

Montana Elevation Working Group: 2023 Lidar Planning

Agenda

June 27, 2022, 10:00a – 12:00p

- Introductions
- Brief background
- Lidar acquisition updates
- Areas without lidar, what remains?
- USGS 3DEP BAA application overview
- 2023 acquisition planning
- Funding availability/opportunities
- Information sharing

Montana State Library

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Introductions

- *Name and Organization*

Montana Elevation Working Group (MEWG) Background

- Formed in November 2018
- To communicate, plan, and execute initiatives relevant to the collection, maintenance, and dissemination of high-resolution elevation data.
- First task: develop a Montana Lidar Plan that sets the path for statewide lidar acquisition and coordination. **Completed June 2019.**
- To date: Focused on completing lidar statewide and creating a high-resolution, highly accurate 1-meter statewide Digital Elevation Model.

Statewide lidar status

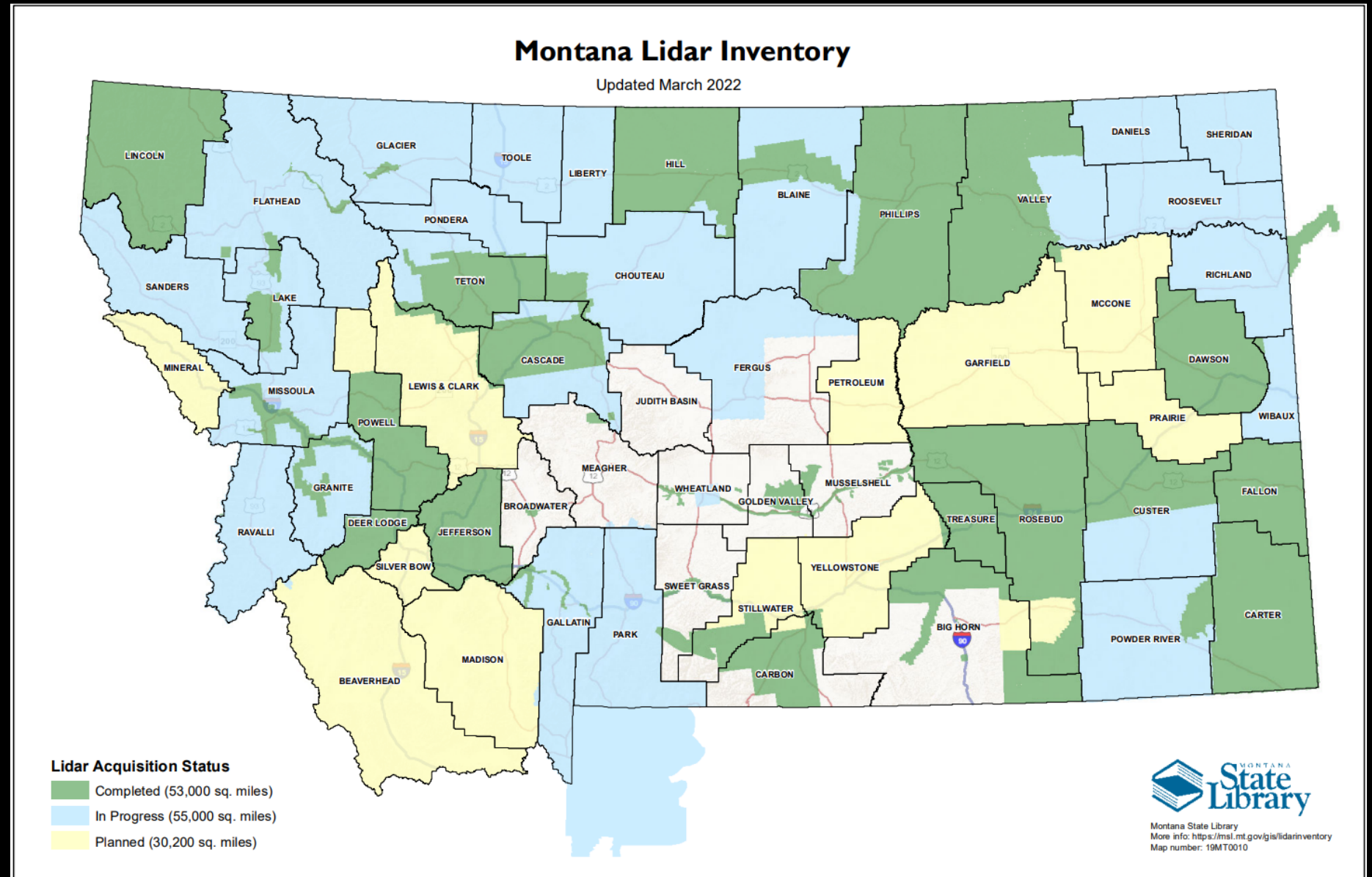
<https://msl.mt.gov/gis/lidarinventory>

Approximately 88% complete, in progress, or planned (138,000 square miles)

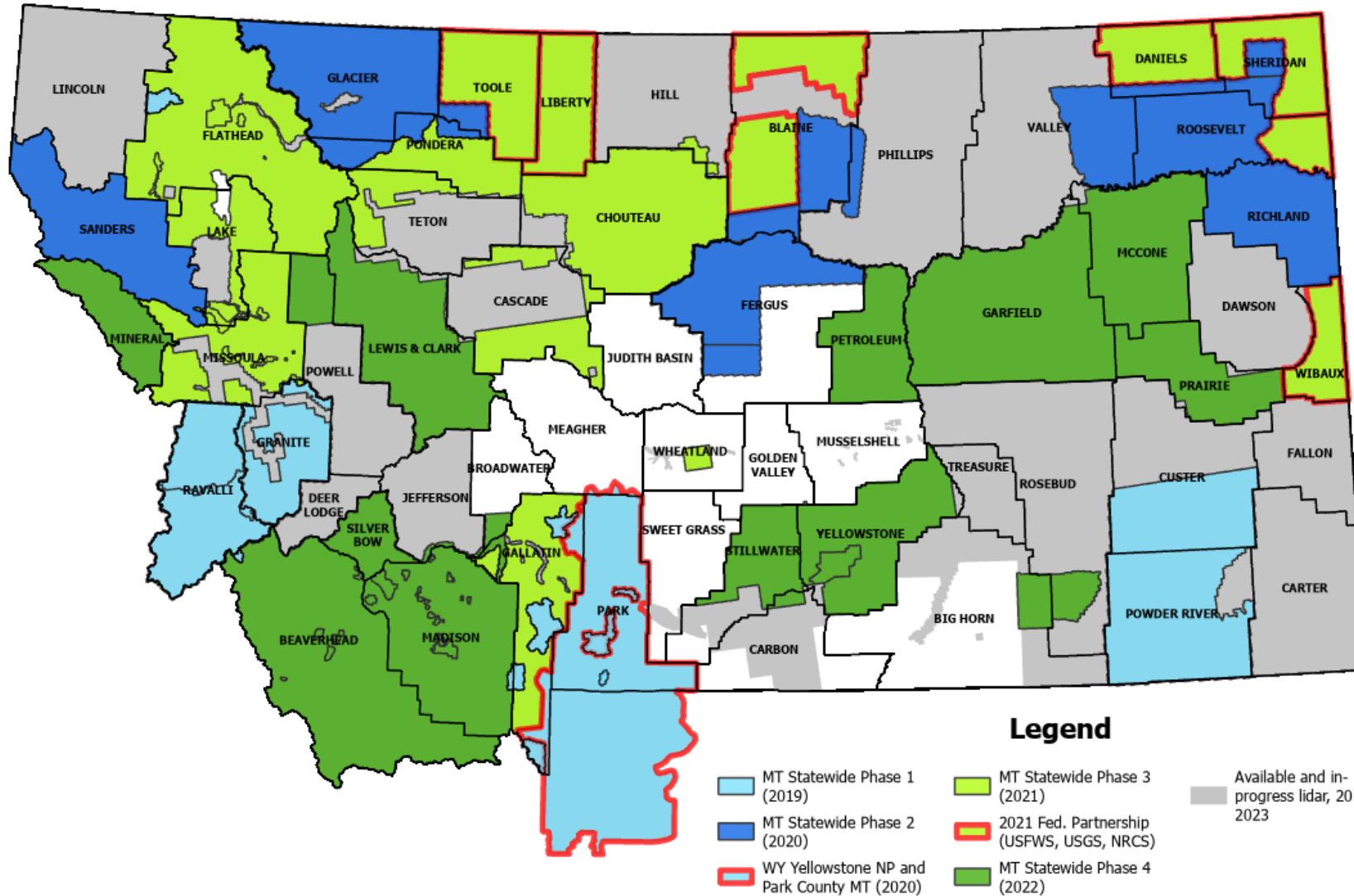
Derived products viewable/downloadable:

- Bare-earth DEM
- Digital Surface Model
- Intensity
- Hillshade
- Canopy Height Model

Point clouds and other products available by request



MT Statewide Lidar Acquisition Projects (Phases 1 - 4)

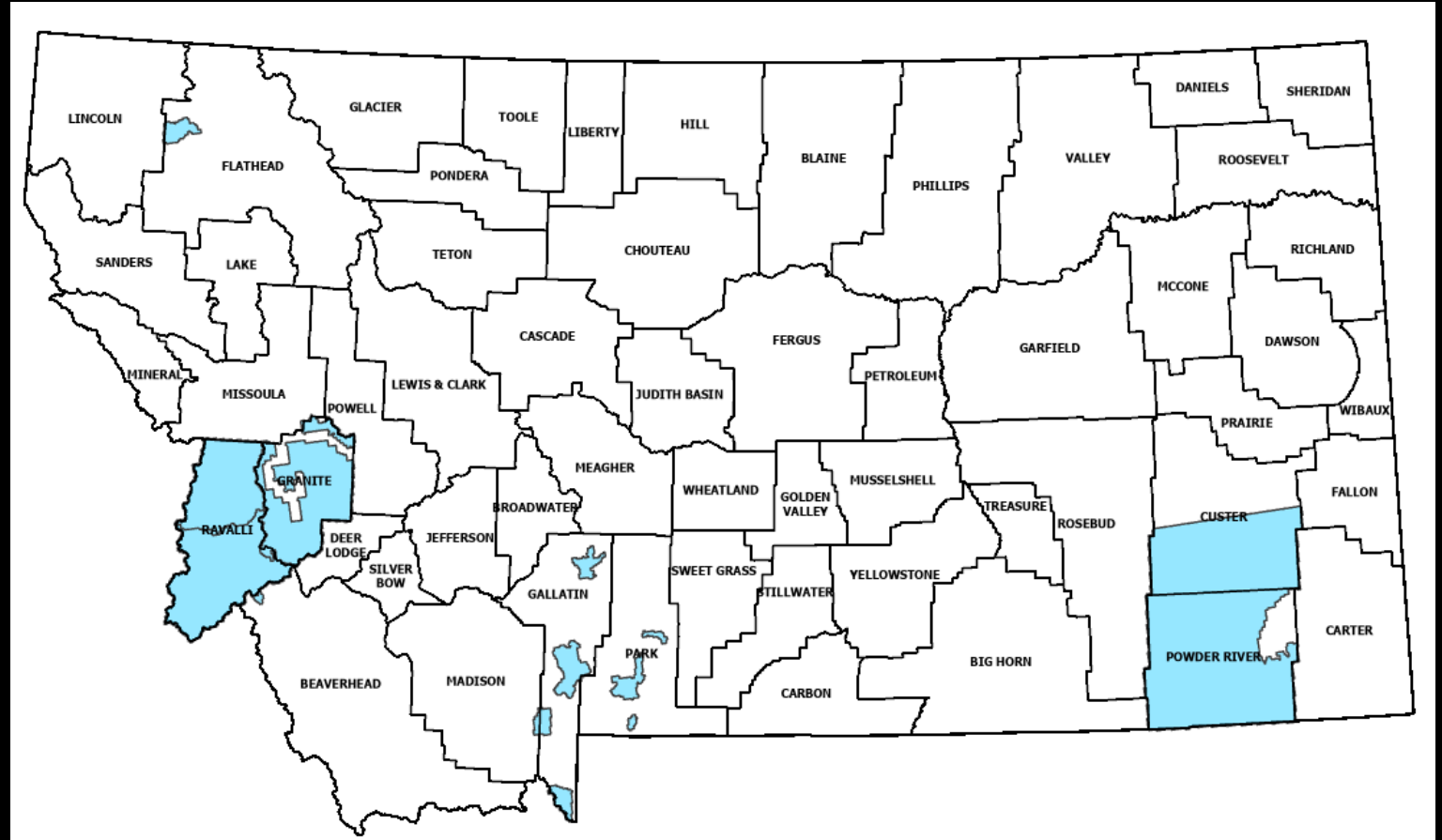


MT Statewide Phase 1 (2019)

Approx. 9,500 square miles

Thank you to the funding partners:

- USGS 3DEP
- NRCS (national office)
- NRCS (MT office)
- MT DNRC

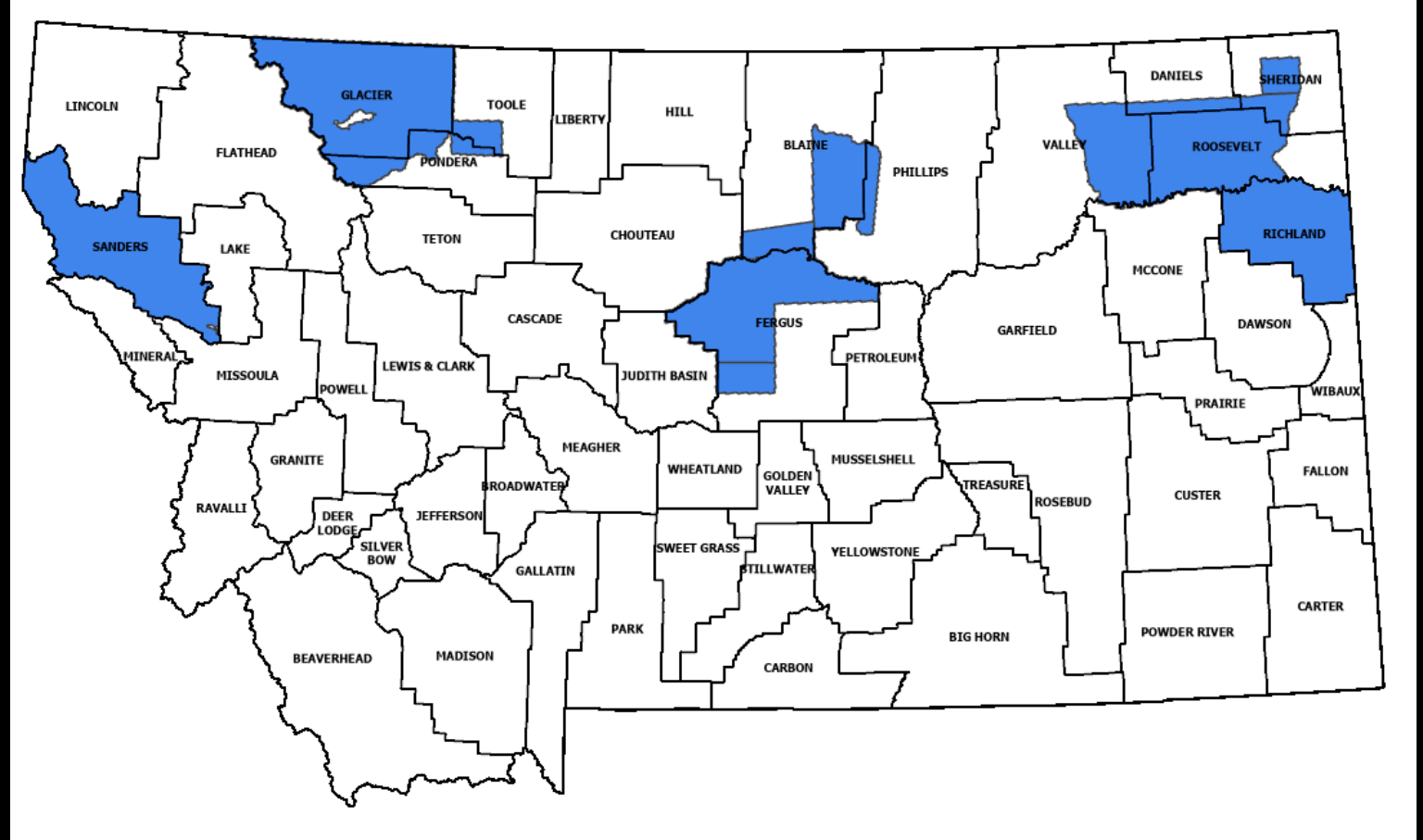


MT Statewide Phase 2 (2020)

Approx. 18,500 square miles

Thank you to the funding partners:

- USGS 3DEP
- Blackfeet Tribe
- MT DNRC (data share)
- Fort Belknap
- Fort Peck
- Glacier National Park
- Yellowstone National Park
- NRCS (MT office)
- U.S. Forest Service
- U.S. Fish and Wildlife

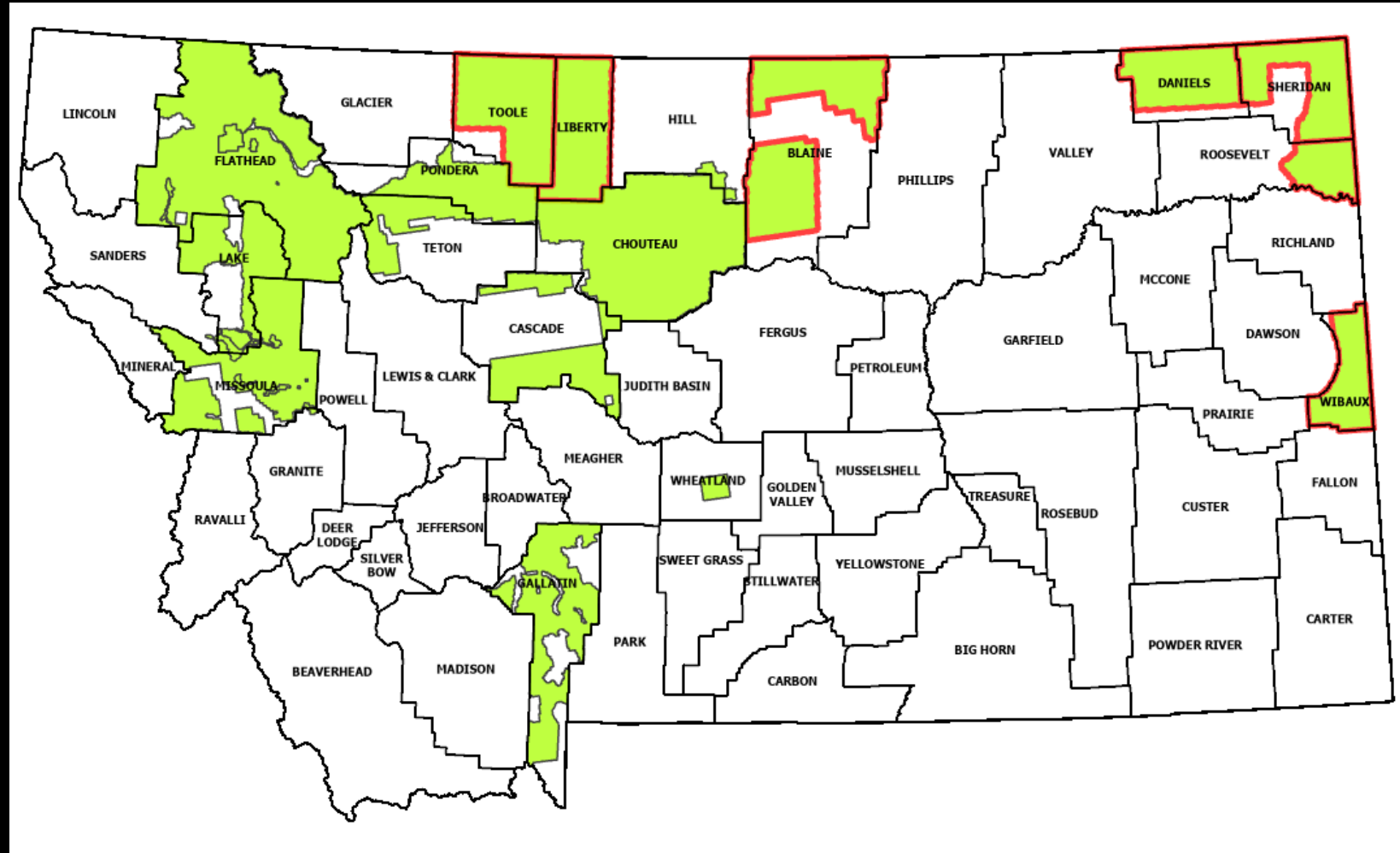


MT Statewide Phase 3 (2021)

Approx. 26,000 square miles

Thank you to the funding partners:

- CSKT
- MT DNRC
- Glacier National Park
- USGS NoRock
- NRCS (state and fed office)
- U.S. Forest Service
- U.S. Fish and Wildlife
- USGS 3DEP

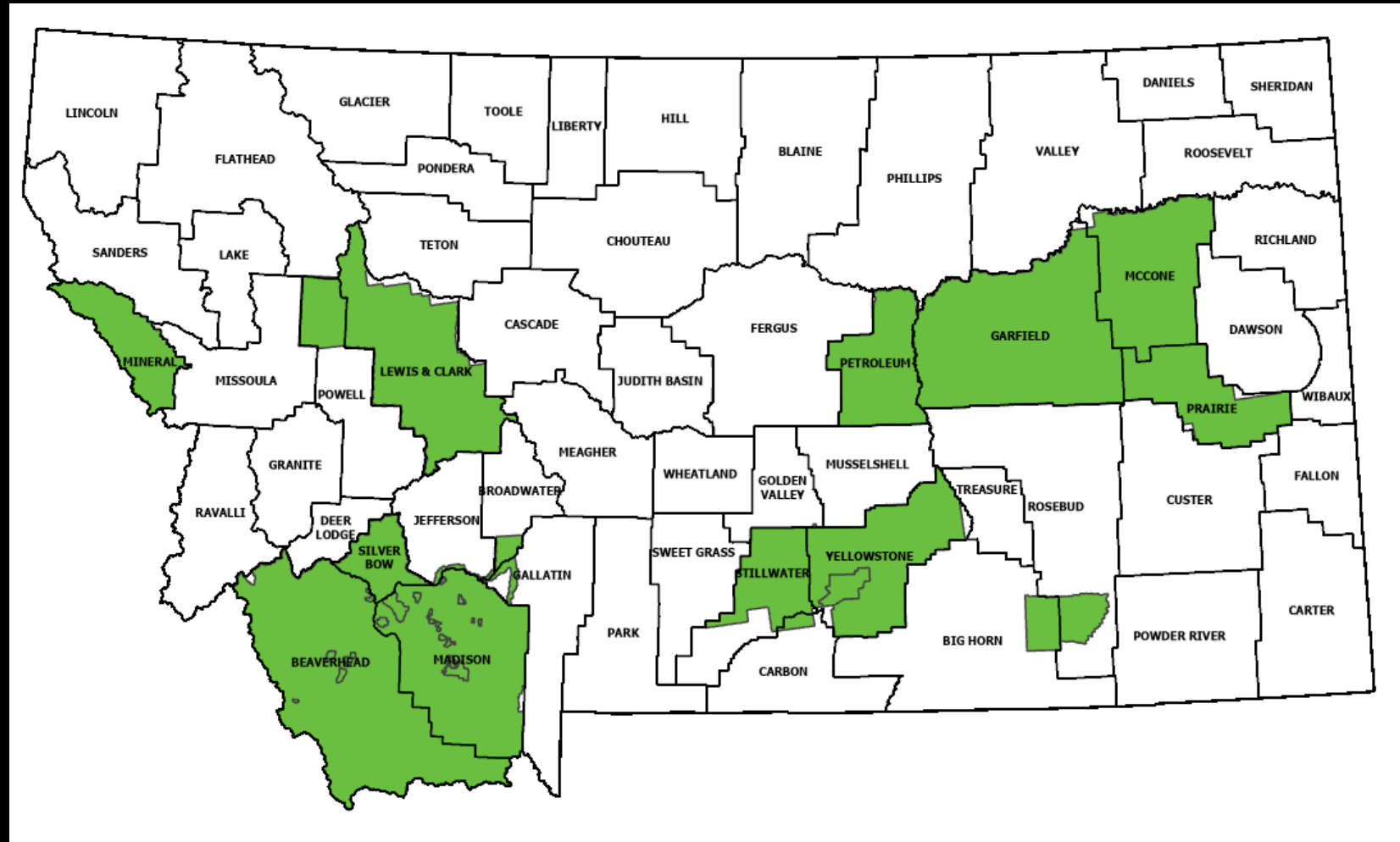


MT Statewide Phase 4 (2022)

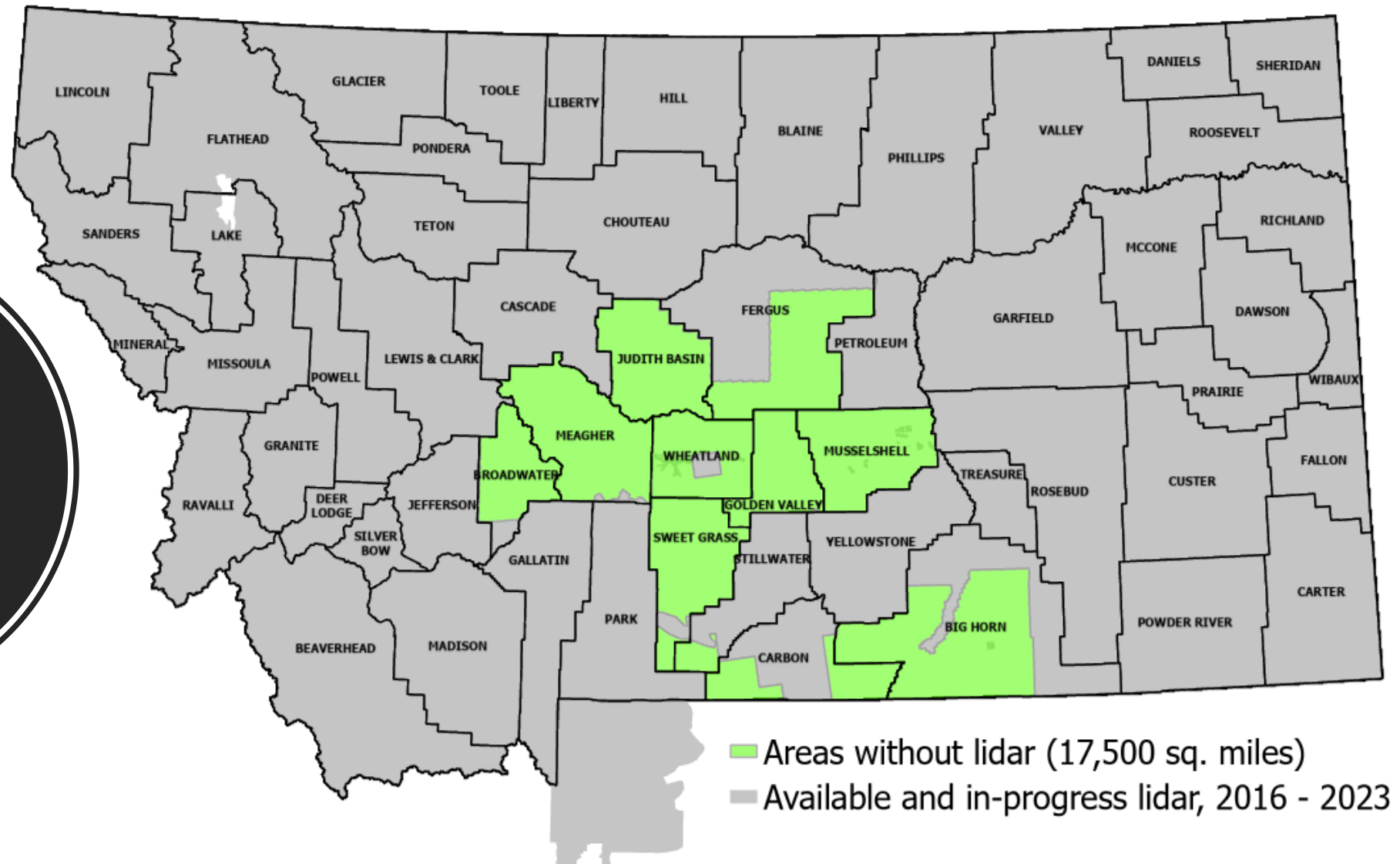
Approx. 30,000 square miles

Thank you to the funding partners:

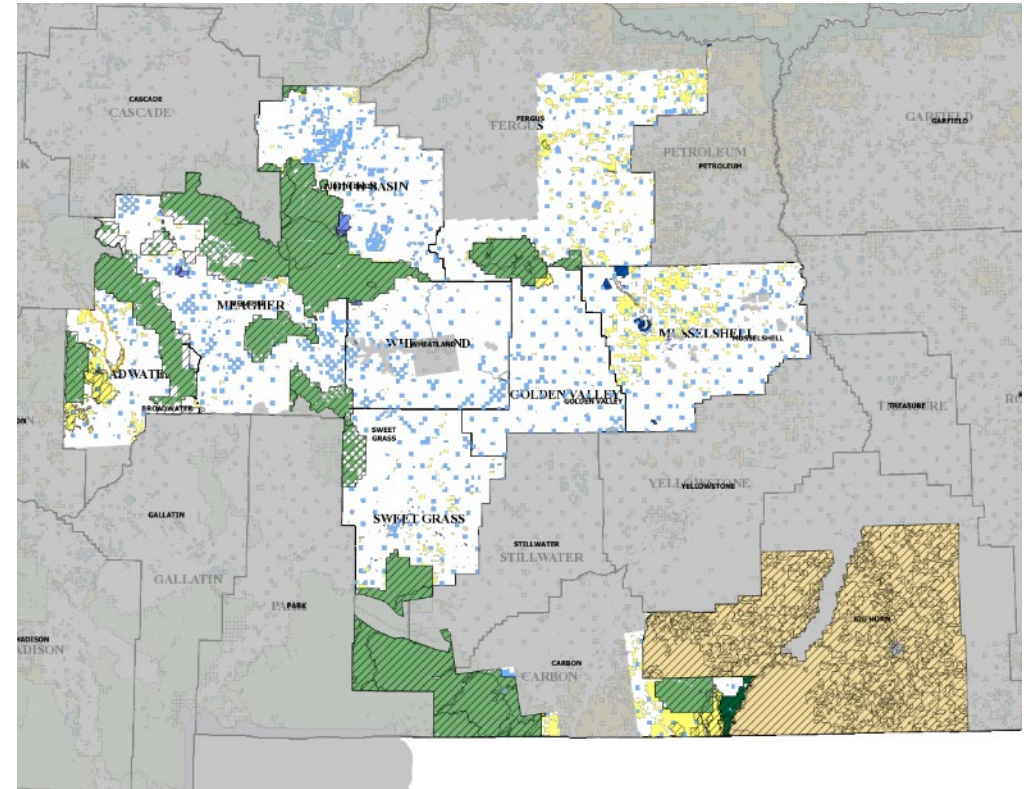
- BLM
- NRCS (MT office and fed)
- U.S. Forest Service
- U.S. Fish and Wildlife Service
- USGS 3DEP



MT Lidar
gaps in
coverage

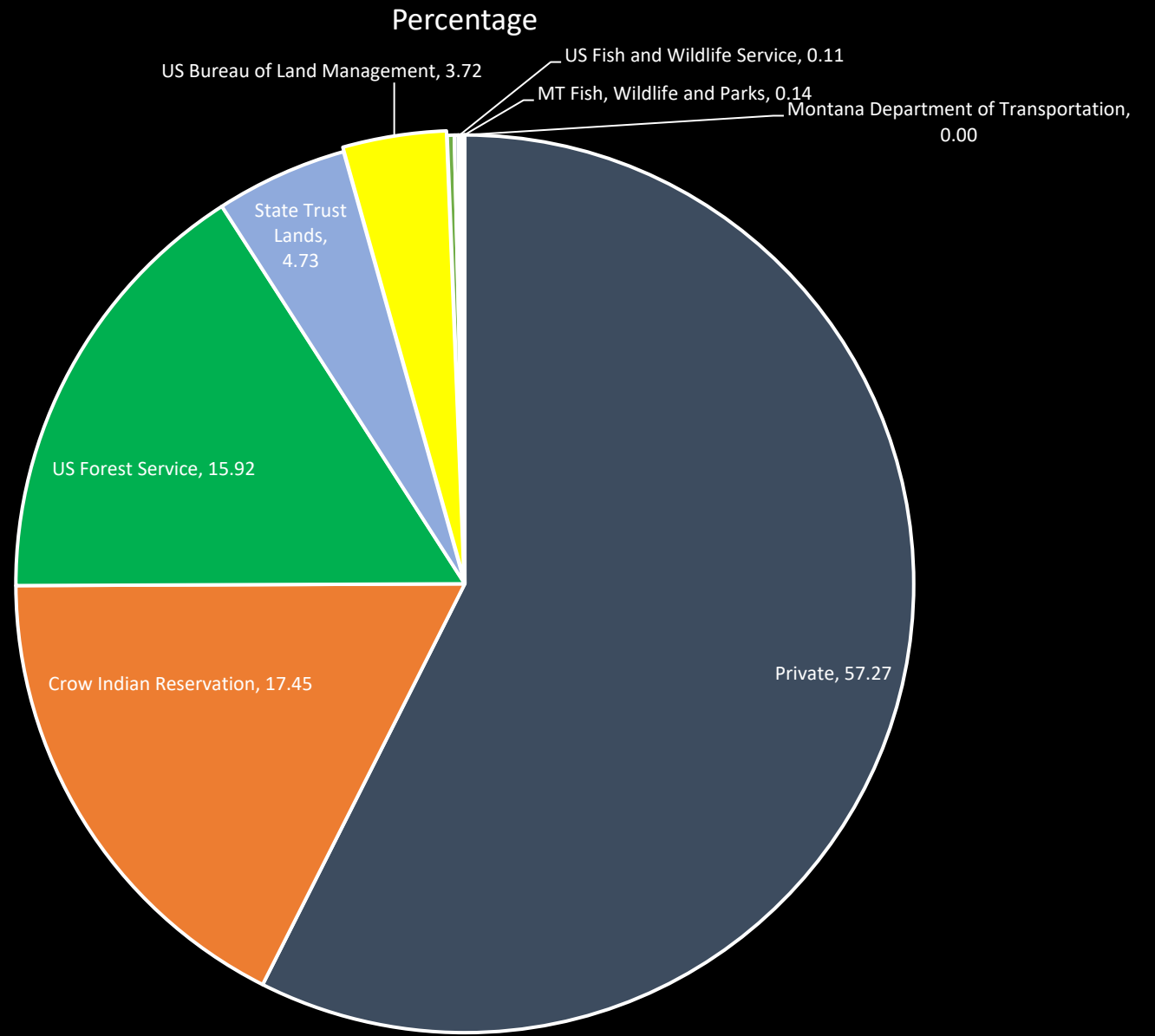
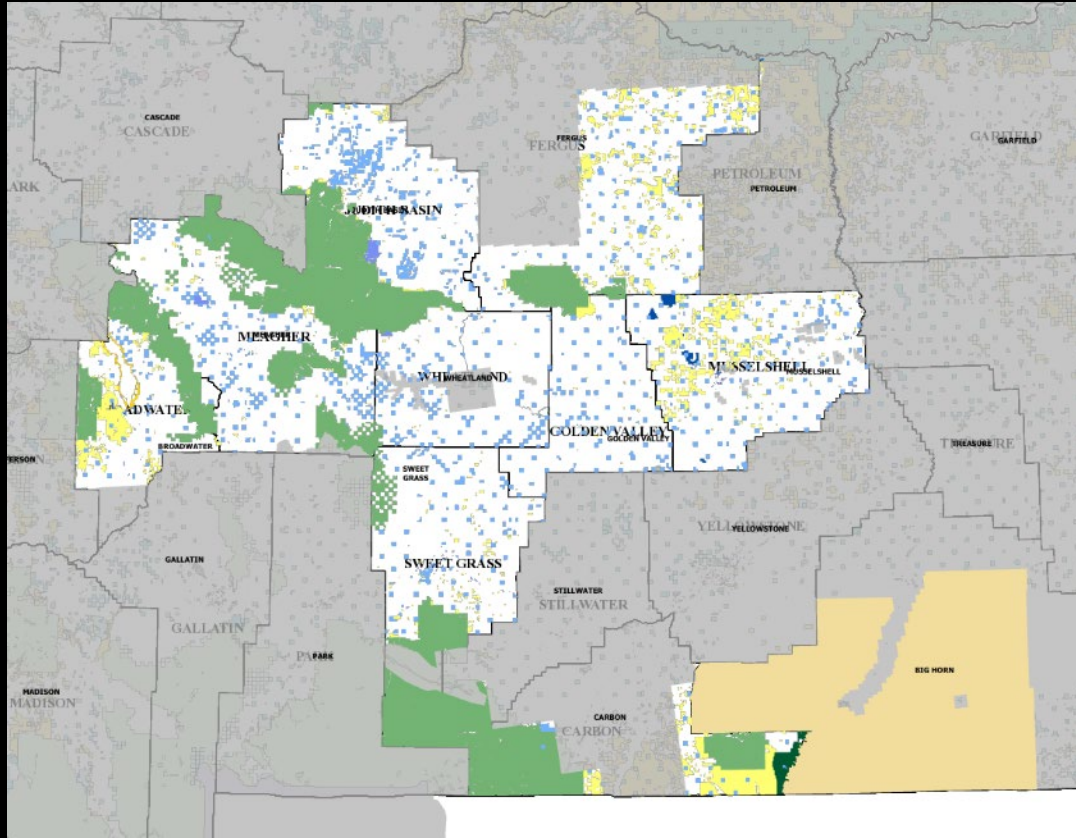


Managed Areas without lidar

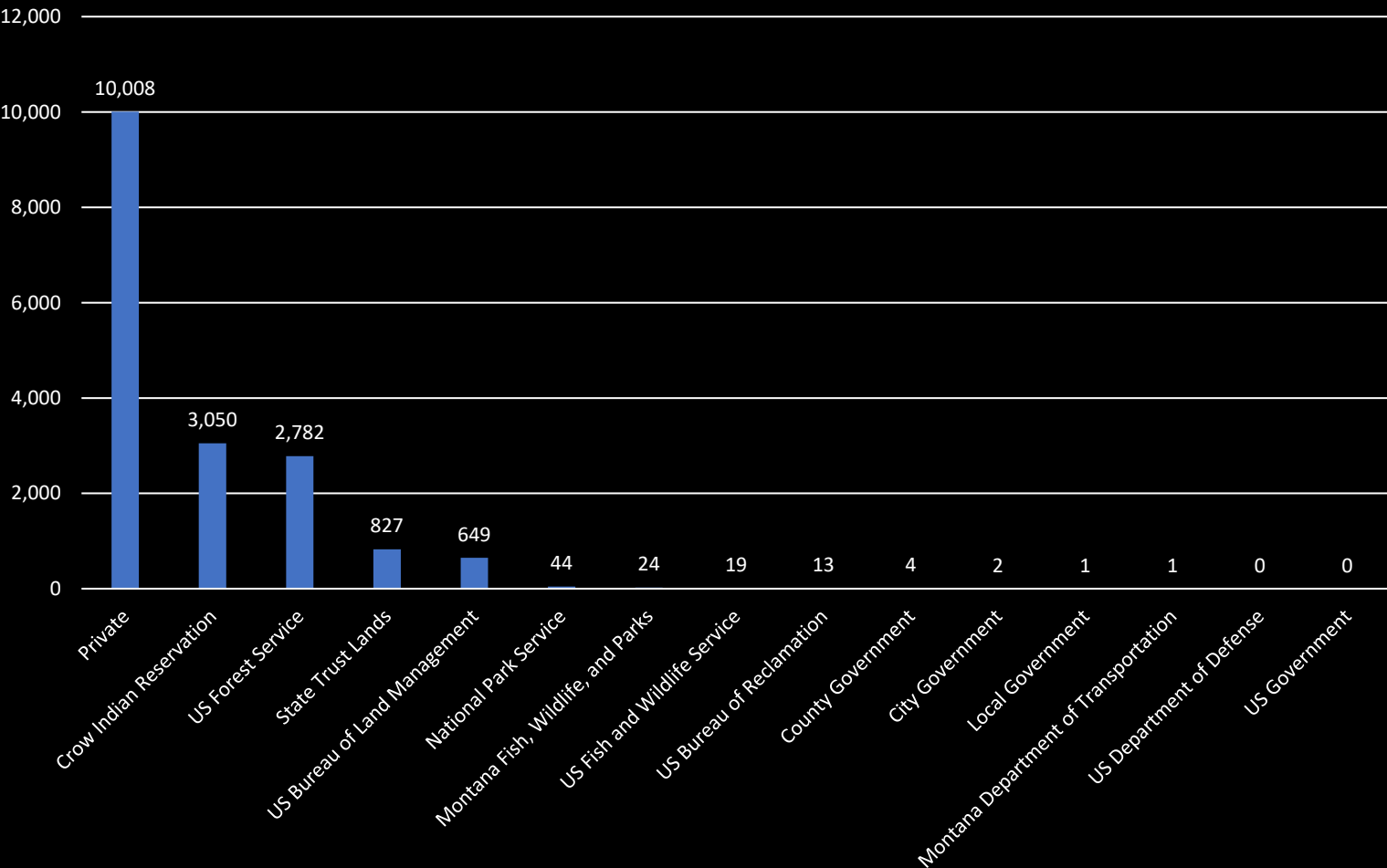
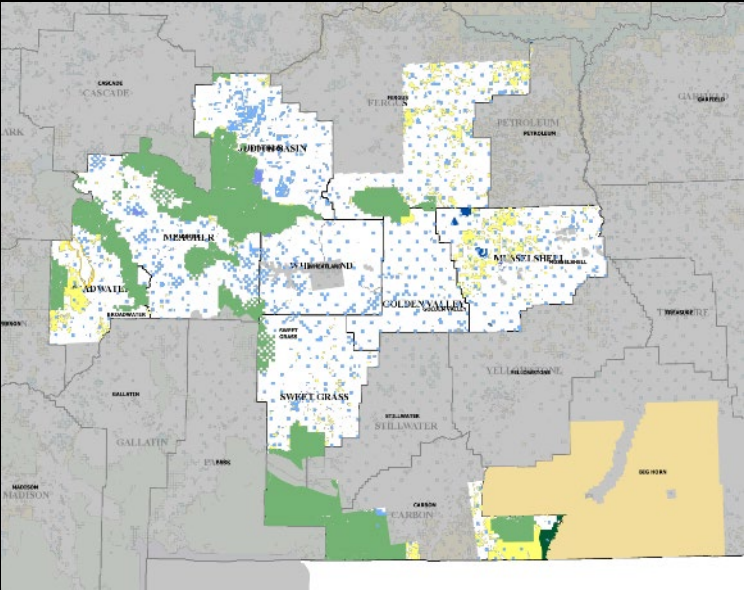


Managed Areas Name	ACRES	MANAGER	MA_TYPE
Custer Gallatin National Forest	3,333,102.74	Custer Gallatin National Forest	FFSNF
Helena-Lewis & Clark National Forest	3,174,124.59	Helena-Lewis & Clark National Forest	FFSNF
Crow Reservation	2,299,745.66	Crow Tribe	TCRIR
Crow Reservation Trust Land	1,436,407.76	Crow Tribe	TCRAL
Absaroka-Beartooth Wilderness	941,016.14	Custer Gallatin National Forest	FFSWA
Charles M. Russell National Wildlife Refuge	934,651.59	U.S. Fish & Wildlife Service, Charles M. Russell National Wildlife Refuge	FFWWR
Custer Gallatin National Forest, Yellowstone Ranger District	793,874.13	Custer Gallatin National Forest, Yellowstone Ranger District	FFSRD
Helena-Lewis and Clark National Forest, Belt Creek-White Sulphur Springs Ranger District	653,658.34	Helena-Lewis and Clark National Forest, Belt Creek-White Sulphur Springs Ranger District	FFSRD
Custer Gallatin National Forest, Beartooth Ranger District	603,584.13	Custer Gallatin National Forest, Beartooth Ranger District	FFSRD

Percent ownership of lands without lidar



Square miles without lidar by OWNER



USGS 3DEP Broad Agency Announcement (BAA) - Overview

- The 3DEP Broad Area Announcement is typically released mid-August.
 - Cost estimate request early Sept.
 - Application due October
 - Montana State Library will serve in coordination role, seek review from all funding partners, and complete the application.
 - A good-faith funding commitment from each partner needs to be included with the application.
 - If successful, each funding partner will need to have an interagency agreement (IAA) or joint funding agreement (JFA) in place with the USGS 60-days before lidar acquisition begins. Approximately March 2023 at earliest.
 - A federal agency wanting to use FY22 funds needs a signed agreement or mod in place by early August
 - If successful, lidar acquisition will begin spring 2023 after snow off or fall 2023 before snow fall.
 - Lidar data available approximately fall/winter 2024 or early 2025. Expect an 18-month to 24-month turnaround.
- ❖ **USGS takes care of contracting, project management, QC, and technical aspects of the lidar acquisition and deliverables.**



USGS 3DEP Broad Agency Announcement

Request for cost estimate (USGS IGCE) or cost estimate from vendor(s)

Good-faith signature from funding partners - November

Proposals Due - November

Formal funding agreements between USGS and each funding partner need to be in place 60-days prior to acquisition – Approx. March 2023



Navigate the 3DEP BAA

The 3DEP Broad Agency Announcement (BAA) facilitates partnering with the USGS and other Federal agencies to acquire high-quality 3D elevation data for the nation. Follow these guidelines to apply.

We are here →

1 Find partnerships



Check SeaSketch for Federal agency priorities. Engage Federal, State, Tribal, local, academic, and private partners and stakeholders.

More information at <https://usgs.gov/3DEP/Collaborate>

This one →

2 Select contract mechanism

Geospatial Products and Services Contracts

Financial Assistance (Cooperative agreement)

Montana State Library task →

3 Gather application materials from <https://usgs.gov/3DEP/baa>

- Attachment A
- Attachment C (optional)
- Attachment D
- Vector GIS file defining project coverage area




- Attachment A
- Attachment D
- Standard Form 424
- Standard Form 424 A
- Standard Form 424 B
- Vector GIS file defining project coverage area

Montana State Library task →

4 Submit completed application materials

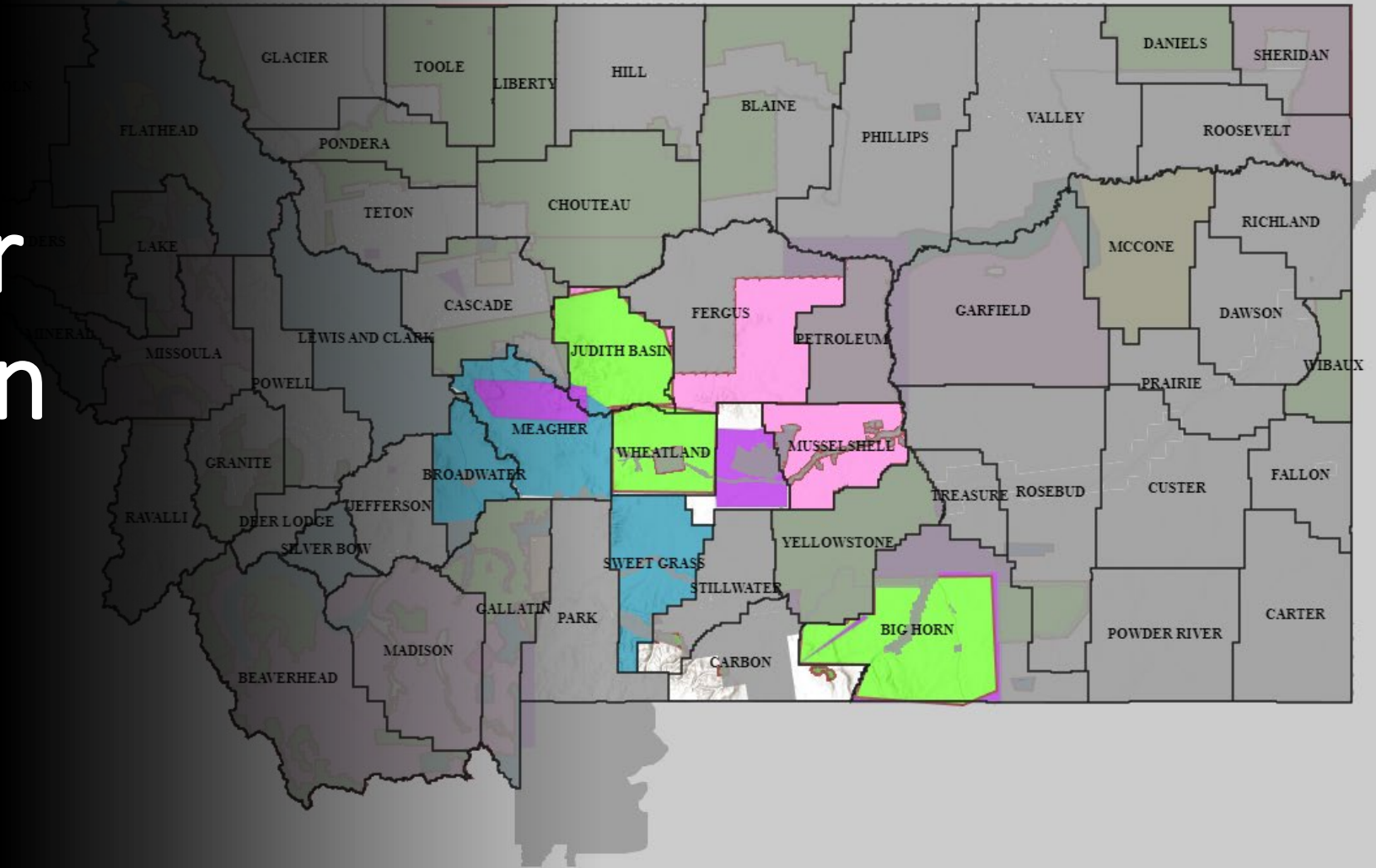
Submit directly to the Contracting Officer via:

 gs_baa@usgs.gov

Submit via:

<https://grants.gov> 

2023 Lidar Acquisition Planning



Priorities:

- NRCS, BLM, USFS, USFWS, MBMG, DNRC, BIA . . .

Priority and cost by county (DRAFT)

County	sqmi	Interested Org	DRAFT MTPriority	EstYear	EstCostQL1	EstCostQL2
BIG HORN	3,060.95	MT DEQ; Crow; NRCS; BIA	1	2023	\$658,104	\$1,346,817
MUSSELSHELL	1,862.93	USFWS; MT DEQ; MBMG; NRCS	1	2023	\$400,529	\$819,688
JUDITH BASIN	1,840.56	MBMG; unk; NRCS	1	2023	\$395,720	\$809,847
PETROLEUM	2.56	MBMG; USFWS; NRCS	1	2023	\$551	\$1,128
FERGUS	1,948.18	MBMG; USFWS; NRCS	1	2023	\$418,859	\$857,200
SWEET GRASS	1,750.92	DNRC Floodplain Mngmt; NRCS	2	2023	\$376,448	\$770,405
BROADWATER	1,104.84	DNRC Floodplain Mngmt; NRCS	2	2023	\$237,541	\$486,131
MEAGHER	2,337.87	Private; NRCS	2	2023	\$502,641	\$1,028,661
STILLWATER	223.64	USFS; NRCS	2	2022	\$48,084	\$98,404
CARBON	852.64	USFS	3	2023	\$183,317	\$375,160
GOLDEN VALLEY	1,170.18	NRCS	3	2023	\$251,589	\$514,879
WHEATLAND	1,319.24	NRCS	3	2023	\$283,636	\$580,464
					\$3,757,019	\$7,688,783

OWNER	Sum of SqMiles	Percentage	Est. QL2 Cost	Est. ideal partner cost share
Private	10,008	57.27	\$2,151,720.00	\$860,688.00
Crow Indian Reservation	3,050	17.45	\$655,750.00	\$262,300.00
US Forest Service	2,782	15.92	\$598,108.45	\$239,243.38
State Trust Lands	827	4.73	\$177,805.00	\$71,122.00
US Bureau of Land Management	649	3.72	\$139,638.57	\$55,855.43
National Park Service	44	0.25	\$9,563.20	\$3,825.28
Montana Fish, Wildlife, and Parks	24	0.14	\$5,150.97	\$2,060.39
US Fish and Wildlife Service	19	0.11	\$4,039.66	\$1,615.86
US Bureau of Reclamation	13	0.08	\$2,866.69	\$1,146.68
County Government	4	0.03	\$966.06	\$386.42
City Government	2	0.01	\$455.16	\$182.07
Local Government	1	0.01	\$195.17	\$78.07
Montana Department of Transportation	1	0.00	\$153.69	\$61.47
US Department of Defense	0	0.00	\$39.13	\$15.65
US Government	0	0.00	\$10.51	\$4.20
	17,425 square miles		\$3.7M	\$1.5M

Next Steps

- USGS 3DEP BAA webinar, August
- Within the priority areas of interest identified today, identify potential funding partners. Let me know if you can contribute. A signed, good-faith commitment is needed by Nov. for the application.
- Preliminary cost estimate (IGCE) or vendor cost proposals ~September
- Submit application ~October

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[406.444.7930](tel:406.444.7930)

Information sharing

MSL

- Canopy height models (geotiff) available through [Montana Lidar Inventory](#)
- [Relative Elevation Models for select rivers <link>](#)
- Lidar for LOMA – 1 foot contour web service for select areas (Great Falls area)
- Lidar/imagery workflow to identify cattle guards – testing/development phase
- Testing various processing/workflow (contours, acquisition date per tile, seamless . . .)

- Glacier National Park (emailed)
- ...

Relative Elevation Model – Teton River

