APPENDIX B
NOTES FROM LISTENING SUMMITS

Michigan NSDI CAP Grant
Outreach Findings Summary

Prepared for

Michigan Department of Technology, Management and Budget

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CONTENTS

INTRODUCTION

This document captures comments provided by the stakeholders in the GIS community in Michigan at each of the listening summits held around the state.

Draft notes from each meeting were distributed to everyone that attended the meeting for review and comments. The text included here represents those notes following requested edits by those that attended the meetings.

Information that was submitted after the summits were concluded is also included in this report.

The objectives of each meeting were:

- Learn about status of stakeholder GIS use and business needs
- Get input and ideas for achieving the SDI
- Identify needed improvement to the MGF and help guide the path of MGF future development

MARQUETTE MEETING (APRIL 20, 2010)

ATTENDEES

First	Last	Title	Organization
Eric	Anderson	Sr Planner, Resource Management Dept.	Marquette County
Nels	Anderson	GIS Specialist/Assistant Planner	Western UP Planning & Development Region
Brian	Bower	GIS Specialist	Hannahville Indian Community
Nathan	Fazer	Community Planner/GIS Coordinator	EUPRPDC
Cam	Fuess	GIS Coordinator	Superior Watershed
Matthew	Koss	GIS Engineering Technician	City of Marquette
Steve	Lenaker	GIS Coordinator	CUPPAD
Kelly	Levely	GIS Specialist	TriMedia Environmental & Engineering Services, LLC

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Steve	Lenaker	GIS Coordinator	CUPPAD
Kelly	Levely	GIS Specialist	TriMedia Environmental & Engineering Services, LLC
Ken	Marshall	GIS Specialist	Keweenaw Bay Indian Company
Justin	Murawski	GIS/Tax Administrative Specialist	Marquette County Tax Roll/Equalization Dept
Chris	Pinnou	Engineer	MSU-LTAP
Bill	Rowe	GIS Systems Analyst	Marquette County Information Systems Dept
Gary	Schlaff	IT Manager, Center for Technology & Training	Michigan Tech University
Lori	Schultz	GIS Specialist	Public Health, Delta & Menominee Counties

Additional Attendees:

Paul Harmon	Michigan Department of Technology, Management and Budget
Steve Aichele	USGS
Martin Roche	GeoPlanning Services

MEETING AGENDA

1. Welcome and Introduction
2. Business Drivers and Business Needs for GIS
3. Identification of GIS Benefits
4. High level characterization of GIS Status and Implementation Obstacles
5. Specific Data Activities and Needs
6. Overview of MGF
7. Characteristics of Successful Collaborative Programs
8. Data Stewardship and Access
9. MGF Detailed Discussion
10. Wrap-Up and Next Steps

MEETING NOTES

BUSINESS DRIVERS FOR GIS

Development and implementation of a Wildfire Protection Plan specifically with GIS used for:

- Risk modeling
- Planning
- Education
- Completion of required US Forest Service-Federal Forms
- Participation from Feds, State, County, Tribal, Township and Villages

Cartographic production to support master planning and recreational planning

Modernization and maintenance of Zoning Data to improve efficient implementation of land use regulations and to reduce legal costs. Additional business driver for zoning GIS is the preservation of records and the ability to communicate zoning designation for individual parcels to the public.

Preservation of paper records for zoning, utility systems (water/wastewater) and plats is a driver for building GIS. Digital copies can be stored off-site for preservation in case of a fire or other disaster. Conversion of paper to digital formats is also driven for a variety of legal reasons.

Property assessing was cited as having a number of business drivers for implementation of a GIS:

- Cost savings from reduced field work

- Forecast revenue for future years based on sales data trends in property values

Property Assessment
Making sure that properties are appropriately taxed is a large driver for building a GIS and acquiring imagery. Specifically identifying improved parcels taxed as unimproved, underserved agricultural exemptions, and identifying improvements that were not issues building permits (sheds, garages, mobile homes, etc.) were cited as reasons.

Homestead exemptions, specifically individuals claiming more than one for property to get tax breaks that they are not entitled to was identified as a driver for creating a GIS on land ownership. Significant additional revenue is possible particularly for areas with summer homes or significant numbers of rental properties.

Corner monumenting issues
- Property transfer fees pay for collection of section corners
- Frustration with current project by land surveying department (pace of project, data received)
- Coordinates required but not provided by contractors
- Establish township lines for property appraisers
- Important for E-911
- Disaster planning
- Disputes exist over current or re-drawn boundary lines

Natural Resources
- Private land forestry issues
- Management of resources—to maximum yield
- Management of variable distance buffers based on soils, slope, water quality, etc.
- Understanding of land values
- Resource management

Flood Maps
- Requires better elevation data than currently available
- Current flood map modernization with 'best available" data doesn't provide a suitable solutions for most communities
- Poor flood maps jeopardize water quality as septic permits may be issued for inside of flood plain
- Improved elevation data required for economic development
    - Identification of appropriate industrial sites
    - Tower locations for broad band accessibility

Provide improved public information

Planning and communicating road improvement projects

BENEFITS FROM GIS IMPLEMENTATION

Technology reduces staff time to:
- Maintain critical data
- Respond to citizen requests
- Lower costs maps and services to walk-in citizen requests
- Reduced time to identify location to provide service from 1 hour to 5 minutes

Routing of snow plows, school busses, garbage trucks, inspectors:

- Reduced fuel use and vehicle maintenance from reduce miles driven
- Improved accountability—no plows parked at bar when they should be working
- Better service to citizens

Improved data quality through people using the data and identifying issues

Digital Data available via .pdf provided info faster cheaper and easier interactive

GIS can be used to support grant application bring money and needed services to the community:

- Can provide better more competitive applications using GIS
- Communications and graphics
- Identification of compliance with grant requirements
- Reporting grant requirements

Jobs

Education—GIS can be used to educate elected officials and the public about complex issues. "Maps are worth more than 1,000 words…" when attempting to explain a difficult issue or put together different data.

Data Integration—able to take data from multiple sources and perform analysis that would otherwise be impossible

Analysis—modeling for improved infrastructure planning, wildfire risk assessment and mitigation, etc.

Maximize road improvement budget—

- use asset management to repair roadways before situation requires very expense repairs (example may be reseal road before it is so bad it needs to be completely re-structured
- identify critical improvements based on crash data

Tower location example

- move tower to tribal or other owned land and efficiently place it to provide service eliminated $1,400/month rental fees

Prioritize Infrastructure for construction

- Use GIS to identify most critically needed infrastructure

Seek $$ from Grants

Quantify the costs of sprawl

- Additional road mileage comes with specific costs—GIS can be used to analyze those
    - Plow $$ per mile
    - Garbage collection, student transportation
    - Pavement maintenance

Visualization/Analysis of Alternatives

- See and better understand variable land use scenarios
- Produce 3D visualizations of slope to demonstrate impact of development

Limit "Stupid Things"

- Better information enables decisions makers to make better decisions

- Example: Understand that an easement that was initially with a single parcel may now cross two (after a subdivision for example) and changes to add a pipe when only a road was authorized by the easement may required negotiation with multiple landowners

Boost Public Confidence

- Make Government appear to citizens to "have its act together"
- To be technologically up to date and provide efficient services
- Minimize the "run around" for permits from zoning, to building, to address assignment, etc.

Make Complex concepts easy to understand

- Visualization of results of analysis
- Put together different data to identify situations where a circumstance exists when it would have been very difficult to do in the past (Example: crash data and business locations to make access to shopping safer and easier)

Economic Development

- Provide information to local businesses to allow them to grow
- Seek grant moneys for training workers, building infrastructure, etc.
- "Economic Gardening" enabling local people to start and build profitable businesses

Recreation and Tourism

- Better market the fact that a region has a lot of opportunities in close proximity
- Identify trails (hiking and snow mobile)
- Provide improved access to opportunities to local citizens

Fire Protection

- Improved response times through appropriate assignment of address to 911
- Location of fire stations in places here most needed to reduce response times
- Perform risk assessment (primarily wildfire) and assignment of stations or districts to areas of high risk
- Model high wildfire risk areas, compare to housing locations, work to mitigate potential loss of life and property

Search/Rescue

- Coordinate for improved response
- "Get to them quicker" by understanding access via trails, forest roads, etc.

GIS CHARACTERIZATION

Stand Alone GIS	2
Enterprise GIS	10

Enterprise GIS w/1-5 Depts	2
Enterprise GIS w/6-10 Depts	2
Enterprise GIS w/10+	5

What are the departments that you are working with or supporting?

- NRCS Natural Resource Conservation Service?
- USDA
- Forest Services
- Private firms (foresters, engineers, others)
- Conservation Districts
- National Parks
- State Police
- Timber Companies
- E-911 Coordinators
- Electric/Gas providers
- Townships

OBSTACLES TO GIS MEETING BUSINESS NEEDS

Departments view GIS as "something I use the maps from but don't need to understand myself"

Lack of Training and Education

Lack of Data

Lack of Communications (internal and external)

Money

Ownership restrictions—This is "my data"

Needs private company data (utility) that they are unwilling to share

Concern over cooperation with private firms

Staffing capacity—only so much time and most of it is devoted to doing basics

Lack of education (focused on decisions makers)

Resistance to change from current staff and management

Time spent on coordination can be spent on doing the job my employer demands

Staff turnover

Charging for public data since it is exempt from FOIA

STEWARDSHIP AND COOPERATIVE PROGRAMS

Reasons for concerns about data sharing

- Need to recover costs for data development and to support data distribution
- Bad analysis done by people after I provide data may put me and my organization in a bad light with the public
- Poor data quality—or data that I have is fit for my use but may not be appropriate for what the next person wants to do with it
- Management demands for cost recovery
- A lack of trust

Bureaucracy gets in the way of effective stewardship. Some institutions want secrecy.

ROI for the data "custodian" (organization that collects and maintains the data) may not be there if additional time and effort must be spent to meet other people's needs.

Chippewa County is in the early stages of working with the county, city, state, and feds on data sharing.

CHARACTERISTICS OF SUCCESSFUL COLLABORATION EFFORTS

Local sharing with County has been positive—close, similar requirements
Good communications
Informal relationships—I know who to call to get what I need and we work well together
Trust—built on long term personal relationships
Everyone benefits

Data Development Collaborations (for example orthos with USGS)

- Single administrator to deal with vendor and project management
- Everyone gets a good deal on cost

User groups that meet locally are a big benefit for successful collaboration

- Build relationships
- Get a good understanding of what everyone is doing and how we can cooperate

Positive attribute of cooperating on framework data is that the state distributes it—when requested can direct to state to take care of them

Tribal data sharing is successful based on strong communications and shared goals

Wildfire prevention and containment has driven sharing based on a national system has also been successful. Training available, certification system and $$$ are available

Collaboration with Universities is also a positive thing

- Lake Superior State—Lab and project give an opportunity to have students do projects
- They provide answers to "hard" problems we don't have the time or technical knowledge to work out
- Michigan Tech's Roadsoft is an example:
    - Driven by a legislative mandate

- Support people are readily available by telephone and have been stable over the life of the product
- It is FREE

CHARACTERISTICS OF LESS THAN OPTIMAL COLLABORATION EFFORTS

Flood map modernization projects were identified as a less than successful project from the viewpoint of local governments. This is largely because they are driven by old data resulting in an inferior product. The project also was developed without sensitivity to local needs and situations—particularly in rural communities with limited data and resources.

The re-monument program current underway for township corners is not sensitive to local needs and although it has a dedicated funding source (in the form of property transfer fees) the funds are not sufficient to get the work done in a timely manner. Local needs and GIS were not considered since the coordinates of the re-monumented corners are not provided.

General comments on the failure of some collaborative efforts include there can be no match of local benefit to local cost. The cost may be carried locally while benefits are realized by the state or federal government.

A lack of good management of collaborative efforts was also identified as a reason that many have failed to produce desired results.

Other general comments on failed collaboration efforts:

- Ownership “this is OUR data”
- Some benefits don’t come back to locals even if promised…the real benefits of the effort are at the state level not the local level
- Negotiation is difficult with multiple parties (with variable budget deadlines, project requirements, etc.)
- Liability concerns—will I be liable for mis-use or mistakes in my data
- Public safety may be compromised
- Privacy of data may be compromised—individual names of property owners, etc.
- Homeland security concerns—making sensitive data available for critical facilities
- Variable needs not identified and cause trouble with scale, attributes, etc.

DISCUSSION OF THE MGF

WHAT IS GOOD ABOUT THE MGF?

Free

Available

Data is "pretty good"

It provides a reliable source for our base data and base maps

We use it for:

- Platt books
- Road Atlas for emergency responders, etc.
- Long range planning (land use and transportation)

MGF is important to support or planning for:

- Land use and zoning
- Wildfire protection and identification of future land uses
- Natural resource protection and management

It is also useful for:

- Maps required for grant applications
- Provides surrounding county data when necessary
- Supports census analysis
- Redistricting
- Transportation planning
- Asset management
- Access management (state roads, driveways, etc.)
- Non-motorized transportation (trails, rail)
- Logistics (routing, etc.)
- Railroads & Distribution Utilities
- Contained in Geographic Data Library

WHAT CAN BE IMPROVED?

Accuracy

- Spatial accuracy doesn't match the orthos
- Tabular data can be incorrect or lacking important information
- Content—it contains some roads that do not exist
- Structure data not complete

Need to have more timely corrections (some corrections are not accomplished after 3-4 notices to the state. Example cited was a jurisdictional boundary)

New versions aren't turned around quickly enough

Schedule of distribution of updates doesn't match demand for RoadSoft users

WHAT CAN BE ADDED TO THE MGF TO MAKE IT MORE VALUABLE

What data elements should be added to the MGF to make it meet your business needs?

- Flood zones
- Parcels (statewide)
- Emergency response zones (fire districts, etc.)
- Orthos

Improve the coordinate density would be a benefit

Consistency across jurisdictions in the roads that are in the database would be beneficial. Include all local roads, forest service roads, unpaved/gravel roads, and important driveways to boost utility of data for emergency response and local transportation

Review the labeling of roadways. It is difficult to pull a single road from the database since the county names, state names, and local names seem to be variable.

Correct error in roadway functional class identifies

Add reservation boundaries.

Establish more clarity in resolving boundary disputes in the data. [Note: There appears to be a lack of understanding in the complexity of changing boundaries between legal jurisdictions that should be resolved if possible.]

Hydrology as it exists in the MGF is poor. Improve the quality, consider moving toward the National Hydro Dataset NHD. There was also some concern expressed about lakes in the database that don't exist and the lack of a linear feature for water at lakes.

Establish a mechanism for providing communication about the status of changes.

Provide a list of the MGF contact in other regions to facilitate communication.

Provide users with an organizational chart so it is clear who does what at the State office. (Name and staff changes have caused some confusion)

Establish a process for identification of authorized data editors.

Allow digital submissions. County has great data and it would like to include it in the MGF but there appears to be no mechanism in place to do so.

Clean up Act51 and TIGER 2000 data

Provide improved information with the re-monumentation data.

Include ortho data and synchronize collaborative programs with local budget and project cycles. Provide longer notice on potential joint projects including timelines and cost models.

LIDAR and elevation data at a better resolution than current would be a nice addition.

More collaboration with state and federal agencies to enhancing the MGF is necessary.

Change tracking and communication with locals would be a benefit.

Consider creation of a funded "regional" representative structure. Perhaps have an individual from each planning council fill this role as the local voice of the MGF. They could be the authorized editor and serve a role in building partnerships to improve the dataset.

Adjust timing of releases so they can be more in sync with the asset management council requirements for RoadSoft.

GAYLORD MEETING (APRIL 21, 2010)

ATTENDEES

First	Middle	Last	Title	Organization
James	A	Bennett		InfoGeographics, Inc.
Justin	M.	Booth	GIS-Remote Sensing	MSU
Denise		Cline	GIS Specialist/Community Planner	Northeast Michigan Council of Governments
Alexander		Code	Area Geologist	Dept. of Natural Resources & Environment
Carla		Elenz	GIS Manager	MI Dept. of Military Affairs
Candice		Fox	County Administrator	Montmorency County
Patricia		Gnotek	Property Analyst	MDOT
Donald		Grier		Grand Traverse County Rd Commission
Kevin	G.	Keller	Director	Montmorency County Equalization Department
Tom		Kellogg		Corwith Township
Toby	J	Kuznick, Sr.	Engineering & Zoning Assistant	City of Rogers City
Mark	W.	Larrow	Engineering Information Specialist	Monroe County Road Commission
Darcia		Little	GIS Technician	Camp Grayling
Liz		McNichols	Resource Information Specialist	Huron-Manistee NF
Sarah		Merz	GIS Analyst	Northwest MI Council of Governments
Jessica		Moy	Director	RS&GIS, MSU
Gaye		Pizzi		Crawford County Equalization and GIS
Sarah		Prinie	Clerk/Deeds & Descriptions	Montmorency County

First	Middle	Last	Title	Organization
Alan		Proctor	GIS Director	Little Traverse Bay Bands of Odawa Indians
Rainer	E.	Reichert	GIS Analyst	Grand Traverse County
Paul	H.	Riess	GIS Specialist	LIAA
Marc		Seelyem	Drain Commissioner	Charlevoix County
Tom		Sheneman		Kalkaska County Equalization
Matt		Tonello		Michigan DTMB
Sharon		Weiss		Cheboygan County GIS
Sharon		Zakrajsek	Director	Kalkaska County Equalization

Additional Attendees:

Laura Blastic	Michigan Department of Technology, Management and Budget
Steve Aichele	USGS
Martin Roche	GeoPlanning Services

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MEETING NOTES

BUSINESS DRIVERS FOR GIS

Asset Management—

- repair roadway pavement in a timely and efficient manner to avoid higher costs through postponing work until the situation has degraded to the point of total replacement
- pavement management
- Maximize insurance claims for crash damaged property (signs, guard rails, etc.)

- sign management
- pulp industry

Collecting revenue—managing tax appraisals so they are equitable, fair, and represent actual market values. Also making revenue collection efficient

Improved service to citizens 24/7 (Example; camp ground reservations)

Better long range planning for infrastructure, land use, and public facility site selection

Meeting mandates from state and federal government.

Range management—ensuring a safe training environment for military while maintaining environmental compliance

Homeland security—protection of critical assets

Natural disaster response and risk mitigation

Natural resource management—

- preservation of water quality
- protection of habitat for endangered species
- management of resources for sustainability—pulp and timber management

Access Management—making sure businesses can be safely accessed from public roadways without impeding traffic flow

Protection of water quality—from spills

Wells & Pipelines—

- safety inspections (compliance with regulatory requirements)
- maintaining of right of way

Reduction in staff time

- responding to citizen questions
- find information necessary to identify location of work order (pothole filling, etc.)

Record retention

- digital information duplicated and stored off-site
- historical changes over time with audit trail

Grants

- complete effective and improved grant applications
- management of grant processes
- identification of areas eligible for grants

Cultural resource protection

- protect unique resources from destruction
- education of the value of these resources

Map truck routes

Provide improved information to the general public—boost credibility

Private firms—sell products from data received from government

Economic Development—
- assist to identify the site for facilities
- demonstrate and understand utility availability
- identify broadband access to support development (understand potential impact on land values)

Manage permits (applications and inspections)

Minimize or defend against litigation
- wetland encroachment
- assure that well distances are maintained

Reporting to federal/state government agencies

Meet audit requirements

BENEFITS FROM GIS IMPLEMENTATION

Saving staff time through self-service on the web

Improved accuracy of data

Reduced travel time and expenditures—specifically referenced ortho and oblique photos and tax assessment

Analysis of crash data would be impossible (or very difficult) without GIS. The analysis improves safety and helps prioritize investment in road work

Improved tax revenue by using orthos to identify property not appropriately taxed or receiving a homestead exemption that isn't eligible.

GIS based inventory of assets allows for improved budgeting

Timely road maintenance saves money. Execute the repairs before it is too late and the repair is much more costly.

Efficient inspections and improved compliance with regulations

Improved staff accountability

Better routing for E-911 and inspections saves on response time and transportation costs.

Reduction in personnel costs

Wildfire risk modeling has benefits in improved response times by staging equipment in areas where it is likely to be needed. Also has a benefit of prioritizing areas for mitigation and public education.

Improved cooperation between agencies

Better quality of information

Consumer protection—based on improved information

Improved citizen understanding

Tools for education of citizens and decision makers

Visualization of alternatives and encouraging public participation in planning efforts

Smart transportation decisions—from both public and citizens

Understanding funding impacts from alternatives

Trends can be apparent

Improved tax assessment

GIS enables analysis and empowers improved decisions

Visualization of land records and easements—understand where easements are and how many parcels are impacted by utility construction projects

Cooperation between departments on address assignment

Improved citizen satisfaction in services—they don't feel like they are getting the runaround

- better client services—can provide answers to questions that weren't possible before
- available 24/7 on web

Fewer stupid mistakes

Reduced duplication of efforts

Improved accountability in data

Economic development—information to support appropriate location decisions

Multiple departmental use of data

Improved communication up and down the management chain

Tie data together for improved understanding and analysis

GIS CHARACTERIZATION

OBSTACLES TO GIS MEETING BUSINESS NEEDS

Security of information and systems

Confidential data needs to be protected

Lack of infrastructure—specifically cited was broadband availability

Silos of information—no sharing even within organizations

Lack of needed data—elevation data

Staff—don't have the people we need

No money

The data we have is old

Corrections and additions take all of our time so we can't devote time to other applications of GIS

- maintenance of old data takes all available staff time

Lack of understanding

- elected officials
- boards
- ROI

Recreation of data

Lack of metadata from already available data makes it difficult to judge quality and appropriateness of the data for next use

Poor 2 way communications

- Within organization
- Up and down the management chain
- Between local jurisdictions and state/federal governments

Lack tax base to support GIS development

Internal support is lacking

- Need internal marketing to build support
- Need to identify a political champion

Organization charge for data so I can't get what I need even though it exists

Unable to find time for training

It is difficult to keep up with technology changes and maintaining the data

End users accessibility

- Providing them with the tools they require to get to the data and analytical tools
- Uses don't understand that they need it

Lack of priority—money is available and spend on other items rather than GIS

There is a conflict between tax base and services demand. More demand than $$

Resistance to change. We always done it this way and it works—so why spend $$ on GIS

Accountability—people don't want to be held accountable (cited example was plow drivers)

Need value education. Necessary services can be improved with GIS but they must also be paid for now so directing budget to GIS implementation is immediate cost but benefits are down the road.

Turf protection. "My data" feeling.

Legal restrictions make important data unavailable

- Some "confidential" information would be good to have
- Appraisals are sensitive

Protection desires limits availability of some data

- Endangered species
- Archeology and cultural resources

I can't fund the data I need

Resolution of available data doesn't fit my needs

- MGS road data
- Imagery (NAIP—leaf on vs. leaf off)

Poor data quality of available data and a lack of metadata.

STEWARDSHIP AND COOPERATIVE PROGRAMS

Organizations need to build a "champion"

- Get a key decision maker interested in GIS
- Sell them on the benefits and ROI
- Find a need and fill that need
- Create a plan with clear goals, details, implementation steps and clearly define the benefits for the decision maker from attaining the goals

There was an identified need to establish a governance structure (a legislative coordinating council was specifically mentioned) within Michigan that will support and sustain cooperation and stewardship over time. North Carolina was cited as an example where effective coordination has been implemented but it was recognized that formal coordination efforts around the nation have seen variable levels of success.

CHARACTERISTICS OF SUCCESSFUL COLLABORATION EFFORTS

Regional E-911 effort example of a successful collaboration

- Technical support available at regional council
- Cost savings
- Transfer of knowledge to local partner with the understanding that they eventually will do maintenance themselves
- Project is formal and has a limited duration—clear deliverables and schedule

Ortho photos joint projects

- Provide accurate data
- Save everyone involved money
- Single product meets multiple needs—example cited included two products with a lower resolution product made available to state partner for distribution while local partner could continue to sell the higher resolution data

Re-monument project underway

- Good cooperation between Corps of Engineers, Tribes, and local government
- Money is available to do the project
- Data is becoming available
- Negatives
    - Long time to complete the project with the funding available

Roadsoft is a successful collaboration between federal, state, university, and local organizations

- Good available tools that don't have to be developed by each user
- A product is readily available
- There is good use support—if I call someone will give me an answer
- System can grow to support local needs
- Negatives
    - Compatibility with systems in place
    - Data may also not be in a compatible form
    - Release schedule means working with old data

Oblique imagery projects

- Help multiple organizations including tax assessment, wildfire, and first responders
- Cost savings from multiple partners participating
- Data is available and accessible

Data sharing projects were discussed and generally had the following characteristics

- Technical assistance was available from the lead partner
- Data QA/QC was performed one of the partners to assure everyone a quality products
- Some were formal—with signed agreements in place
- Many were informal—accomplished at technician or GIS coordinator level without involvement of high level decision makers
- Data share projects sometimes encountered difficulties with
    - Edge issues—different projects or data structures made combining data difficult
    - No central place to get all the data needed

Good cooperation between Bureau of Indian Affairs provides tribes with ESRI licenses without cost to tribe.

Regional user groups have been very valuable in building partnerships and understanding

Standards help collaboration efforts since everyone knows what they will be getting and how it fits together

Good collaboration efforts have representation of all parties involved.

Successful collaborative efforts can be driven by availability of grant money from outside sources—federal or state government

CHARACTERISTICS OF LESS THAN OPTIMAL COLLABORATION EFFORTS

In some cases a lack of local understanding can limit success-they lack technical understanding

Distance between organizations can hamper communications

Often people who need data don't know what other have or where to get the info they need

Some organizations and individuals "lack professionalism"

Buy in at the decision maker level can be difficult. It is easy to get GIS folks to agree.

Mandated without funds to support the effort—demands from state that require doing something without funding that activity for example.

Benefits of the project may not be at the level where the bulk of the expenses are carried. There may be value to the state or private sector but that value is not captured by the partner doing the bulk of the work.

Conflicting standards.

DISCUSSION OF THE MGF

There were 7 users of the MGF and 2 contributors at the meeting

WHAT IS GOOD ABOUT THE MGF?

Free

Statewide availability and it works across jurisdictional boundaries

Easy to get

Up to date—somewhat

Easy to send updates

WHAT CAN BE IMPROVED?

Address data is weak

Spatial accuracy is poor

Update schedule—it takes too long to get updated data

Not a web service—provide as WMS, KML, etc.

Redundant data sets

Metadata doesn't convert well to ESRI formats and tools

Needs fire protection zones—which fire department is assigned to where

Coverage or Shape to GeoDatabase conversion problems
- Relational ties lost
- Topology
- Domains

Will Oracle to ESRI conversion result in data loss or reduction in utility?

Make available data library definitions
- Better tools for layer customization
- Easier to extract features (example: All "M" roads)

Better communication of data model so potential users can understand what they can do with the data. Suggestion for a "data catalogue"

Include all roads (alleys, commercial driveways, forest roads)

Include unincorporated points

Improve the hydrology data set
- Blend of line and polygon has created problems for users
- Polygons need a centerline for flow modeling
- Migrate to National Hydrology Data
- Provide high water line for Great Lakes

Make the MGF fully compatible (two way) with E-911 systems in place and homeland security tools

MSAG info should be merged into MGF with reconciliation to other data and to standards (NENA/Postal)

Public land boundaries should be included

Forest Road standards for inclusion need to be developed

State leadership in promoting value of MGF

Improved quality DEMs (possibly from LIDAR) is needed for a variety of applications (flood modeling, tower placement, viewshed, wind power studies)

Add the following to road vectors:

- Speed limits
- Pavement type (paved yes/no)
- Weight limits on bridges
- Height restrictions

Improve rail updates and communication of metadata (inactive vs. removed)

Electric and natural gas data should be added

Point locations of critical facilities

- Hospitals
- Schools
- Police stations
- Fire stations
- Communications towers

Add information on oil/gas wells and transmission lines

Bathymetry at least along coast is not for entire lakes.

KALAMAZOO (APRIL 27, 2010)

ATTENDEES

First	Last	Title	Organization
Rose	Anger		Barry County
Aaron	Boos	Manager of GIS	County of Ottawa--IT Department
Nina	Consolatti	Graduate Student	WMU Geography Dept
Joel	Cook	Southwest Region Asset Management	
Amber	Eckert	Technical Specialist	Fishbeck, Thompson, Carr & Huber, Inc.
Darcy	Ellinger	Real Estate Records Dept	Consumers Energy
Rich	Francisco	GIS Systems Analyst--IT Department	County of Ottawa
Andrew	Hartwick	GIS Director	St. Joseph County
John	Hippensteel	Director of Equalization	Calhoun County
Lotta	Jarnefelt	Director	Kalamazoo County Dept. of Planning & Community Development
Joanna	Johnson	Managing Director	Kalamazoo County Road Commission
Valdis	Kalnins	Director-Land Information Services	Allegan County
Karl	Klemm	GIS Specialist, Dept. of Community Development	City of Portage
Dwight	Leeks		
Dan	List	GIS Manager	Facilities Management, Western Michigan Univ.
Jon	Merrick		Calhoun County
Richard	Muyskens	Electric Distribution GIS Specialist	Holland Board of Public Works
Jeff	Reicherts	Surface Water Specialist	Kalamazoo County Health and Community Services Department
Kitty	Rothwell	Associate Region Engineer	MDOT
Laura	Sanford	Real Estate Records Dept	Consumers Energy
Erik	Schnepp	Southwest Region Surveyor	MDOT
Andrew	Schwallier	Environmental Specialist	Fishbeck, Thompson, Carr & Huber, Inc.
Steve	Sedore	Director of Information Services	Allegan County
Teresa	Stassines	Real Estate Records Dept	Consumers Energy
Steve	Stepek	Senior Transportation Planner	Kalamazoo Area Transportation Study
Jason	Sundell		MDOT-Grand Region Delivery
Margaret	Tenkow	GIS Analyst	W.E. Upjohn Center For Geographic Change
Rick	Updike	Superintendent of Public Works	City of Plainwell
Thomas	Van Bruggen	Property Information Analyst	Muskegon County Mapping & GIS

First	Last	Title	Organization
Nick	VanWoert	Resource Analyst	Southwest Regional Office (MDOT)
Kenny	DenBraber	Transportation Engineer	St. Joseph County
Robert	Goodwin	GIS/Remote Sensing Analyst	RS&GIS MSU
Wade	Hawes	Assistant Planner	Pokagon Band of Potawatomi Indians
Ken	Oscarson	KCRC Commissioner	Kalamazoo County Road Commission
Matt	Vandyken	IT Director	City of Holland

Additional Attendees:

Laura Blastic	Michigan Department of Technology, Management and Budget
Paul Harmon	Michigan Department of Technology, Management and Budget
Steve Aichele	USGS
Martin Roche	GeoPlanning Services
Peter Croswell	Croswell-Schulte Information Technology Consultants

MEETING NOTES

BUSINESS DRIVERS FOR GIS

Public Safety

- Dispatch
- Emergency Disaster Planning
- Locations of Hazardous Materials (with a mobile capability)
    - Concerns were expressed about liability for these data
- Identify locations of threats of violence to inform field crews of potential dangers
- Disaster recovery
- Guard Rail repairs are tough to collect on following a crash

Accident Analysis—link crash statistics and locations to responses for both pre-planning and post-event use

Utility Infrastructures Asset Management

- GIS based asset inventory and tracking of assets
- DOT for culvert and catch basin maintenance—make more efficient management decisions and make sure only appropriate features are services
- Stormwater drainage analysis—prevent flooding and assess those benefitting from improvements the cost of the improvement

Customer Service—improved service with better data. Reduce phone and walk in requests that interrupt staff during work on other assignments

Infrastructure Asset Management

- Real estate management
- Long term planning for sustainability

Capture institutional knowledge

- Staff turnover and retirements cause a loss of knowledge

- Building spatial databases may retain some of that knowledge

Real property appraisal
- More equitable
- Identify missed attributes or features (improved properties taxes as un-improved for example)
- Cross boundary information is important to support
    - Economic development—housing and non-residential property availability outside of county
    - Non-residential appraisals since low volume a sales in a single county don't provide enough comparables for valuation. Non-residential property markets are multi-county in nature
    - To detected Homestead violations
- Make sure all improvements in a jurisdiction are taxed properly.

Flood plain modeling (1999 DEQ flow modeling)

Government/Private partnerships (example Consumer Energy property project)

There are business drivers for 'structure' data

Alternative revenue source to replace gas taxes--vehicle tracking for miles driven in an automated fashion since fuel economy and alternative fuel vehicles will reduce collection of revenue used to support road maintenance.

Infrastructure
- Planning and design for new projects—make sure they are efficient and meet potential future needs
- Generate accurate cost estimates to assure adequate funding for projects

Environmental and public health regulations—particularly septic tank permits and well head protection
- Parcel data may be required to do this effectively

Health Clinical Services
- Critical structures for emergency planning and response
- Incident analysis—disease outbreak tracking

Ortho-imagery identified as a business driver
- Method, organizational approach for capturing

Need to capture duplication of efforts

Route inspectors and transportation services
- minimize travel and vehicle maintenance costs
- provide improved customer service (schedule service windows for example)

Improved data access—more flexible applications for on-line access

Federal and State reporting requirements—example cited Act51 road miles

GIS CHARACTERIZATION—SPECIFIC DATA NEEDS

GENERAL DATA COMMENTS

The community needs to define, for each element of data, functional vs. ideal accuracy.

Spatial accuracy should be consistent to boundary data matches other data sources (census geography not matching road centerlines and hydrology was cited as an example)

Communication of improved data or newly available data needs to be improved. Users need to be able to find the data they need.

SPECIFIC DATA NEEDS

Facility data (HSIP)

- Schools
- Nursing homes
- Day care centers
- Fire stations
- Police stations

Environmental justice information (example: Amish locations for areas to avoid installation of road rumble strips)
Soils
Hydrology
Drains
Elevation point data sufficient to support generation of 2 foot contours
Water well locations—residential
Historical information including aerial photos and Sanborn fire maps
Broadband availability
Endangered species locations
Utilities—all water/sewer/natural gas/electrical (in part to support "call before you dig" programs)
Boundaries

- Special purpose districts
- School
- Fire protection

Section corners—need to have accurate location data of these since the entire parcel fabric is built off these locations

- The re-monument program needs to include requirements for precise GIS coordinates to be made available

Ortho photos are critical and need to be updated on a specified schedule.
Infrared imagery
Parcel data statewide based on established spatial and attribute standards (for example a standard parcel ID #)
Oblique imagery
Address points
Road centerlines with address ranges
Private roads
Land cover and Land Use with a 1 acre mapping unit
Ground water contamination—build off of data already available at environmental mapping web site (http://www.mcgi.state.mi.us/environmentalmapper)

School districts
ZIP codes

OBSTACLES TO GIS MEETING BUSINESS NEEDS

Encourage use, expanded use requires people to see benefits rather than GIS as competition

Unable to get funding to "scrub" the data to help improve accuracy after funding is made available to convert the data from paper to digital.

Hardware/networks funding and support, connection with IT, technological challenges from virtualization

Introducing mobile devices—acquisition, training, applications

Understanding datums, projections, etc.

Technology transfer to regional office of state agencies due to bandwidth constraints

State agencies requirements to request support through IT. Minor requests for new accounts or to install software require too long.

Organizational structure and governance needs to be improved

- need for better coordination between entities
- not enough unification between entities
- restructure cross-boundary committee
- identify a "champion"

No State mandate to have GIS

Lack a well defined process for data updates

Training and orientation for use of GIS

Lack of state provided support for GIS services to low resources jurisdictions

Need a better channel to legislative or local bodies

Data access restrictions based on licensing requirements or data sales

Poor quality data

Lack of standards and/or lack of compliance with standards

Funding!

Insufficient support from management

There is a lack of a view of GIS as a process requiring ongoing support for data and applications. Somehow we to overcome the perception of GIS as a "project" with a distinct beginning and ending.

STEWARDSHIP AND COOPERATIVE PROGRAMS

During an open discussion on the status of stewardship in Michigan the following comments were made:

- There needs to be a respect for the needs from different levels of government
- There should be a theme of cooperation with GIS as a foundation for that cooperation
- Private use of public data (particularly if they are using the data to make a profit) can be a problem
- There is a lack of standard data licensing terms and that sometimes restricts sharing and cooperation (there was a suggestion that a standard license could be developed and potentially mandated)
- Need to "enforce" data standards particularly for parcels and funding should be provided to meet the standards including:
    - Parcel #
    - Legal description
- RoadSoft is used regionally and supported by State rule for low population areas
- We need to explore the possibility of inter-county cooperation (where multiple counties band together to jointly provide services and support on a contract basis)

The cost of sharing data was also discussed with 10-30% of staff time being devoted to data requests from local units of government, districts, state, federal, private firm, and general public requests being included in that total.

CHARACTERISTICS OF SUCCESSFUL COLLABORATION EFFORTS

A multi-organizational Pictometry project was cited as an example of positive collaboration. The project had:

- A lead organization that provide project management and technical support
- Cost share between partners provided everyone with data as a reduced costs
- Variable resolution products were available to meet all partner needs

Several organizations cited project where they jointly share and host data. In some cases this is a township/private vendor relationship.

Good communications were identified as key to any successful multi-party effort.

Regional E911/emergency services operations were identified as a successful collaboration because:

- They have a central office that manages activities
- Formal structure with clear roles and responsibilities outlined
- Provide a buffer of data from outside of the jurisdiction which can be important for response
- Based on historic positive personal relationships and long standing "mutual aid" agreements

The LUCA (Local Update of Census Addresses) was identified as a successful local/federal/state collaboration:

- A simple to use tool was provided to edit data
- There was the ability to add boundary data changes based on annexation, etc.
- The appeal process was clear
- The tool for use with ESRI wasn't great, but the stand alone tool was better
- There was a clear and tangible benefit to the local partner for participation.

A multi-jurisdictional data on-line data service was identified as a successful collaborative effort—it allows for multiple organization to use a single web server reducing costs associated with hardware, software, networking. It is an ad hoc working relationship with formal agreements or licenses.

Generally successful project benefit from:

- Economies of scale—reductions in total costs based on the size of the project. Examples are ortho photo projects and parcel conversion/maintenance projects.
- Standardized products

Multiple Townships have collaborated on parcel maintenance projects driven by improved efficiencies and better value.

Collaborative efforts between local governments and counties have been successful when the county allows the local GIS to grow, mature, and evolve over time. This includes the relationships as well as the attitudes.

CHARACTERISTICS OF LESS THAN OPTIMAL COLLABORATION EFFORTS

FEMA Flood Modernization was cited as an example of a project with less than successful characteristics. Some of those characteristics were:

- Local data and input were ignored in the process
- Leadership changed at the host Federal agency (more than once) during the project creating a lack of continuity
- Changes in the host agency—moving departments and people—caused project issues
- Communications to contractors from staff seemed to be a problem, particularly after there was a transition in contractors
- Program lacked sustainability after hurricane Katrina and the organization shifted key resources to issues related to hurricane clean-up
- If you ask for data from local sources USE the data from local sources
- Old data was used when better data was available but never requested
- Project restrictions on funds for data

A positive element of the FEMA Flood Modernization project was that data were provided that would have been unavailable without the project. However, some comments were received that suggested that in this case no-data may have been better than bad data.

DISCUSSION OF THE MGF

WHAT IS GOOD ABOUT THE MGF?

Low cost

Easy to use

Single statewide file make getting and using the data efficient

Attributes are good

Used for:

- multi-county base maps
- asset management
- planning and displaying future projects
- data set for training and education
- school bus routing
- supporting grant applications

Data outside of the county is valuable for:

- Court exhibits that have required tracking a vehicle
- Transportation routes
- Dispatch emergency vehicles—using a buffer around the county
- Geocoding features outside of the county

The road network is more updated than other sources

It doesn't require duplication of work

We have a history of involvement with MGF and involvement makes us "feel good."

We have a business driver for centerline data that can be linked to RoadSoft, is an improved set over TIGER, and supports the QVF (qualified voter file).

WHAT CAN BE IMPROVED?

The download process for orthos is tile based without an adequate index grid.

Spatial accuracy doesn't meet my needs.

Improve the alignment with local data sets, particularly focus on alignment to orthos

Divorce the township boundary lines from the road centerlines

There are projection issues particularly an error in ESRI's tools for the Michigan state projection

Some files lack any projection information

Files are in the MGF projection

Lack of a permanent ID on segments. Segments also need attributes on pavement type, all season/seasonal status.

Dynamic segmentation is a difficult environment for some small organizations to work with.

Break points are not at the end of road segments

Need a point file of intersections

The From-To values on address ranges sometimes don't match the PR-MP system. MGF road direction follows the LRS mile point but the local agencies prefer the road to follow address direction There is a need for a road naming guidelines document and some enforcement of postal standards for addressing

The MGF is complicated and there is an additional need for education for users.

Accuracy varies from county to county—need to define a working scale for the data

Act51 linkage is somewhat unclear in users minds. Need to include Arc51 mileage vs. the 2D GIS length.

WHAT DATA SHOULD BE ADDED TO THE MGF?

The transportation data should be enhanced to include:

- Surface type
- One-way designations
- Number of lanes
- ESN-emergency service network # to link to dispatch system

Overall a better linkage to the asset management council

Improved hydro data, specifically the; NHD

Other state data that is currently available in view only tools (for example well data)

Topo maps

Better elevation data

MGDL should be expanded to include other data

Historic data

Metadata

Green infrastructure

Survey data from construction projects—as "builts"

Hydrology should be enhanced to include:

- A county drain designation attribute
- Linear referencing
- Reach codes

Add ZIP code polygons

PARKING LOT NOTES

A number of comments from attendees were recorded but not fully discussed due to time constraints. These comments included:

- "State mandates" must come with funding
- Participation from private utilities is important
- GIS products/services sales has an impact on progress
- Data licensing and ownership
- FEMA flood map modernization and lack of local involvement
- Data collected based on difference geographies results in inconsistencies
- Data standardization is the basis for integration. This should include symbology, unique keys, and parcel #
- The Great Lakes restoration initiative should be explored (EPA program)
- Requirements for sex offender notification may be a key business driver for parcels and addresses
- There are other proximity based notification requirements (permits, zoning changes, etc.) that also drive need for address and cross boundary spatial data
- New broadband mapping initiative (connectmi.org)
- Data needs to be available for everyone—including counties with low resources
- State DEQ had an environmental mapper application that is in use
- State led deed fees should be considered to support GIS for local governments (like WI, MN, IL)
- Recurring costs for data refresh need to be understood
- Incentives are needed to support refresh costs
- Need a strong business case for GIS that considers partnership costs and "in-kind" expenditures
- Regional coordinators (maybe at regional councils) should be explored
- Work through MAC, MML, and other related organization to reach decision makers.

PONTIAC (APRIL 28, 2010)

ATTENDEES

First	Last	Title	Organization
Sarah	AcMoody	Remote Sensing & GIS	Michigan State University
Bryan	Agosti	GIS Specialist	Mannik & Smith Group, Inc.
Nathan	Arnold		Washtenaw County Support Services/IF
Jeff	Baker	Surveyor	RCOC
Michelle	Barnes	Res Eng	U of M
Alex	Bellak	GIS Administrator	City of Troy
Robbie	Beller	GIS Coordinator	Grand Blanc Township
Tom	Blust	Dir. Of Eng	RCOC
Ann	Burns	Assistant Manager	Information Technology Department
Anita	Campbell	Data Services Supervisor	Oakland County Information Technology
Cori	Cox	GIS Coordinator	St Clair County
Dennis	Doherty	Business Development Manager	Superior Information Technologies
Trevor	Floyd	GIS Analyst	St. Clair County Metropolitan Planning Commission
Scott	Harrod	Sr Applications Specialist/GIS Coordinator	Community Services, City of Ann Arbor
Jason	Heywood		Aerocon Photogrammetric Services
Kenneth	Hudak	Planner III	Road Commission of Oakland County
Ken	Koleda	GIS Director	Genesee County
Matthew	Malone	GIS Coordinator	City of Farmington Hills
Richard	Mangus	GIS Supervisor	City of Madison Heights
James	Miller	GIS Department Manager	Hubbell, Roth & Clark, Inc.
Susan	Moore	GIS User Support Specialist	Oakland County, Dept of IT
Richard	Owens	Graphic Technician-GIS Public Safety	Macomb County Planning and Economic Development
Steve	Perry	Senior GIS Specialist	Southeast Michigan Council of Governments
Laurie	Prange-Gregory	Applications Manager	State of Michigan
Christine	Ritchie	Assistant Director of Assessing	Independence Township
Doug	Ritter	GIS Coordinator	Northville Township
Tara	Russell-Weir	GIS Analyst	
Bill	Sauer	GIS Manager	City of Rochester Hills
Barbara	Saunders	Supervisor, Data Integrity Gas	DTE Energy\MichCon Gas

First	Last	Title	Organization
Dawn	Siegel	Supervisor, Dept. of Information Technology	Oakland County
Jeff	Staebler	Associate Partner, Director of Technology	OHM Architects, Engineers, Planners
Bill	Tyler		City of Livonia
Michael	Woods	Transportation Planner & Asset Manager	Opus International Consultants Inc.

Additional Attendees:

Laura Blastic	Michigan Department of Technology, Management and Budget
Paul Harmon	Michigan Department of Technology, Management and Budget
Steve Aichele	USGS
Martin Roche	GeoPlanning Services
Peter Croswell	Croswell-Schulte Information Technology Consultants

MEETING AGENDA

1. Welcome and Introduction
2. Business Drivers and Business Needs for GIS
3. Identification of GIS Benefits
4. GIS Status and Implementation Obstacles
5. Specific Data Activities and Needs
6. Lunch Break
7. Overview of MGF
8. Characteristics of Successful Collaborative Programs
9. Data Stewardship and Access
10. MGF Detailed Discussion
11. Wrap-Up and Next Steps

MEETING NOTES

BUSINESS DRIVERS FOR GIS

Emergency Management

- Situational awareness
- Mash-up to support EOC
- Imagery, road centerlines

Asset Management

- Move from reactive to predictive maintenance to save $
- Support infrastructure management priorities with shifting population and related demands
- Population shifts have driven

    - changes in transportation planning,
    - reduced customers required market readjustments and analysis of maintenance relative to lower revenue
    - migration of roads from paved back to gravel to reduce maintenance expenses
- MDOT cost recovery for damages from crashes
- Accident analysis to improve safety
- County report of road miles in compliance with Act51 to drive revenue share from state
- Aging suburban infrastructure drive need for panning

Land management-US Forest Service

- Public land management (DNR budget of $4.1 million for management)
- General land management
    - Capability, characteristics, land use planning, decision making

Homeland security

- Border crossing management
- Regional focus on emergency management

Water/Sewer Districts—long range planning

Capture institutional knowledge
Record Preservation – linking records to location

Compliance with State and Federal Regulations

- Real property tax regulations
- Storm water management
- DIMP Federal (August Plan)
- Natural Gas assets and compliance with regulations on setbacks, buffers, etc. (FERC)

Water/Sewer requirements for 5 year vulnerability assessment and state revolving loan fund (SRF score)

Economic Development

- State economic development corporation requirements for report to legislature
- Site selection and site characterization
- Labor force analysis
- GIS as “sales tool”
- Brownfield redevelopment—support for grant opportunities
- Planning for incentives

Real Property Management

- Need for standards drive local assessors
- Parcel valuation
- Special tax districts
- Townships—sales studies for sales valuation
- Map foreclosures
    - forecast/track vacant structures to communicate to law enforcement
    - public health impact of unmaintained swimming pools
    - predictive analysis on housing values and resulting tax revenue
    - Hot spots analysis for complaints

Animal control/pet census
- Public health—making sure rabies vaccinations are done
- Revenue—collect on pet licenses

Data Standards – it is tough to determine a lowest common denominator to work from

BENEFITS FROM GIS IMPLEMENTATION

Reduce flow rate to treatment plant resulted in $132,000 savings in possible infrastructure costs

Improved workload planning using GIS

Legal cases made simpler or remove potential damages/liability
- Prove encroachment on easements or ROW
- Manage land development
- Recover costs for road infrastructure damage—value assets and seek $ from insurance company for damages
- Avoid liability—claim that a snow plow ran driver off road allowed AVL data to prove it wasn't a plow from County/Township

Lost opportunities minimized

GIS was used to support the police department murder investigation by mapping location with AVL and cell tower signals

Leak detection—comparing facility locations, weather, and fumes reported to identify source wasn't gas company but another manufacturer

Cost avoidance-shifting staff to higher level tasks once they are freed from redundant data maintenance

Pet licenses improved public health and revenue for programs

Improved maintenance—through work order management and making sure correct crews with correct equipment are dispatched to site

Permit application process streamlined (endangered species example)
- Added on-line form with GIS component
- Quickly found 80% have no impact—allowing 20% of time devoted to reviews to be spent on these with remainder on those that required careful examination
- Speed review of those requiring careful examination so as to not exceed required approval deadlines

Special assessment districts can identify impervious services for equitable taxation

Mailing of notices—identifying addresses with code required buffers—can be done very quickly and easily

Tree species diversity and ages can be mapped to better understand issues with tree replacement and management

Load balance of garbage collection—efficient routes and equitable quantities of collections

Provide bus routing information to citizens

Identify priority construction projects and make sure water/sewer projects are in sync

Pay back sewer costs through management of a recovery service benefit fee

Elimination of illegal discharges to surface waters

Received grant funding made possible through application of GIS
- Energy savings from appropriate routing of vehicles
- Reporting grant results to public and granting agencies made easy

Asset management generates a positive ROI with shift from predictive to reactive maintenance. Example cited was resurface of roadways prior to complete failure of payment or replace of water line prior to break.

Reduced printing costs from making data available on mobile devices—example of maps to location of call

Schedule service calls provide better service to customers and improved impression of organization

Validate correct mileage reimbursements being requested by staff—increased accountability

GIS CHARACTERIZATION—SPECIFIC DATA NEEDS

Data standards are needed for:
- Parcels
- Centerlines
- Content and format
- Mapping rules

Standard data models

Best practices for data development and maintenance

Metadata

GENERAL DATA COMMENTS

Local data is more detailed than state or federal data so little perceived benefit from working with those organizations

Need easy tools for data maintenance

SPECIFIC DATA NEEDS

Need a permanent base feature ID to support dynamic segmentations (Iowa as an example)

Need easy tools for data maintenance

Census geography—2010 Census data and past census geography boundaries and data

OBSTACLES TO GIS MEETING BUSINESS NEEDS

High cost of GIS software. Potential mitigation options

- Cost savings with open source software (Quantum, TatukGIS)
- State purchase enterprise license (ESRI)
- Review licenses actually required and reduce total numbers (replace ArcGIS with ArcView)
- Server consolidation
- Virtualization (desktop)

Organizational Structure/Coordination problems

- Need more ability to convey best practices
- State leadership for governance structure

Silos create competition for services and budget

- Improved communication
- Mandated reduction in redundancy—identify single responsibility for data maintenance

Data availability

- Needed data does not exist
- Data exists but is hard to find and access

Conveying need/justification for data from a multi-jurisdictional context

Staff to research products

Innovative staffing/resourcing

- Co-op programs with local universities can be problematic from a human resources department perspective
- Establish a clearinghouse for resumes of potential co-op or intern students

Union employees—changing their duties to include GIS

STEWARDSHIP AND COOPERATIVE PROGRAMS

State led data acquisition partnerships with local governments are viewed as a positive. Example: NAIP with opportunity for local enhancements. Issues include the NAIP standards don't meet local needs.

Microsoft Bing maps: issues with specific licensing terms and with the timing of the project relative to local budget cycles and deadlines for commitment.

Contrast Google Maps with more robust GIS data and tools.

CHARACTERISTICS OF SUCCESSFUL COLLABORATION EFFORTS

GIS Steering Committees were identified as being cooperative efforts that have lead to successes particularly in areas with limited resources and with a focus on data:

- Oakland County identified a committee that has been meeting on quarterly basis for 10 years to discuss issues and share needs
- SEMCOG has a group that meets made up of technical GIS users
- State MI GIS user group meets monthly
- SEMCOG Another area has quarterly steering committee meetings and technical working groups that meet monthly

Southeast Michigan Regional ortho photo project was an example of federal/regional/local/utility cooperation

- Needs of all partners were considered and flexible
- Cost savings were realized for all partners
- Local participation in structuring agreement
- Unified project management—a single organization responsible for management of all aspects of project
- Formal contract between SEMCOG (project host organization) and counties
- History makes cooperation easier. First time it took 3 years to put together, second version only a few months
- Group has history of working together and has built trust

A multi-jurisdictional parcel mapping program was identified as being a successful collaborative effort. It provides:

- A single hosted site representing cost savings on hardware and software
- Central data repository that assures data safety and availability
- Consistent format over multiple adjoining jurisdictions
- Standards are established and enforced
- No duplication of efforts saves staff time and resources
- Common data formats
- Technology is used efficiently

RoadSoft was identified as another successful collaborative.

- Money is available to maintain the software
- User feedback is used to drive further development
- A quarterly meeting of users is hosted via the internet
- On-line training is available
- The product is flexible
- Workflow is designed to pass information up the jurisdictional chain while still being useful at the lowest levels
- Technical assistance is available
- Negative: MGF data delivery schedule is out of sync with the Michigan Transportation Asset Management Council (TAMC) and the annual RoadSoft release
- Negative: RoadSoft is highly dependent on Michigan Technological University (MTU)
- There has been stability in the organization at MTU that develops and maintains the software
- This is an excellent example of a “funded mandate”

DISCUSSION OF THE MGF

Meeting was attended by 9 users and 3 contributors to MGF.

WHAT IS GOOD ABOUT THE MGF?

Provided data from outside of my jurisdiction

Free

Linear referencing system

Seamless for projects that are near county boundaries

Includes census data

Community boundaries are useful

WHAT CAN BE IMPROVEd?

Improved accuracy of geocoding services. Commercial services seem to provide better match quality

Spatial fit to ortho photos –Recommended Spatial Accuracy: +/- 6 feet, 1:2400 Scale

Funding to support local updates to the data

Web services:

- Traffic with road closings and construction projects
- Weather with wind speed and direction
- Address validation
- Base map service

WHAT DATA SHOULD BE ADDED TO THE MGF?

State right-of-way layers

Census blocks

Private roads (for geocoding and routing)

- Apartment complexes
- Condos
- Trail Parking

Speed limits

Elevation of features at intersections (overpass, tunnel, etc.) – This currently exists in the MGF as Grade Seperations.

Rail ownership

Feature points:

- Hospitals, health care facilities
- Shopping centers
- Shelters
- Schools
- Fire
- Law enforcement facilities (stations, jails, etc.)

Points of interest—for tourism

Parcel fabric (for zoning notification) (Statewide)

Sex offender registry

Road project notifications—what is undergoing construction and the projected project dates

County drains

Improved hydrology

- NHD
- Local contributions and updates
- Storm water management information
- Arc Hydro data model

Elevation data that is easy to access and use

Education

Best practices—common analysis methods and source code for useful tools

EAST LANSING APRIL 29, 2010

ATTENDEES

First	Last	Title	Organization
Ronald	Agacinski	Deputy Director-Engineering Division	Wayne County Dept of Public Services
Scott	Ambs	GIS Manager	Jackson County
Jeff	Bachus	Master Planner/GIS Specialist	Michigan Dept of Military Affairs
Benjamin	Barker	GIS Cartographer	Commonwealth Associates Inc.
Chris	Beland	Professional Surveyor	State of Michigan Office of Land Survey
James	Bennett		InfoGeographics, Inc.
Frank	Boston	Certified Photogrammetrist	MDOT--Geodetic Surveys
Katie	Bower	Assistant Division Director	Michigan State Police
Kevin	Bowman		CMS Energy
John	Bush	Drain Commissioner	Ionia County Road Commission
Jean	Cain	IT Manager	DTMB
Chris	Cantrell	GIS Coordinator	Midland County
Larry	Christenson	Manager	AeroMetric
Tim	Croze	Roadway Operations Engineer	MDOT-Division of Operations
Eric	Daley	GIS Manager	Eaton County
Brad	Danks	Engineering Aide III/GIS Tech	Genesee County Road Commission
Edward	Dempsey		Prein Newhof
Daniel	Dillinger	Information Systems Planner	Tri-County Regional Planning Commission
First	**Last**	**Title**	**Organization**
Stephanie	Doherty	MDTMB CADD Development and Support	
Brandy	Donn	Pavement Management Engineer	MDOT-North Region Office
Nick	Ekel	Remediation and Redevelopment Division	Dept of Natural Resources and Environment
Dave	Engelhardt	BCATS Director	Bay County
Tyler	Erikcson	Research Scientist	Michigan Tech Research Institute
John	Esch	Senior Geologist	Michigan Dept of Natural Resources and Environment

Lonnie	Finch	IT/GIS Director	Ionia County Road Commission
Dena	Fitzgerald	GIS Analyst	City of East Lansing
Edward	Fowler	Transportation Planner	Michigan DOT
Ty	Hosinger	Engineering Tech II	Road Commission for Oakland County
Michael	Hurd		MDOT
Merle	Johnson	GIS Manager	City of Ann Arbor
Brian	Jonckheere	Livingston County Drain Commissioner	
Mark	Jordan	Manager, Project Development Section	MI DOT
Dean	Kanitz	Transportation Engineer	MDOT-Operations Traffic & Safety
John	Kelly	Cartographer	Commonwealth
Bob	Kennedy	Web Developer	University of Michigan Transportation Research Institute
Keith	Lambert		
Tim	Lee	Assistant Commander	Michigan Intelligence Operations Center
Steve	Leese	Director	Eaton County 911
Marlio	Lesmez	Hydrologic Studies Unit	Michigan DNRE
Mark	Lewis	Structures/Area Engineer	US DOT, Federal Highway Administration
John	Lobbestael	Technician	MDOT
David	Lusch	Distinguished Sr. Research Specialist	MSU-Dept of Geography
Victor	Martin	Director	Lapeer County Central Dispatch
Raj	Mudaliar	Technical Lead	MDOT
Michael	Muskovin	Data/Radio Systems Manager	Ottawa County Central Dispatch Authority
Joyce	Newell	Transportation Planner	MDOT
Nick	Nolte	GIS Tech	Jackson County GIS
Jennifer	Osborne	Transportation Planner	MDOT-Urban Travel Analysis Unit
Theresa	Page		
Jesse	Parker	Operations Engineer	Tuscola County Road Commission
Shane	Pavlak	Sr. GIS Specialist	REGIS (Grand Valley Metro Council)
Bethany	Penn	DMUA	DMUA
Brad	Peterson	Landscape Architect/CSS Coordinator	MDOT
Andrea	Polverento	Planning Director	Watertown Charter Township
Sam	Quon	GIS Administrator	City of Lansing
Glenn	Radford	Statistician	Division for Vital Records, Michigan Dept. of Community Health

Wade	Renando	GIS Coordinator	City of Jackson
Dave	Rigney	Geodetic Advisor	NOAA
Everett	Root	Center for Geographic Information-DTMB	Dept of Technology, Management and Budget
Joshua	Ross	Geographic Framework Analyst	DTMB
Ron	Rushton	Permit Agent	MDOT
Sally	Sands	Crash Unit	Michigan State Police
Kenneth	Schapman	GIS Specialist	Michigan Farm Service Agency--USDA
Darcy	Schmitt	Planning and Zoning Administrator	City of East Lansing
Amy	Schoonover	Director of Public Works	City of Charlotte
Steve	Schreier	Traffic Records Program Coordinator	Michigan State Police
Randy	See	Program Officer	USGS
Jon	Sgtiegel	GIS Tech	Jackson County
Syd	Smith	Manager	MSP
Rob	Surber	Administrator	CSSTP
Mark	Swartz	Resource Conservation Section Manager	Michigan Dept of Agriculture
James	Tchorzynski	Infrastructure Analyst (MIOC)	Michigan State Police
Craig	Thelen	MIS Director	Clinton County
Michael	Toth	Transportation Planner, Asset Management Section	Michigan DOT
Sriram	Venkatasubramaniam	Data Architect	MDOT
Jeroen	Wagendorp	Chair	GVSU
Chuck	Walz	Utility	Jackson Co. Road Commission
Nicolas	Wheeler	Director	Hillsdale County Equalization & Land Information
Kelvin	Wixtrom	Photogrammetric Consultant Project Manager	MDOT Design Division
Erin	Wyrick	GIS Coordinator	Clinton County
Mike	Zonyk	GIS Analyst	GVMC

Additional Attendees:

Laura Blastic	Michigan Department of Technology, Management and Budget
Paul Harmon	Michigan Department of Technology, Management and Budget
Steve Aichele	USGS
Martin Roche	GeoPlanning Services
Peter Croswell	Croswell-Schulte Information Technology Consultants

MEETING AGENDA

1. Welcome and Introduction
2. Business Drivers and Business Needs for GIS
3. Identification of GIS Benefits
4. GIS Status and Implementation Obstacles
5. Specific Data Activities and Needs
6. Lunch Break
7. Overview of MGF
8. Characteristics of Successful Collaborative Programs
9. Data Stewardship and Access
10. MGF Detailed Discussion
11. Wrap-Up and Next Steps

MEETING NOTES

BUSINESS DRIVERS FOR GIS

Emergency management and response

- Chemical facilities
- Hazmat on rails and planning for plume or spill
- Prepare response for mitigation
    - Access to sites
    - Pond locations for fire suppression
- Crash/crime relations patterns
- Response resource distribution for efficient and rapid deployment
- Pre-planning and training
    - Prison Evacuation
    - HazMat response
- Call routing—who is responsible for response to 911 call?
- Identify impact of emergency on businesses
- Food safety concerns
    - Proper refrigeration
    - Infectious disease tracking
- Required for Next Gen 911

Fresh data

Addressing:

- Standards vary between USPS and QVF
- Geocoding difficulties when address format vary

Asset Management

Economic Planning

- Understanding the regional economy

Water Resources

- Track and report on water quality and supply for compliance with regulatory and planning requirements
- Support for terms of Great Lakes Compact (evaluating impact of water use)Recreational opportunities
- Quality of life
- Underground water
- Filed tile drains
- Strom drain management

Regional storm water management and the maintenance and modeling of complex systems

Real Estate Management—GIS support for tracking location and characteristics of public land/facilities and transactions (sales, leasing, and acquisition) of this land

- DNR Data requests
- Easement management-encroachments, sales of surplus property
- DOT—access to local data to save staff time on field work, reduce travel to county courthouses
- Identify public land and facilities that might be sold or acquired—possibility of revenue as well as support for public programs through more effective land management
- BS&A software linkages to data to support property appraisal for counties and townships

Statewide imagery for rural counties and parcel maintenance
Statewide acquisition plan for consistent new imagery

Visualization

- Infrastructure status and distribution (drains were cited as initial example)
  - ROI for drainage improvements—show who benefits and why
  - ROI – impact on domestic products
- Planning
- Management
- Build understanding of decision makers to improve the quality of decisions

Government to private linkage necessary to improve and update navigation data (in-vehicle GPS systems base data)

Access to parcel information

Historical photos necessary to:

- Research environmental contamination issues (data from as early as 1920s and 1930s)
- Encourage land donation to wildlife organizations—show dramatic changes in development over time

Economic and demographic data to support planning and decisions support

LiDAR/Hypsography data to enhance base map and hydrological modeling

Economic development

- Site selection on a statewide basis (state coordination with local governments)
- Brownfield re-development

Grant applications and management

Permit review—make sure that reviews are timely, staff is focused on most critical applications, and regulations are enforced

GIS is a requirement for some programs. For example: PA451 amendments—water withdrawals

Understand inspector proximity for efficient field staff use. If an inspector is "in the neighborhood" of something that may require inspection in the near future he may be able to do it while there saving another trip.

Make sure that work is done correctly. Example cited was a state road crew cleaning catch basins on a county road

Improved quality data at facility level—continuous updates of spatial data for facilities

Reporting to state—for example crime statistics

Data mining to improve understanding—web links and improve existing tools

BENEFITS FROM GIS IMPLEMENTATION

Insurance claims can be managed relative to crash data to make sure that state property is replaced if damaged (guard rails, signs, etc.)

Show complex issues quickly to support decisions

Public Safety prevention of loss of life and property

Meet Transportation Asset Management Council requirements

Make information available for future analysis

Reduced redundant traffic counts

Michigan Environmental Mapper offers:

- Staff savings
- FOIA reductions—self service access to information to answer citizen and media questions
- Better data
- Better interaction with citizens

Staff savings in managing drain improvement special assessments—identify properties and make sure revenue is collected

Historical review of features possible

Highway performance monitoring

Asset management allows for some costs to be avoided and others minimized

Digital topo production

Public education from simple maps and visualization

Agency looks competent in eyes of citizens by being able to quickly respond to requests

Commonality over data quality—private sector data may not be a accurate as public but it is the same over the entire area of interest.

Collaboration with private firms

Clean Water Act Phase 2 compliance

Attach data to common basemap allows for MDOT and local road commissions to share project info, road closing, and road condition information

Transportation asset management allows for a support for prioritization of capital expenditures

Simple viewers on-line provide access to information for people who need it

GIS CHARACTERIZATION—SPECIFIC DATA NEEDS

SPECIFIC DATA NEEDS

Section Corners

DEM Terrain Data

Boundaries
- -Centerlines
- -Fire Jurisdictions

Address Ranges and Points

OBSTACLES TO GIS MEETING BUSINESS NEEDS

Funding limitations

Poor access to resources (lack of staff to provide access/upgrades)

Lack of understanding/awareness of GIS and the potential value of GIS

Easy and cost-free access/integration

Fragmented, legacy data (hard to access)

Poor access to local data (e.g. parcels)

Institutional barriers to data access

Limitations of access
- Bandwidth for downloads
- Server capacity
- Drive capacity

Restrictive IT policies limit access

IT imposed costs make progress difficult

Insufficient data accuracy and resolution of imagery

Open records restrictions (access fees on public agency data)

Data volumes (e.g. LIDAR)

Staff skills limitations—ability to hire proper staff

Lengthy learning curve

Time/availability for training (technology management)

Software licensing and license management

Not enough "local/regional" conference opportunities

Low external demand from public, private sector, government entities. People that should be requesting information and analysis are not doing so—may lack understanding or what to ask for

Data consistency (lack standard coding and schema impacting integration)
- Parcel data—lack of consistent data standards
- Hydrography, drainage, utility data also have this problem.

Prevalence of project-by-project data gathers inhibits effective use and integration

Insufficient senior management level advocates and support
Trust Issues restrict collaboration
Boss says you cannot participate in sharing

Data management problems-local storage (on desktop) of old and incorrect versions of data

Lack of tools and practices to support/encourage collaboration—need improved governance
- Policy board needed to craft policies, best practices, etc.

Distributed data—use server based environment to support better access

Data standards are lacking
- Lack common data identifiers (a common key to link databases)
- Inconsistent naming (for crime records: arrest, charged, adjudicated)

Concerns about access limited by governments

- Fees charged and established by local governments for data
- Cost Vs. Revenue and the lack of understanding the total costs or charging for data

Changes in government leadership/elected officials result in change directives

- Formal GIS –related work plans and policies can put GIS program in better position when elected administrator or senior management changes.
- Lack of a mandate
    - Mandates with funding equal to required work are good
    - Mandates without funding or not enough funding are bad
- Link to MML, Association of Counties, Assoc. of Townships and other representative associations to validate actions and education newly elected officials to importance of programs.
- Term limits require frequent "re-orientation" of newly elected officials

Need benefit to encourage local participation. **What is the benefit for local governments?**

- Funding support for meeting or migrating to standards
- Cost-sharing of new data collection
- Others?

Possible unfair fee-based programs (crime stats are reported to state and state sells the information via an on-line service with on share returned to reporting agencies)

Difficulty in outreach…"getting the word out" to local entities on cost sharing opportunities

- Insufficient lead time
- Lack of synchronization in fiscal years for varies entities

Some counties have "outgrown" the need for MGF (they have better quality data, accuracy, timeliness issues)

Have Vs. "Have Not" Counties/areas—need to address the fact that the majority of counties in the state (low population areas) have limited resources to implement and maintain GIS programs and databases.

Tie to geographically reference documents

- Spatially index documents
- Issues of public record retention policies

Importance of data maintenance not valued

STEWARDSHIP AND COOPERATIVE PROGRAMS

What is the impact of data sales on stewardship?

- Private vendors use of the data drives much of the demand for selling data
- Tangible benefits from participation in collaborative efforts may reduce demand for selling data

Collaboration driven grants are a positive opportunity

Data should be viewed as infrastructure—critical to functioning of government and providing efficient services

TIGER modernization from MGF was cited as a positive example where everyone benefits from work done by state

Any collaborative effort requires clear articulation of roles/responsibilities

NRCS (Natural Resource Conservation Services) publication "Shall We Dance" provides a good overview of the type of collaborative agreements possible. Examples: strategic partnership, joint venture, etc.

There are issues with multiple groups modifying and maintaining separate hydrology datasets, watershed boundaries, etc.

CHARACTERISTICS OF SUCCESSFUL COLLABORATION EFFORTS

Eaton County E911 (a four county project)

- Server consolidation and backups
- Cost sharing
- Formal by-laws in place

Military/Veteran Affairs funding support for US National Guard Bureau for data capture, maintenance. The project focus is on having data available for sharing with others to provide a common operating picture.

- Security issues (anti-terrorism provisions)
- Use of GIS/CADD standards---Spatial Data Standards for Facilities, Infrastructure and Environment (SDSFIE) managed by the Corps of Engineers
- Issues with projection conversions

Shared solutions—NHD Federal partnership

- Shared data development costs
- Hosting provided
- Tools available
- Training available

NOAA height modernization and CORS maintenance

Jackson County collaboration with local Board of Realtors (example of public/private partnership)

- Data sharing on an informal basis
- Value of parcel data exchanged for ability to access private sector information on sales
- No exchange of money. just data
- County has a similar project with the Substance Abuse Council

State agreement with Microsoft is another public/private partnership example

Cropland data project with USDA, MI Agricultural statistics services, MUS, NAS

- Uses private satellite imagery
- Includes land ownership data

Ann Arbor-Washtenaw County joint IT services

- Driven by need for cost savings
- Formal governance structure
- New business case under development for GIs infrastructure consolidation
- Joint 911 dispatch center in place

- CLEMIS collaboration

MI Public Act 29 gives county authority to establish "telephone districts" for the collection of fees to support E911 implementation. Several other acts address fees and implementation for wireless 911. This is a local funding source with significant GIS impact.

Lansing, East Lansing, COG, USGS collaborated on LIDAR project

- Cost sharing
- Formal agreements
- Data in public domain

Genesee County had multi-department funding of GIS director

- Cost sharing
- Allowed position to be filled to benefit of all departments

LEIN (Law Enforcement Info Network) is a local, state, and federal collaboration

- Had a statewide governing board until recently
- Continues to function now that board has been dissolved by Governor

Jackson County has participation from municipalities, utilities on policy advisory board. Participation based in part on financial contributions. The board meets quarterly to discuss issues.

USGS has many project/contract based collaborations

Statewide governance

- Geolibrary
- Statewide focus

Joint participation for support of National Guard bureau

Statewide Structure would support collaboration

- Steering Committee generally too technical
- Need involvement from policy/decision makers
- Mechanism to "move" on recommendations and initiatives
- Center for Share Solutions has a good focus and the Cross Boundary Committee is a good start in this direction

DISCUSSION OF THE MGF

WHAT IS GOOD ABOUT THE MGF?

Easy to use

- Data access tools
- Good organization, intuitive for user

Beast way to get data for adjacent county or statewide

Free

Data Rich

Pretty up-to-date

Single statewide projection

Many data themes relatively up to data (but annual updates not sufficient for all)

WHAT CAN BE IMPROVED?

Synchronizing with RoadSoft releases and the needs of the Transportation Asset Management Council demands

DRG—problems with visual quality

Spatial accuracy limitations

- Mismatches in curves
- +/- 33 feet not sufficient for local applications

LRS need to update/migrate "event table" data when LRS is updated (new roads, route definitions)

Need for addressing and mile post points to support dispatch on highways

"Mining" data from RoadSoft from the MGF (e.g. # of lanes, signage, traffic volume, Act51 milages)

Improve linkages with Caliper at MDOT—Transcad and ESRI

Bridges should be represented as segments

Add Mile Markers or Highway address / referencing system

WHAT DATA SHOULD BE ADDED TO THE MGF?

SSURGO—could be added from the NRCS web sites

Addition of road data for private and seasonal roads, State forest service roads. Non-motorized / recreational trails

Structures as points

- CEPI—locations of public schools
- CSSTP has been asked by USGS to establish stewardship for HSIP data (hospitals, EMS, police, fire, etc.)

Watershed and drainage district boundaries

Elevation data associated with roads

Shared survey control

Migrant housing locations that do not have addresses (both licensed and un-licensed facilities).

Recreational trails (needed to promote tourism, for emergency response—search and rescue as well as wildfire suppression)

Legal border crossings

Utility corridors (above and below ground)

Park & Ride locations

MBSII—Michigan Business Portal information—including business locations and NAICS codes, employees, etc.

- Data needed to understand daytime vs. nighttime populations for transportation planning and emergency response planning
- Food safety issues
- Critical economic development information

Zoning and Land Use data

Souls and physical soil properties

All public land (as polygons) including federal, state, local

Consolidate multiple lakes layer to one source file

Bounder Crossings

Act 51 Certification length

Pumping Stations

Better watershed data

DATA PRIORITIES (WHAT IS NEEDED EVEN IF OUTSIDE OF MGS)

Section corners and quarter section locations

- Remonoumentation program
- Metadata is critical
- Issue of datum and adjustments

DEM and improved terrain data

- Storm water management
- Flood management
- Improved accuracy for ortho generation

Survey grade data to support facilities management

Parcel base—dependent on section corners—as a best possible location not a "legal position"

Building heights or number of floors for emergency response

Elevation data to compute slope

USGS topo hypsography

Hydrography—NHD including integration of storm drainage, drainage districts, etc.

Boundaries of jurisdictions and ESNs

Address data—specifically address range data. Solution to problems with cross-jurisdictional addresses that are significantly similar

Road data

- A simple attribute to differentiate the type of road (interstate, US highway, state highway, etc.)
- Surface type (paved going to unpaved for example)

Survey grade coordinates tied to visible features (identifiable in field and on imagery for quality control)

Critical infrastructure—issues of access limitations to certain types of utility/infrastructure data

Economic Development information

- Broadband data
- Pipelines and utility capacity information
- Site suitability information

Roads

- Indian/reservation roads
- Private roads
- Cross boundary roads for emergency response

Integration of NHD

POST MEETING NOTES & COMMENTS

This document is a listing of comments and additional information submitted after the conclusions of the five regional listening sessions.

NG9-1-1 AND GIS

Received from Michael T. Muskovin, Data/Radio Systems Manager, Ottawa County Central Dispatch Authority

I'd like to take the time to describe, in very limited detail, what I began to reference at the meeting. Internationally, 9-1-1 is approaching a fundamental change in the way that callers are reaching their local Public Safety Answering Point (PSAP).

Today, 9-1-1 calls are routed to the appropriate PSAP by way of the Master Street Address Guide (MSAG). The MSAG is a database of address ranges and their associated emergency response zones. The MSAG is referenced by the caller's telco in order to determine where to route the 9-1-1 call. While the MSAG can be verified against centerline data for purposes of QA/QC, the two are not synonymous. The MSAG, along with other call delivery and detail information, form Enhanced 9-1-1 (E9-1-1). With an E9-1-1 system, PSAPs may optionally deploy mapping systems that will plot the location of calls and incidents. In this way, GIS is a secondary or tertiary system for the operation of a PSAP.

In order to receive calls and location information from non-traditional devices, the 9-1-1 community is developing a system called NG9-1-1. Next Generation 9-1-1 (NG9-1-1) is changing 9-1-1 on a level as primary as call routing. In an NG9-1-1 system, telcos send a 9-1-1 call to an Emergency Services IP Network (ESINet). The ESINet is an IP network that may or may not be operated by a telco. Once the 9-1-1 call enters the ESINet, it is routed to an array of servers providing a multitude of services such as Location Validation Function (LVF), Location to Service Translation (LoST), and Emergency Services Routing Proxy (ESRP); all completely GIS-driven. The GIS systems within the ESINet makes it possible for 9-1-1 calls to be routed to the appropriate PSAP with supplemental data information that will assist first responders in locating and acting at the scene. In this way, GIS is a required primary system for the routing and deliver of 9-1-1 calls.

I'm afraid that the GIS community is not aware of this requirement for the operation of NG9-1-1. The level of accuracy required for this to function at the level needed by PSAPS is near 100%. It will take a monumental effort on the part of both 9-1-1 and GIS communities to make NG9-1-1 and accurate call-routing a reality.

To quote Lew Nelson, Law Enforcement Solutions Manager at ESRI, "GIS has traditionally been the paint job on the car. Now it is becoming the chassis." His words ring clear as the chassis for NG9-1-1 is GIS!

Additionally, the Center for Shared Solutions should be made aware of pending legislation to make matching funds available to build a statewide GIS system for the express purpose of providing routing of calls within the ESINet. While no detail has been including to identify the form or means by which this dataset should be developed, it is logical that CSS be involved if not tasked with this endeavor. House Bill 5622 (specifically page 4, line 6) can be found at http://www.legislature.mi.gov/(S(ldpybnb5yc1l2x45haeskhn4))/mileg.aspx?page=GetObject&objectName=2009-HB-5622

For more information regarding NG9-1-1 and its GIS components, see the NG9-1-1 Project page on the National Emergency Number Association (NENA) website http://www.nena.org/ng911-project

NEEDED USER FORUM

The following comments were submitted via e-mail by A Benjamin Barker, GIS Cartographer, Commonwealth Associates, Inc.:

The idea is to have a user forum similar to what is run through ESRI's User Forum. I noticed people who normally wouldn't talk to each other, because of varying reasons, were starting to discuss ideas and solutions with each other. If we had a discussion board/user forum specifically geared towards the MGF and its users, we, as users, could collaborate better. For example, imagine if Ottawa County 911 is having issues geocoding their rural addresses. They could create a post, or look to see if others are having the same issue. Ingham County's GIS Dept. may have a solution to the problem and can go online and post the solution. Often parties can be reluctant to share data but this way they could possibly get a solution to their specific problem without necessarily touching the data. A bonus with this proposal is solutions can be shared by the "haves" and the "have-nots" alike.

COORDINATING COMMITTEE NEEDED

Comment received from Steve Perry, Senior GIS Specialist, Southeast Michigan Council of Governments:

There needs to be an effort to create a Statewide Coordinated body that represents all facets of the geospatial community in Michigan.

STATE LAWS TO SUPPORT GIS AS CRITICAL DIGITAL INFRASTRUCTURE

Comment from Andrew J Hartwick, GIS Director, St. Joseph County:

My understanding is when Michigan's governmental GIS was in its infancy it got pigeon holed in with whatever department was attempting to champion it. Now that GIS has become more prevalent in everyday life, the desire for other departments to control it has increased (i.e. more data, more revenue, more personnel, etc). Some of these departments use the "its not a mandated service" to either keep them from becoming their own department or to attempt to place additional controls on them. This becomes a problem for governmental GIS practitioners because the majority of their time can be spent doing specific Equalization or Central Dispatch assignments, never getting to see its full GIS potential come to fruition. I believe State Law should be enacted to aid in the establishment and maintenance of local governmental GIS as a critical digital infrastructure.

FOCUS OF CENTER FOR SHARED SOLUTIONS

Comment from Andrew J Hartwick, GIS Director, St. Joseph County:

Also with the new name of Center for Shared Solutions I believe that they should focus more on "solutions" to usability rather than "solutions" of obtaining/creating/maintaining data that is already available through local governments. The State has the ability to create applications that are useful to local government and citizens of the State. This I did not see mentioned in the notes (perhaps I missed it). Software solutions could be the best leverage in getting a real data standard in place which local governments will want to use. An issue with creating data standards is that if you don't need them for your daily use, why do so when everything is working fine here? For example if there were a 911 mapping application housed at the State where locals could upload their datasets into and have the local dispatchers utilize these data, there would be a large desire to have standardized attributes and geographies throughout the local GIS departments. This could also relieve some of the burden of data maintenance at the State because participation from cities and counties who have no incentive to participate to get involved would start doing so. Applications like a centralized 911 mapping system could pave the way for other user friendly for-public consumption online dynamic maps.

COMMENTS FROM THE US DEPARTMENT OF INTERIOR (NATIONAL PARK SERVICE)

United States Department of the Interior

NATIONAL PARK SERVICE
Great Lakes Network Office
Suite D
2800 Lake Shore Drive East
Ashland, WI 54806

Providing Inventory & Monitoring services to: Apostle Islands National Lakeshore, Grand Portage National Monument, Indiana Dunes National Lakeshore, Isle Royale National Park, Mississippi National River and Recreation Area, Pictured Rocks National Lakeshore, Sleeping Bear Dunes National Lakeshore, St. Croix National Riverway, and Voyageurs National Park.

4/13/2010
Michigan Center for Shared Solutions and Technology Partnerships
GIS Business Planning and Framework Stewardship Meetings

The National Park Service maintains three park units in Michigan, Isle Royale National Park, Pictured Rocks National Lakeshore, and Sleeping Bear Dunes National Lakeshore. We are very interested in cooperating on acquisition, maintenance and archival of spatial data layers in Michigan. The Great Lakes Network is a relatively new program within the NPS, and our mission is to conduct long term ecological monitoring in and adjacent to National Parks.

All of our Network monitoring programs rely on spatial data, thematic data layers, aerial photography, roads and parcel data, and others in carrying out this mission. In particular, the land cover monitoring program is primarily based on remote sensing techniques, and we currently budget for acquisition of high resolution aerial photography on a six year rotation for each of our parks.

We strongly support efforts to bring together various public and private funding mechanisms to provide for greater efficiency in acquisition of spatial data, in particular, aerial photography, providing for data availability to a broader user community. These efforts also build stronger working relationships for voicing our related data needs, development of data standards, as well as sharing of resulting analysis, information, and reports. NPS funding is committed to ensuring these datasets are available in the public domain, recognizing that the public should have access to data paid with public dollars.

Our primary need for aerial photography is spring, leaf-off imagery, preferably at 0.15 – 0.2m (6 – 8 inch) resolution. We also find the NAIP imagery to be of value, and we support acquisition of all four image bands when flown with digital camera. This year, we provided funding to a state-wide program in Wisconsin (Wisconsin Regional Orthophoto Consortium – WROC), rather than as an individually contracted flight, and believe efforts such as this provide for the best use of public funding to the larger user community.

I would appreciate being informed on any on-going efforts in developing data sharing opportunities, and we are in a position to contribute funding for aerial photography acquisition pertinent to our park areas.

Ulf Gafvert
GIS Coordinator
Great Lakes Network
National Park Service
2800 Lake Shore Drive, East
Suite D
Ashland, WI 54806
715-682-0631 x22
ulf_gafvert@nps.gov

ADDITIONAL OBSTACLE AND DIFFICULTY COMMENT

Comment received via e-mail from John P. Lobbestael, P.S., Michigan Department of Transportation, Highway Development - Real Estate Technical Unit:

I attended yesterday's Listening Summit in Lansing. A few things have come to mind since - specifically under the category of "difficulties / obstacles:"

1.) Standard Coordinate System / Map Projection: I did not hear anyone mention that we have a legislated coordinate system in Michigan - as defined in Public Act 9 of 1964, as amended. In my opinion this piece of legislation is vague in defining who, exactly, must comply...but never-the-less it should be evaluated / addressed in your business plan under the topic of standardization of projection/coordinate systems.

2.) Geodetic Control:
a.) Digital Elevation and Terrain modeling is currently being performed relative to an obsolete / degraded national vertical control system. Mr. Rigney of NGS/NOAA briefly mentioned height modernization in yesterday's session. The importance of addressing / improving such foundational elements can not be stressed enough. To date the Height Mod program is underfunded and progressing very slowly.

b.) Geodetic control we reference as a basis for locating objects on the earth's surface, has dynamic values yet most GIS systems are rarely updated when NGS/NOAA performs mathematical updates to the control system.

3.) Occupational Code / Licensing Issues:
Michigan's Occupational Code (Act 299 of 1980) clearly limits some cartographic mapping functions, geodetic surveying, the management of "land information systems through establishment of datums" and other GIS/Survey activities as functions of the licensed surveyor...yet many stakeholders have encroached upon these legal boundaries...performing functions beyond their training / capabilities.

That being said I think it is reasonable that a GIS professional licensing program be considered in order that functions of the GIS professional are clearly defined.

GOVERNANCE COMMENTS NOT FULLY DOCUMENTED

Comments received from James Bennett of InfoGeographics, Inc.

June 4, 2010
Martin Roche
President/CEO
GeoPlanning Services LLC

Martin,

The following are some comments to date about the listening sessions I attended and the summary/appendices.

At the Gaylord listening session there was a discussion about governance, statewide coordinating councils, and the need for fair representation and some level of authority in a governance structure. Though it was agreed that some are more or less successful, North Carolina was brought up as an example of a good, effective one. This discussion did not make it into the notes for this meeting or the summary, contrary to an email from you dated 4/30/10. I insist that this discussion be documented in the session notes at the very least.

At the East Lansing listening session there was an extensive discussion about governance, statewide coordinating councils, and the need for fair representation and some level of authority in a governance structure, and the success that such a structure breeds. An overview of what a statewide coordinating council type of governance entailed was offered. Many comments were brought up by various members of the audience, including a good one about a resource (software program?) that can help evaluate and decide what governance structure is appropriate given input parameters. This discussion did not make it into the notes for this meeting or the summary. I insist that this discussion be documented in the session notes and the summary in more than cursory fashion.

At the IMAGIN conference, during the Membership Meeting, an overview and discussion of statewide coordinating councils and governance was held. This concluded with an attending membership vote of probably around 150 GIS professionals that unanimously approved to move towards a representative council with some level of authority over statewide GIS efforts. More exact wording that was used for the vote can probably be acquired from Scott Ambs, the moderator and President of IMAGIN. This discussion and vote did not make it into the summary. I insist that this discussion and vote be documented in the summary.

Also at the IMAGIN conference, I had a 15± minute conversation with Peter about the project and overall situation. I tried to give as many constructive, salient comments and opinions as I could in that limited timeframe. Though Peter had a pad of paper and pen next to him the whole time, there was not one thing written down and to my knowledge this input was not documented in any way, nor did it make it into the summary or appendices. I strongly object to this.

No formal interviews were done with anyone from the Michigan-based private sector, tribal agencies, or not-for-profit organizations. There was only one municipal level interview, in my opinion not sufficient for this segment of stakeholder. I find this area of project input very deficient.

In general, I insist that all notes for the individual interviews and all comments gathered through any means, be it the survey, email, or otherwise should be documented and included in the appendices for this project. Names could be taken off if that would make it more protected and palatable but the good, the bad, and the ugly must be transparent. This includes these comments.

If you would like to discuss this, please contact me by telephone at (231) 995-8266 ext.100, or via email at jbennett@infogeographics.com .

Sincerely,

James A. Bennett, President

InfoGeographics, Inc