

MSDIS Update 2025

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What is the Missouri Spatial Data Information Service?

Missouri's geospatial data clearinghouse

Responsible for the collection of GIS data, imagery, and Lidar generated or funded by Missouri state agencies and the distribution of these data as both downloads and REST services

Housed in the University of Missouri Department of Geography

Funded by University of Missouri College of Arts and Sciences with assistance from the Missouri 911 Service Board

Currently maintains a catalog of ~91 terabytes of data (and counting)

Current MSDIS Architecture

Data storage

MSDIS Data

Includes all vector and LiDAR data, plus all imagery data other than 6" statewide imagery projects

ArcGIS Online

Includes only the most recent statewide vector data layers

MSDIS Statewide Imagery

Includes only 6" statewide imagery projects

Server

MSDIS Imagery Server

MSDIS Open Data Portal

MSDIS Statewide Imagery Server

External access

All imagery services available via moimagery.missouri.edu

Data available for download and as feature services via <https://data-msdis.opendata.arcgis.com/>

6" resolution statewide imagery services available via state imagery site currently in development

Utilization

All external applications that utilize imager services, including state, local, and private sector GIS applications and workflows

Current MSDIS Staff

Program Director – Dr Mark Palmer, Professor and
Geography Department Chair

Program Manager – Tom Vought

Team MSDIS – Brennan Meyerhoff, Rachel Riley, Rikki
Ascani, and Peyton Smith


Fiscal and Technology Support Provided by Mizzou Arts &
Sciences/Division of IT

What's New Since 2023?


MSDIS Excellence Fund

Starting in 2024, MSDIS worked with the University of Missouri Office of Advancement to set up a Mizzou Give Direct account called the MSDIS Excellent Fund

While the fund was initial conceived of as a way for geospatial partners to chip in to help cover technology costs, due to ongoing funding discussion with the Missouri Office of Geospatial Information, we have reframed the account as a vehicle to fund awards for the MSDIS interns.

 University of Missouri

MIZZOU GIVE DIRECT



Description

Donor Wall

Dean of Arts & Science

MSDIS Excellence Fund

Serving students, faculty, private industry, and state and local governments, the **Missouri Spatial Data Information Service (MSDIS)** is the primary GIS data clearinghouse for the state of Missouri. Established in 1996 to provide a single point of access for Missouri's digital spatial data, MSDIS maintains a comprehensive collection of cartographic data.

MAKE YOUR IMPACT ON MIZZOU

Large or small, every gift matters

Post

Gift Amount

\$

☐ I would like to be listed as a contributor.

☐ This gift is a tribute to a friend or loved one.

Please share with us why you are giving

250

And its working!

MSDIS would like to thank longtime friends of the clearinghouse, Aaron Addison and Author Crawford, for their generous donations that have assisted in the purchase of annual awards and delicious coffee and bagels

Statewide LiDAR Coverage and Organization

As of Summer 2024, the MSDIS LiDAR service directory now features the twelve services necessary for statewide coverage at QL2 or better

The component services range in dates from 2015 to 2023 but collectively represent the best LiDAR coverage available to MSDIS for any given area of the state

Because the AOIs of some of these collections are very patchwork and we are still unsure of how future collections will be targeted, MSDIS will not be generating a seamless statewide service of LiDAR

ArcGIS REST Services Directory

[Home](#) > [services](#) > [LiDAR](#)

[JSON](#) | [SOAP](#)

Folder: LiDAR

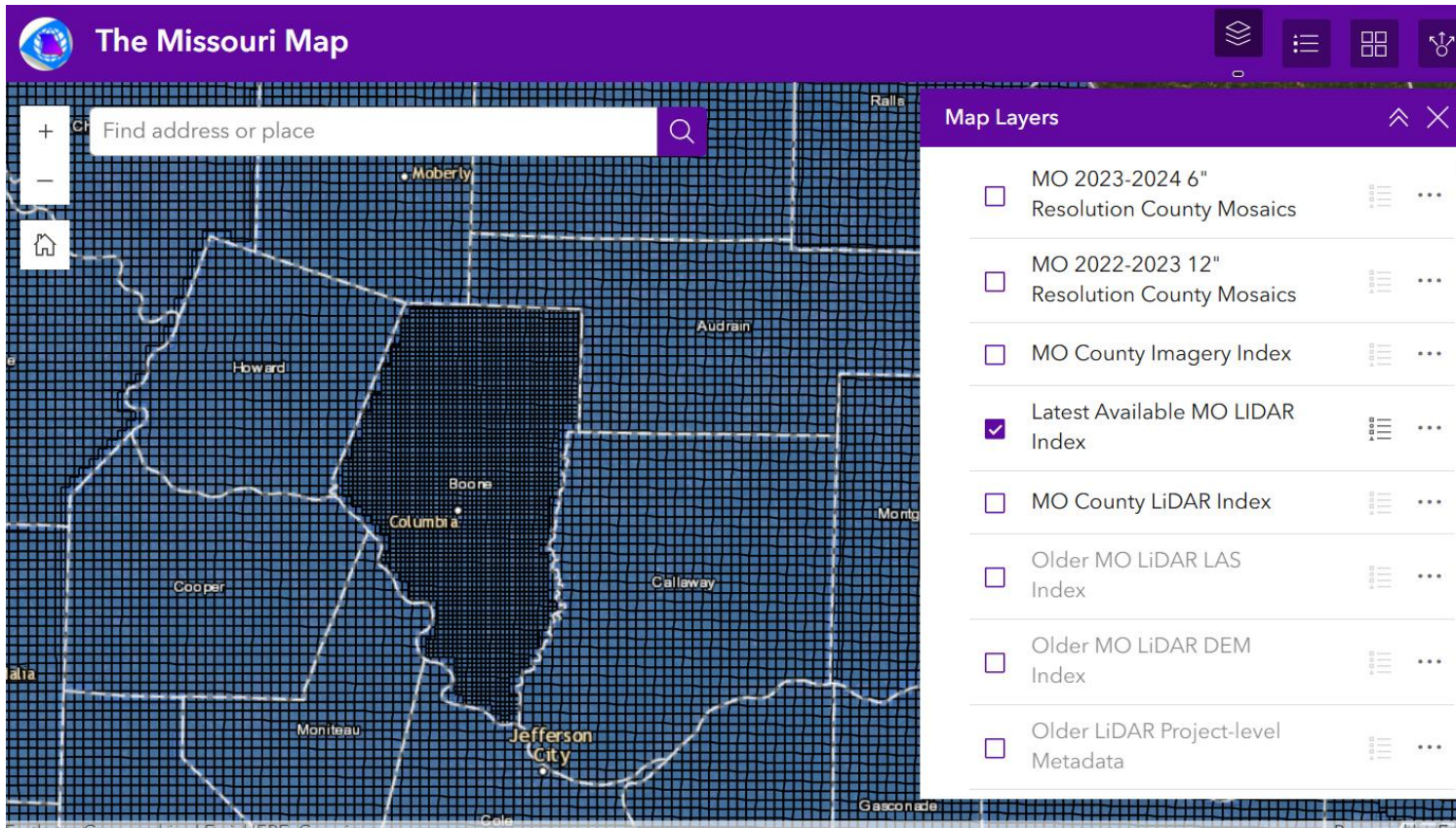
Current Version: 10.81

View Footprints In: [ArcGIS Online Map Viewer](#)

Services:

- [LiDAR/Boone 2023 UTM](#) (ImageServer)
- [LiDAR/FEMANorth 2017 UTM](#) (ImageServer)
- [LiDAR/FEMASouth 2017 UTM](#) (ImageServer)
- [LiDAR/MO Bootheel 2015 UTM](#) (ImageServer)
- [LiDAR/MO FEMANRCS 2020 D20 UTM](#) (ImageServer)
- [LiDAR/MO NorthernSEMO 2021 UTM](#) (ImageServer)
- [LiDAR/MO Southern 2022 UTM](#) (ImageServer)
- [LiDAR/MO Southwest 2021 D21 UTM](#) (ImageServer)
- [LiDAR/MO WestCentral 2018 D19 UTM](#) (ImageServer)
- [LiDAR/MO WesternSevenCounties 2023 UTM](#) (ImageServer)
- [LiDAR/SoutheastMissouri 2016 UTM](#) (ImageServer)
- [LiDAR/StLouis 2017 UTM](#) (ImageServer)

Statewide LiDAR Coverage and Organization



In addition to LiDAR services, The Missouri Map has been updated with a Latest Available MO LiDAR download coverage

While MSDIS typically houses the data it makes available for download, the LiDAR download index has been rewired to point directly to USGS LiDAR storage

Statewide LiDAR Coverage and Organization

Does this mean that MSDIS is no longer storing LiDAR locally or working with WashU to store LiDAR?

Statewide LiDAR Coverage and Organization

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Absolutely not

Statewide LiDAR Coverage and Organization

MSDIS and WashU already maintain copies of all the LiDAR DEMs that are available from the USGS

Pointing to the USGS storage is simply easier for everyone involved and allows us time to work out how best to download and store a staggering amount of LAS files that often are not included on the hard drives used to deliver the DEM files

MSDIS-OGI MOA/MOU/The Agreement

In May 2024, MSDIS was informed by then-OGI Director Tracy Schloss that her request for significantly increased funding, which included funding for the clearinghouse, had been approved for the state budget

Starting in late 2024, MSDIS, the University of Missouri Department of Geography, and the State of Missouri Office of Geospatial Information began formally discussing expectations and goals of an expanded, state-funded clearinghouse

In early 2025, the basic skeleton of an MOA was created

As of today, MSDIS is working with current OGI Director David Nykodym and State of Missouri fiscal officers to finalize the language

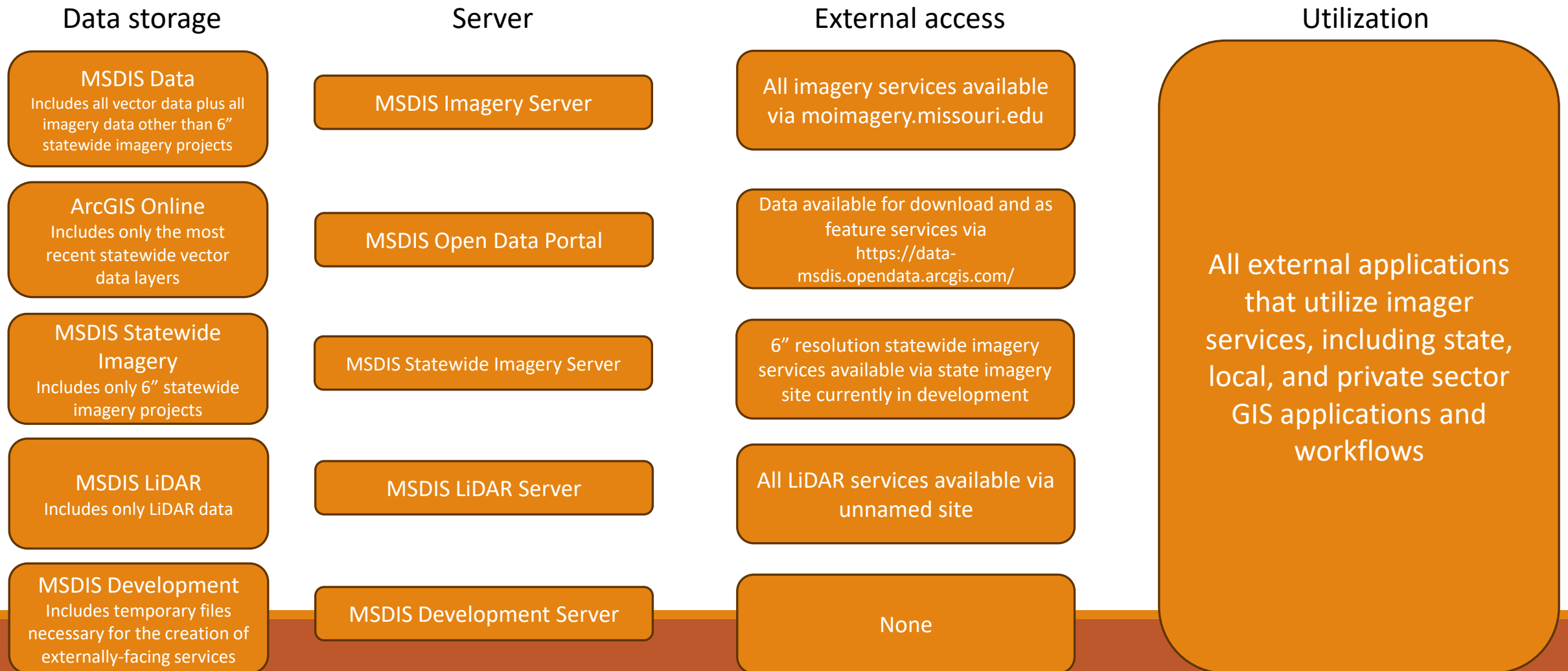
Once the MOA has been completed by the State, it will be passed along to University of Missouri fiscal and legal offices for input

MSDIS-OGI MOA/MOU/The Agreement

If executed, The Agreement would allow MSDIS to...

- Upgrade existing storage
- Hire full-time staff
- Support undergraduate interns by paying them actual salaries to complete cartography projects
- Develop GIS workshops for state employees
- Setup new servers (including a Dev server and a LiDAR server)

Theoretical MSDIS Architecture with The Agreement



MSDIS-OGI MOA/MOU/The Agreement

It is important to note that execution of The Agreement (hypothetical or otherwise) will not change MSDIS overnight

The clearinghouse has been running in low power mode for almost a decade and it will take time to ramp up

6" Resolution Statewide Imagery and Server

The 2023 and 2024 6" resolution imagery are currently available from the MSDIS Imagery Server has individual services based on the year of collection and as county-scale downloads from The Missouri Map

The 2023 Northern Missouri 6" resolution image service was published and made available in December 2023

The 2024 Southern Missouri 6" resolution image service was published and made available in December 2024

6" Resolution Statewide Imagery and Server

ArcGIS JavaScript API: Statewide/Missouri_6inch_12inch_North_2022_2023_Detail
(ImageServer)

Built using the [ArcGIS API for JavaScript](#)



ArcGIS JavaScript API: Statewide/Missouri_South_2024_TEMPORARY (ImageServer) Built using the [ArcGIS API for JavaScript](#)



6” Resolution Statewide Imagery and Server

As we discussed two years ago, the plan for the 2023 and 2024 image services has always been to make them available on the existing MO Imagery server until such time as they could be deployed to a new server specifically meant to distribute only the 6” resolution imagery

Thanks to financial support from the State 911 Service Board, the statewide imagery server has already been created by the University of Missouri Division of IT, Image Server, has been installed, WebAdaptor has been configured, and a domain alias has been secured.

6" Resolution Statewide Imagery and Server

A statewide mosaic combining the two 6" collections has been successfully created and published to the new server, but has not yet been made available due to the lengthy process of tile cache creation

While most of the image services available from MSDIS do not take advantage of tile caches, it is important that we make every effort to implement this option for the 6" statewide imagery due to the sheer size of the mosaic and the expected demand for the service

In other words, the necessary components all exist, they work, and they are technically accessible if you know the URL, but the server is still in testing

6" Resolution Statewide Imagery and Server



6" Resolution Statewide Imagery and Server

So why is the new server “still in testing”?

6" Resolution Statewide Imagery and Server

So why is the new server “still in testing”?

Because I'm not done yet

6" Resolution Statewide Imagery and Server

First, this is the first time in a very long time that I have been able to work on setting up a server before it was already live and in-use

- When we rolled out the first set of virtual servers, it was because the aging physical servers had literally become inaccessible, and we had no choice but to swap ahead of schedule
- When we rolled out the replacement imagery server a few years ago, we were able to pick and choose our schedule, but we were still on a very tight clock as DoIT had set a hard deadline for decommissioning older instances of Windows Server

Second, since we currently lack a development server, the server being used to distribute the image service is also being used to prepare the image service for distribution, and building a tile cache of 30+ terabytes of statewide imagery is incredibly resource intensive. The current cache levels allow usage of the data at roughly 1:4500 scale, but we have options for two additional levels. Creating either of the final layers will take days to process even if allowed to utilize all available CPU assets, which would lead to frequent slowdowns and/or interruptions.

Future Plans

MSDIS and AWS (aka The Other Agreement) - MSDIS continues to lay the groundwork and prepare data for transfer to AWS S3 storage via the Open Data Sponsorship Program

The MSDIS Open Data Hub – The Open Data Hub is now MSDIS' primary web presence, but the information it offers has not kept up with recent events. We recently implemented a MGISAC tab and are working on implementing new tabs for Imagery and LiDAR projects

Ways You Can Help Support MSDIS

Write your metadata

Donate to the MSDIS Excellence Fund so I can keep bribing my interns

Send an email supporting MSDIS to the Mizzou President's Office(president@missouri.edu) and/or the Dean of the College of Arts and Sciences (Drury@missouri.edu)

Send us some cool new data

Convince your agency/office/local government to support future LiDAR and aerial photography collections

Support the NG911 data collection (<https://www.missouri911.org/gis>)

Support MGISAC

Contact Info

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