

Workshop Minutes
from
The Digital Hydrography Data Development Stakeholders Meeting

Lansing Holiday Inn Conference Center
Lansing, Michigan
April 15-16, 2002

	Artificial Path	Connectors	Themes	Scale/Accuracy
Dave Lusch	Need to capture divergent for modeling	<ul style="list-style-type: none"> Hydro Studies Unit, LWMD – Noncontributing Areas have been delimited in many areas of Michigan State University They've done all connectors in the UP Have county drain maps for 43 counties to consult for "potential flow connection" Flow direction on drains in county soil surveys What happens at dams re how connectors become part of a reach. 	<ul style="list-style-type: none"> Need "Legally Established Drains" Connectors for drain enclosures <p>SWAMPS</p> <ul style="list-style-type: none"> Use 100k Swamps Check against Drg Only where connectors are being considered <p>OTHERS</p> <ul style="list-style-type: none"> Dam ID's (MSU, LWMD, DEQ) Waterfalls (Fisheries, GLEAS) (GNIS, MIC) Culverts (modeling, fish, flood, flows MDOT) <p>PT 301 requirement: All lakes \geq 5 acres Islands – only important for encoding divergent flow in riverine systems</p>	<ul style="list-style-type: none"> From a modeling or habitat perspective positional accuracy is less important than shape (sinuosity) Cartographic needs desire "hand-in-glove" fit at DOQQ Only needed for divergent flow If present in framework, re-position per "the standard" If not present on framework, put in a point feature (placeholder) so we can go back in the future)

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Mike Beaulac				<ul style="list-style-type: none"> • NMAS: 1:24K (min) • GPS: DGPS (preferred) autonomous (min) • Islands: One acre (desireable) 5 acres (acceptable) • Lakeshores: ± 40' • Streams & Ponds: ± 40' accuracy • Acceptable minimum size standard: ponds: 5 acres (size) • Lake acreage: 5 acres (size) • Minimum stream width: 6' (drains) 1-24k local and fisheries needs dictate delineation of drains • Detail: (oxbow, split channel): general pattern and shape is needed but not the "absolute" details (details could be included in attribution, DOQ, etc.) • Single vs. 2-banks: single line is fine but must follow thread of river <ul style="list-style-type: none"> ○ Major rivers, shipping channels, ○ 100 county apps (desired standard) 200 state apps (minimum standard) for double bank • Single - double bank transition: <ul style="list-style-type: none"> ○ (desired) - 100' - county apps (cartographic) ○ (minimum) - 200 - state apps (good) • Neighboring jurisdiction: •

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M Beaulac cont....				<ul style="list-style-type: none"> ○ Need whole watershed in neighboring states for fisheries/ecosystem management ○ Flow management • Number of intermittent streams: if viewable and verifiable • • Width: 6' is desired <p>Minimum standard Importance of headwater tribunals: Yes: needed for fisheries controls hydro characteristics (flow) environment protection issues (no standards were provided)</p>

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Paul Seelbach	<ul style="list-style-type: none"> Necessary component Cartographic require accuracy Potentially misleading e.g. culvert placement <ul style="list-style-type: none"> Local project scale Consultants rely on basemap, framework is viewed as "true" (permits etc) Need process for fine scale revision by locals 		<p>Drains & Headwaters Intermittent Comprehensive</p> <ul style="list-style-type: none"> Needed for MDOT for counties Legal designations Names Private forest mapping - initiatives Very numerous <p>SWAMPS & Floodplains</p> <ul style="list-style-type: none"> Longterm goal - completeness and accuracy would be used Need short term plan - use available to create initial model With ability for local upgrade <p>SWAMP Sources</p> <ul style="list-style-type: none"> On site - soils good (digitized) <p>First Cut</p> <ul style="list-style-type: none"> NWI widespread use acceptance 1:24,000 USGS/Dem? County - but inconsistent across state? <p>PONDS</p> <p>Oxbow, Meander Details</p> <ul style="list-style-type: none"> Streams shown should have accurate channel Oxbows, bayous, double banks shown for larger rivers \geq (3rd order) 	<p>Positional Accuracy Issue of credibility/ re overlays Use best available data For Hydrography - live with positional glitches For local/project communications use something else</p>

Significant Features: Bridges, Culverts, Dams (Ladder=ATTR), USGS gages, Flow Stats

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<p>Lidia Szabo Marshall Strong David Borgeson Ed Baker Carol Finn</p>		<ul style="list-style-type: none"> • Yes we want connectors because re: private waters - connection to state H2O • Disease invasive species issues - fish must come from dire? Free h2o • Stocking fish permit needed to stock from dis. Free • Habitat connectivity for wildlife needs to be a strong hyp. Deer along revering systems set state wide protocol needed • NHD needs a protocol - through MI • Consistency need (ex. P. 13) connect and artificial paths thru 		<ul style="list-style-type: none"> ○ 3-5 acres for trout ○ Fish Div Resource Inventory Program min 10 acres • All water bodies created by dams and legal lake level structures (set by the court) • Add a point to photo identified water bodies • FS - if it's identifiable on the photo its important to wildlife, habitat, stand openings • Could be a point feature <p>Minimum Stream Width</p> <ul style="list-style-type: none"> • Streams that are connectors need to be included regardless of width <p>Double vs. Single Line Stream</p> <ul style="list-style-type: none"> • Fisheries - surface area calculations • FS-stand, area, land calculations • Stream as a polygon • 33'feet wide, represent by 2 lines • Working w/LIDAR data • Identifies points in water <p>Headwaters - Reference ws boundaries & DRGs</p> <ul style="list-style-type: none"> • Calculating flood discharge <p>Sediment transport</p>

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<p>Lidia Szabo Marshall Strong David Borgeson Ed Baker Carol Finn Cont...</p>		<ul style="list-style-type: none"> • DOQQ and QAD check to add connectors and artificial paths • Protocol if seasonal connector a once established... • These connectors - do they allow for important fish/water movement - now do we need 2° attribute <p>1-3 strong to very strong evidence for connector existing app on DOQQ and QUAD, on DOQQ not QUAD to include connectors</p> <p>Topo tie-in-train to interpret multiple factors when assigning connector for consistency throughout staff</p> <p>Wetlands - to include: Adding wetlands/extra attribute Limitations in size/software</p> <ul style="list-style-type: none"> • Any level of detail would assist it'll be nice to intersect w/ a wetlands 		

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Everett Joel Enking Richard Jodoin Jim Breck John Clark	<ul style="list-style-type: none"> No matter where it is in lakes/ivers Need H2O channel will be stable - route fish may be if dams are removed...you'd want to know 2x banner streams/oxbows/sinuosity width of 50ft of river - oxbow/ratio of sinuosity to length oxbows need to closely represent (not exact) or we'll use something else Business Practices - Wildlife, Federally regulated 		Oxbows/Split Channels- Add <ul style="list-style-type: none"> Sinuosity Important fish habitat Contaminant deposition Stream classification Modeling Change over time - need details at the beginning 	Minimum Positional Accuracy Shorelines feature fit repositioning source <ul style="list-style-type: none"> Lake area calculations <ul style="list-style-type: none"> Regulated lake treatments Vertical integration of land features. Hydro is often a boundary Public confidence in GIS analysis <ul style="list-style-type: none"> Court cases Inlet details <ul style="list-style-type: none"> Fish spawning habitats Lakes in photos not in FW <ul style="list-style-type: none"> Fisheries

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Everett Joel Enking Richard Jodoin Jim Breck John Clark CONT...		<ul style="list-style-type: none"> • What ever connectors are added....Keep connectors but rationalize • Conn/art. Paths <p>Need consistency ✓</p> <p>Connectors - Dams-fish banners, wildlife, H2O focus Intermittent 3rd att - legal Activity water extensions - streams protection/drainage off channel Private ponds Proximity dictates burning requirements Legally defensible data Streams Drains direct unknown</p>		

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Rob Surber Rep's AG, County-Allegan, DEQ, MIC, Spicer Group representing counties and locals cont...	<ul style="list-style-type: none"> • 			Minimum Lake Acreage? Definition of lake needed Adding lakes not as important as adding streams If county really needs it work with the state Minimum Pond Size Definition of pond needed Adding ponds isn't as important as adding streams If county really needs it work with the state Minimum width of stream Add what can be seen work with locals for adding additional streams. Oxbows, Split channels Current information is probably sufficient Oxbow class or? Type possibility?

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<p>Mike Donovan Forest service DNR Army Corp MIC</p>				<p>Absolute Accuracy - Attribute Accuracy Relative Accuracy - Completeness ✓</p> <p>Island Size? Important recreationally Cartographically Potential habitat If you can see it on DOQQ map it. < Acre</p> <p>Positional Accuracy? Lake shores, streams, ponds All features need to have same match to DOQQ - 1:12,000 positional accuracy ✓ Hydro needs to match transportation layer - single largest impact on hydrology</p> <p>Completeness ✓ Minimum mapping unit What are 1:24,000 rules 1 Acre</p> <p>Lakes Ponds - Water body See it on DOQQ - map it ✓ Wildlife - habitat Highly variable in size - temporally How often do you update?</p> <p>Streams - see it on DOQQ map it - Don't remove any existing</p> <p>Two Bank Streams- need for cartographic purposes - recreational purposes, indicates types of fish wmm. 15 meters or greater. Shape - Shape is critical get detail Oxbows - Include relate to river energy dynamics. Interstate: variable depends on system crossing boundary Headwaters/Intermittent Don't' lump all non-perennials together there is a difference between ephemeral and intermitted Extend where you can see them and fit minimum width reg for streams. Don't remove if already in network even if can't see.</p>

- USFS - ownership/or not
- Polygon attribute > .5 acre in size
- Medium detail for shore outline

Fisheries Indicator of shallow water

- Keep all islands in FW
- Lake area calculations within 3%
- Lake perimeter
- Island Perimeters

Lake level and photo date

FEED BACK NOTES

1. Do you know of other stakeholders who should be a part of the digital hydrography review process? If so, please list their names and organizations below.

- Michigan Association of County Drain Commissioners (MACDC)
- Steve Holden – SWQD, DEQ
- Mike Sweat – USGS (887-8915) mjsweat@usgs.gov
- FEMA – REP
- Kurt Kowalski, USGS
- US Fish and Wildlife Service
- NOAA: Weather Service
- National Park Service
- FEMA
- Ducks Unlimited
- Trout Unlimited
- American Rivers
- River Network
- American Fisheries Society etc.
- Similar Public Interest, Environmental, Water, Aquatic organizations. (Some may contribute funds as well)
- Several DNR Wildlife Specialists, I will share information and results via website with them.
- MDNR – Fisheries Research Representatives
- Yes, Ducks Unlimited – Rob McCloud
- Counties – Like Delta County GIS
- Trevor Floyd – St. Clair County
- NRCS/FSA? Drain Commissioners – IMAGIN E.D. facilitate data sharing with local units
- Fish and Wildlife Service, East Lansing Office
- County Planning Departments, Michigan Association of County Drain Commissioners
- FEMA; Digital Flood Insurance Rate Maps should use the NHD framework; LIDAR data is higher resolution; importing these DEM layers is important; US Fish and Wildlife; MACDC)
- John Wuycheck – MDEQ/SWQD
- Bill Creal – ""
- Mark MacKay, MDNR Fisheries Division
- Two key individuals for Wayne County were in attendance, Sue Ann Hanson and Andra Mealey. There is a wealth of information on the Rouge watershed that can help with the development of the NHD. There are many individuals including Wayne County staff and consultants that have worked on the Rouge Project for many years who can provide input as needed. Information on other areas of Wayne County may not be as detailed but is available as well.
- FEMA Flood Mapping Modernization Program

2. Would you like to be kept informed as the review process continues?

YES –31

NO - 0

3. Do you have any comments or suggestions that were not discussed during this meeting?

- Keep system simple enough so it can be available in this decade. Also, make it so other things can be added later.
- Would have been good to have various examples of scales and accuracy posted on walls for reference purposes: maps, photos, etc. to become familiar with limits on size and shape.
- Session was well-designed, well-managed, just long enough to complete the mission of the meeting; Make sure you get the broader range of stakeholders, see above; many publics will access and use this information.
- Will email Steve Miller (I talked to Steve at end of meeting)
- Great meeting! Thanks for the invite. Please don't start meetings on Monday. Too far to drive on a weekend.
- Not at this time. Thanks for the opportunity to comment
- More about how to include attributes for features
- FYI: Tourist info says Michigan has 11,000 lakes, so lakes down to 4 acres need to be included to make this count.
- Verify that the need for connectors is correct. Some of the information from the topo maps may have been lost during digitizing
- Should we start encouraging training on 1:100,000 NHD? Migrating data and creating tools/ using tools available; local input feedback mentioned as extremely important, need tools for feed back, IMS site? Other tools? How do we keep interest from dying over long process? Generalization- need to mark where more detailed/more generalized, Need to be able to query out high detail for cartography/consistency in modeling; Metadata – in editing need to track what was done and why, when. Source for change important; "Legally defensible"-what is the state's responsibility?
- Potential sources of training were mentioned but only briefly. Training would be a valuable part of NHD
- Purpose to have available scripts for ArcView 3.2 for use by others. Provide these to ESRI for tools in updates, LWMD, HSA has developed many; We have done connectivity's for streams in the U.P name changing needs to be controlled; connectors should be added when they can be documented; Where do Digital Elevation models (DEM's) fit in? Who will store this data layer? FEMA's standard is to use DOQQ's as background; Need ability to incorporate best available DEM's into layer.
- Mark has dam locations that were spatially corrected using DOQQ's. He would like to contribute them to NHD. His phone is (989) 275-5151 x2072
- will follow up with Charlie Hickman regarding a small amount of money left over from project several years ago where the Rouge Project contracted with the USGS to create digital topo contours for the Rouge watershed. We would like to use this as "seed money" to get the NHD high res project going in Wayne County, particularly for the Rouge watershed. Sue Ann Hanson and I would like to be considered the data stewards for Wayne County for this project. Hopefully, there will be continued interaction among the group you assembled for this meeting. Perhaps an NHD Michigan User Group (or some similar group) could be formed that meets regularly to discuss the project. This group could meet at the yearly IMAGIN Forum.

Name Scott Zeeb
Organization Michigan Dept of Ag
Area of Expertise Conservation Reserve Enhancement Program

Name Michael Beaulac
Organization Michigan Dept of Transportation
Area of Expertise GIS, Surface Water Resources

Name Ralph Reznick
Organization Michigan Dept of Environmental Quality, SWQD
Area of Expertise Engineer – Nonpoint Source Program

Name Richard Jodoin
Organization USGS, WRD
Area of Expertise GIS

Name Dave Gerczak
Organization USACE – Detroit District
Area of Expertise Photogrammetry, Remote Sensing, GIS

Name Russell LaFayette
Organization USDA Forest Service
Area of Expertise Forest Hydrology/Water Quality

Name Marshall Strong
Organization Michigan Dept of Natural Resources, Wildlife Division
Area of Expertise Biology/Ecology, GIS and Mapping, Remote Sensing and GPS Work

Name Andrew Lebaron
Organization Michigan Dept of Environmental Quality DWRPD
Area of Expertise GIS

Name Tracy Aichele
Organization MSU Center for Remote Sensing and GIS
Area of Expertise GIS Technology/ Tool Development Haming/ Metadata

Name Robert Haas
Organization Michigan Department of Natural Resources
Area of Expertise Fisheries

Significant Features: Bridges, Culverts, Dams (Ladder=ATTR), USGS gages, Flow Stats

Name G Elling

Organization Washtenaw County Drain Commissioner

Area of Expertise Stormwater Management

Name Charles Hickman

Organization USGS

Area of Expertise National Mapping

Name Hope Croskey

Organization MDEQ, Land and Water Management Division

Area of Expertise Hydrology-Hydraulics-Watershed Delineation, Floodplains, Dam Safety

Name Matt Staron

Organization MDEQ/SWQD

Area of Expertise Environmental Engineering

Name Troy Zorn

Organization MDNR Fisheries Division

Area of Expertise Rivers, Fish

Name Joel Enking

Organization Ottawa National Forest

Area of Expertise GIS/DATA Development

Name Kurt R. Newman

Organization MDNR

Area of Expertise Fisheries, River Processes, Geofluvial Morph

Name Kyle Kruger

Organization MDNR

Area of Expertise Fisheries

Name Scott Reynolds

Organization MDNR

Area of Expertise Computers

Name Thomas Peek

Organization MDOT

Area of Expertise Environmental

Name Jim Breck

Organization MDNR Fisheries Division

Area of Expertise Fish and Lakes

Name Mike Donovan

Organization MDNR

Area of Expertise I'm Trying

Significant Features: Bridges, Culverts, Dams (Ladder=ATTR), USGS gages, Flow Stats

Name Thomas Behrendt

Organization USGS

Area of Expertise Surface Water Data

Name Scott Maki

Organization US Forest Service – Hiawatha National Forest

Area of Expertise GIS Hydrology

Name Rosemary Anger

Organization Barry County

Area of Expertise Local Mapping

Name Mark Irwin

Organization MDNR (IFR)

Area of Expertise NHD Production

Name Sherman Hollander

Organization MDNR

Area of Expertise _____

Name Russell LaFayette

Organization USDA Forest Service

Area of Expertise Forest Hydrology/Water Quality

Name Andra Mealey

Organization Wayne County Dept of EWMD

Area of Expertise GIS Geology

Name Laurie Prange-Gregory

Organization MDNR

Area of Expertise GIS

Name Carol Finn

Organization USGS Mid Continent Mapping Center

Area of Expertise HR NHD Production Training and Expertis