Hydrography, a new and much improved way to model water.

Please join us to learn about key geospatial data layers; how you can participate in advancing themes; what's on the horizon for imagery and lidar data collection; and the benefits of using the Montana State Reference Network for real-time, high-accuracy GPS positioning.

GIS Coordination in the State of Montana

MONTANA STATE LIBRARY
GIS COORDINATION

Montana State Library **Geospatial Statute** Activities & Programs

- State GIS Coordination
- Montana Spatial Data Infrastructure
- Natural Resource Information System
  - Water Information System
  - Natural Heritage Program
- Montana State Reference Network (MTSRN)

MONTANA
STATE LIBRARY
A GREATER STATE OF KNOWLEDGE

Montana Geospatial Information Act (MGIA)

- State GIS Coordination
- Advisory Council
- **M**ontana **S**patial **D**ata **I**nfrastructure
- Grant Program
- Geospatial Information Plan
- GIS Coordination Strategic Plan

Montana Geospatial Information Act
Modernized & Updated Language
Section 90-1-401 – 90-1-413

90-1-404 – **Geospatial information -- management -- duties of state library.** (1) The state library shall:

(b) work with all stakeholders, including but not limited to federal, state, local, private, and tribal entities, to prioritize needs and collect, develop, maintain, and disseminate geographic information systems, geospatial information, and geospatial technologies;

Montana Geospatial Information Advisory Council

- Governor's Appointed Council
- 11 Members
- Advise the State Library on …
  - Geographic information systems, geospatial information, and geospatial technologies;
  - Data Development;
  - Geospatial Information Plan;
  - MGIA Grant Program;
  - Promote coordination of programs, policies, technologies for geographic information systems, geospatial information, and geospatial technologies;
  - Advocate for the development of consistent policies, standards, and guidelines for geographic information systems, geospatial information, and geospatial technologies

Montana Geospatial Information Advisory Council

	First	Last	Agency/Organization	Representative Type
1	Allen	Armstrong	Bureau of Land Management	Federal Government Representative
2	Adam	Carpenter*	State Chief Data Officer (Dept. of Admin)	Director of the Dept. of Administration or Designee
3	Maureen	Celander	Custer County	County or Municipal Government Representative
4	Nick	Youngstrom	MT Dept. of Natural Resoures & Conservation	State of Montana Executive Branch Department Director
5	Brian	DeMarco	Siyeh Communications	Tribal Government Interests Representative
6	Valentijn	Hoff	University of Montana - Fire Center	Montana University System Representative
7	Joseph	Kauffman	MARLS	Montana Association of Registered Land Surveyors Representative
8	*Vacant*		tbd	Private Business (Active in GIS) Representative
9	Lee	Macholz	City of Missoula	County or Municipal Government Representative
10	Eric	Spangenberg	MAGIP Rep (City of Helena/LC County)	Montana Association of GIS Professionals Representative
11	Jennie	Stapp*	State Librarian	State Librarian or Designee - Serves as Presiding Officer

**Denotes Permanent Member*

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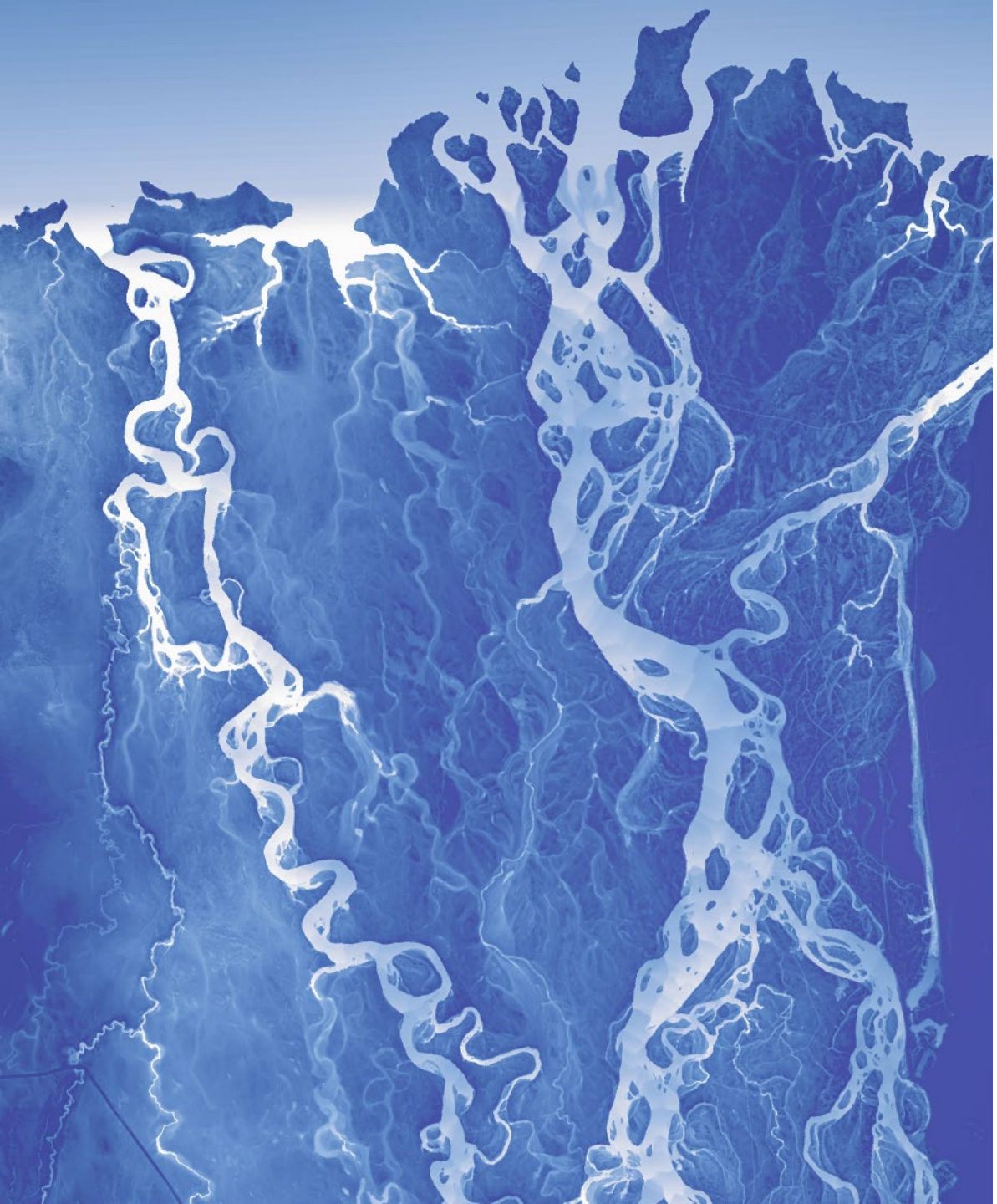
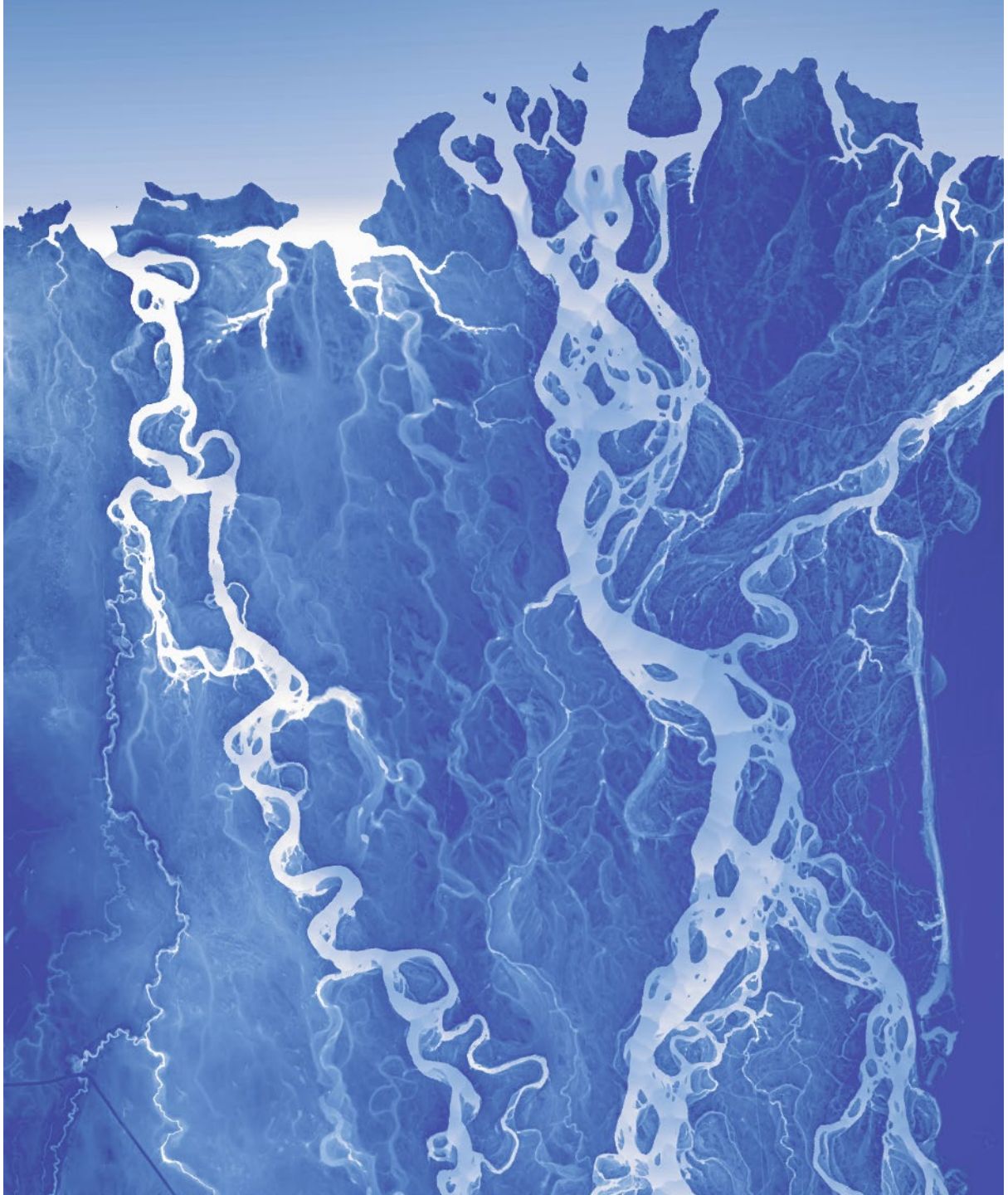


Montana Geospatial Information Plan

- Written in consultation with the MGIA Council, Montana Spatial Data Infrastructure (MSDI) Theme Leads, and other stakeholders.
- Prioritizes:
  - needs to collect, maintain, and disseminate geospatial information;
  - Geospatial coordination
  - MGIA Grant awards
- Reviewed and, if appropriate, updated every three years.



Montana Geospatial Information Plan

- Review & public comment period:
  - Spring & Summer 2025
- MGIA Council approved the Plan at the September 25th meeting and recommended the MSL Commission adopt the Plan.
- The MSL Commission approved the Plan at the October 8th meeting.

Montana Spatial Data Infrastructure (MSDI)

Administrative Boundaries

Legally documented and attributed jurisdictional boundaries.

Cadastral

Tax Parcels, Land Ownership, and Conservation Easements.

Climate

Accurate, timely, and relevant climate data.

Elevation

Spatially references vertical positions above or below a datum surface.

Geographic Names

Names and locations for cultural and geographic features.

Geology

Geologic map data collected from field research.

Hydrography

Networked geometry and attributes representing surface water.

Hydrologic Units

The area of land surrounding a hydrologic feature.

Land Cover

Records natural biological communities and disturbances.

Mapping Control

Locations of monumented points.

Imagery

Georeferenced images of the Earth's surface.

Soils

Polygons representing soil map units and attribution.

Structures and Addresses

Spatial database of primary structures, buildings, and their addresses.

Transportation

Transportation features and attribution.

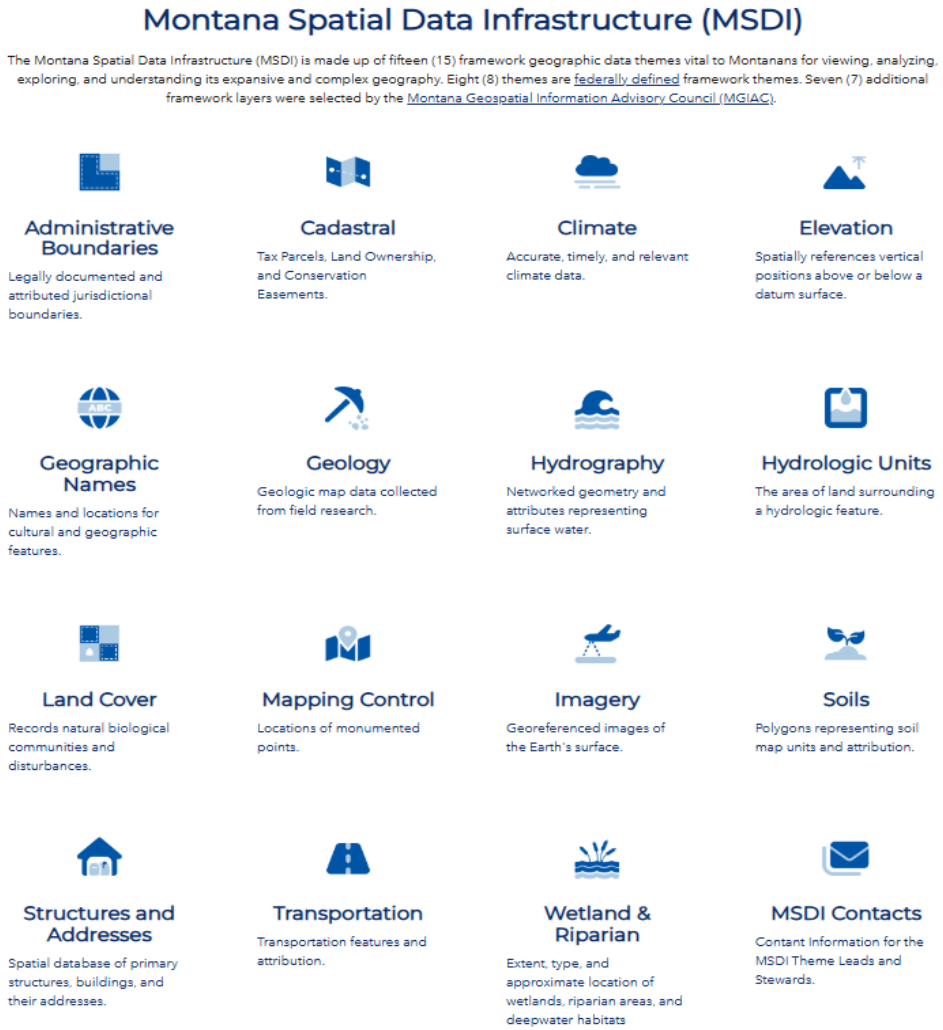
Wetland & Riparian

Extent, type, and approximate location of wetlands, riparian areas, and deepwater habitats

MSDI Contacts

Contant Information for the MSDI Theme Leads and Stewards.

Montana Spatial Data Infrastructure



- Stewarding Agency
- Theme Lead
- Statewide Datasets
  - Downloadable
  - Web Services
  - Metadata
  - Applications
- Working Group – open to all
- 1-3 Data Improvement Plan*
- Documented Standards*

Collaboration: MSDI Working Groups

- Develop Standards for Imagery Data
- Create an Inventory of Existing Data
- Understand Business Uses and Critical Activities
- Explore Cost Efficiencies of Shared Resources
- Develop MSDI Imagery Plan

Imagery Working Group Example

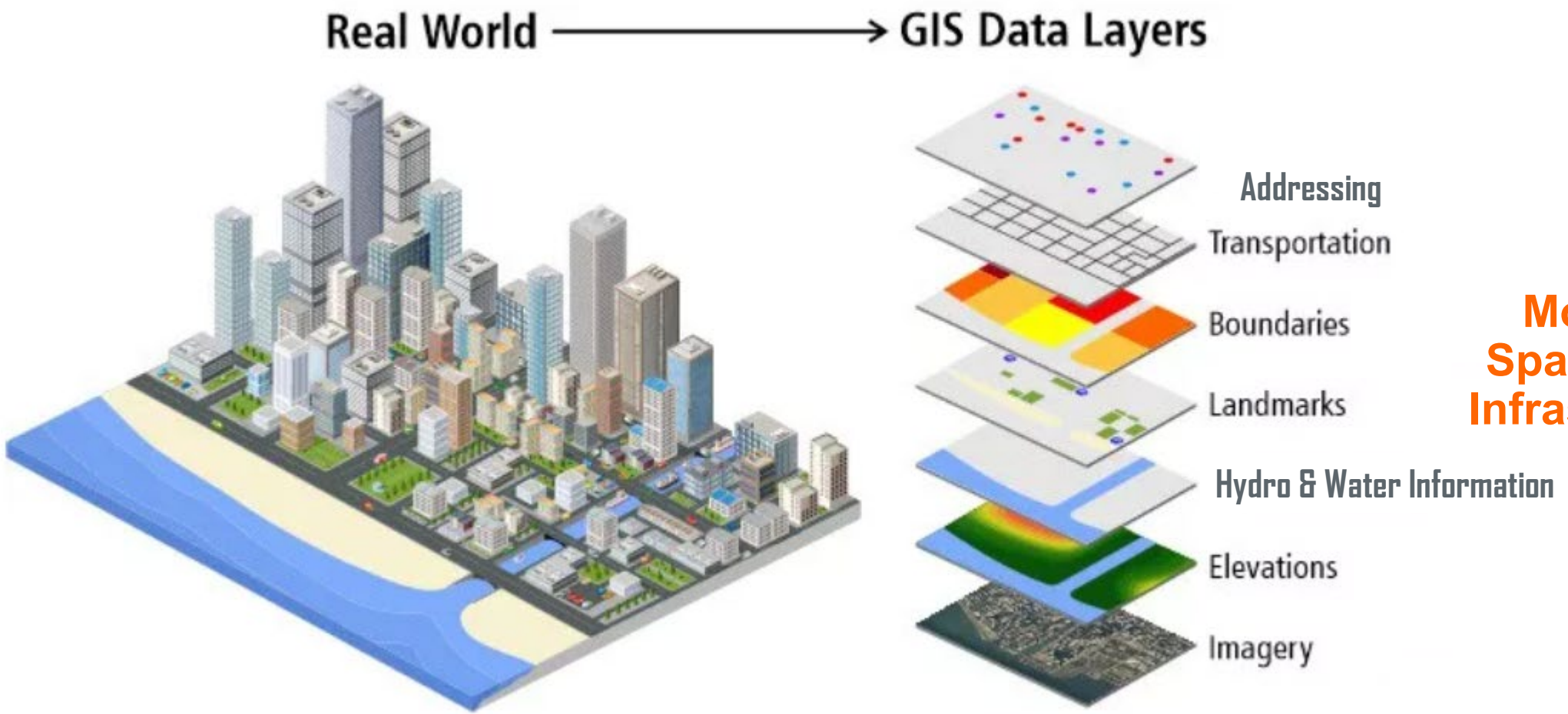
Standards & Best Practices

- Create Geospatial Information & Technology Standards & Best Practices
  - Widely Used
  - Create Efficiencies
  - Reduces Duplicative Efforts
  - Saves Time
  - Saves Money

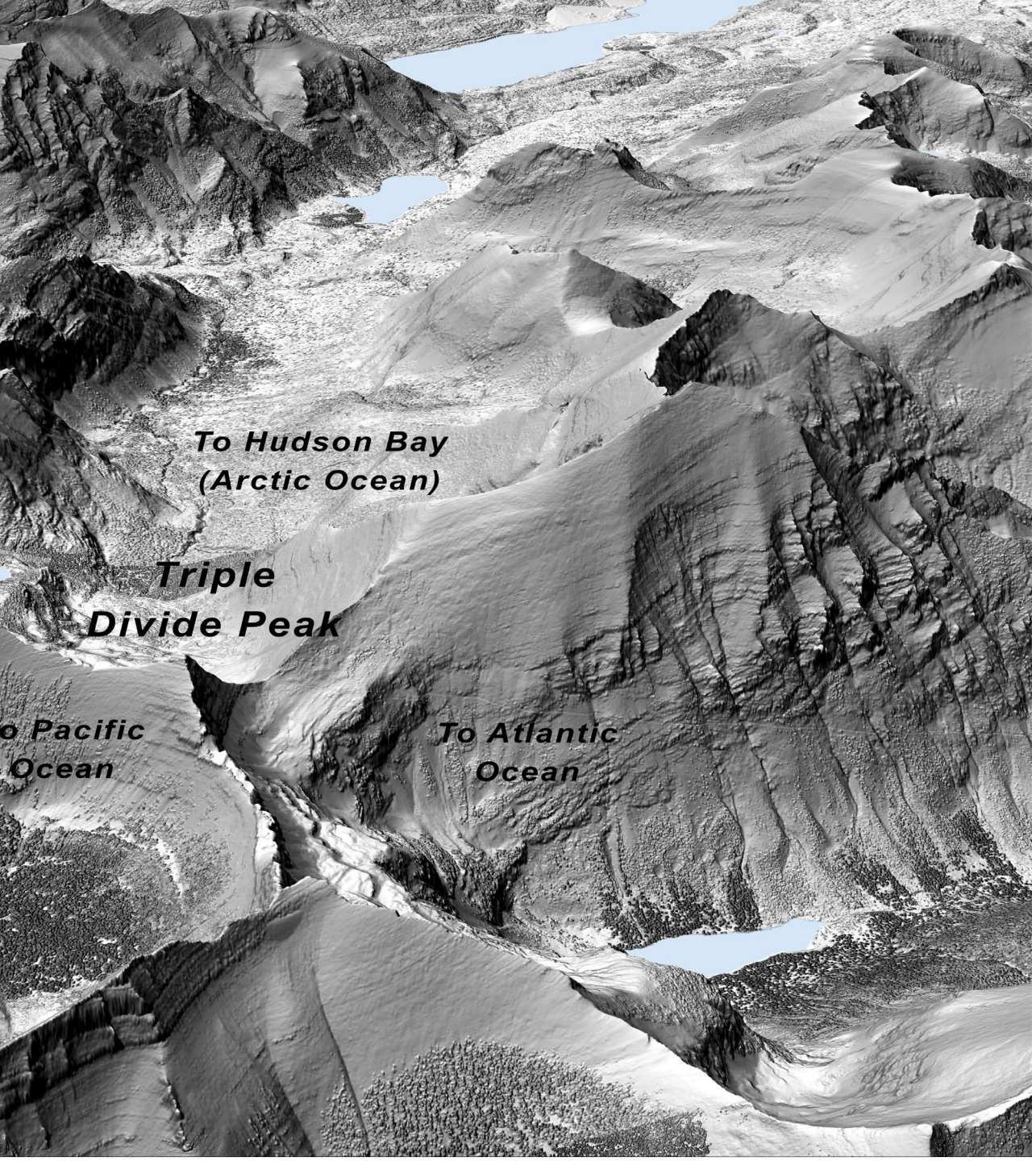
Promotion & Communication

- Provide Training
  - Subject Matter Expert Webinars, Case Studies, hands-on
- Provide Expertise
- Communicate to Stakeholder Communities
  - GovDelivery, Email, Website, Direct Invites, Summits, Working Group Meetings
- Supportive Grant Program
- Represent Montana Locally, Regionally, & Nationally
  - Present to stakeholder groups

Coordination Makes it Possible!



Montana Spatial Data Infrastructure



Montana Geospatial Information Act Grant Program

- Funding through Recordation Fees
- Cancelled State Fiscal Years 2025-2026 – due to funding downturn
- Grant program priorities are set through the Geospatial Information Plan
- Eligible Recipients
  - local, state, & tribal government entities & Montana universities

Geospatial Data Assets & Services

4 MONTANA GEOSPATIAL INFORMATION ACT GRANT PROGRAM

4.1 Prioritize Grant Awards that directly impact the improvement of the MSDI Framework Thems & Data Initiatives in *Figure 4.1*:

MSDI Framework Theme Grant Priorities	
Administrative Boundaries	Hydrography
Cadastral	Transportation
Elevation	Structures & Addresses

Key Geospatial Data Initiatives:
NG9-1-1 Data Development
Geo-Enabling Montana's Elections
3DHP/Elevation Derived Hydrography

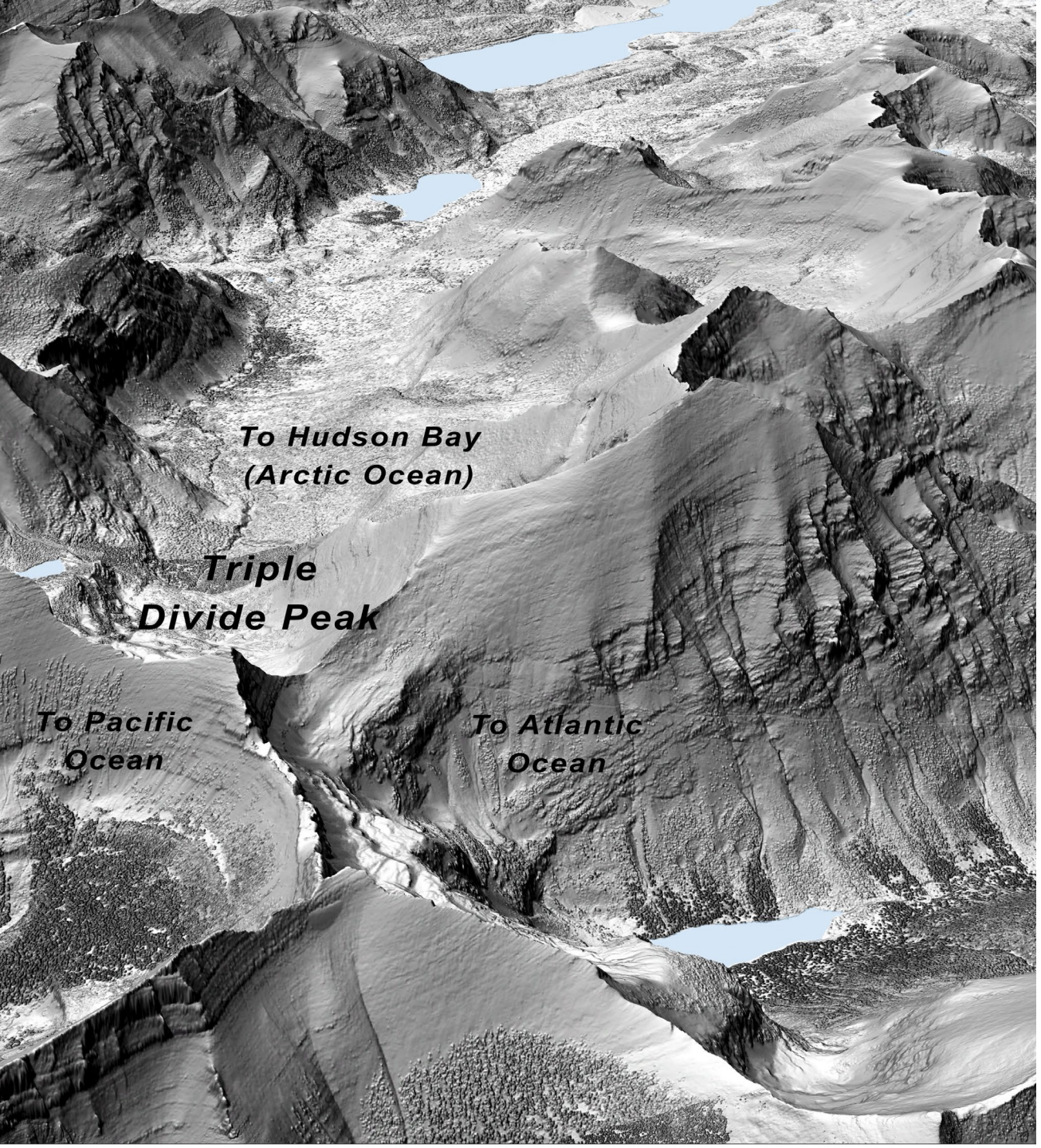
Figure 4.1

4.2 Conduct an internal review of the MGIA Grant Program

- Present internal review findings to the Council.
- Act on findings, recommendations, and advice from the Council.

4.3 Improve Communication for the MGIA Grant Program's Grant Criteria

- Conduct outreach, create/record webinars, oversee in-person trainings, etc.



Changes to the MGIA Grant Program

- Reopening for State Fiscal Year 2027.
- Funding Amount will be set at the November Council Meeting.
- Grant Project priorities must be set by May 15th.
- Two Year Program
- Simplified Reporting

Geospatial Data Assets & Services

- Montana Spatial Data Infrastructure (MSDI)
- GIS Resources and Applications
- Imagery Collection
- Lidar Inventory | 3D Hydrography Program
- Water Information Resources
  - Water Supply
  - Drought Maps & Survey
  - Climate
  - Channel Migration Zones

MSL GIS Resources

Montana Spatial Data Infrastructure (MSDI)

https://msl.mt.gov/GIS/msdi

Administrative Boundaries
Legally documented and attributed jurisdictional boundaries.

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Tax Parcels, Land Ownership, and Conservation Easements.

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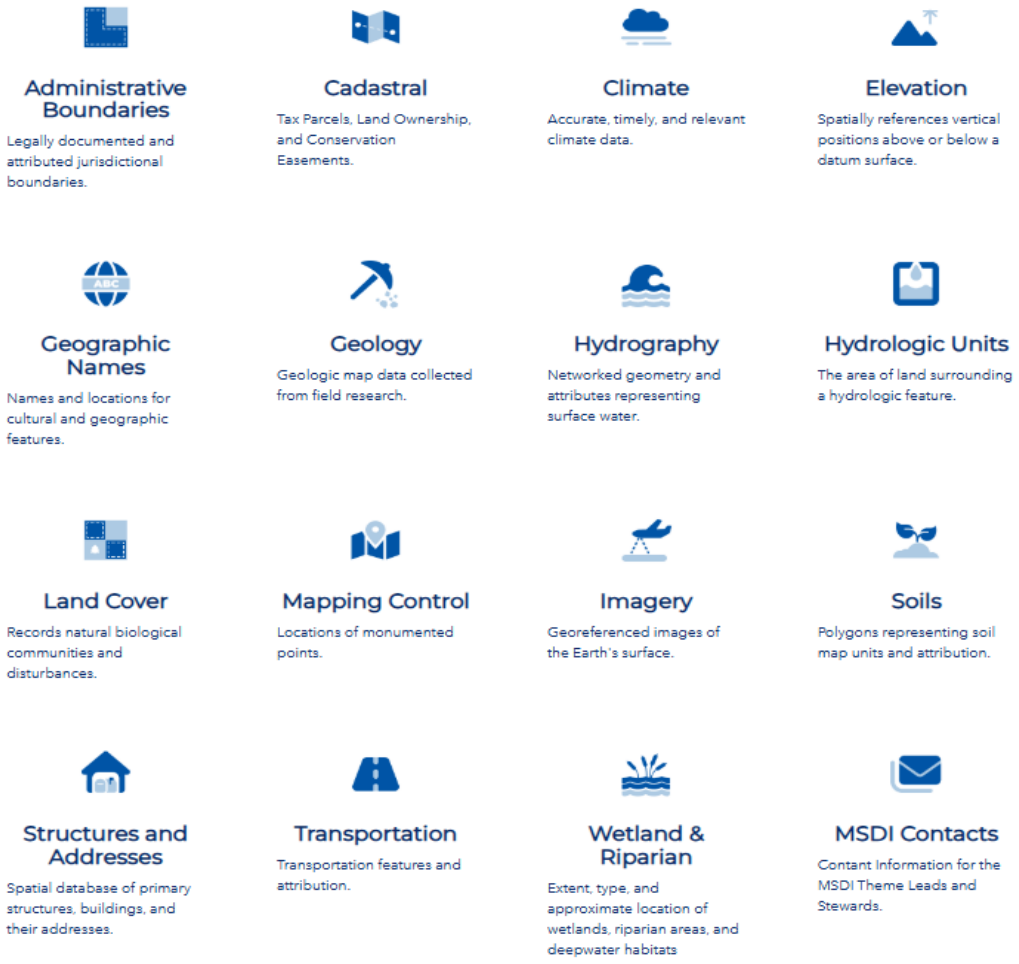

- Stewarding Agency
- Theme Lead
- Statewide Datasets
  - Downloadable
  - Web Services
  - Metadata
  - Applications
- Working Group – open to all
- 1-3 Data Improvement Plan*
- Documented Standards*

Subscribe to MSL News for Updates: https://public.govdelivery.com/accounts/MTLIBRARY/subscriber/new

Montana Geospatial Data Assets & Services

Search, Explore, Clip and Ship GIS Data in Montana

Data List
Find GIS Data and Web Services

Data Bundler
Clip GIS Data to your area of interest

Digital Atlas
View and summarize GIS Data and Basemaps

What is the Data List?

- Catalog of metadata records for geographic data and web services that may be used with GIS software to make maps and perform analysis
- The Montana State Library and other organizations have published their data here for you to search
- Search for and Download Datasets

Searching the Data List

- Use “Browse Full Data List” to see all records
- Text Search
  - First searches records that have the word in the title, then keywords, then elsewhere
  - Exact Phrase
  - All Words
  - Any Words
- MSDI Framework(s)
  - Montana Spatial Data Infrastructure
  - Search by theme(s)
- Content
  - Applications, Downloadable Data, Live Data and Maps, Offline Data
- Data Category
  - 19 categories

Search Results

- Current vs. Historic
  - Most recently updated data in current tab
- Collections/Related Records
  - Some records are part of a collection
  - Only the collection title will show up in a search
  - Other records will be displayed in the “Related Records” tab

What is Metadata?

- Data about Data
- Provides basic descriptive information:
  (who, what, where, when, and why)
- Include core Library Catalog Elements
  (Title, Abstract, Publication Date)
- Geographic Elements (Geographic Extent, Projection)
- Database Elements (Attribute Labels and Domain Values)
- Provides information on where to retrieve the dataset
- Conforms to a standard (e.g. FGDC, ISO)
- Text file (usually XML file)

Data List Metadata Required Elements

- Title
- Abstract
- Originator
- Publisher
- Time Period of Content
- Bounding Coordinates
- Theme Keywords
- Distributor
- Resource Description
- Metadata Date

Data List Record

Revenue Final Land Unit (FLU) Classification, 2017

Download Data

This data set may have multiple access options or be a data collection or member. Please see the **Related Records** tab for other data access options or collection members.

Data Provider	Montana Department of Revenue
Date	2017
Content Type	Downloadable Data

Description | Usage | Distribution | Metadata | Related Records

Abstract

The Department of Revenue Final Land Unit Classification (FLU) is a classification of private agricultural land into one of six uses, fallow, hay, grazing, irrigated, continuously cropped and forest, with forest additionally classified as commercial or non-commercial and irrigated land classified as being flood, pivot, or sprinkler. This layer contains forested land and agricultural land that was not classified as grazing. The data are used in property valuation for agriculture and forest land on private properties. FLU data may exist in tax-

https://mslservices.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?did={5be9e24f-e4ba-4797-943f-0bba85c49f22}

Data List Record

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The Montana State Library provides this product/service for informational purposes only. The Library did not produce it for, nor is it suitable for legal, engineering, or surveying purposes. Consumers of this information should review or consult the primary data and information sources to ascertain the viability of the information for their purposes. The Library provides these data in good faith but does not represent or warrant its accuracy, adequacy, or completeness. In no event shall the Library be liable for any incorrect results or analysis; any direct, indirect, special, or consequential damages to any party; or any lost profits arising out of or in connection with the use or the inability to use the data or the services provided. The Library makes these data and services available as a convenience to the public, and for no other purpose. The Library reserves the right to change or revise published data and/or services at any time.

MONTANA STATE LIBRARY

Data List Record

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Data Provider	Montana Department of Revenue
Date	2017
Content Type	Downloadable Data

Description | Usage | **Distribution** | Metadata | Related Records

Data Access	ftp://ftp.geoinfo.msl.mt.gov/Data/Spatial/NonMSDI/DOR/01312017_FLU.zip
Distributor	Montana State Library PO Box 201800 Helena, MT 59620-1800 Telephone: 406-444-5354 TDD/TTY: 406-444-4799 Fax: 406-444-0266 Email: geoinfo@mt.gov
Distribution liability	The Montana State Library provides this product/service for informational purposes only.

MONTANA **STATE LIBRARY**

Data List Record

Revenue Final Land Unit (FLU) Classification, 2017

Download Data

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Data Provider	Montana Department of Revenue
Date	2017
Content Type	Downloadable Data

Description | Usage | Distribution | **Metadata** | Related Records

View Metadata
View Metadata (XML)
Metadata date 01/31/2017

https://mslservices.mt.gov/Geographic_Information/Data/DataList/datalist_MetadataDetail.aspx?did={5be9e24f-e4bc-4797-943f-0bba85c49f22
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Metadata Record

Metadata for Revenue Final Land Unit (FLU) Classification, 2017

Identification Information:

Citation:

Originator: Montana Department of Revenue
Publication date: 01/31/2017
Title: Revenue Final Land Unit (FLU) Classification, 2017

Publication place: Helena, MT
Publisher: Montana State Library

Online linkage: ftp://ftp.geoinfo.msl.mt.gov/Data/Spatial/NonMSDI/DOR/01312017_FLU.zip

Abstract:

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Purpose:

The Department of Revenue Agriculture and Forest Final Land Unit Classification data (FLU) is used for property valuation for agriculture and forest land on private properties in Montana. The data is used with the NRCS SURRGO and NASIS soil databases, a DOR GIS dataset of forest productivity and the Department of Revenue statewide cadastral GIS databases to determine productivity for agriculture and forest land on priviate parcels

Time period of content:

Calendar date: 2017
Currentness reference: publication date

Status:

Progress: In work
Maintenance and update frequency: Continually

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Data List Record

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Download Data

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Data Provider	Montana Department of Revenue
Date	2017
Content Type	Downloadable Data

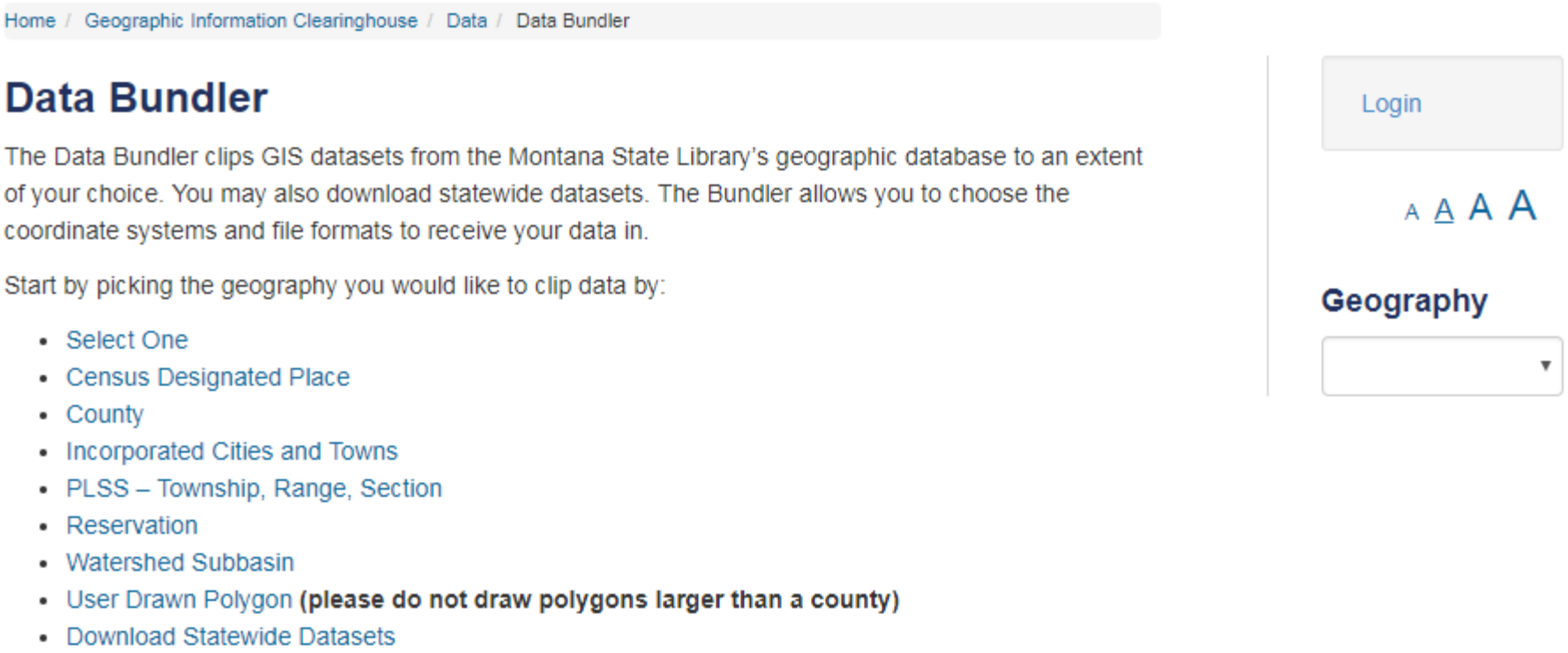
Description | Usage | Distribution | Metadata | **Related Records**

[Child] Revenue Final Land Unit (FLU) Classification, 2009
[Child] Revenue Final Land Unit (FLU) Classification, 2011
[Child] Revenue Final Land Unit (FLU) Classification, 2013
[Child] Revenue Final Land Unit (FLU) Classification, 2015

The Data Bundler

- The Data Bundler is MSL's "clip, zip, & ship" service for obtaining GIS datasets for selected areas
- Built with FME Server, ArcGIS Server, and JavaScript
- Provides many options for output formats, data sources, and user interface enhancements

Step 1: Choose Geography to Clip Data By

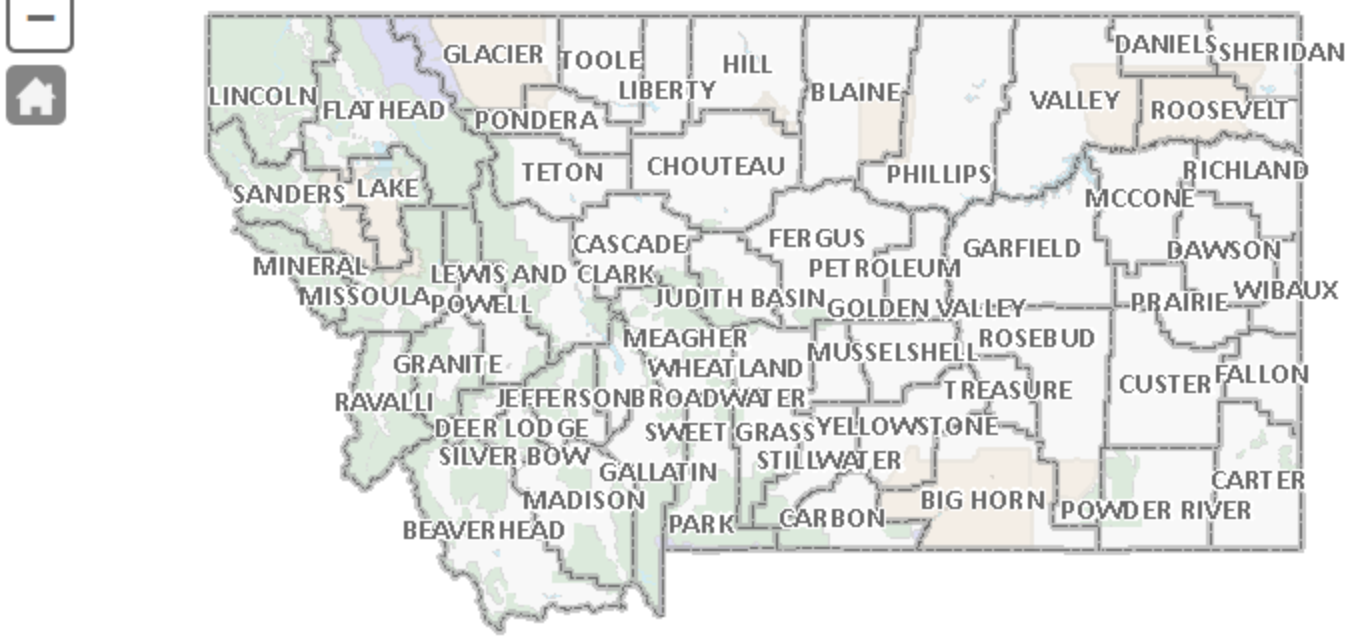


Data Bundler - Clip by County

search map here...

Search

Street | Aerial | Topographic | View Legend



Login

A A A A

Geography

County

1. Clip by County

Select features from map or dropdown

Select One

2. Set Parameters

Add/Remove Layers

Output Coordinate System

Select One

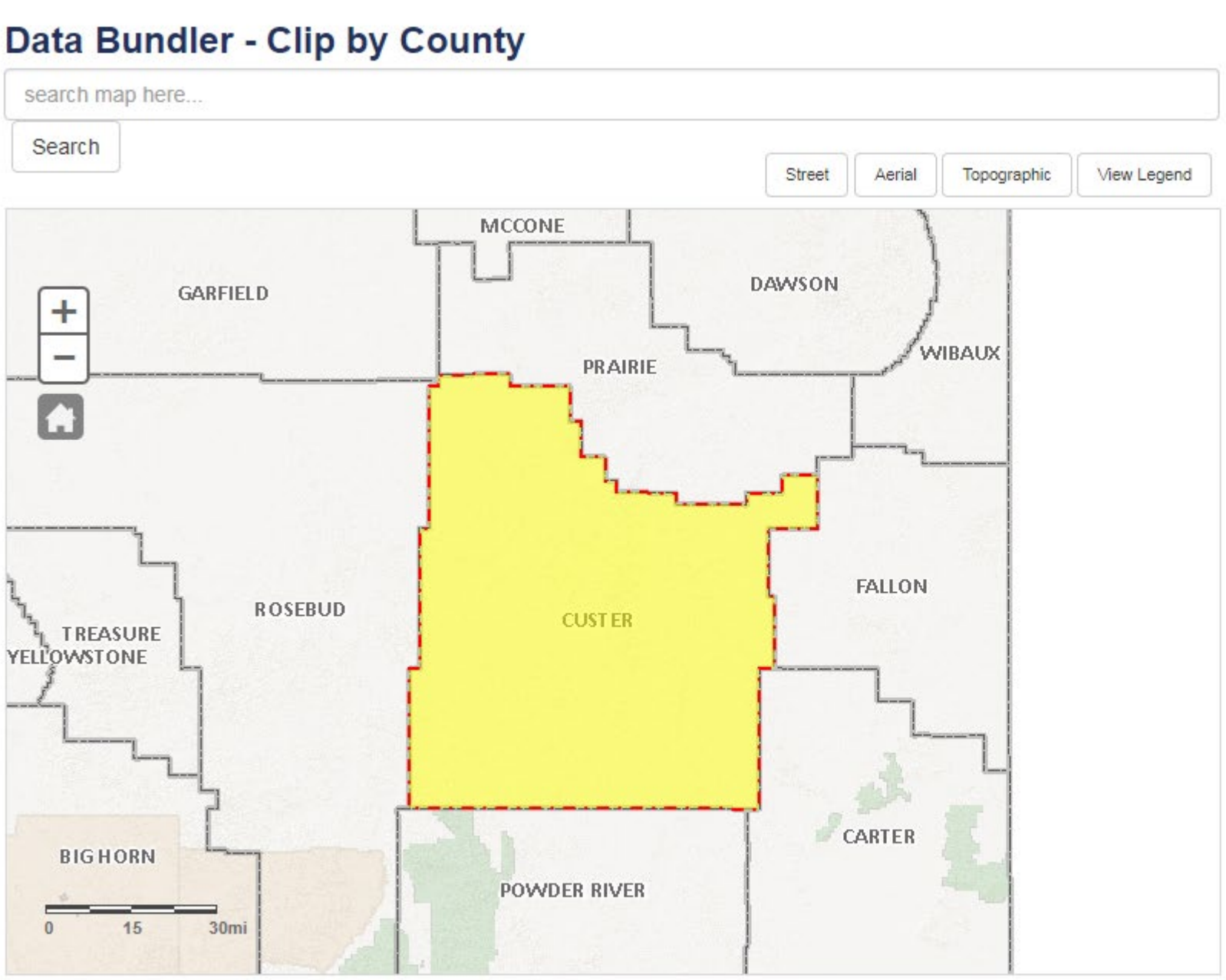
Output Format

Select One

Email

Request Data

Step 2: Select Geographic Extent



Login

A A A A

Geography

County

1. Clip by County

Select features from map or dropdown

CUSTER

2. Set Parameters

Add/Remove Layers

Output Coordinate System

Select One

Output Format

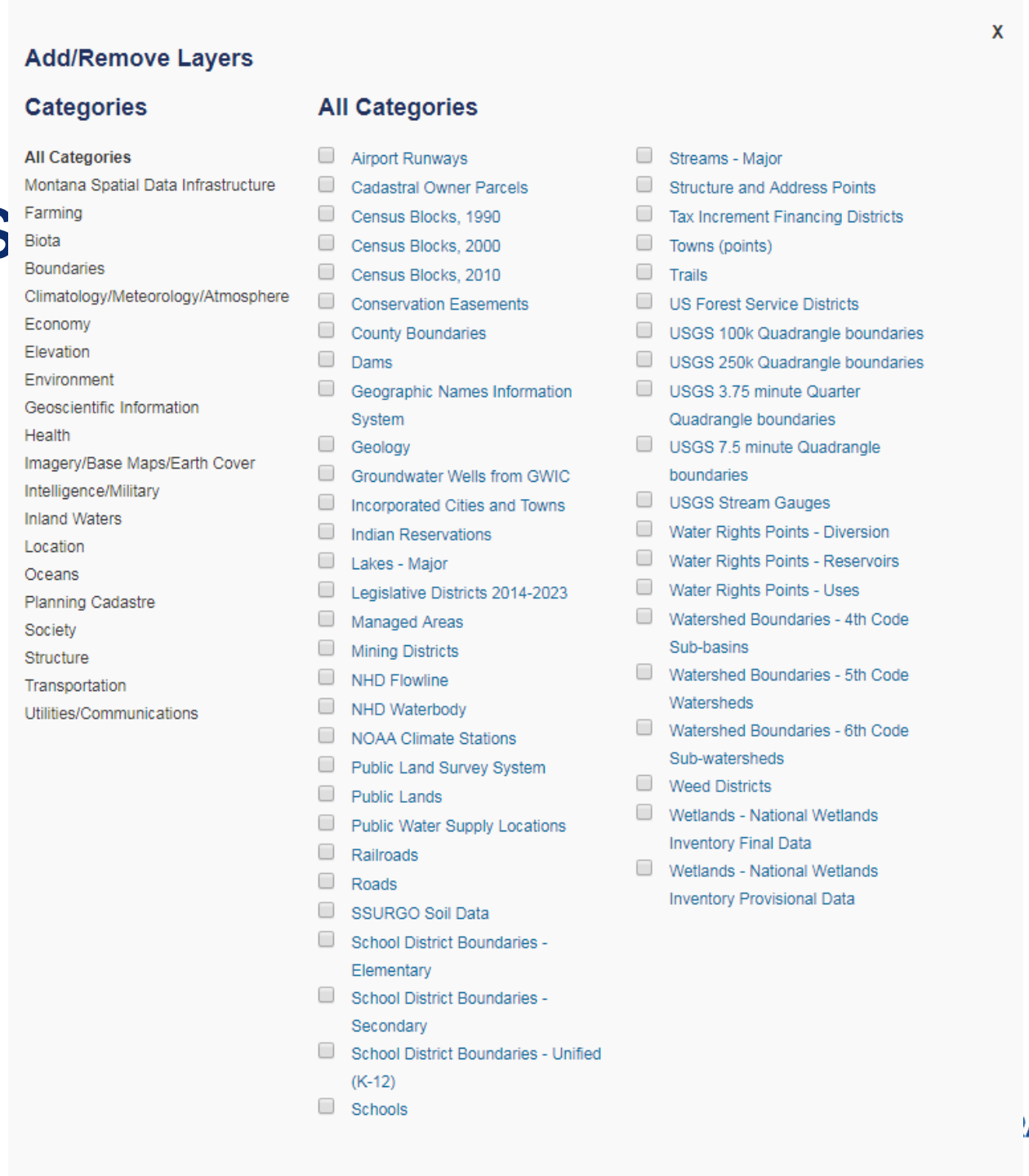
Select One

Email

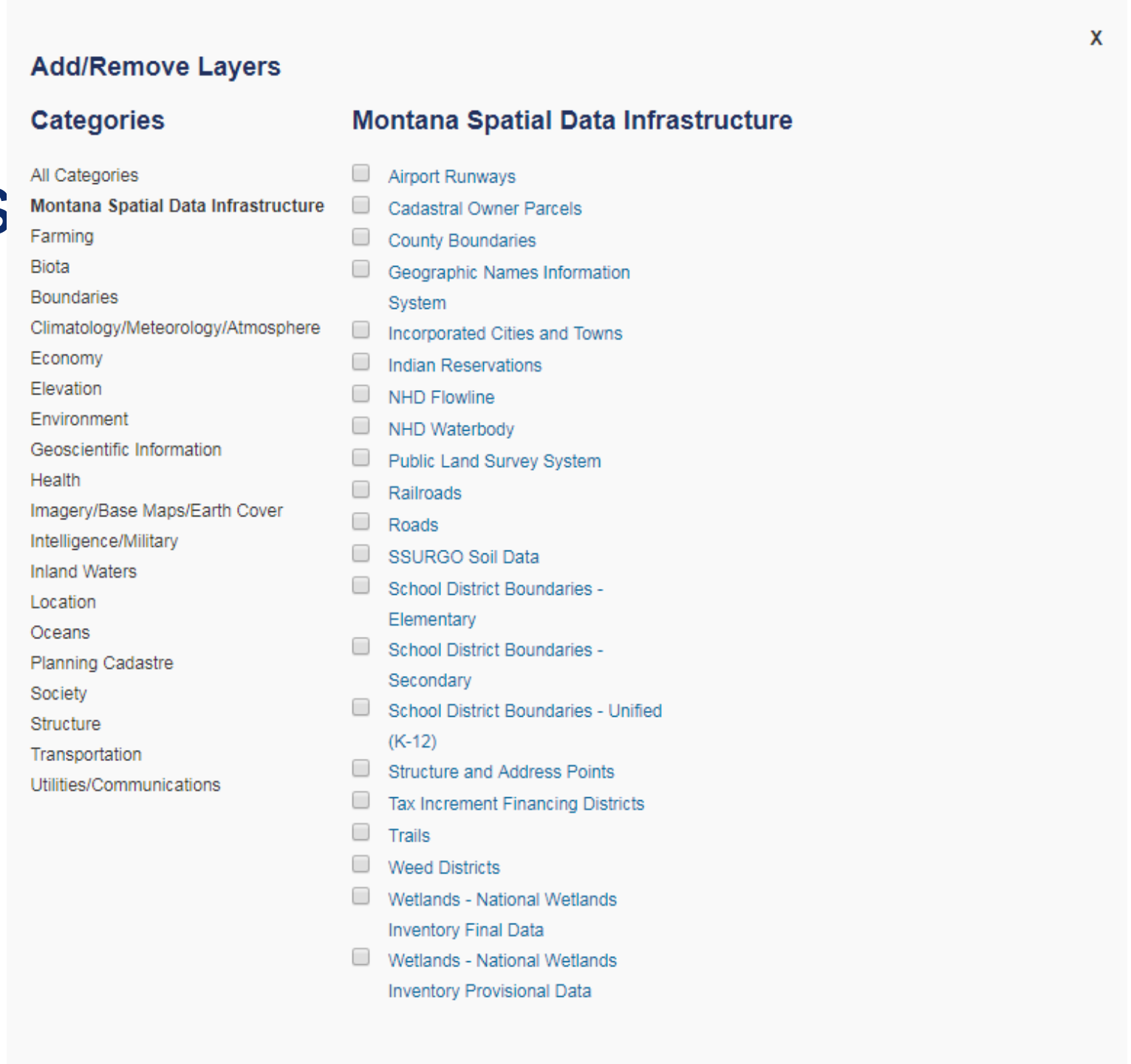
Request Data

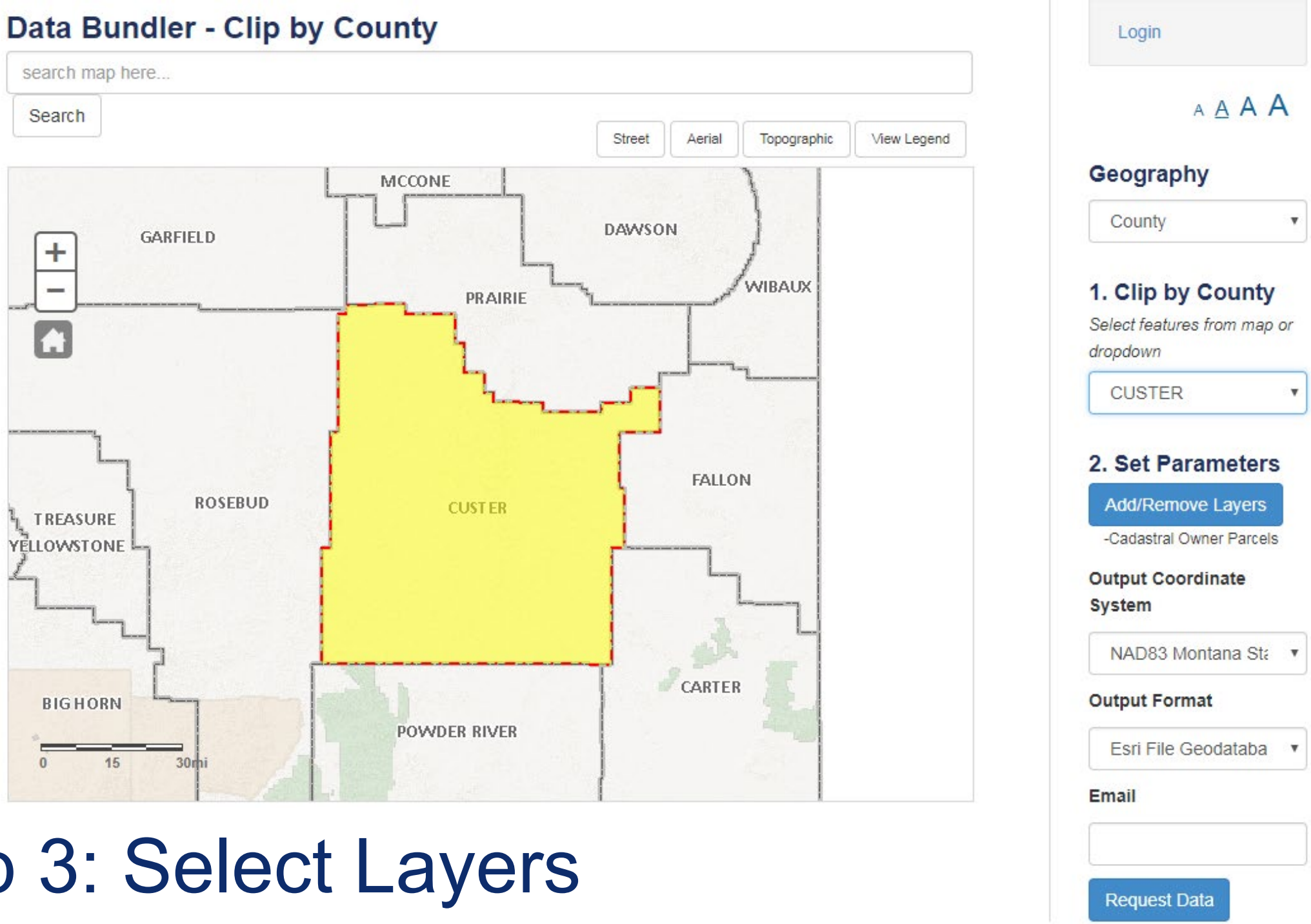
Step 2: Select Geographic Extent

Step 3: Select Layers



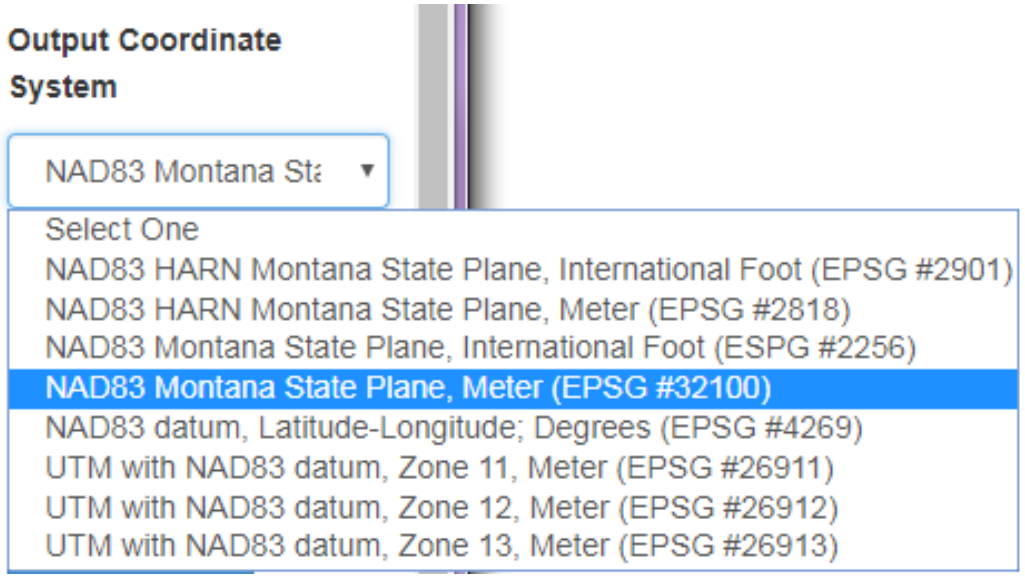
Step 3: Select Layers



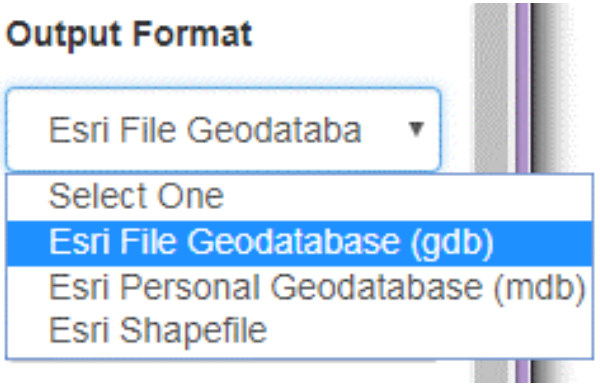


Step 3: Select Layers

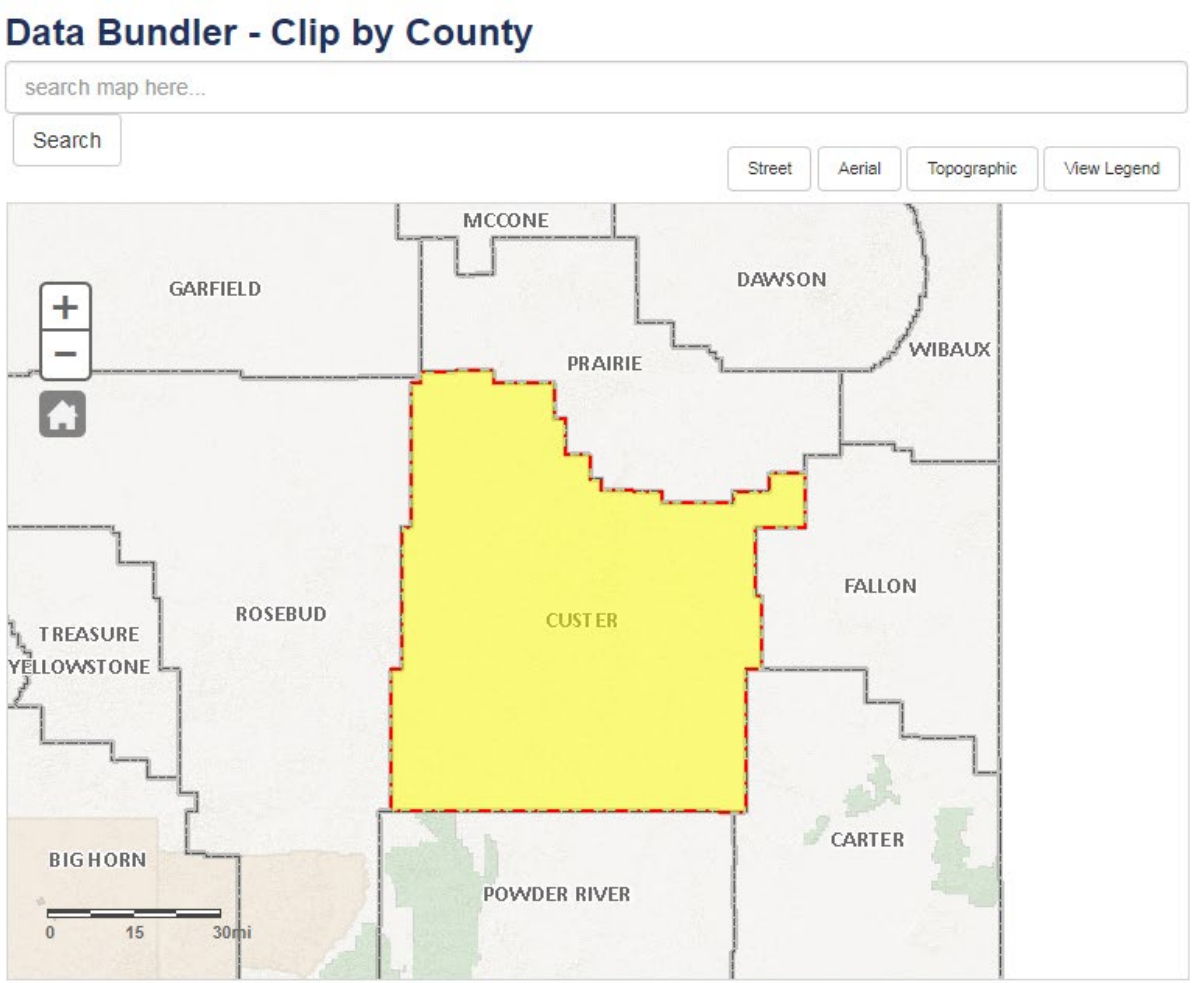
Step 4: Select Coordinate System



Step 5: Select Data Format for Output



Step 6: Enter email address



BRARY

Data Bundler Request Output

From: geoinfo@mt.gov [mailto:geoinfo@mt.gov]
Sent: Wednesday, April 11, 2018 4:54 PM
To: Burns, Meghan <MBurns2@mt.gov>
Cc: Montana State Library GeoInfo <GeoInfo@mt.gov>
Subject: MSL Geographic Information Data Bundler Request

This zip file contains the results of the request you made to the MSL Geographic Information Data Bundler on Wed-11-Apr-2018 04:51:32 PM (Request#: 1106).

Click here to download the result: https://mslfme.mt.gov/fmedatadownload/results/FME_2D335913_1523487092560_8600.zip

For more information about your request, see the _ReadMe.txt in the zip file.

If you have questions, please contact the MSL Geographic Information Staff at: geoinfo@mt.gov or 406-444-5354.

What can you do with the Digital Atlas?

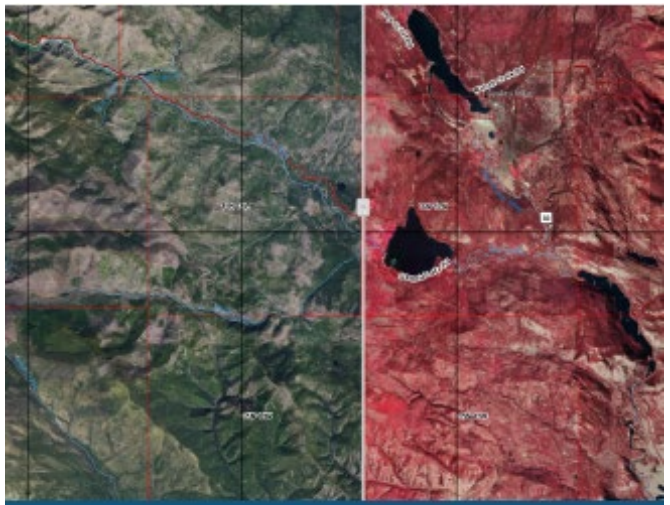
- Build a Map and Share it
- Find Locations in Montana
- Explore Databases
- Browse Aerial photos and Topographic Maps
- Generate reports from the Data
- Download Data
- View Metadata

Available Map Layers

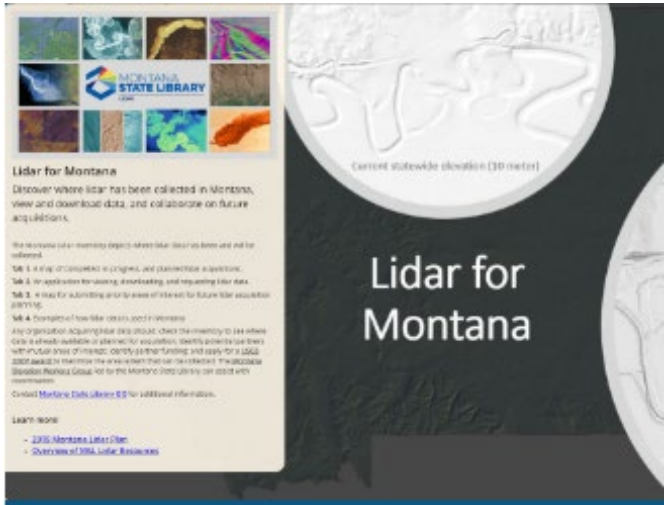
- Administrative Boundaries
  - Counties, Reservations, Cities, TIFDs
- Air Photo Dates
- Aviation
  - Airports, Heliports
- Cadastral
  - Owner Parcels, Conservation Easements, Public Lands
- Census Blocks
  - 1990, 2000, 2010
- Dams
- Groundwater Wells
- Legislative Districts
  - 2015 House and Senate Districts
- Managed Areas
- Mining
  - Abandoned and Inactive Mines
  - Mining Districts
- Public Land Survey System (PLSS)
  - Townships, Sections, Sub-Sections, Special Surveys
- Registered Commercial Apiaries
- Schools
- School Districts
  - Elementary, Secondary, K-12
- Septic System Density
- Soil Data (SSURGO)
  - Point, Line, Mapping Units, Surveys
- USGS Gauges
- Streams and Lakes
- Registered Commercial Apiaries
- Structures
- Addresses
- Towns
- Population Estimate Areas
- Transportation
  - Highways, Public Roads, Other Roads, Trails, Railroads
- US Forest Service Districts
- Watershed Boundaries
  - 4^{th}, 5^{th}, 6^{th} Code
- Weed Districts
- Water Rights
  - DNRC Places of Use, Diversions
- Wetlands
  - Wetland and Riparian Areas, Mapping Status by USGS Quad

Featured Applications

Montana Cadastral



Air Photo Browser



Montana Lidar Inventory

Cadastral

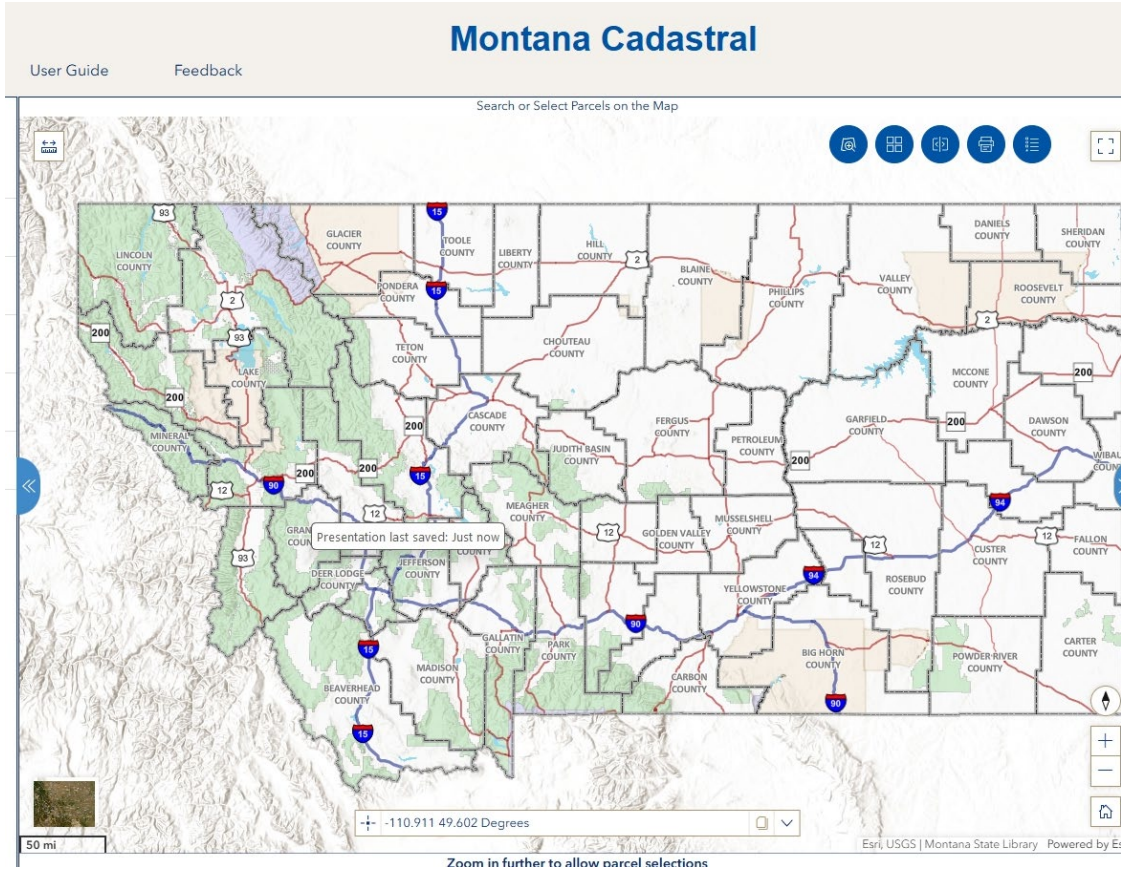
https://msl.mt.gov/GIS/Cadastral

What can you do with the Cadastral Application?

- Search for property information by geocode, owner, or subdivision.
- Search for property information by zooming in to a specific part of the state and clicking on one parcel at a time to display the property record card.
- Download the parcel GIS data and the Department of Revenue (DOR) Computer Assisted Mass Appraisal (CAMA) database.

MSDI Cadastral

- Data Layers:
  - Owner Parcels
  - CadNSDI (PLSS)
  - Conservation Easements
- Available as file gdb, shapefile, and web services
- View in the Cadastral Application, Digital Atlas, and many other MSL web applications
- Additional information available in the Cadastral App User Guide



Additional GIS Data Resources & Apps

Next Generation 9-1-1

Migrates 9-1-1 to an all IP-based architecture capable of communicating with any device connected to the network

NG 9-1-1 GIS Hub

Provides resources for local and tribal government public safety answering points (PSAPs) for migrating to NG 9-1-1

Geo-Enabled Elections Hub

Provides MSDI Boundary and Address work performed by MSL for the Secretary of State's Office Election Management System

Map Gallery

Curated and searchable list of MSL maps and apps

Web Services

List of available web services hosted by MSL through our Esri Managed Services Environment

MGIA Grant Program

MSL administers a grant program to support state, local, tribal, and state university projects to improve the MSDI

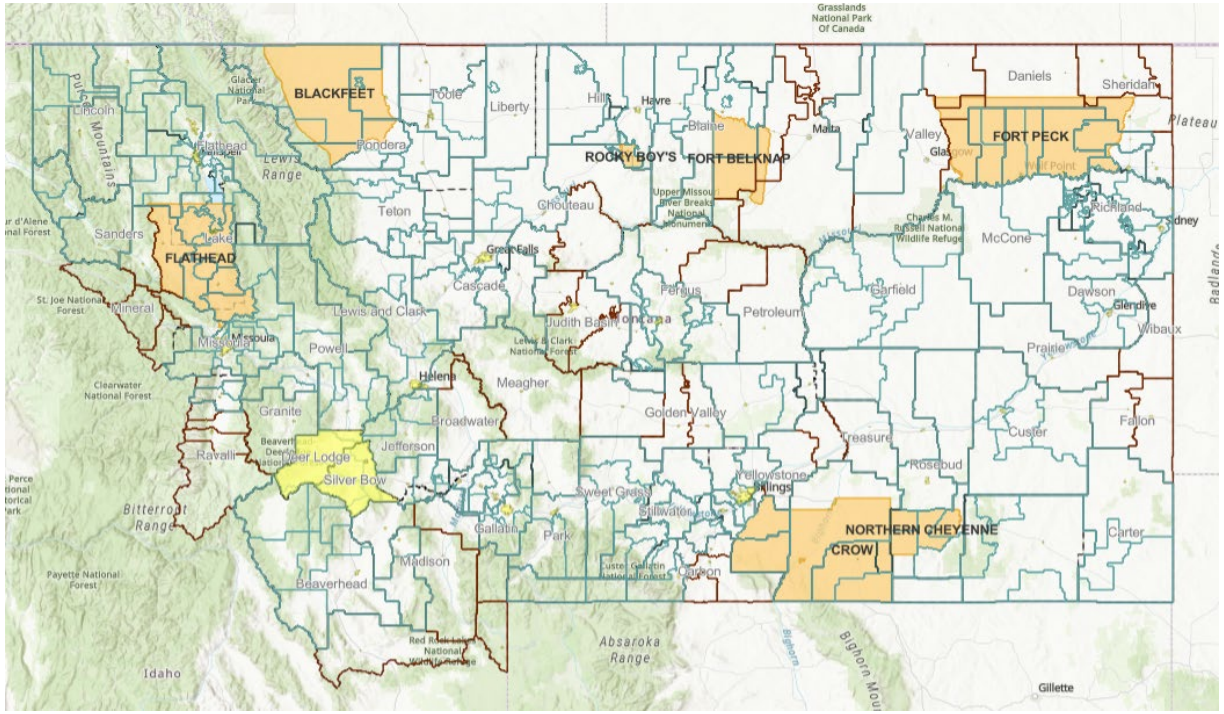
List of all GIS Apps: https://msl.mt.gov/geoinfo/applications

Administrative Boundaries

https://msl.mt.gov/GIS/Boundaries

Administrative Boundaries Theme Updates

- The number of sub-themes has grown from 18 to 43
- Election Districts are used for state/county/city elections
- Data come from federal, state, and local partners
- MSL provides data updates to: Census, USGS PAD-US, Esri
- MSL publishes datasets in various formats, maps, and apps



Administrative Boundaries Sub-Themes: Core

- State
- Tribal Nations Reservations & Off Reservation Trust Land
- Congressional Districts (LEG)
- Legislative Districts (House and Senate Districts)
- Voting Precincts
- County
- County Commissioner Districts
- Incorporated Cities and Towns
- School Districts (Elementary, High School, K-12)
- Rural Fire Districts (DNRC)
- Soil Conservation Districts (DNRC)
- Tax Increment Financing Districts (DOR)
- Weed Management Districts
- Managed Areas

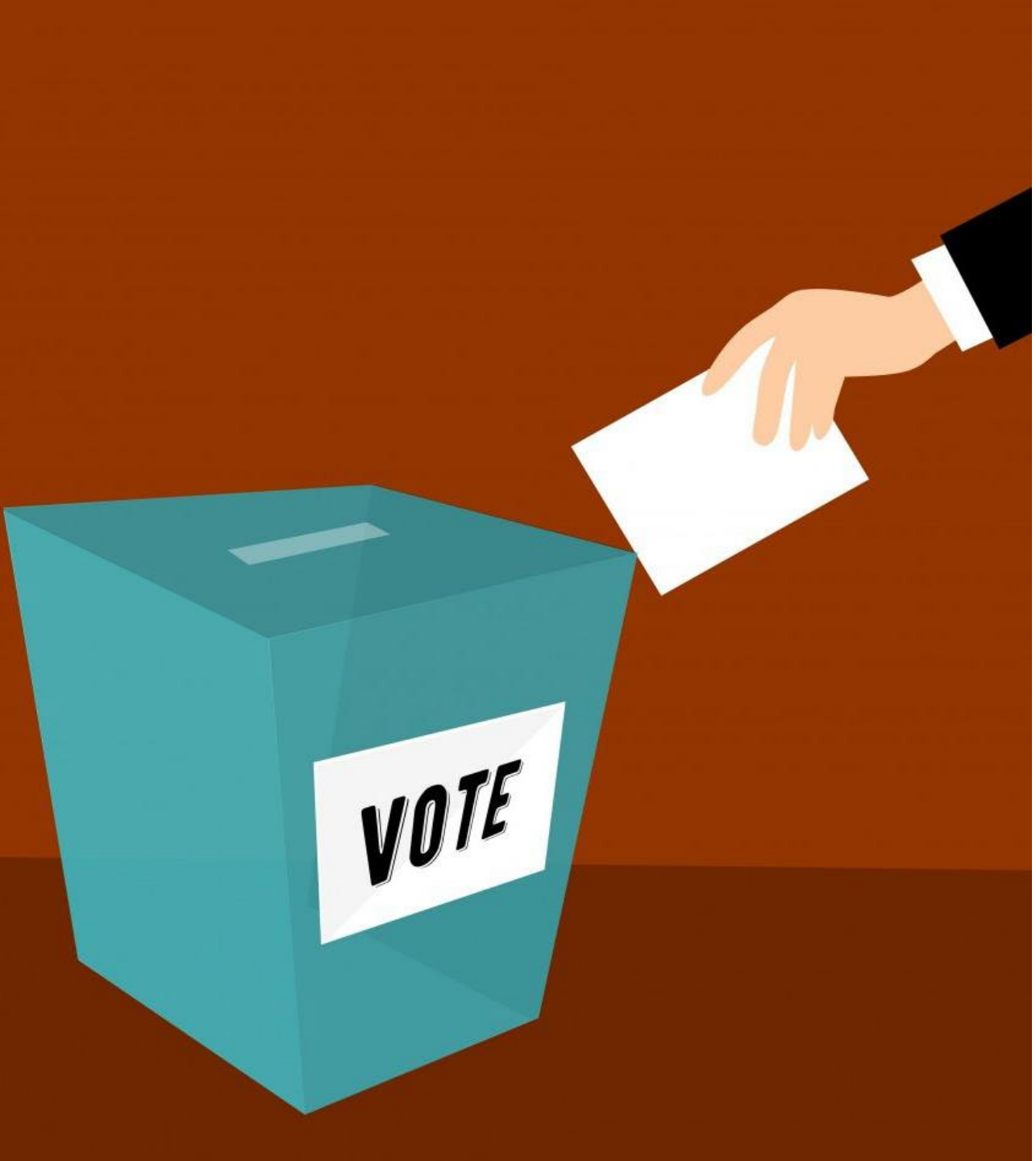
Administrative Boundaries Sub-Themes: US Census Bureau Data

- State*
- Tribal Nations Reservations*
- Congressional Districts*
- Legislative Districts (House and Senate Districts)*
- Voting Precincts*
- County*
- Incorporated Cities and Towns*
- School Districts (Elementary, High School, K-12)*

Non-MSDI include:

- Census Tracts
- Census Block Groups
- Census Blocks
- County Subdivisions
- Public Use Microdata Areas (PUMAs)
- Census Designated Places (CDPs)

*** Indicates sub-theme is also a Core Sub-Theme**



Geo-Enabling Montana's Elections

- Support Montana's Elections through MSDI Data Layers
- Partner with Secretary of State and Local Government Election Administrators
- State & Local Elections Systems are now using geospatial data and technology to locate voters.
  - Geospatial data & technology is the foundational for getting the right ballot to the right person.
- Similar to NG9-1-1 efforts GEE relies upon MSDI Addressing & Boundaries data.

Administrative Boundaries Sub-Themes: Election Districts

- Ambulance/EMS
- Cemetery
- City*
- Community Council
- Congressional*
- County Commissioner*
- County*
- Fire*
- House District*
- Irrigation
- Judicial
- Jury
- Library
- Mosquito
- Park and Recreation
- Public Hospital
- Public Service Commission
- Resort
- Rural
- Rural Improvement
- School*
- School Single Member Trustee
- Senate District*
- Sewer
- Soil Conservation*
- Special
- State*
- Study Commission
- Supreme Court Justice
- Transportation
- Voting Precinct*
- Ward
- Water

*** Indicates sub-theme is also a Core Sub-Theme**

Public Boundary Data Layer Updates March 2026

- Election Districts and Precinct Splits are current as of Date (for the May Elections)
  - Available to download from the MSDI Boundary Page or the FTP:
    - ✓ Statewide and by County
    - ✓ Format:
      - File Geodatabases
      - Shapefiles
      - Web Services
    - ✓ And Current Precinct Splits Excel Table

- Visit the MSDI Boundary page for: https://msl.mt.gov/GIS/Boundaries
  - Metadata Records (links to MSL GIS Data List Application)
  - Data Download Links (File Geodatabase and Shapefile)
  - Web Services: https://gisservicemt.gov/arcgis/rest/services/MSDI_Framework/Boundaries/MapServer
  - Map/App Gallery: https://montana.maps.arcgis.com/apps/instant/filtergallery/index.html?appid=02748f7435284288bc4e0a656a634a6c
  - Geo-Enabled Elections Hub: https://geoenabled-elections-montana.hub.arcgis.com/
  - FTP Link: https://ftpgeoinfo.msl.mt.gov/Data/Spatial/MSDI/AdministrativeBoundaries/Elections/

Boundary Calendar

January

- **Receive US Census Bureau Boundary Annexation Survey (BAS) materials**
- Check and update School County Superintendents list
- *Newly elected legislators take office; Candidate filing*

February

- BAS non-response follow-up by MSL and Montana Department of Commerce Census and Economic Information Center (CEIC)
- BAS State Certification by MSL due
- Local Governments must submit formal notification for the creation or amendment of a TIFD to DOR on or before **February 1**

March

- **BAS due March 1**: Boundary updates returned by this date will be reflected in the American Community Survey and Population Estimates Program data, and in next year's BAS materials.
- Update City boundaries and Annexations table from US Census Bureau
- Request new TIFDs list from Montana Department of Revenue and update TIFDs

April

- Review Weed District Contacts
- Review National Park Boundaries
- Review Tribal Nation Reservation Boundaries
- US Census Bureau School District Review Program Verification for Previous Year

May

- **Final BAS submittal May 31**: Boundary updates returned by this date will be reflected in next year's BAS materials.
- ***Special District Elections (e.g. School Districts)***

June

- ***Election Primary (Even Years)***

July-September

- Adjust boundaries to new CadNSDI (if there is an update)
- US Census Bureau School District Review Program (SDRP) Coordinator is appointed for the State: The Boundary Theme Steward has been performing this role in Montana
- Obtain updates from the Office of Public Instruction (OPI): make School District boundary changes, update the School Enrollment table, and check Grade and LE changes

October

- Request School District boundary changes from County Superintendents/County GIS
- Check OPI Schools List for grade and LE changes

November

- ***General Election (Even Years) | Municipal General (Odd Years)***

December

- US Census Bureau School District Review Program updates are due December 31 (SDRP Coordinator submits updates on the county's behalf)
- Obtain Census BAS Annexations submitted this year

https://geoenabled-elections-montana.hub.arcgis.com/pages/boundaries

Election Calendar

Month	Even Years	Odd Years
January	Candidate Filing / Boundary & Address Updates	Candidate Filing / Boundary & Address Updates
February		
March	Primary Ballot Certification	
April	Special District Ballots / Ballots to UOCAVA for General Election	Special Districts Ballots
May	Special District Elections	Special District Elections
June	Primary	
July	Boundary Updates	Boundary Updates
August	Ballot Certification	Municipal Primary Ballots
September	UOCAVA Ballots	Municipal Primary
October		Municipal General Ballots
November	General Election	Municipal General
December		

May – Special Elections (e.g. School)
September – Municipal Primary
November – Municipal General

Indicates when the Montana Secretary of State (SOS) can update the Election Management System (EMS) with GIS Data Layers from the Montana State Library (MSL)

Boundary Related Laws

- The Montana Code Annotated (LEG)
- Administrative Rules of Montana (SOS)
- List on the Geo-Enabled Elections Hub Boundaries page:

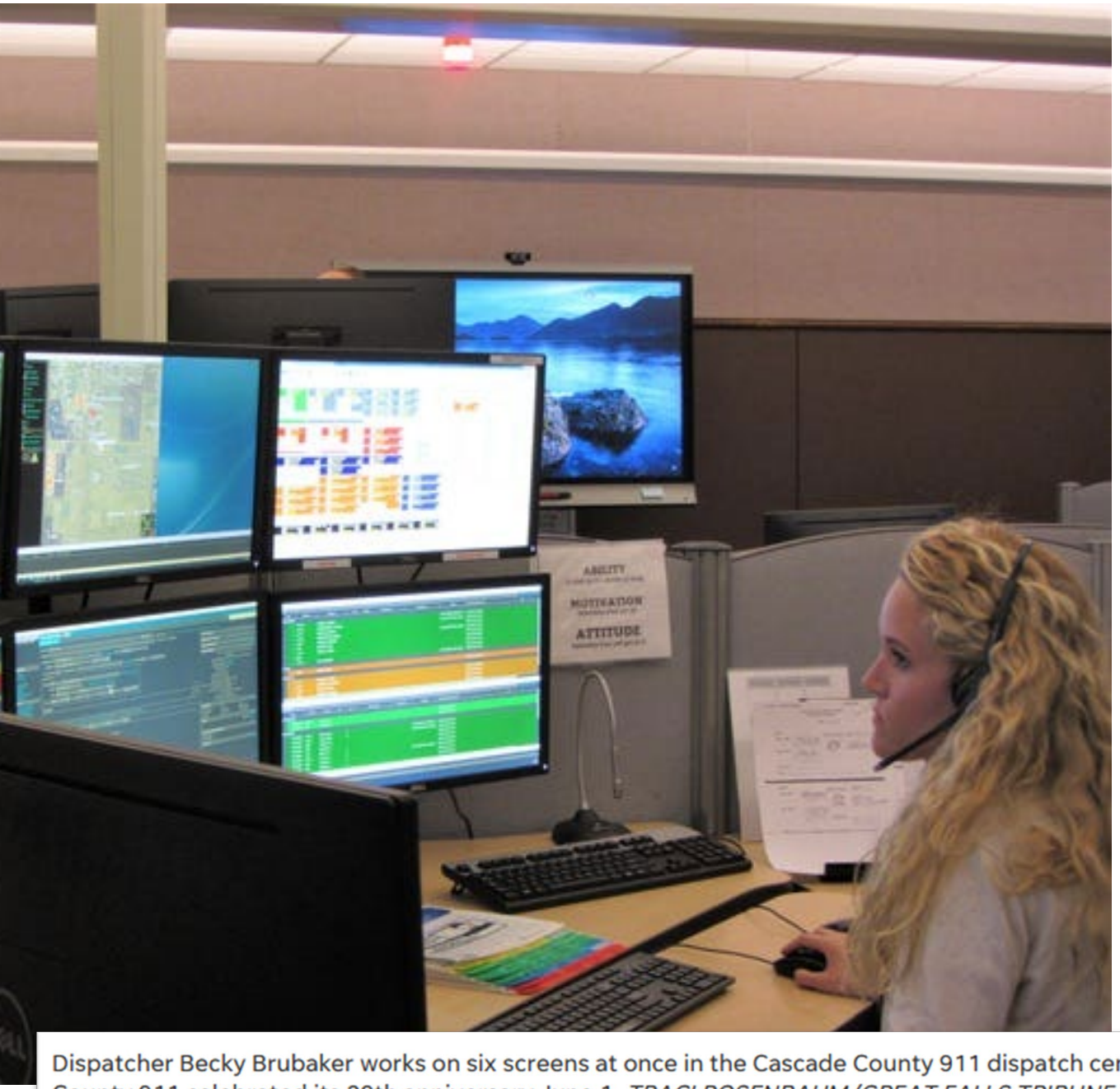
https://geoenabled-elections-montana.hub.arcgis.com/pages/boundaries

What's Coming Up

- Seeking feedback on the MSDI Boundary Data Improvement Plan
  - Please fill out the MSDI Boundary Survey
- Presented at the MAGIP Big Sky GeoCon in Whitefish on April 16
- Present the plan to MGIA Council
- Schedule a Working Group meeting to review draft Theme Plan

Structures and Addresses

https://msl.mt.gov/GIS/Structures



Dispatcher Becky Brubaker works on six screens at once in the Cascade County 911 dispatch center. Cascade County 911 celebrated its 30th anniversary June 1. *TRACI ROSENBAUM/GREAT FALLS TRIBUNE*

Advancing Technology in Public Safety

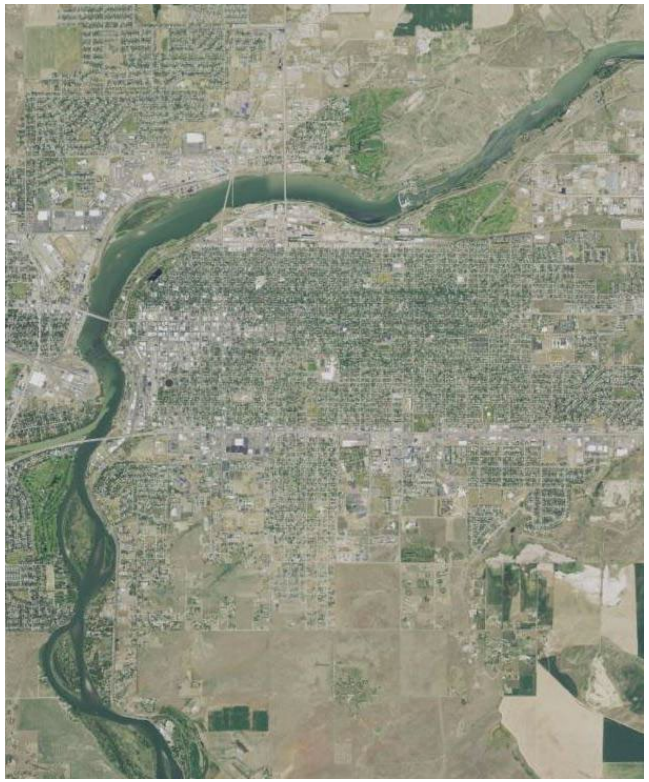
- Support Public Safety through MSDI Data Layers
- Next Generation 9-1-1: modernizes current system to be all IP-based.
  - Geospatial data & technology is the foundational for all location validation & call routing.
- MSL works with state, local, & tribal governments to produce state's authoritative Addressing & Boundaries data.
- **Montana Geocoding Web Service**

Imagery

https://msl.mt.gov/GIS/imagery

Imagery Collection

- Statewide imagery is NAIP
  - 10 years of NAIP since 2005 (approx. every 2 years)
  - Natural Color and Color Infrared
- NAIP 2025
  - 30 cm resolution in MT!
  - County Mosaics Available Now
  - Web Service Coming Soon!
- Other ad hoc collections



Natural Color

Color Infrared

Imagery Collection

- Browse the State Library Collection online:
  - Montana Air Photo Browser
  - Montana Digital Atlas
  - Web map services
  - ArcGIS Online Basemaps

- View the image dates
- Download county mosaics or
- Request tiffs

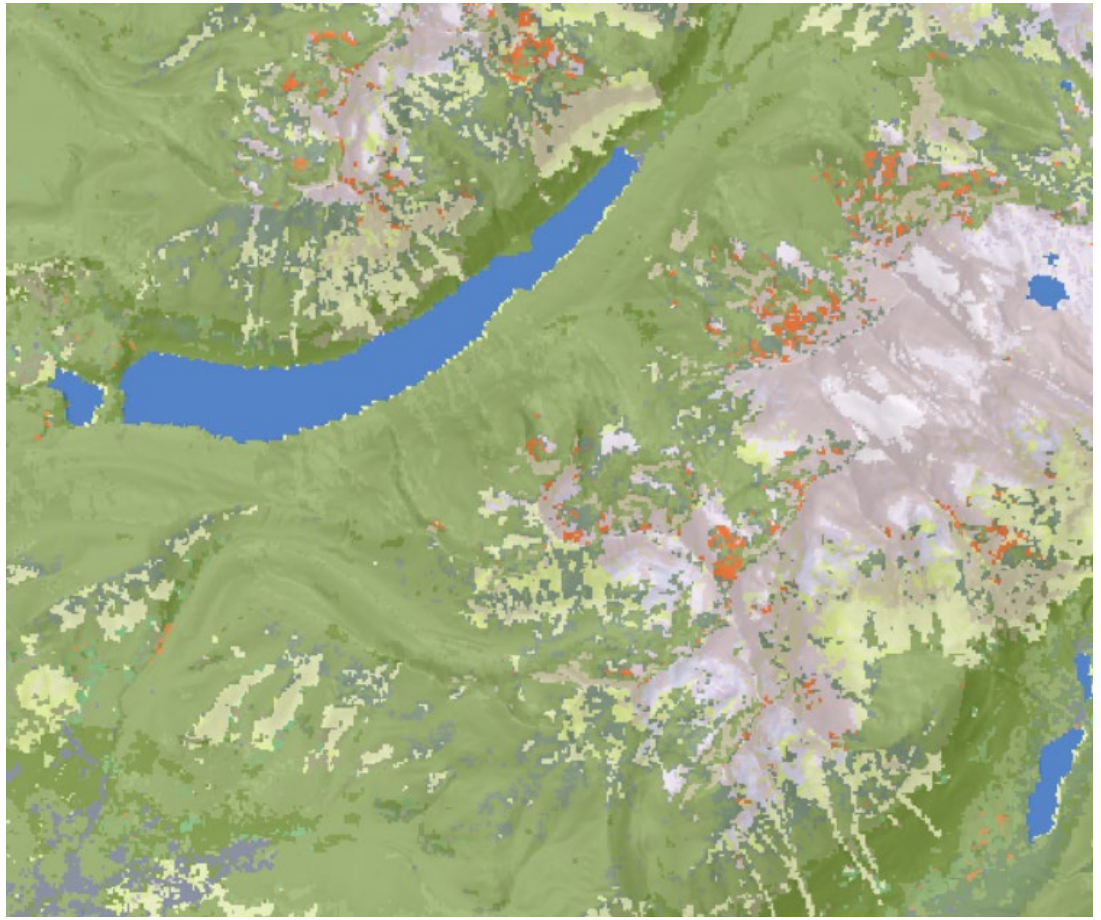
https://msl.mt.gov/GIS/imagery

Land Cover

https://msl.mt.gov/GIS/LandUse

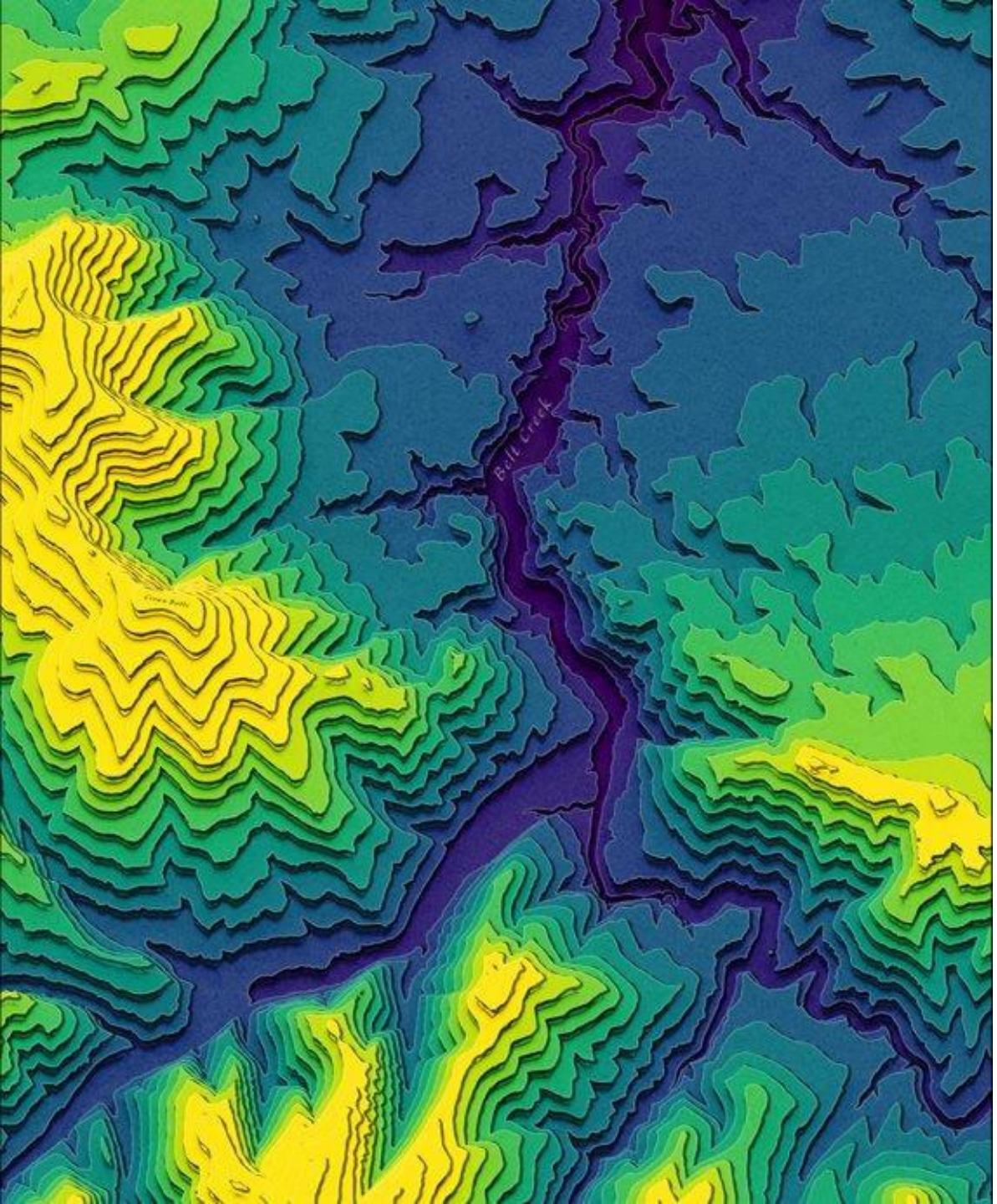
MSDI Land Cover

- 30-meter Resolution
- Adapted from a NatureServe version of the National Vegetation Classification Group-Level Vegetation Communities
- Current: Published in 2025
- Archive:
  - 2023
  - 2010-2017
- Applications:
  - MTNHP Map Viewer
  - MTNHP Ecological Communities Guide
  - Ecological Site Reviewer



Elevation - Lidar

https://msl.mt.gov/GIS/Elevation

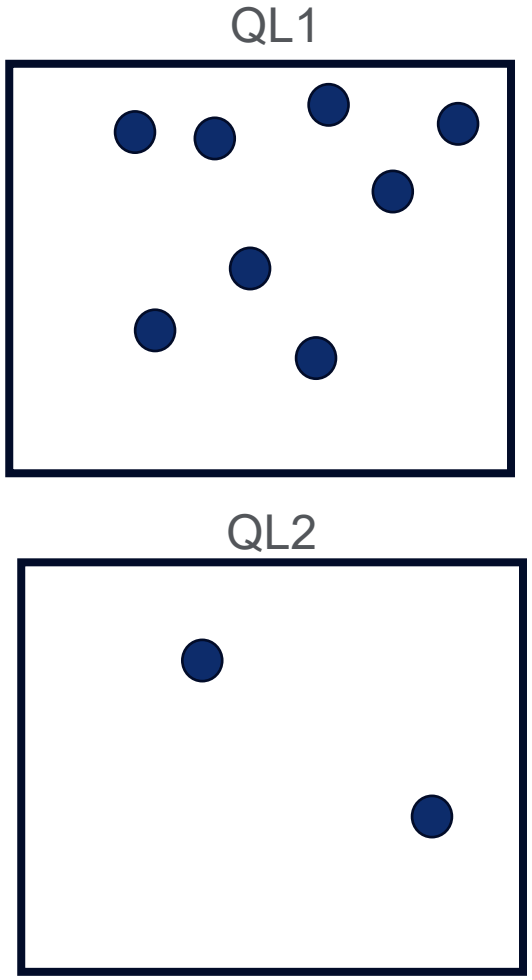


LiDAR (Elevation Data)

- MSL serves in a coordination role finding partners to acquire lidar through the **USGS 3D Elevation Program (3DEP)**.
- Kicked off in 2019
- From meters (current) to centimeters (future) accuracy
- Ubiquitous access

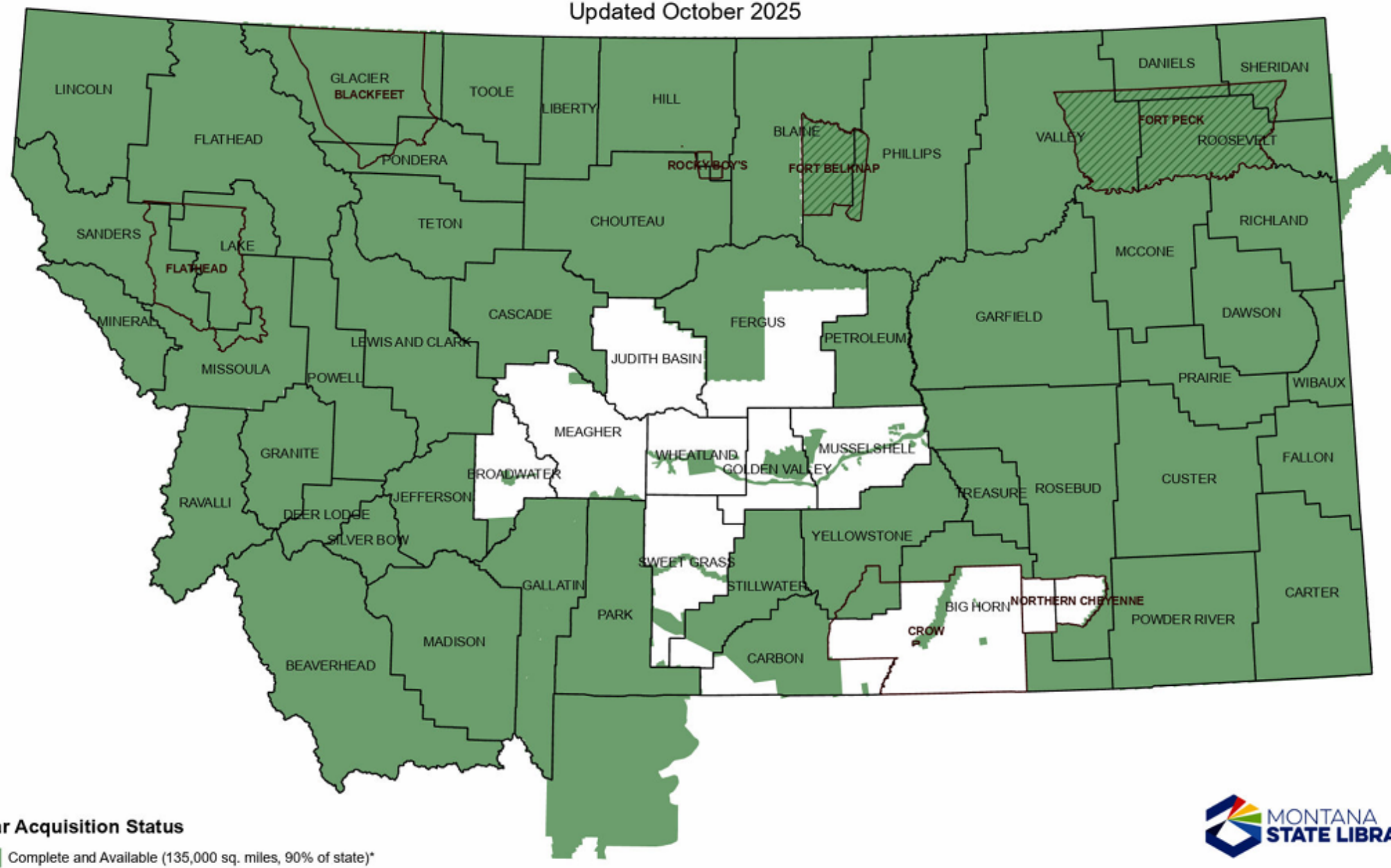
Montana lidar by the numbers

- **130,000** square miles covered (90%)
  - 100% expected by Spring 2026
- **20,000** square miles repeat coverage
- **170 TB** of data stored
  - 13+ million files
- **20%** Quality Level 1 (1/2m DEM)
- **80%** Quality Level 2 (1m DEM)
- **~10 cm** vertical accuracy $RMSE_z$
- **~50 cm** horizontal accuracy



Montana Lidar Inventory

Updated October 2025



Lidar Acquisition Status

Complete and Available (135,000 sq. miles, 90% of state)*

Complete (not available at MSL)

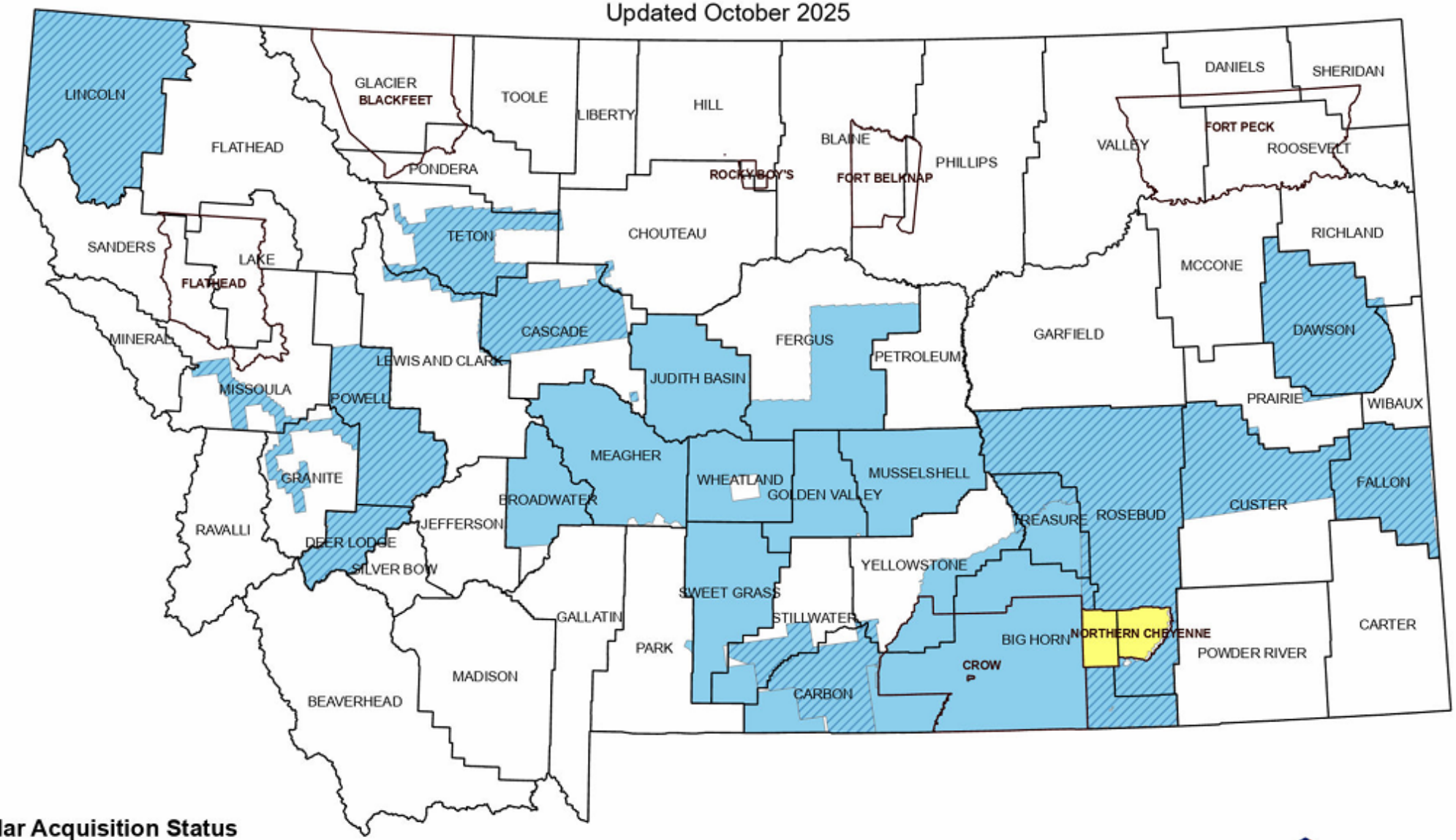
*Includes overlapping projects and Yellowstone National Park

MONTANA STATE LIBRARY

Map updated October 3, 2025
Map number: 19MT0010
https://msl.mt.gov/gis/lidarinventory

Montana Lidar Inventory

Updated October 2025



Lidar Acquisition Status

- In Progress (45,000 sq. miles)*
- In Progress (Reacquire)
- Planned

*Includes overlapping projects and Yellowstone National Park

MONTANA STATE LIBRARY

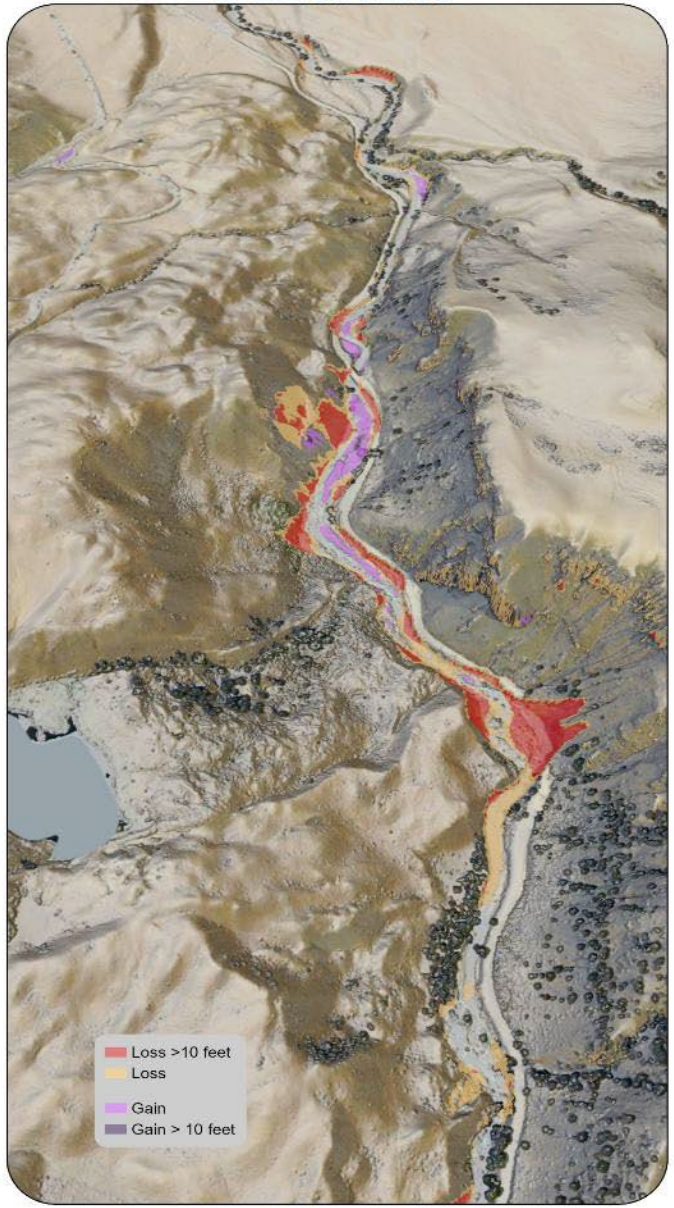
Map updated October 3, 2025
Map number: 19MT0010
https://msl.mt.gov/gis/lidarinventory

Spot the Difference

2020

2023

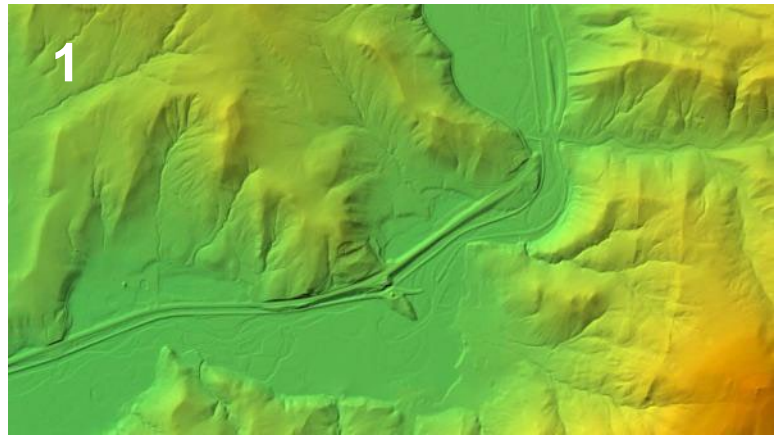
Difference

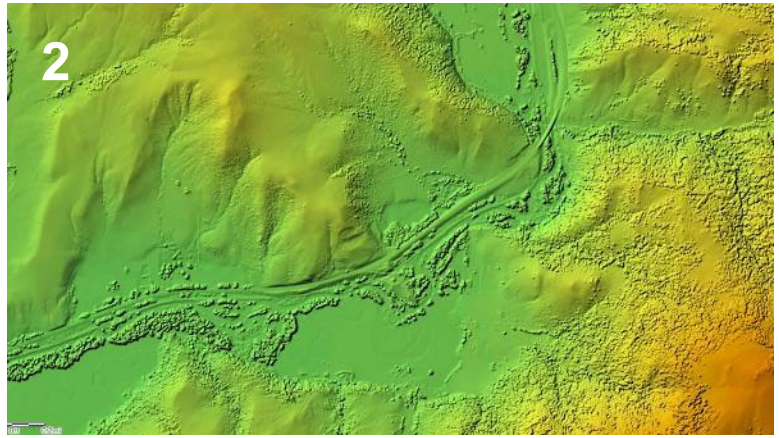


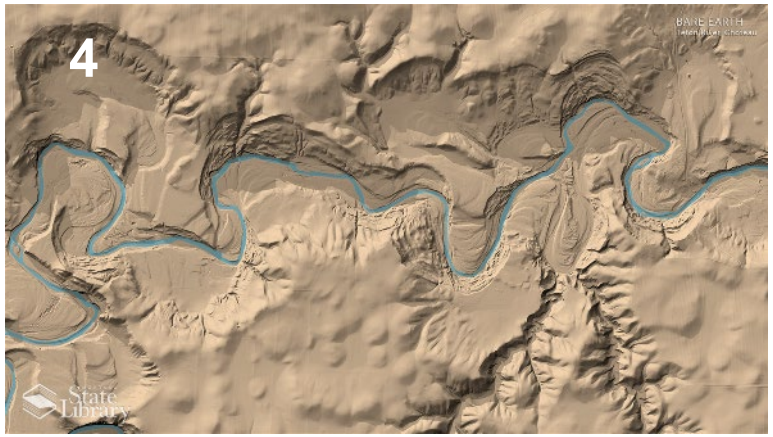
What is available?

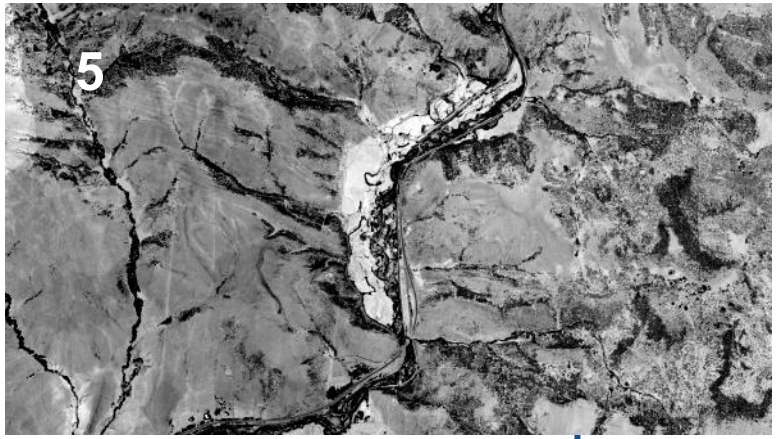
Core Products (1 meter resolution)

1. Bare-earth Digital Elevation Model
2. Digital Surface Model
3. Canopy Height Model
4. Hillshade
5. Intensity image

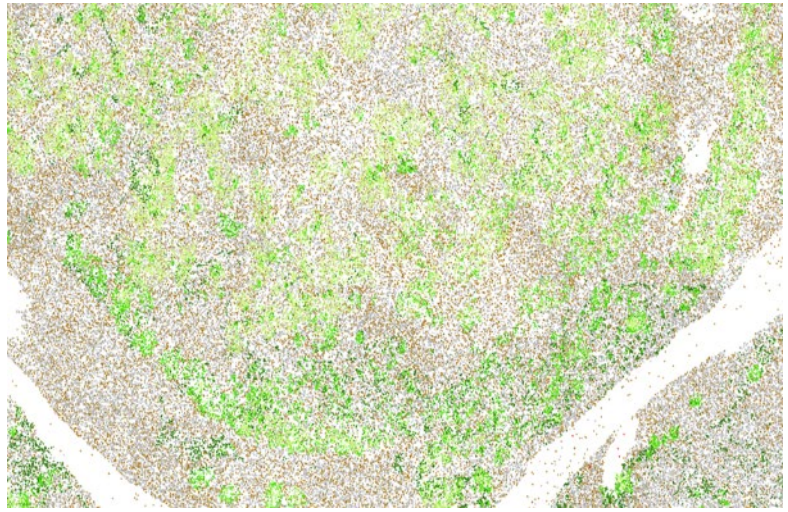








Point Cloud



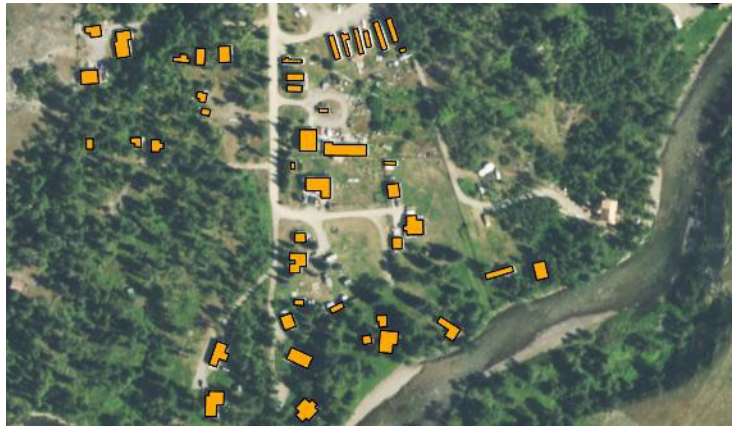
Water breaklines

Control

Reports and metadata

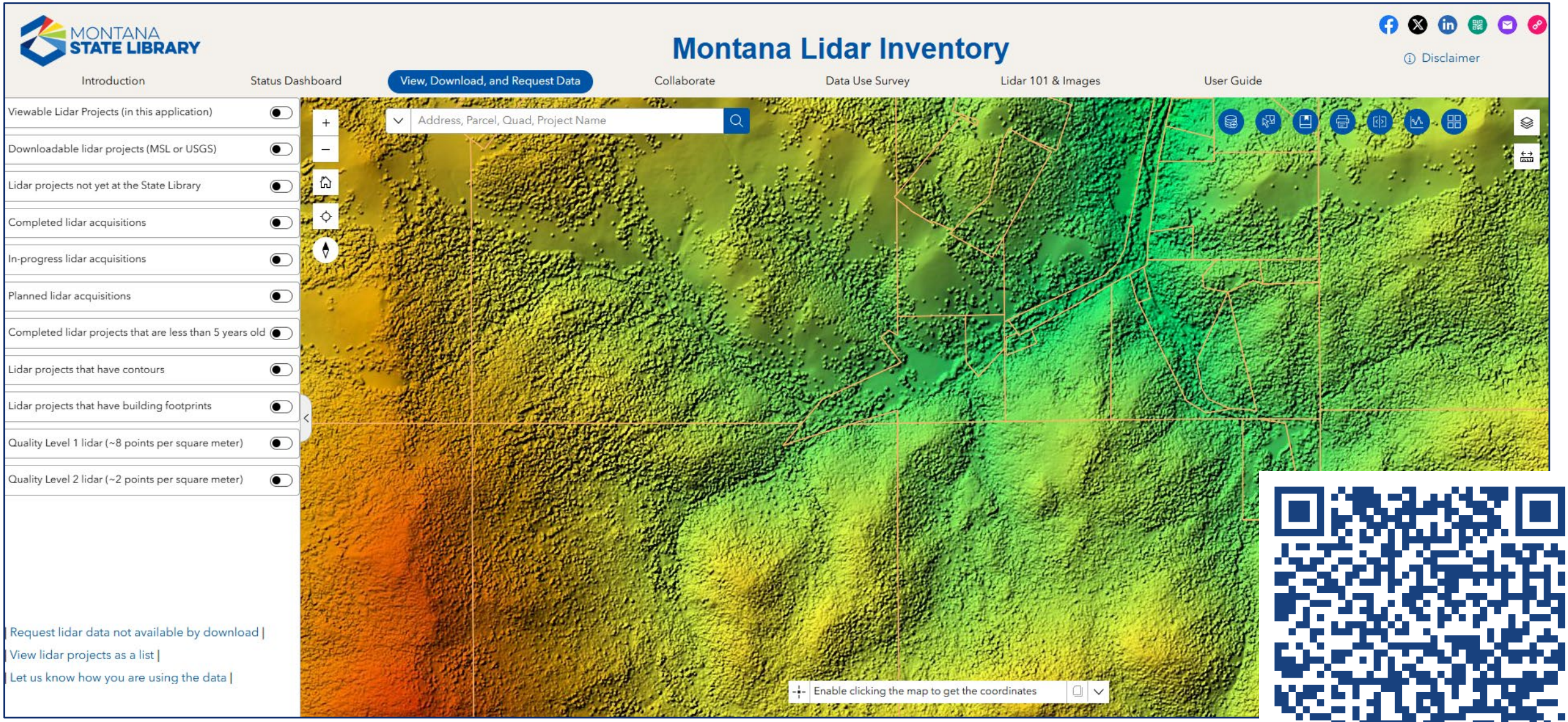
LocationData	11/3/2020 9:48 AM	File folder
Metadata	6/23/2020 1:28 PM	File folder
Mosaics	9/27/2021 2:11 PM	File folder
PointCloudData	7/21/2021 9:48 PM	File folder
Quads	10/5/2021 4:38 PM	File folder

Building footprints

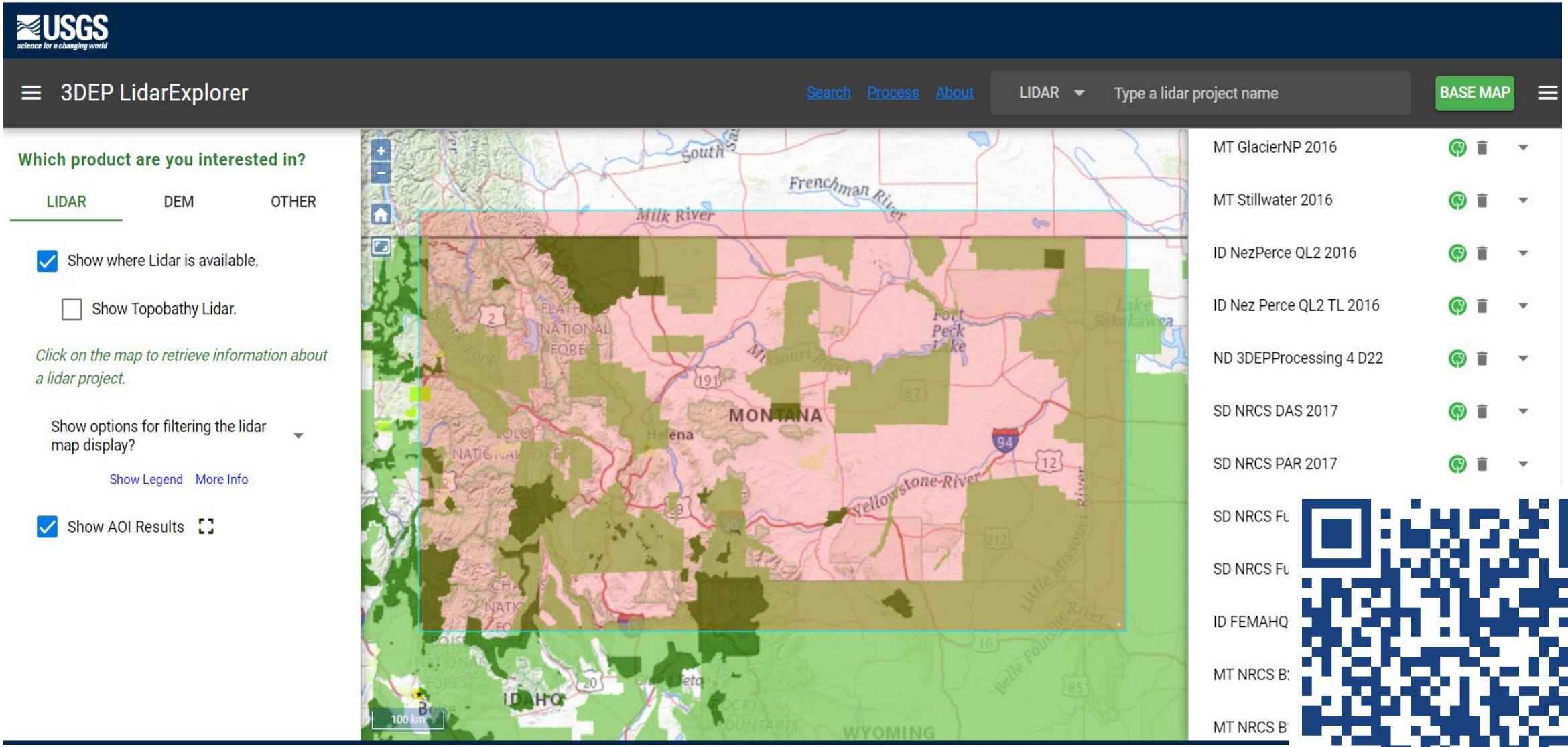


Contours

Where to get lidar data?



USGS National Map – LidarExplorer



Comparison – When to use each app?

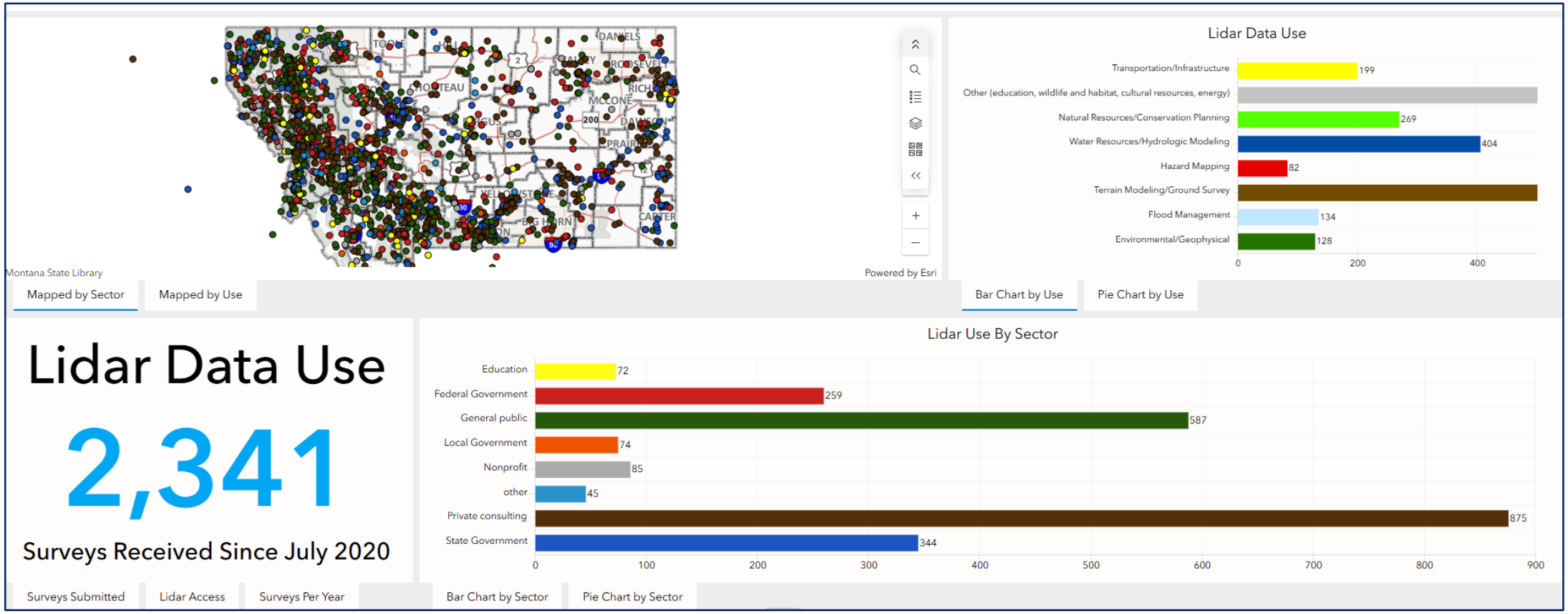
MSL – Montana Lidar Inventory

- Download full-project mosaics (~countywide) - geotiff
- Download by 24K quadrangle - geotiff
- State-led collections
- LAZ/LAS by request only
- Additional derived products:
  - DSMs, canopy height, hillshade, and bare-earth
  - Building footprints and contours (where available)
  - Additional point cloud classification (some areas)
- Older lidar projects (>6 years)
- Data that have not yet been accepted by USGS 3DEP

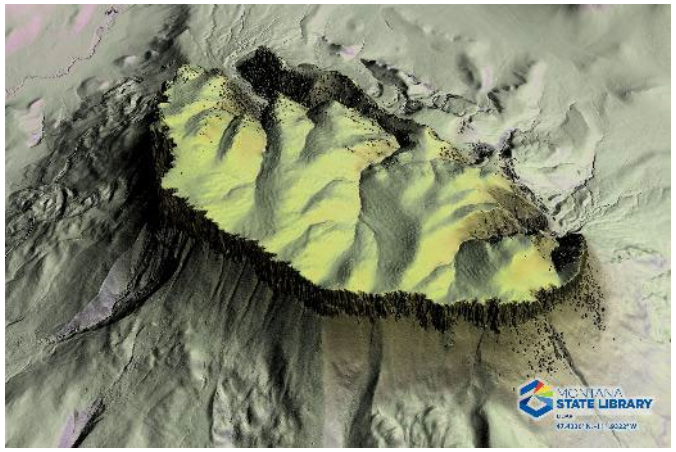
USGS – National Map

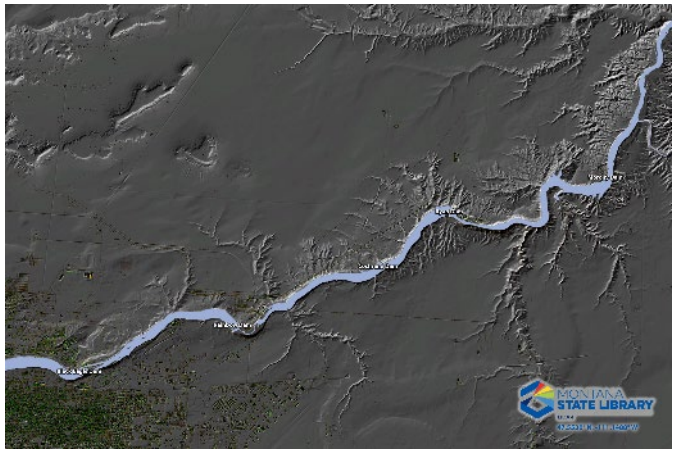
- Download tiles (~1km by 1km tiles)
- USGS-led collections, State contributed data pending
- Newest of new data releases (work units)
- Download LAZ
- Lidar outside of Montana
- Primary focus is bare-earth
- Only lidar that meets USGS 3DEP Specifications*

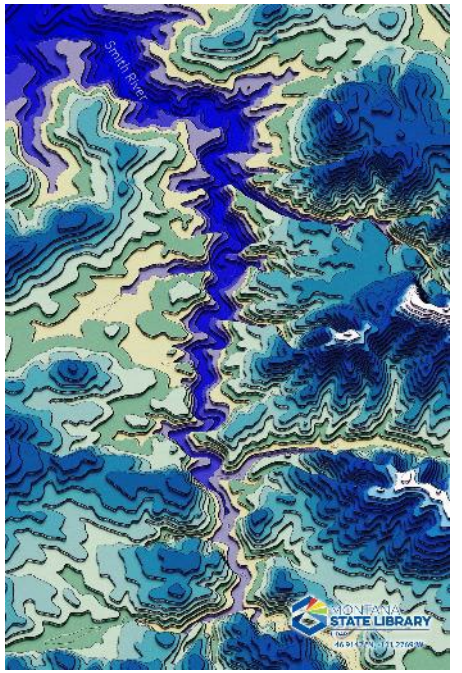
Lidar data use in Montana

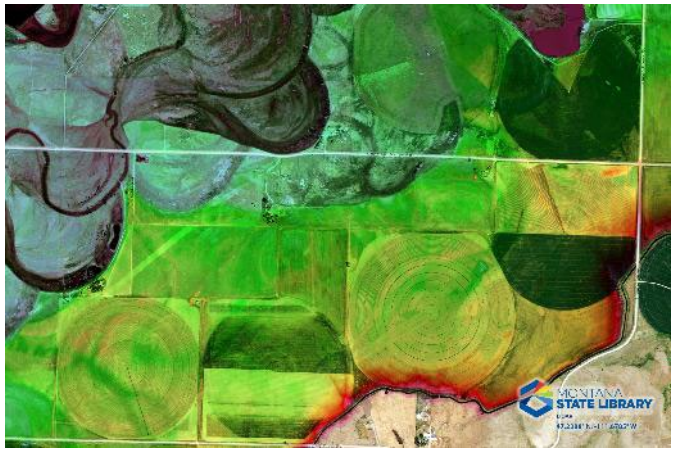


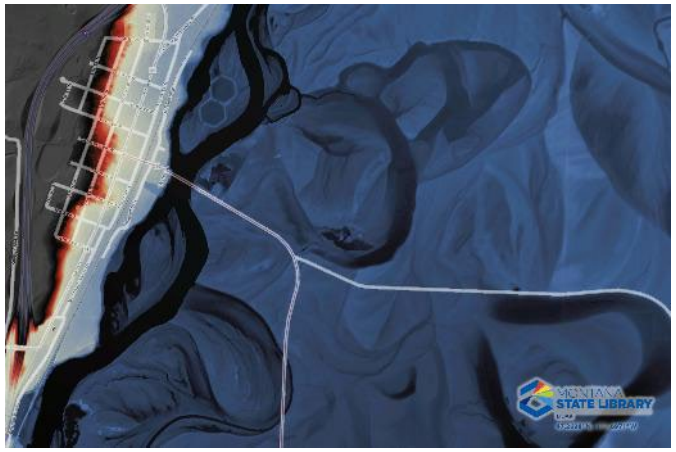
- *"We intend to use the data for an engineering feasibility study for a wildlife crossing structure overpass. It will be used for **preliminary assessments**. Your GIS data portal is fantastic, by the way!"*
- *"I am creating a water distribution system model for the town of Belt and will use the data to assign elevations to nodes in the model. The use of the water model is for planning purposes to assess water distribution system hydraulic deficiencies.*


MONTANA
STATE LIBRARY


MONTANA
STATE LIBRARY


Smith River
MONTANA
STATE LIBRARY


MONTANA
STATE LIBRARY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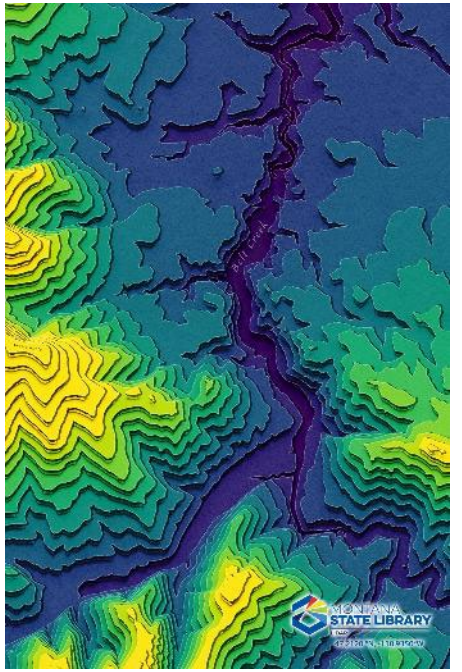
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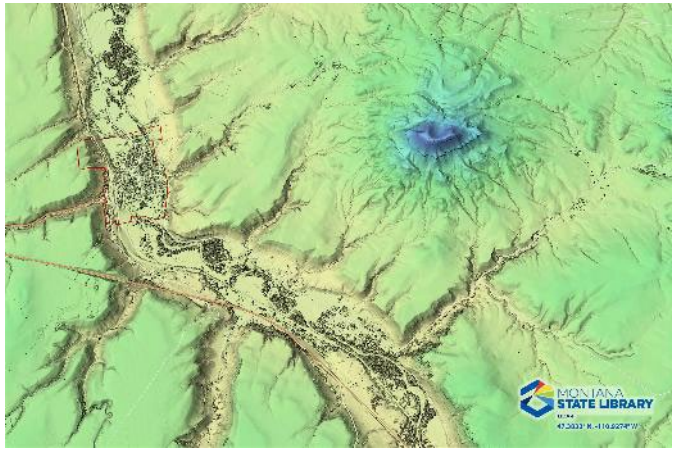
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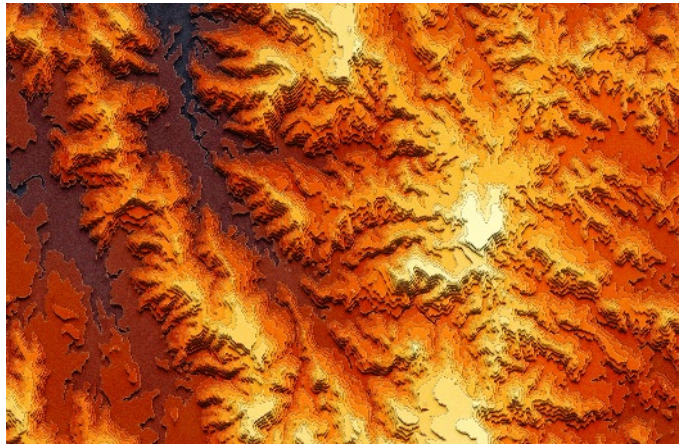
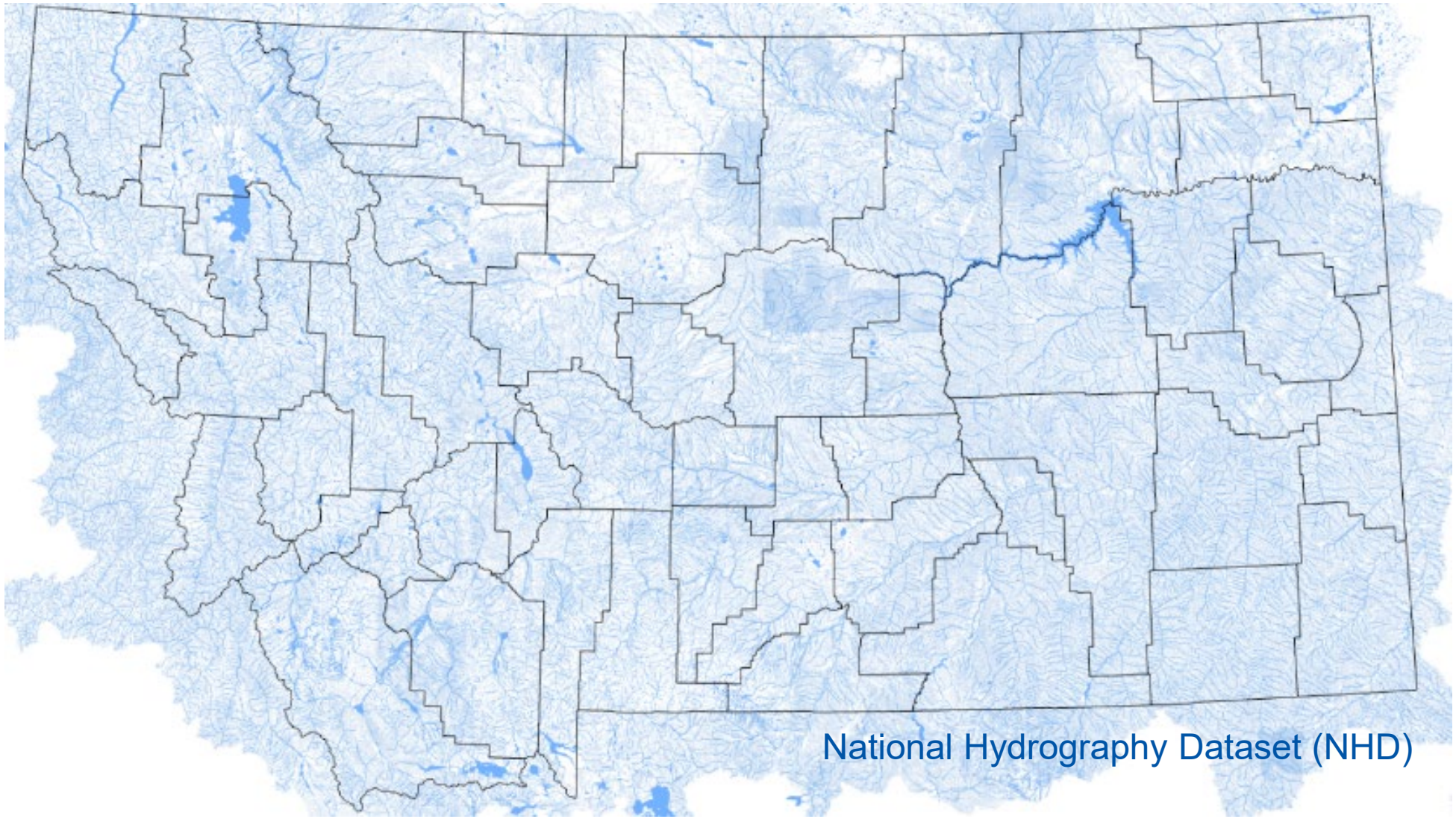
STATE LIBRARY



Hydrography

https://msl.mt.gov/GIS/Hydro

Mapping Montana’s rivers, streams, canals, lakes and other waterbodies



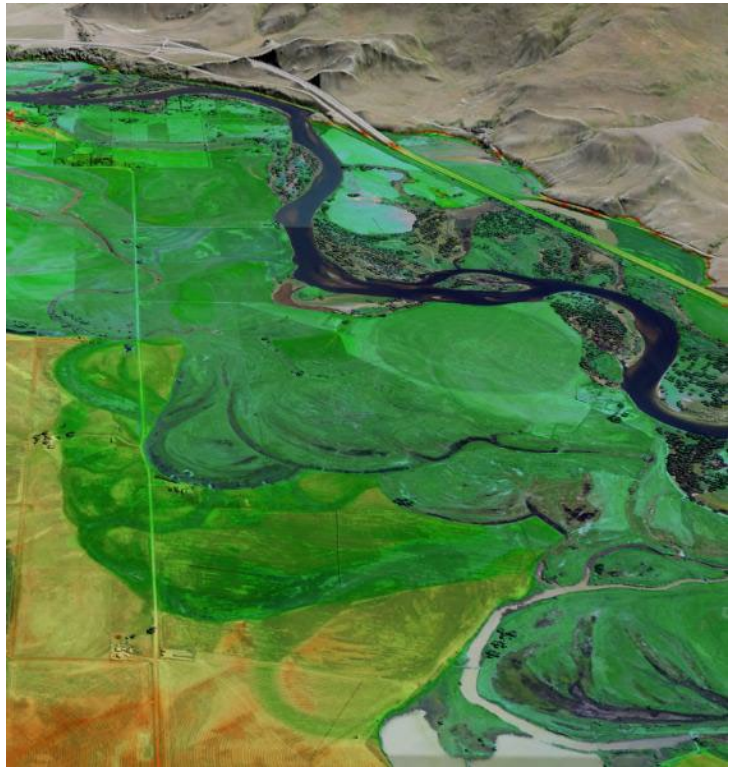
Elevation (lidar)-Derived Hydrography

- The National Hydrography Dataset and Watershed Boundary Dataset are frozen (no more updates)
- Elevation-derived hydrography is coming

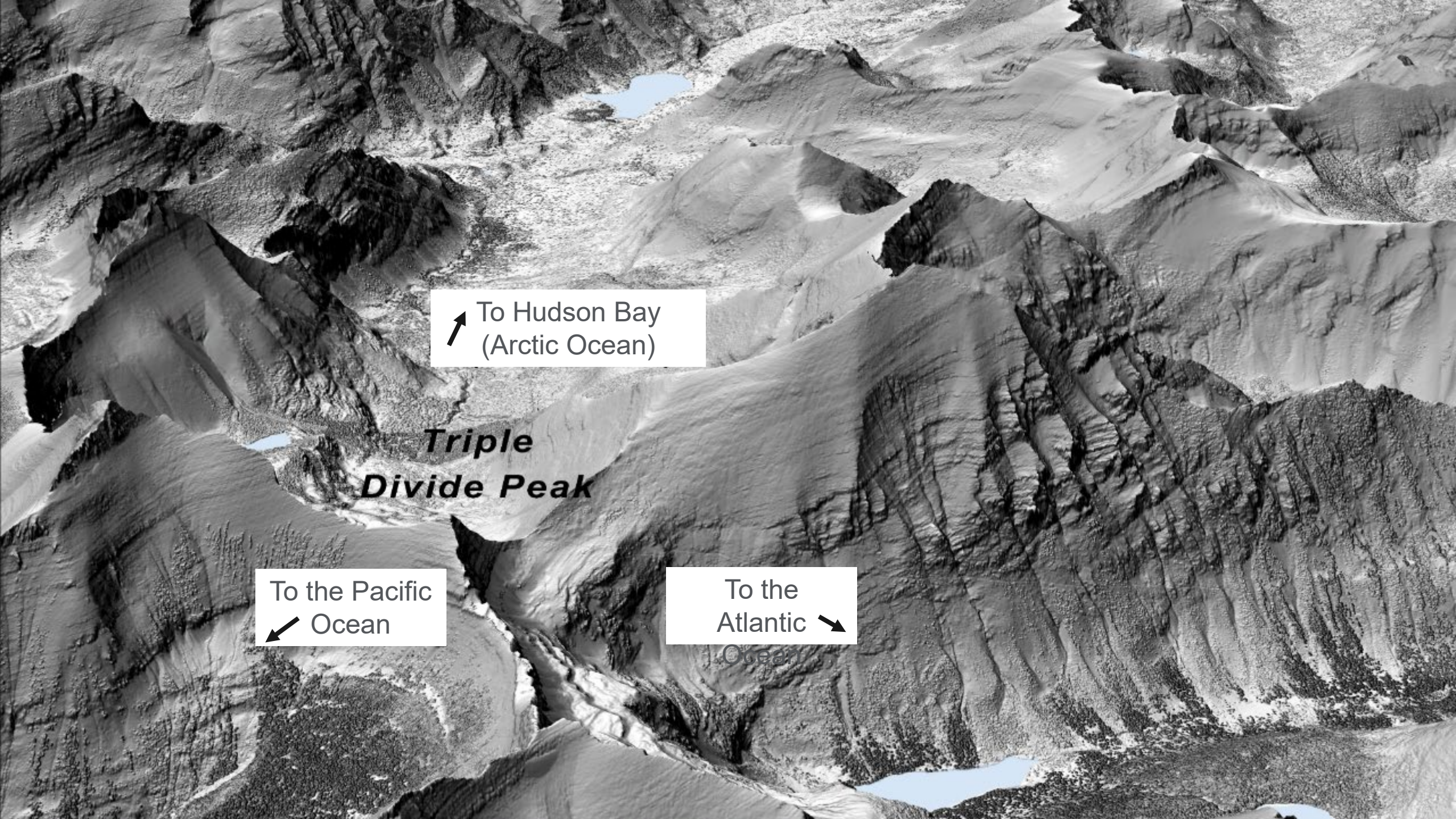
  -USGS 3D Hydrography Program (3DHP)
- Seeking funding partners!

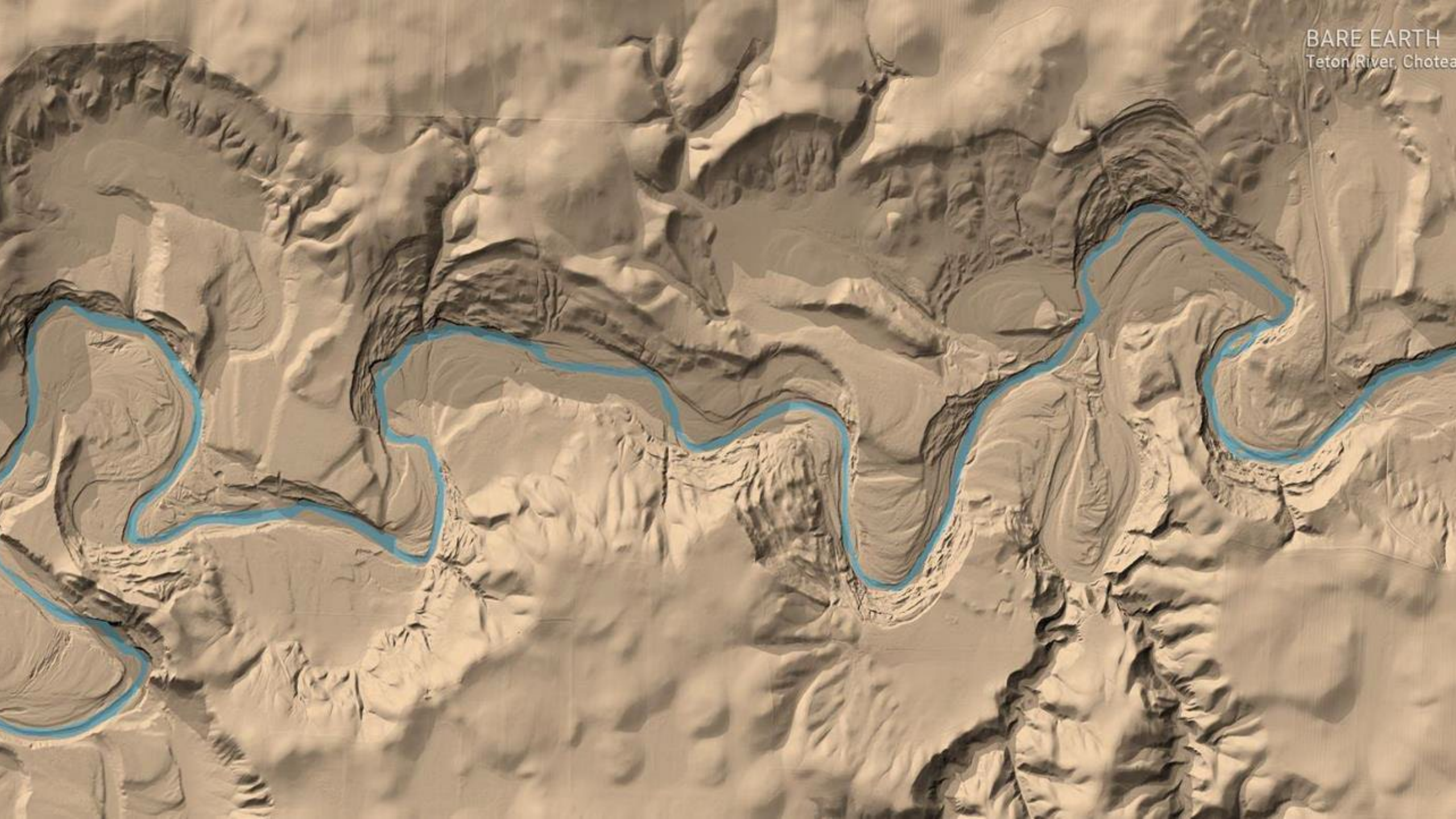
High-accuracy elevation data (LiDAR) informs stream mapping

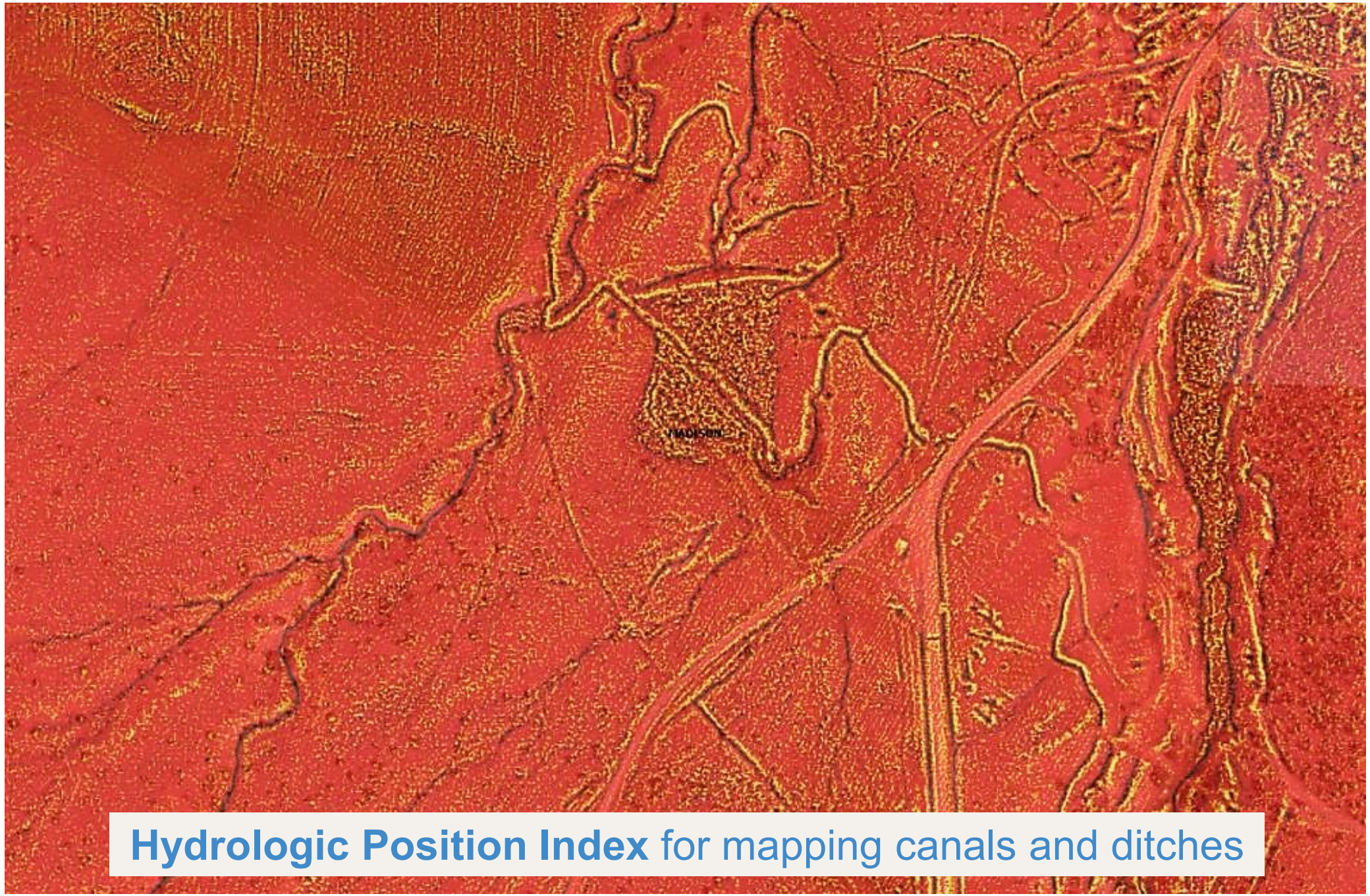
Topography and water shape each other



Water flows downhill > Align hydrography with elevation data

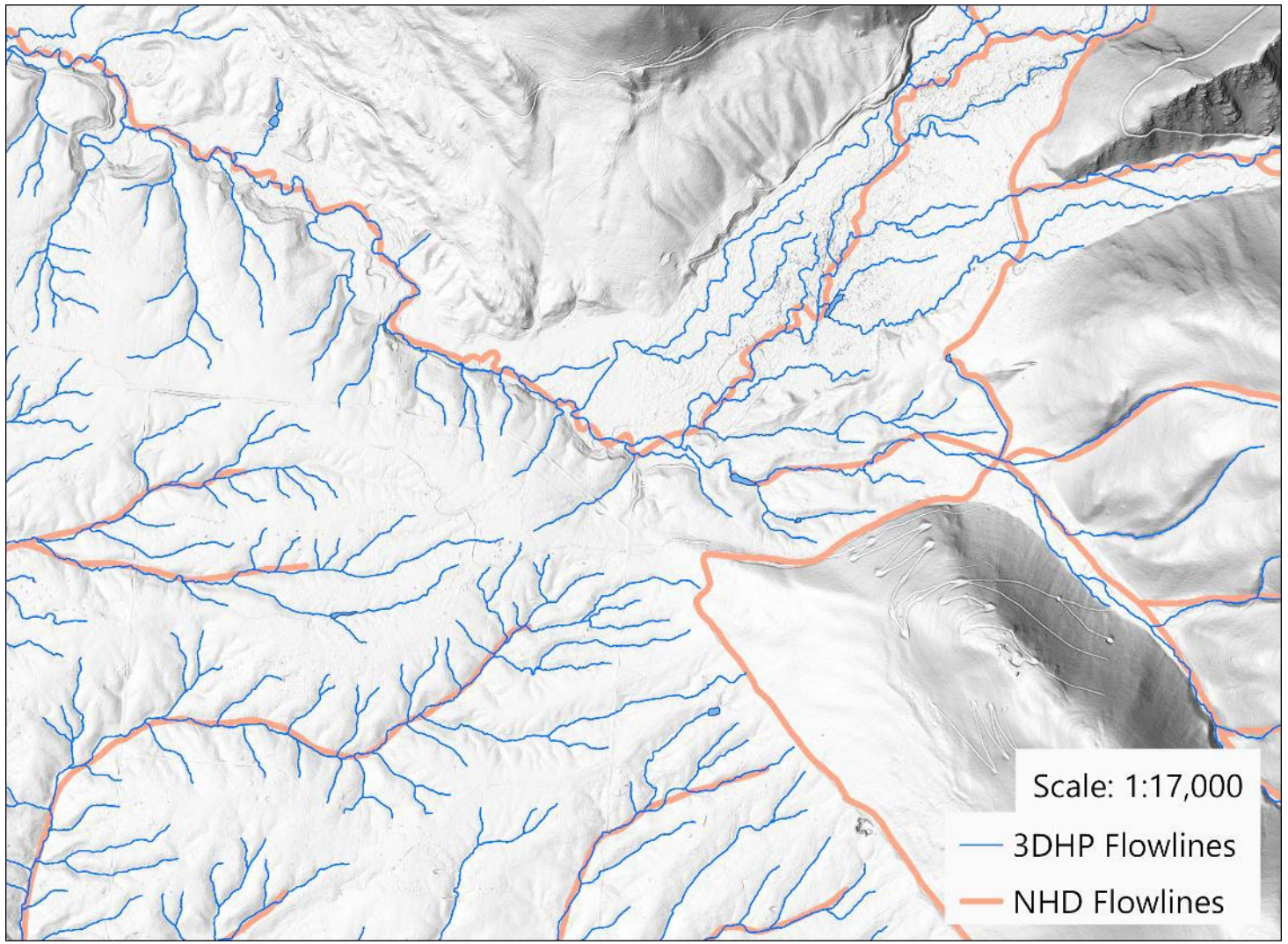

To Hudson Bay
(Arctic Ocean)
Triple
Divide Peak
To the Pacific
Ocean
To the
Atlantic
Ocean


BARE EARTH
Teton River, Chotea

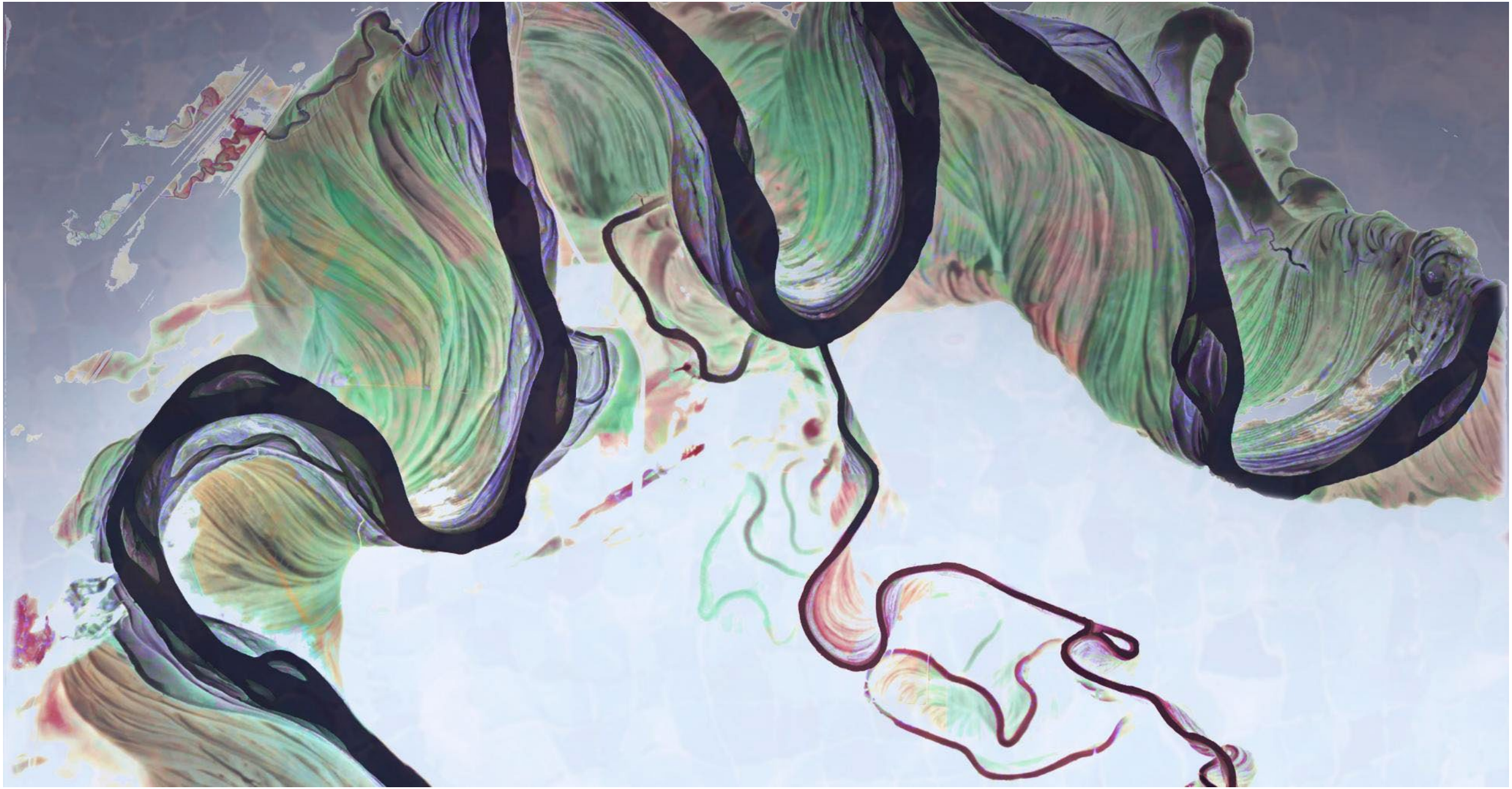


Hydrologic Position Index for mapping canals and ditches

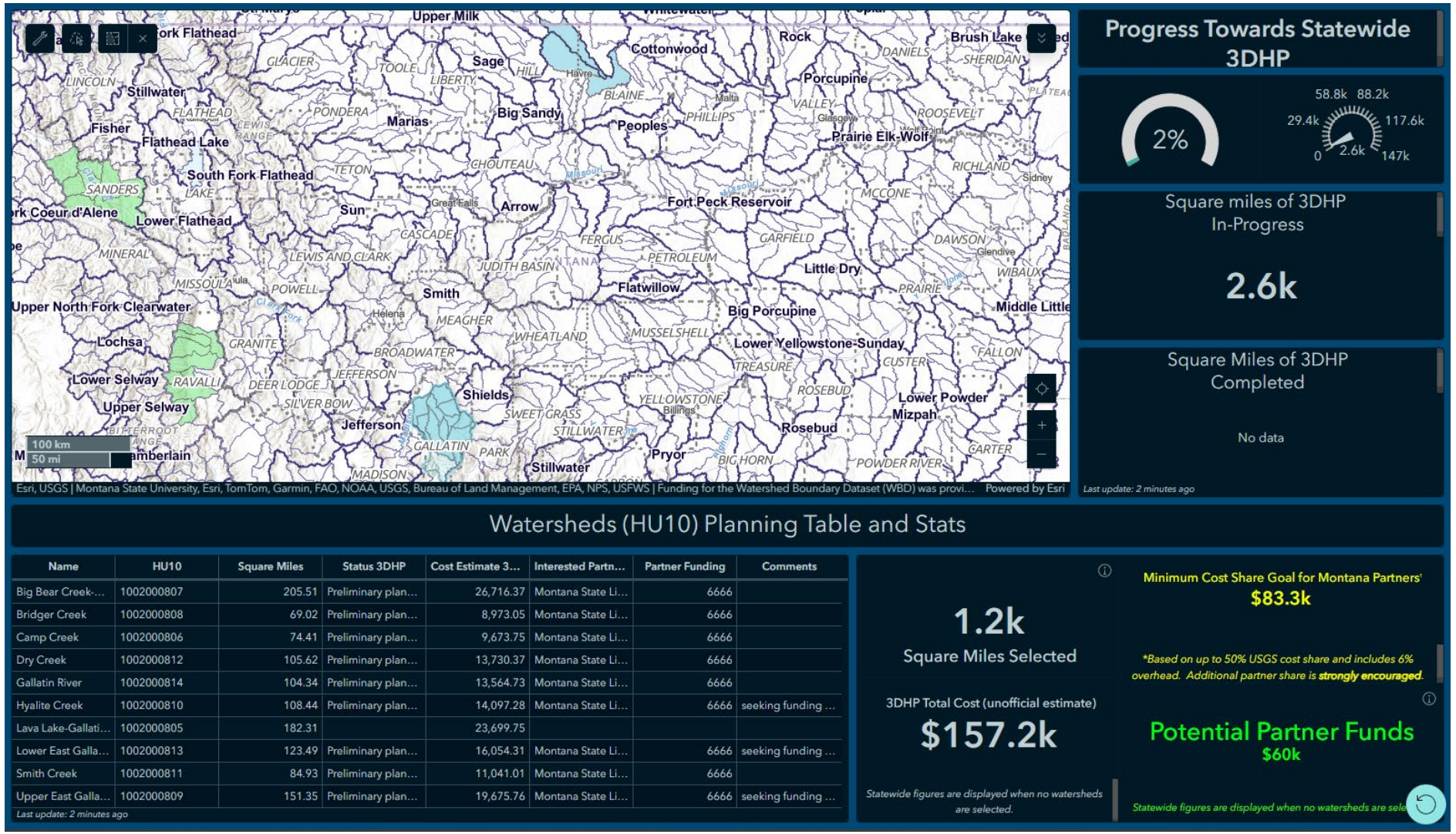
NHD & EDH comparison - Montana



Swamp Creek in the Lower Noxon Reservoir HU-10, Sanders County, MT



Montana's 3DHP Planning Dashboard



Progress Towards Statewide 3DHP

2%

58.8k 88.2k 29.4k 117.6k 0 2.6k 147k

Square miles of 3DHP In-Progress

2.6k

Square Miles of 3DHP Completed

No data

Last update: 2 minutes ago

Watersheds (HU10) Planning Table and Stats

Name	HU10	Square Miles	Status 3DHP	Cost Estimate 3...	Interested Partn...	Partner Funding	Comments
Big Bear Creek-...	1002000807	205.51	Preliminary plan...	26,716.37	Montana State Li...	6666	
Bridger Creek	1002000808	69.02	Preliminary plan...	8,973.05	Montana State Li...	6666	
Camp Creek	1002000806	74.41	Preliminary plan...	9,673.75	Montana State Li...	6666	
Dry Creek	1002000812	105.62	Preliminary plan...	13,730.37	Montana State Li...	6666	
Gallatin River	1002000814	104.34	Preliminary plan...	13,564.73	Montana State Li...	6666	
Hyalite Creek	1002000810	108.44	Preliminary plan...	14,097.28	Montana State Li...	6666	seeking funding ...
Lava Lake-Gallati...	1002000805	182.31		23,699.75			
Lower East Galla...	1002000813	123.49	Preliminary plan...	16,054.31	Montana State Li...	6666	seeking funding ...
Smith Creek	1002000811	84.93	Preliminary plan...	11,041.01	Montana State Li...	6666	
Upper East Galla...	1002000809	151.35	Preliminary plan...	19,675.76	Montana State Li...	6666	seeking funding ...

Last update: 2 minutes ago

1.2k
Square Miles Selected

3DHP Total Cost (unofficial estimate)
$157.2k

Statewide figures are displayed when no watersheds are selected.

Minimum Cost Share Goal for Montana Partners[1]
$83.3k

Based on up to 50% USGS cost share and includes 6% overhead. Additional partner share is **strongly encouraged.*

Potential Partner Funds
$60k

Statewide figures are displayed when no watersheds are sele

Wrap Up

Key Take Aways

- MSL is the coordinating body for MSDI Data
- Partnership is necessary for MSDI Data Layers

MSDI Working Groups are open to anyone interested

Welcome to join future meetings!

MSL Email Updates

Questions?

Thank You!

Please reach out with your questions:

Michael Fashoway – mfashoway@mt.gov
Meghan Burns – mburns2@mt.gov

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