Missouri Spatial Data Information Service
2nd Period Bi-Annual Report
August 2015 – January 2016

Build or implement a survey to identify gaps in the statewide data inventory.

Strategy*: Watch the development of the NSGIC initiative to build a national data survey / needs assessment. Once developed, implement within the Missouri Clearinghouse.*
MEASURE: Completion of NSGIC survey tool and implementation on the MSDIS. <u>MSDIS with MGISAC participation. Participation of personnel from MSDIS. Possible NSGIC national model development.</u>

Current *Status*: Active

1st Period February, 2015 – July, 2015 comments –
There is ongoing harvesting of MSDIS data sets by the NSGIC GIS Inventory and Data.Gov.

2nd Period August, 2015 – January, 2016 comments –
By comparison with other surrounding states - Missouri has some obvious gaps – addressing data, NG911\GIS data coordination etc… Some of those states have viable parcel frameworks, complete LiDAR fabrics and have established funding to accomplish regular state imagery flights.

Continue to develop an Internet mapping interface for MSDIS holdings.

Strategy*: Increase utility of MSDIS Web site by continuing to developing the internet mapping user interface for interaction with the data elements compiled in MSDIS. This includes the development of new maps, evolution of mapping interface, maintenance, update, and upgrades to the Mapper.*
MEASURE: Continued evolution of the design and map services available on MSDIS-maps and MCDC-maps web site. <u>MSDIS with MGISAC participation in review</u>
<u>Participation of personnel from MSDIS.</u>

Current *Status*: Ongoing

1st Period February, 2015 – July, 2015 comments –
The Web servers are already online after successful testing – but the imagery servers are still having assorted issues mostly regarding image services.

2nd Period August, 2015 – January, 2016 comments –
The Imagery server issues have stabilized. We still have one issue with a portion of one (Broadband) service that is proving stubborn – but it does not affect users significantly - as far as we can tell.

Develop and deploy a search interface for MSDIS holdings.

Strategy*: Increase utility of MSDIS Web site for data discovery and query by thematically grouping data holdings.*
MEASURE: Redesign of MSDIS Web site and development of milestones. This schedule will be developed jointly by MSDIS and MGISAC. <u>MSDIS with MGISAC participation in review</u>
<u>Participation of personnel from MSDIS.</u>

Current *Status*:

1st Period February, 2015 – July, 2015 comments –
There is a significant increase of the files available via the GeoPortal - which now serves 2,817 data sets. Most of the increase can be accounted for by the addition of all of the metadata records for the 2007-2009 2' Imagery. Unfortunately, Austin has moved on…

2nd Period August, 2015 – January, 2016 comments –
There has again been a notable climb is metadata records in the GeoPortal to 2,856 data sets. Most of the increase is from additional data sets submitted by data custodians.

Duplicate existing coverage files as geodatabases for all MSDIS holdings.

Strategy: *Migrate the entire MSDIS Clearinghouse to the geodatabase format and host both for a period of time. MSDIS will proactively evolve with changes in the software arena and make the site more usable to new start-ups*
MEASURE: Reformatting of MSDIS coverage holdings as zipped geodatabases.
Requires participation of personnel from MSDIS.

Current *Status*: ***Ongoing***.

1st Period February, 2015 – July, 2015 comments –
The MSDIS GDB continues to grow apace – see comment above. Shapefiles also continue to be served - where applicable – by FTP.

2nd Period August, 2015 – January, 2016 comments –
Ongoing.

To promote interoperability and standardization among core data layers being developed by the state and local government agencies and organizations.

Objectives

Development and endorsement of geospatial standards for database development and attribution.

Strategy: *Review existing state, federal and international geospatial standards. Create or add new components, modify components, or adopt reviewed standards. Release drafts through MSDIS, MGISAC, and subcommittees for peer review and comment. Revise as appropriate and publish final standards within MAEA.*

Disseminate geospatial related standards for active review process.

Current *Status*: ***Ongoing***

1st Period February, 2015 – July, 2015 comments –
See comment for 2nd period above…

2nd Period August, 2015 – January, 2016 comments –
The MSDIS list servers continue to be available for this service – but there is not currently a lot of standards development ongoing at the state level.

Homeland Security

Develop and maintain the data and infrastructure necessary to support Homeland Security Emergency Response.

Strategy: *Coordinate with OIT, Office of Homeland Security, and MSDIS on the development of the communication infrastructure necessary to support Homeland Security efforts. Develop an action plan for the development of the databases and geospatial layers necessary to support homeland security planning, mitigation, risk assessment, and other operations.*
MEASURE: Completion of data development plans for identified data layers based on priorities set jointly by MGISAC, Office of Homeland Security, and OIT. Completion of secure access and password/firewall protected portal to homeland security data and related geospatial layers. Homeland Security; Participation of personnel from MSDIS on data development and QA/QC.

Current *Status*: ***Ongoing***

1st Period February, 2015 – July, 2015 comments –
No activity beyond testing the new virtual servers in Rolla that will provide off-site functionality to MSDIS and the state in the event of an emergency declaration.

2nd Period August, 2015 – January, 2016 comments –
MSDIS was asked to put up services for the Civilian Air Patrol imagery recently collected in support of the latest (January) flood event. The service went up within hours of receipt of the data drive. A number of positive comments were received from both within and without the state.

Other MSDIS quarterly activities that contribute to MGISAC Strategic Plan outcomes…

Outreach / Education / Training

Support the MGISAC to expand the visibility and understanding of the committee's work within Missouri.

1st Period February, 2015 – July, 2015 comments –
MSDIS\GRC played an active role in support of the MOGISCON2015 in Springfield – coordinating as Co-Chair, presenting at numerous sessions, sponsoring a vendor booth, and teaching a number of workshops. When opportunity presents MSDIS continues to be represented\presenting at regional workshops and user group meetings.

2nd Period August, 2015 – January, 2016 comments –
MSDIS is in the planning stages to create and instruct a one day metadata workshop at a number of regions statewide. Look for these workshops in the late spring and early summer. Initially we'll target the two large metros on our east and west borders.

Encourage use of GIS technology and geographic data resources across all levels of state government by providing practical support to new and established users.

List server Users

1st Period February, 2015 – July, 2015

GIS Vendors @ 18
KCAIUG-Announce @ 251
KCAIUG-L @ 63
KCCCGG-L @ 12
LGOV-L @ 46
MAGIC_Public @ 420
MAGIC_Steering @ 28
MAGIC_Consortium @ 51
MAGIC_Executive @ 9
MGISAC @ 143
MGISDATADEV @11
MISSOURIMAPPERSASSOC-L @ 38
MMGUG-L @ 101
MOGIS ADVISORY COUNCIL-L @ 32
MSDIS-NEWS @ 190
PONYEXPRESSGUG@ 15
STCHGISUG-L @ 59
STLGIS-L @ 298
STLRIC-L @ 19

2nd Period August, 2015 – January, 2016 comments –
GIS Vendors @ 17
KCAIUG-Announce @ 242
KCAIUG-L @ 63

KCCCGG-L @ 12
LGOV-L @ 45
MAGIC_Public @ 424
MAGIC_Steering @ 28
MAGIC_Consortium @ 53
MAGIC_Executive @ 10
MGISAC @ 145
MGISDATADEV @9
MISSOURIMAPPERSASSOC-L @ 36
MMGUG-L @ 99
MOGIS ADVISORY COUNCIL-L @ 32
MSDIS-NEWS @ 184
PONYEXPRESSGUG @ 15
STCHGISUG-L @ 60
STLGIS-L @ 323
STLRIC-L @ 18

Conference / meeting Participation:

1st Period February, 2015 – July, 2015 comments –
MSDIS staff members attended numerous meetings during this period on the following topics:

MOGISCON2015 meetings and phone conference (numerous)
MOGISCON 2015 (several staff members coordinated, presented or taught workshops)
Outreach & Education Committee (Regional Workshop Planning Conference calls)
Mid-America Geographic Information Consortium (MAGIC) meetings & retreats (7)
MU Infomatics Symposium
2015 MAGIC Clearinghouse Summit conference calls (planning X3)
2015 MAGIC Grants Committee (review and awardX3)
FGDC Metadata Workgroup Conference calls (numerousX6)
MU Data Analytics meeting
Climate and Human Security – Boulder Colorado
Missouri Mappers Executive Committee meetings (X2)
May Tri-Lakes User Group Meeting
3DEP Workshop – NRCS
MAGIC GitHub Webinar

2nd Period August, 2015 – January, 2016 comments –
MSDIS staff members attended numerous meetings during this period on the following topics:

MAGIC 2016 Symposium Planning meetings and phone conference (numerous)
MAGIC 2015 Clearinghouse Summit in Rogers, Arkansas
MOGISCON 2017 Site Selection Meetings (2)
St. Charles LiDAR Pickup and meeting
SEMO GIS Symposium presentations (Sept.)
2015 NSGIC Annual Meeting (KC)
St. Louis User Group Meeting presentation (East-West)
GIS Day Presentation (Rockbridge Elementary School)
Outreach & Education Committee (Regional Workshop Planning Conference calls)
Mid-America Geographic Information Consortium (MAGIC) meetings & retreats (8)
2015 MAGIC Clearinghouse Summit conference calls (planning 2)
FGDC Metadata Workgroup Conference calls (numerous)

Continue maintenance and publishing of an inventory of data holdings available at the MSDIS.

Wednesday January 20th, 2016
Missouri Dept. of Natural Resources (MoDNR) have supplied 3 updated dataset as follows:

- This is a point data set depicting outfall locations of wastewater facilities in Missouri with National Pollutant Discharge Elimination System (NPDES) operating permits. As authorized by Section 402 of the Clean Water Act, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into the waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Wastewater discharges regulated under the NPDES program include but not limited to facilities such as industrial or commercial facilities, sewage treatment plants, transportation terminals and Combined Sewer Overflows (CSOs).
- This is a point data set depicting permitted features that are in the Missouri Clean Water Information System (MoCWIS) system. These facilities have applied for and been granted coverage under a state-wide Master General Permit (MGP) for discharges of storm water associated with a particular industrial activity. Descriptions are available for review at http://www.dnr.mo.gov/env/wpp/permits/index.html
- This is a point data set depicting animal feeding operations (AFO) outfall locations in Missouri with National Pollutant Discharge Elimination System (NPDES) operating permits. As authorized by Section 402 of the Clean Water Act, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into the waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Wastewater discharges regulated under the NPDES program include but not limited to facilities such Animal Feeding Operations (AFOs) and Concentrated Animal Feeding Operations (CAFOs). An operation is defined as an Animal Feeding Operation, or AFO, if the facility confines, stables, or feeds animals for 45 days or more in a 12-month period and a ground cover of vegetation is not sustained over at least 50 percent of the confinement area. An operation is defined as a Concentrated Animal Feeding Operation, or CAFO, if it meets the definition of an AFO above and also confines more than 1,000 animal units (1,000 animal units is equal to 2,500 swine; 100,000 broilers; 700 dairy cows; or 1,000 beef steers). An operation's "Class Size" is a category that is based upon the total number of animal units confined at an operation. The Class IC, IB and IA are categories that start at 1,000, 3,000 and 7,000 animal units respectively and are required by state regulation to obtain a permit. Class II operations confine less than 1,000 animal units, and by definition, are only an AFO. Class II operations are not required to have a permit, although many voluntarily obtain one anyway. The Department can also require a Class II operation to obtain a permit when an unauthorized discharge has occurred or when a discharge results in a violation of water quality standards. The Class II operations that appear on these maps include only those that are currently permitted and do not represent the total state-wide count of all Class II operations in Missouri. The department does not track nor have records of non-permitted Class II operations.

These data can be found here:

ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2015_NPDES_Outfalls_shp.zip
ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2015_NPDES_Storm_Water_Facilities_Master_General_Permit_shp.zip
ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2015_NPDES_Animal_Feeding_Operations_shp.zip

IMPORTANT NOTES:
MO_2015_NPDES_Animal_Feeding_Operations_shp.zip replaces
MO_2012_NPDES_Animal_Feeding_Operations_shp.zip
MO_2015_NPDES_Storm_Water_Facilities_Master_General_Permit_shp.zip replaces
MO_2012_NPDES_Storm_Water_Facilities_Master_General_Permit_shp.zip
MO_2015_NPDES_Outfalls_shp.zip replaces MO_2012_NPDES_Waste_Water_Outfalls_shp.zip

Wednesday January 6, 2016

Missouri Department of Natural Resources has released five new datasets as follows:

MO_2014_Outstanding_National_Resource_Water_Watersheds_shp.zip: This feature class contains watersheds associated with Missouri's use designations for waters listed in Table D - Outstanding National Resource Waters of the Water Quality Standards rule published in the Missouri Code of State Regulations (CSR), 10 CSR 20-7.031, on January 29, 2014 and approved by the United States Environmental Protection Agency (EPA), on October 22, 2014.

MO_2015_Alluvial_Aquifer_Clay_Cap_Thickness_SE_MO_shp.zip: Liquefaction susceptibility hinges on two key criteria, a shallow water table and the presence of a fine-grained confining unit, or cap, over cohesionless sand deposits as seen in the study area. Liquefaction is most likely to occur when the thickness of this clay-rich cap is five meters (16.4 feet) or less. For thicknesses greater than five meters but less than 10 meters (32.8 feet) the

susceptibility drops from high to moderate. At thicknesses greater than 10 meters, susceptibility approaches zero. The purpose of this map is to help define liquefaction hazard criteria. Clay cap thicknesses were determined using existing well log data.

MO_2015_Depth_to_Groundwater_Change_1970_2000_shp.zip: Drainage of swamplands and increases in high-yield agricultural pumping in southeast Missouri over a 30 year period may have affected water table depths and potentially altered the risk of subsequent liquefaction following an earthquake. Modern agriculture practices associated with prolific rice cultivation has increased the implementation of irrigation wells. It was unknown if recent high-yield pumping has affected depth to groundwater extensively in the study area. The purpose of this map is to show changes in depth to groundwater from 1970 to 2000. Changes in depths to groundwater were derived from existing well log data.

MO_2015_Post_2000_Depth_to_Groundwater_SE_MO_shp.zip: Drainage of swamplands and increases in high-yield agricultural pumping in southeast Missouri over a 30 year period may have affected water table depths and potentially altered the risk of subsequent liquefaction following an earthquake. It was unknown if recent high-yield pumping has affected depth to groundwater extensively in the study area. The purpose of this map is to provide a basis for comparison between static water levels (SWL) prior to 1971 and those of present day (2000 and later). Depths to groundwater were determined using existing well log data.

MO_2015_Static_Water_Levels_Pre1971_shp.zip: Drainage of swamplands and increases in high-yield agricultural pumping in southeast Missouri over a 30 year period may have affected water table depths and potentially altered the risk of subsequent liquefaction following an earthquake. It was unknown if recent high-yield pumping has affected depth to groundwater extensively in the study area. The purpose of this map is to provide a basis for comparison between static water levels (SWL) prior to 1971 and those of present day (2000 and later). Depths to groundwater were determined using existing well log data.

Tuesday December 15th, 2015
The December 2015 MODOT data are available to all MSDIS users. Updates are provided to MSDIS by MODOT on a quarterly basis.

Click to download these data in file geodatabase format.

Web map service: /ArcGIS/rest/services/MoDOT_Roads_Quarterly_December_2015_WMS/MapServer

Monday December 14, 2015

Missouri Department of Natural Resources has released three updated datasets as follows:

MO_2015_Bedrock_24K_shp.zip: This data set contains a collection of bedrock geologic maps produced at a scale of 1:24,000.

MO_2015_Total_Max_Daily_Load_Lakes_gdb.zip: This feature class contains information about paired water bodies and pollutants that have been delisted from Missouri's 303(d) List of impaired waters due to Total Maximum Daily Load (TMDL) or permit in lieu (PIL) of a TMDL development, or because the impairment was determined to not be the result of a discrete pollutant and was recategorized. Only U.S. Environmental Protection Agency (EPA) approved actions are included in this feature class.

MO_2015_Total_Max_Daily_Load_Streams_gdb.zip: This feature class contains information about paired water bodies and pollutants that have been delisted from Missouri's 303(d) List of impaired waters due to Total Maximum Daily Load (TMDL) or permit in lieu of (PIL) a TMDL development, or because the impairment was determined to not be the result of a discrete pollutant and was recategorized. Only U.S. Environmental Protection Agency (EPA) approved actions are included in this feature class.

Thursday December 3, 2015

New dataset released by the Missouri Department of Natural Resources, Division of Environmental Quality, Water Protection Program. This feature class contains watersheds associated with Missouri's use designations for streams listed in Table F - Metropolitan No-Discharge Streams of the Water Quality Standards (WQS) rule published in the

Missouri Code of State Regulations (CSR), 10 CSR 20-7.031, on January 29, 2014 and approved by the United States Environmental Protection Agency (EPA), on October 22, 2014.

These new data can be found here: MO_2015_Metro_No_Discharge_Watersheds_shp.zip

Monday November 23, 2015

The 2010-2012 St. Louis County Image Consortium 0.3m and 0.15m resolution imagery data are now available for download from MSDIS

http://www.msdis.missouri.edu/data/StlCoImgConsortium/index.html

Tuesday October 27, 2015

Missouri Department of Natural Resources has released one new dataset as follows:

MO_2015_Closed_Non_coal_Mine_Shafts_shp.zip: This data set contains the locations and descriptions of abandoned non-coal mine shafts in Missouri closed by the Missouri Department of Natural Resources (DNR), Land Reclamation Program (LRP). This is not an exhaustive list.

Friday October 09, 2015
Missouri Department of Natural Resources has released two updated and three new dataset as follows:

MO_2015_Coldwater_Fishery_Lakes_shp.zip: This feature class contains Missouri's use designations for lakes listed in Table C of the Water Quality Standards rule published in the Missouri Code of State Regulations (CSR), 10 CSR 20-7.031, on January 29, 2014 and approved by the United States Environmental Protection Agency (EPA), on October 22, 2014.
MO_2015_Coldwater_Fishery_Streams_shp.zip: This feature class contains Missouri's use designations for streams listed in Table C of the Water Quality Standards rule published in the Missouri Code of State Regulations (CSR), 10 CSR 20-7.031, on January 29, 2014 and approved by the United States Environmental Protection Agency (EPA), on October 22, 2014.
MO_2015_Metro_No_Discharge_Streams_shp.zip: This feature class contains Missouri's use designations for streams listed in Table F of the Water Quality Standards rule published in the Missouri Code of State Regulations (CSR), 10 CSR 20-7.031, on January 29, 2014 and approved by the United States Environmental Protection Agency (EPA), on October 22, 2014.

MO_2015_Bedrock_100K_shp.zip: This data set contains a collection of bedrock geologic maps produced at a scale of 1:100,000. This replaces MO_2014_Bedrock_100K_shp.zip which has been removed from MSDIS
MO_2015_Bedrock_24K_shp.zip: This data set contains a collection of bedrock geologic maps produced at a scale of 1:24,000. This replaces MO_2014_Bedrock_24K_shp.zip which has been removed from MSDIS

Wednesday September 30th, 2015
The September 2015 MODOT data are available to all MSDIS users. Updates are provided to MSDIS by MODOT on a quarterly basis.

Click to download these data in file geodatabase format.

Web map service: /ArcGIS/rest/services/MoDOT_Roads_Quarterly_September_2015_WMS/MapServer

Thursday September 24, 2015
Missouri Department of Natural Resources has released one updated and one new dataset as follows:

MO_2015_Landfills_shp.zip: This data set contains locations for known landfills in Missouri
This replaces MO_2004_Landfills.shp.zip which has been removed from MSDIS

[MO_2015_Total_Max_Daily_Load_Watersheds_gdb.zip](): This feature class contains information about Missouri Total Maximum Daily Load (TMDL) documents and depicts the area where activities may be implemented to aid in achieving TMDL goals and targets. Watersheds were created only for U.S. Environmental Protection Agency (EPA) approved or established TMDLs. Features described as being of type Permit in lieu of a TMDL (PIL) or Category 4c (Cat-4c) in the TMDL_S and TMDL_L feature classes were not considered in the creation of this data since those features do not have watershed areas associated with them.

To the extent possible increase the amount of MSDIS activities (data development, clearinghouse functionality, hardware costs, etc.) funded by alternative sources.

MOCAP / National Map and other projects…

1st Period February, 2015 – July, 2015 comments –
There has been no new funding source for several of the core MSDIS staff during this period – some supporting staff assets are partially funded by CGI projects.

2nd Period August, 2015 – January, 2016 comments –
GRC staff members that provide some coverage (partial FTE) for MSDIS are substantially paid via other project's funding.

Management

Provide for review of MSDIS operations and budget.

1st Period February, 2015 – July, 2015 comments –
The annual fiscal report is attached…

2nd Period August, 2015 – January, 2016 comments –
The next MSDIS fiscal report is due at the August MGISAC meeting.

Maintenance and development of the MSDIS computing environment for the support of the clearinghouse function and provision of security and continuity for MSDIS functionality.

1st Period February, 2015 – July, 2015 comments –
Virtualization of the Web side is complete and has been tested and confirmed as available for operations
Two servers are located at Telecom (MSDISWEB-TC-P and MSDISWEB-TC-S) another is located in Rolla (MSDISWEB-MST). GeoPortal customization in the form of compacted geodatabases and improved basemaps for the Search and Clip & Download pages are now available to users.
The virtual imagery servers are still experiencing various issues which we are chasing down one by one.
We are also going through a period of staff transition on the imagery side with Tom Vaught picking up the imagery tasks since Jason Hinsen has moved to the CGI side of the GRC.

2nd Period August, 2015 – January, 2016 comments –
Tom Vought has settled in on the Imagery side as our Imagery Coordinator – he has been working directly with both Liz Cook (USDA) and our other imagery stakeholders.
The most important item to report is the reduction from three active servers (maintaining two virtual servers each – MSDISWeb and MSDISImagery) – to two physical servers (with the third being rebuilt as a Development box in our A&S server farm for both the Web and Imagery sides). This decision was based on usage, maintenance costs and staff time.