



# **METRO STORMWATER GEODATA PROJECT**

**Update to Metro Chapter of the  
Minnesota Association of Watershed Districts**

**July 17, 2018**

**Capitol Region Watershed District  
1410 Energy Park Drive, Suite 4  
Saint Paul, MN 55108**

Geoffrey Maas, GISP  
MetroGIS Coordinator



# METRO STORMWATER GEODATA PROJECT

**What is it?**

**What are we doing and why?**

**Recent events and progress**

**Who is doing what?**

**What's next?**



# METRO STORMWATER GEODATA PROJECT

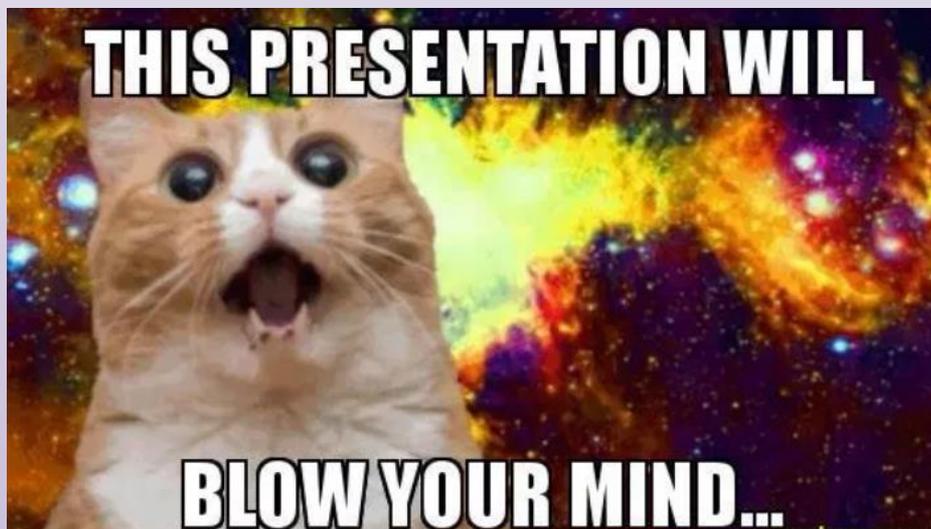
What is it?

What are we doing and why?

Recent events and progress

Who is doing what?

What's next?





# METRO STORMWATER GEODATA PROJECT

## What is it?

A voluntary, multi-agency effort to clearly define the business needs for standardized stormwater geodata;

Develop a data transfer standard;

Develop a workflow to produce a metro-wide dataset;



# METRO STORMWATER GEODATA PROJECT

## What are we doing?

- >> Document **general and specific business needs for stormwater geospatial data**
- >> Develop a data transfer standard that meets these needs
- >> Research on the legal and policy aspects of sharing data
- >> Inter-jurisdictional pilot project (proof-of-concept)



# METRO STORMWATER GEODATA PROJECT

## What are we doing?

- >> Document **general and specific business** needs for **stormwater geospatial data**;
- >> Develop a **data transfer standard** that meets these needs (in progress)
- >> Research on the **legal and policy aspects** of sharing data
- >> **Inter-jurisdictional pilot project** (proof-of-concept)



# METRO STORMWATER GEODATA PROJECT

## What are we doing?

- >> Document **general and specific business** needs for **stormwater geospatial data**
- >> Develop a **data transfer standard** that meets these needs (in progress)
- >> Research on the **legal and policy** aspects of sharing data
- >> **Inter-jurisdictional pilot project (proof-of-concept)**



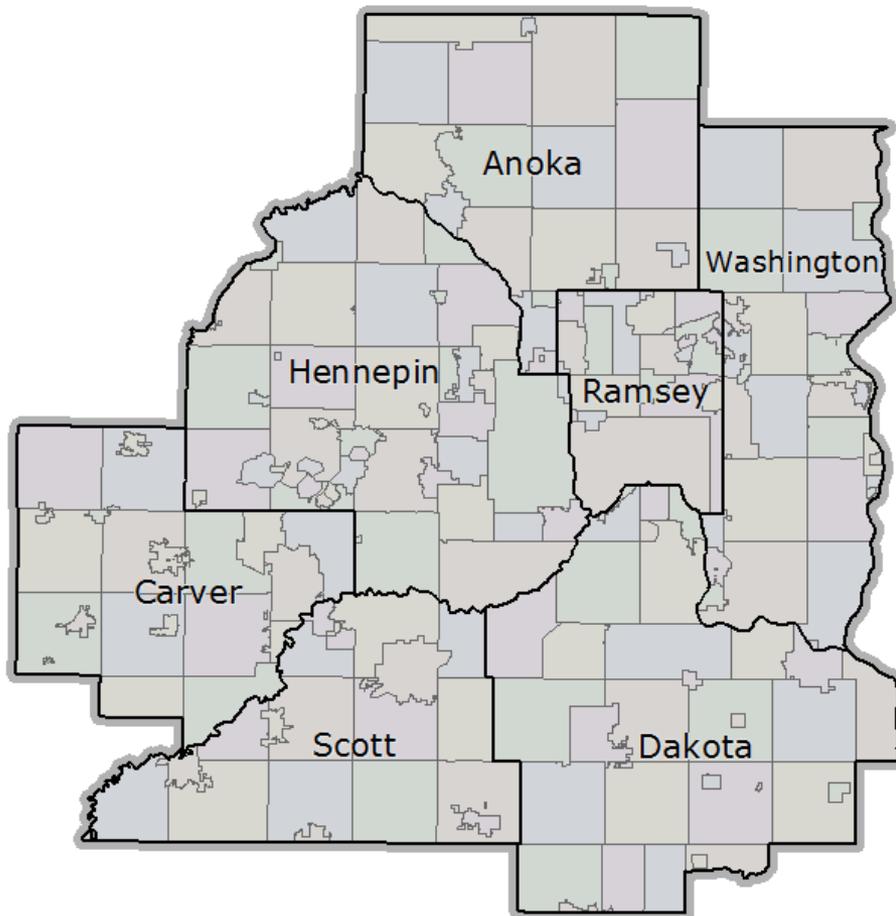
# METRO STORMWATER GEODATA PROJECT

## What are we doing?

- >> Document **general and specific business** needs for **stormwater geospatial data**
- >> Develop a **data transfer standard** that meets these needs (in progress)
- >> Research on the **legal and policy** aspects of sharing data
- >> **Inter-jurisdictional pilot project (proof-of-concept)**



# Why we are doing this...



**182 Municipalities**

**7 Counties**

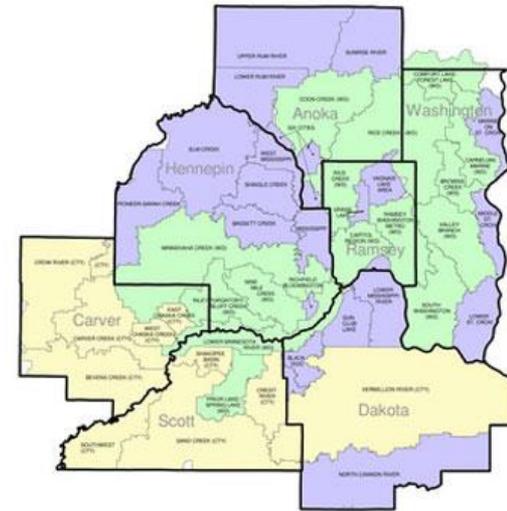
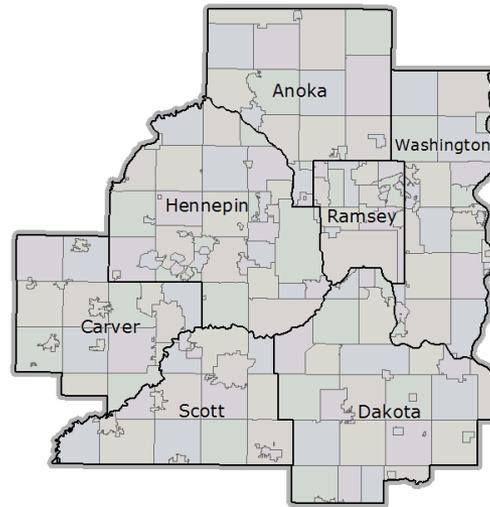
**State, Regional, Private Systems**



**44 WSD/WMOs**

# Why we are doing this...

All are creating and maintaining their data...



...in **different formats/schemas;**

...using **different platforms (CAD, GIS, etc.);**

...in ways where they are **not matching** at boundaries;

...with lack of clarity on **what can be shared** (policy);



# Railroad development in the U.S.

**By 1860s:**

**Seven (7) different gauges were in use in the U.S.**

**In 1862:**

**Congress made 4' 8½" standard for trans-continental lines  
Southern states had seceded (mostly using 5' gauge)**

**1886:**

**All tracks  
converted  
to 4' 8½"  
standard  
gauge**



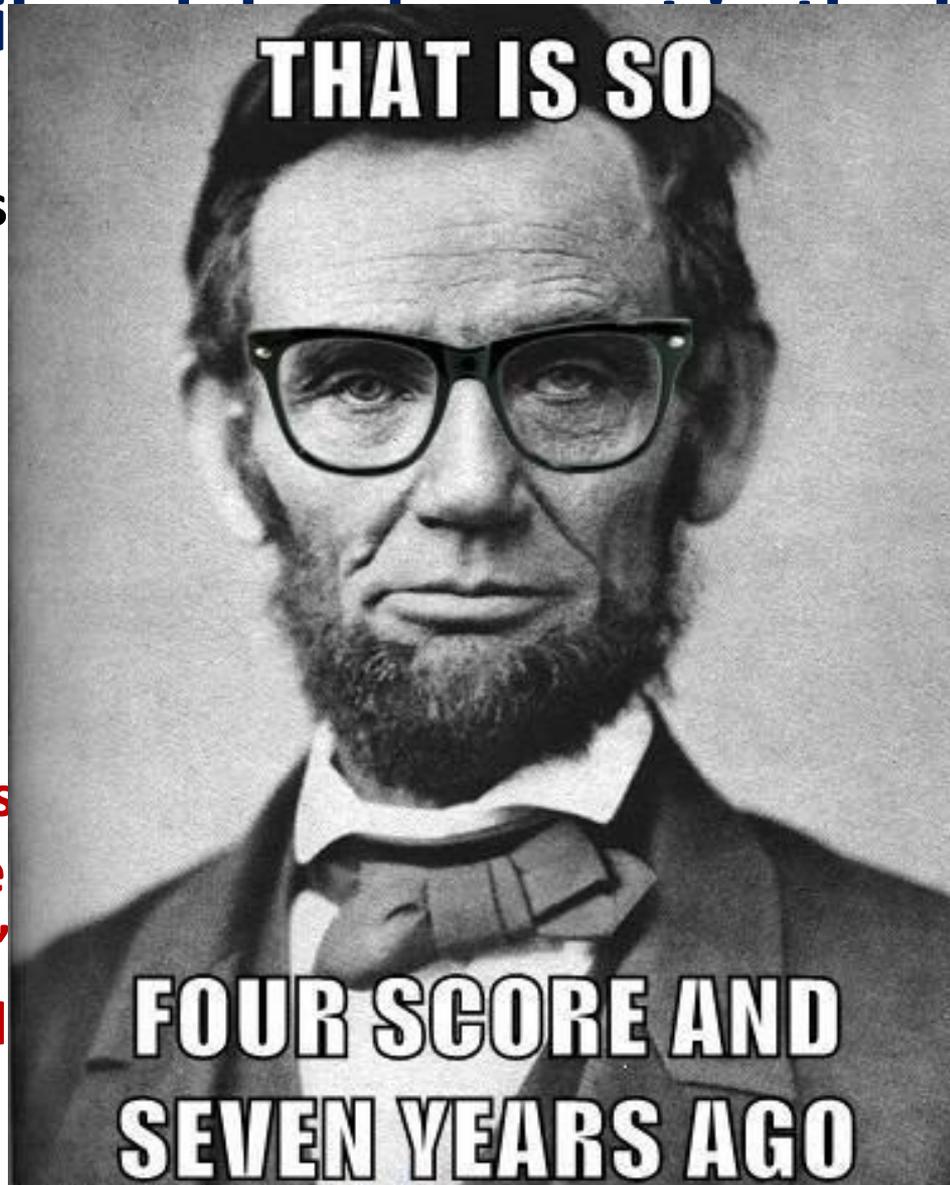


# Railroads in the U.S.

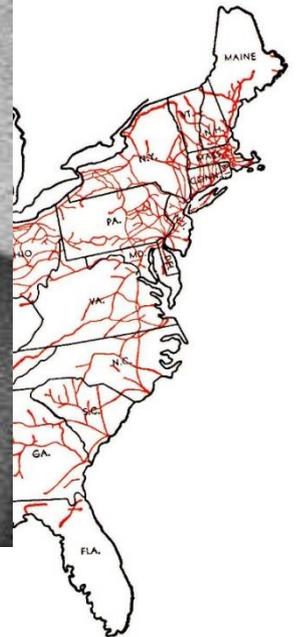
By 1860s  
Seven (7)

In 1862:  
Congress  
Southern

1886:  
All tracks  
converted  
to 4' 8½"  
standard  
gauge

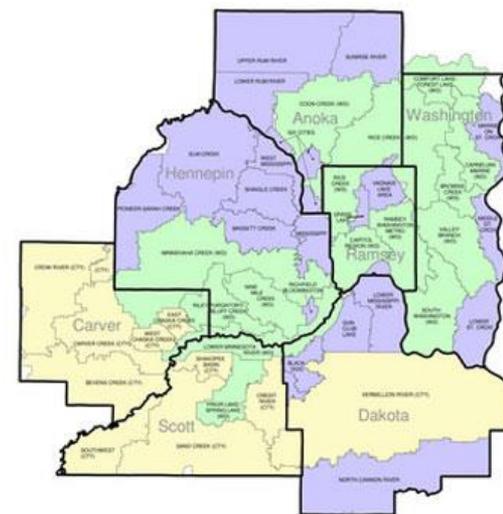
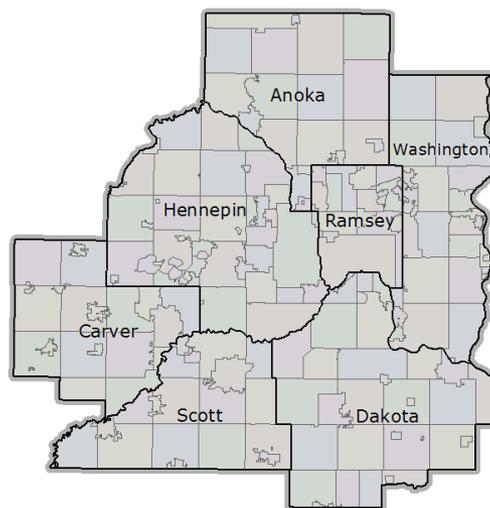


Central lines  
(gauge)



# *Why we are doing this...*

**At present there is no:**  
**Adopted Standard**  
**Best Practices Doc's**  
**Clarity on data policies**



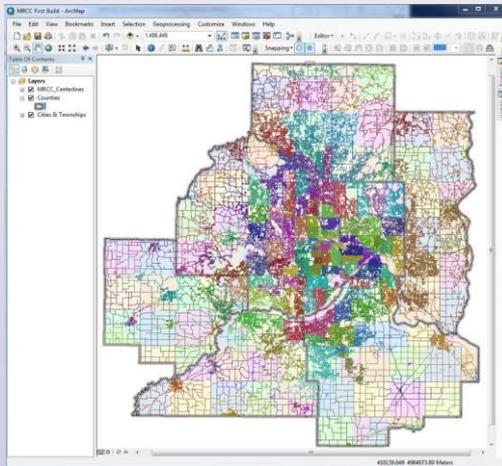
*If this was easy, we'd have it done already..*



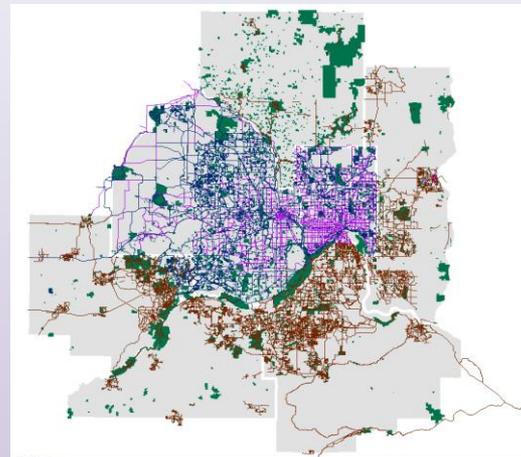


# METRO STORMWATER GEODATA PROJECT

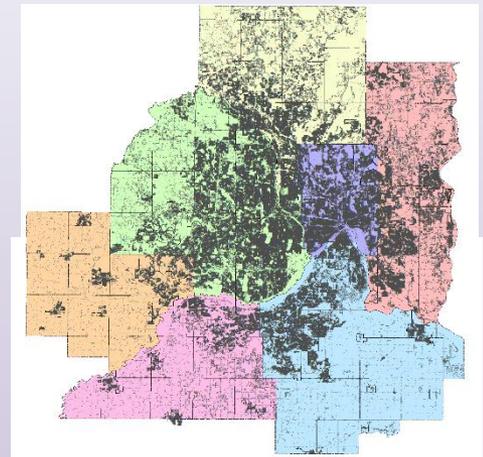
## Recent Events and Progress



**Roads?**



**Parks and  
Trails?**

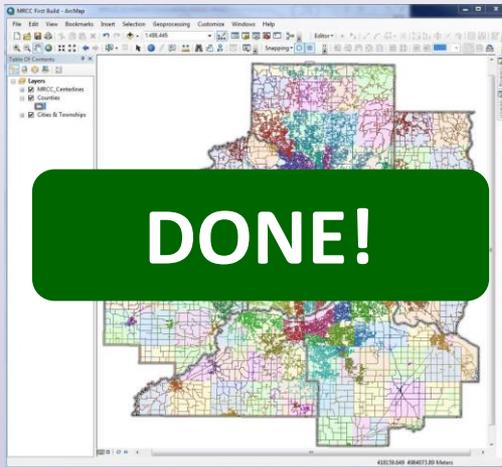


**Address  
Points?**

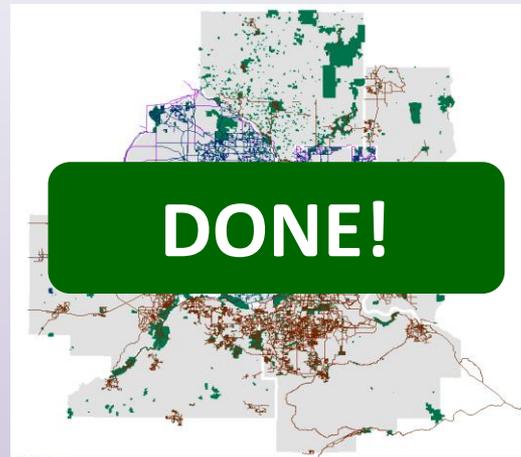


# METRO STORMWATER GEODATA PROJECT

## Recent Events and Progress



**Roads**



**Parks and  
Trails**



**Address  
Points**



# METRO STORMWATER GEODATA PROJECT

## Documenting the Business Needs

2013-2017: Informal info gathering

4/17/2018: Stormwater Data Summit

6/12/2018: CSWEA Presentation/Input

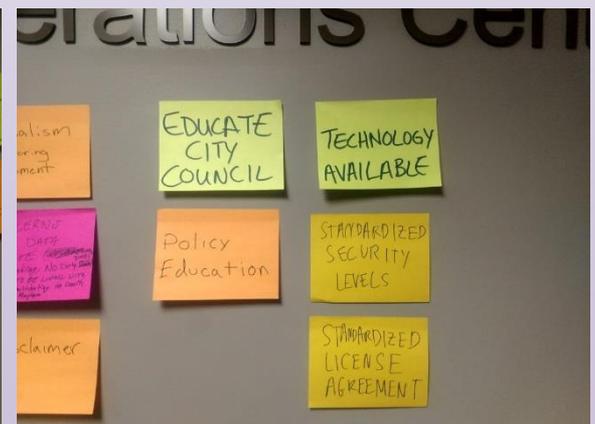
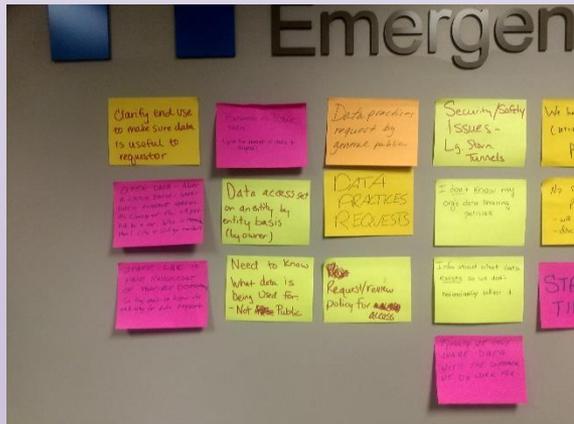
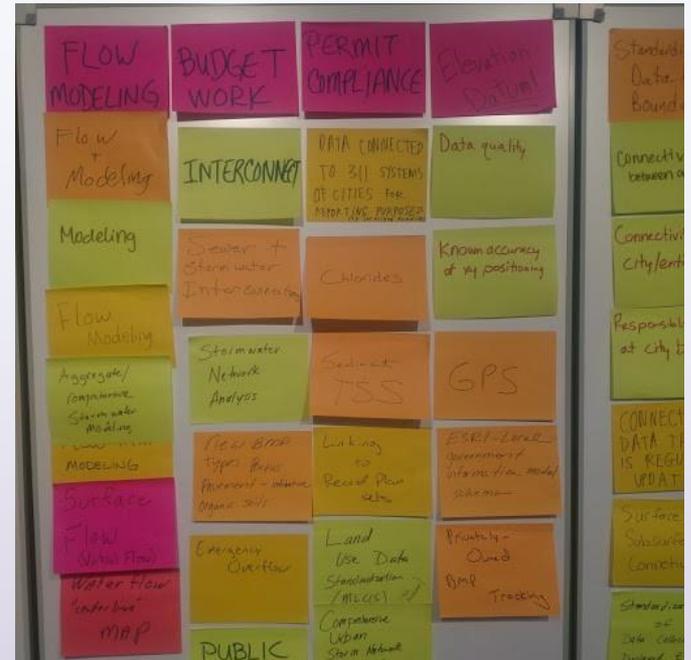


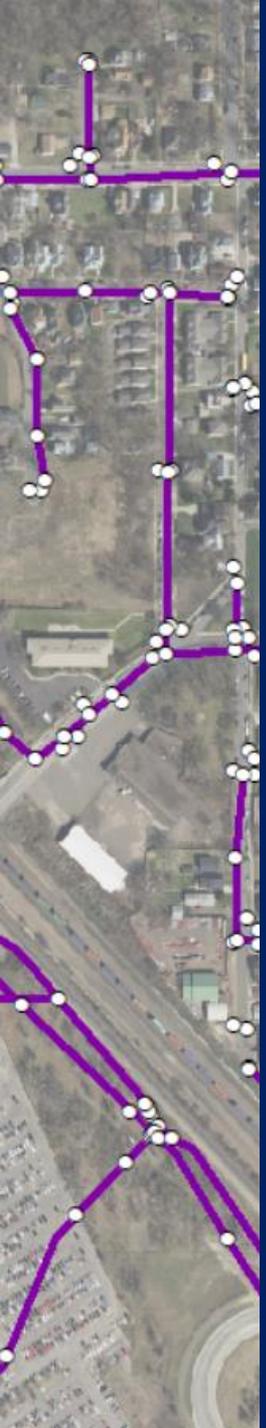
# METRO STORMWATER GEODATA PROJECT

**4/17/2018: Stormwater Data Summit  
Medina (Hennepin County)**



# Stakeholder Input...





# METRO STORMWATER GEODATA PROJECT

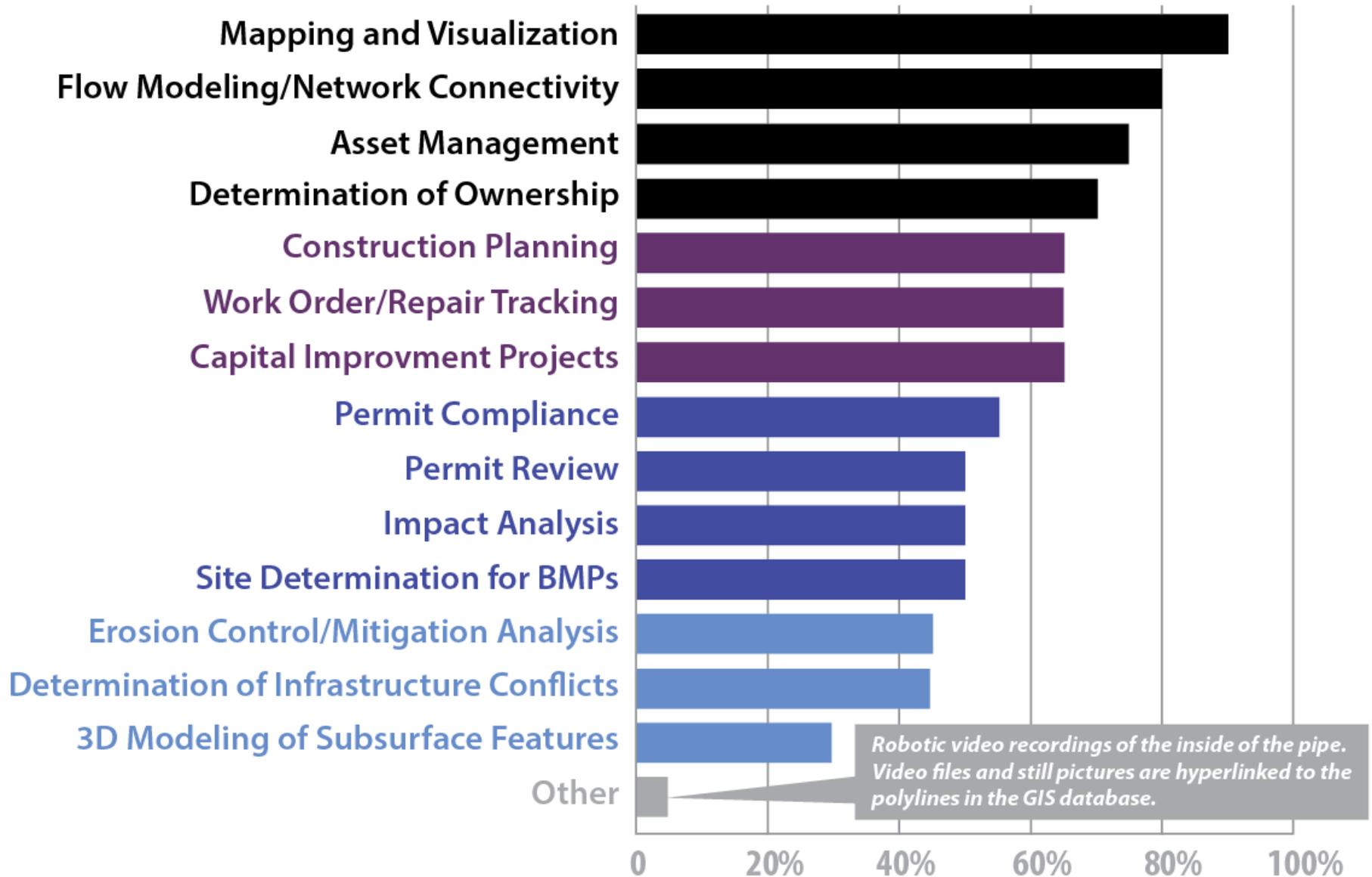


CENTRAL STATES  
WATER ENVIRONMENT  
ASSOCIATION

6/12/2018: CSWEA/H.R. Green (St. Paul)



# General Business Cases for Stormwater System Geodata





# Progress

Robust documentation of **range of stakeholder needs** (general, specific, data policy, etc.)

**Draft Project Charter**

**22 Member Project Steering Team**



**Metro Stormwater Geodata Project**  
(MSGP)

Follow-On Document from April 17 and June 12, 2018 Input Sessions:



**Metro Stormwater Geodata Summit** held on Tuesday, April 17, 2018  
Hennepin County Public Works Facility,  
Emergency Operations Center  
1600 Prairie Drive, Hamel (Medina), Minnesota  
55340



**Summary Presentation & Input Session** held on Tuesday, June 12, 2018  
Central States Water Environment Association  
Offices of H. R. Green  
2550 University Avenue West  
St. Paul, Minnesota, 55114



# Project Steering Team

H. Albrecht, City of Maple Grove  
A. Blenkush, Hennepin County  
P. Clark, Carver County Public Works  
S. Harwell, WSB Engineering  
A. Houghton, Hennepin County  
M. Hoy, Carver County  
B. Jastram, MWMO  
M. Koutnik, ESRI  
J. Lewis, Houston Engineering  
N. Lott-Havey, City of Chanhassen  
E. Madland, City of Bloomington  
C. Magnuson, RWMWSD  
M. McGinn, SRF Consulting Group

D. McGovern, Hennepin County  
R. Olmanson, MPCA  
J. Petersen, Dakota County  
M. Reitter, City of Minnetonka  
E. Resseger, MetCouncil  
C. Richter, City of Blaine  
M. Ryan, Dakota County  
C. Sanocki, USGS  
K. Stehly, Hennepin County  
J. Studtmann, City of Minneapolis  
T. Thompson, VLAWMO  
G. Maas, MetroGIS



# Steering Team Meeting #1 (MWMO)



6/26/2018 in Minneapolis



# Steering Team Meeting #1 (MWMO)

Reviewed the  
stakeholder input;

Agreed to general  
“shape” of the project;

Parsed out key tasks for  
the developing the  
elements to be contained  
in the data standard



Natural Basin  
(Centroid)

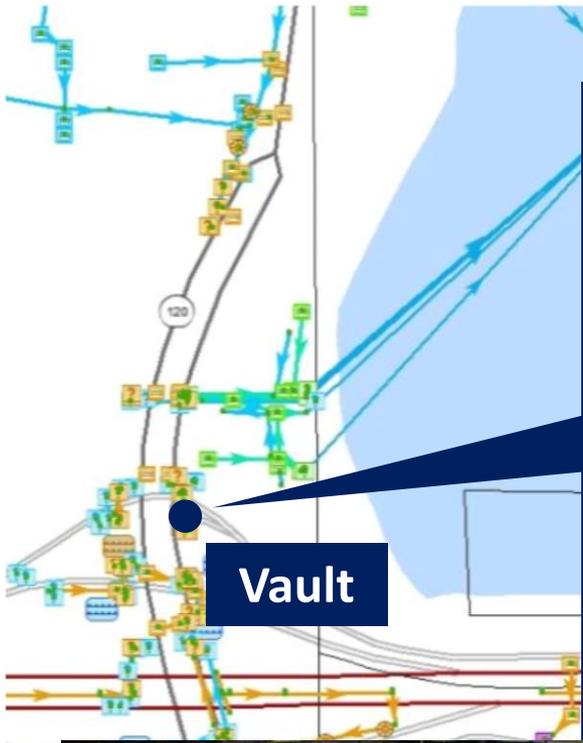
Outfall

Device

Constructed Basin  
(Centroid)

When we click on a **point**, what are all the attributes we want/need to appear and be carried with that point which...

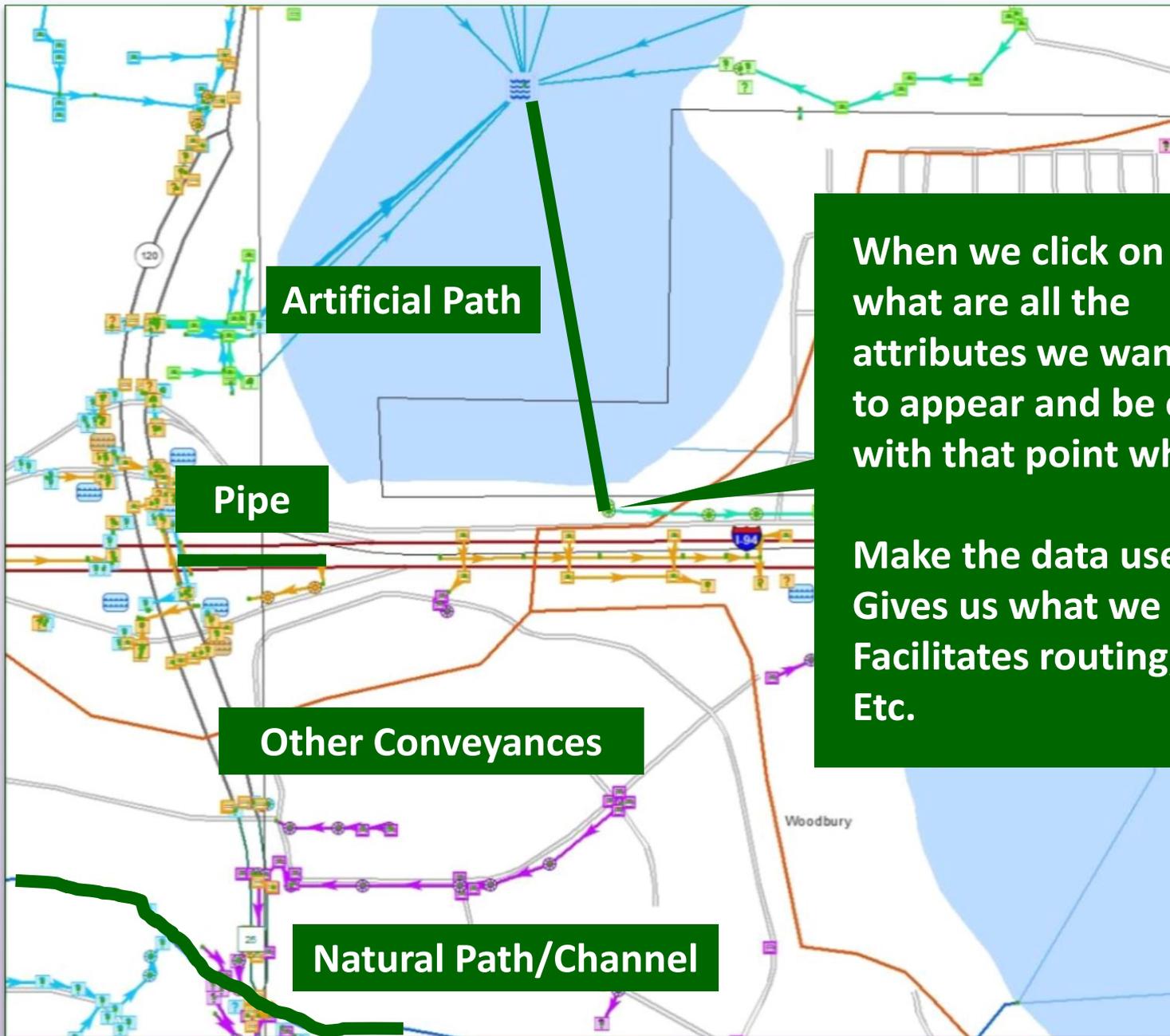
Make the data useful;  
Gives us what we need;  
Facilitates routing;  
Etc.



**Vault**

Type	(Domain of types)
Depth	(feet/inches)
Width (Diameter)	(feet/inches)
Length	(feet/inches)
Volume	(gallons)
Manufacturer	(name of mfg.)
Material	(Domain of types)
Other attributes needed/desired	





Artificial Path

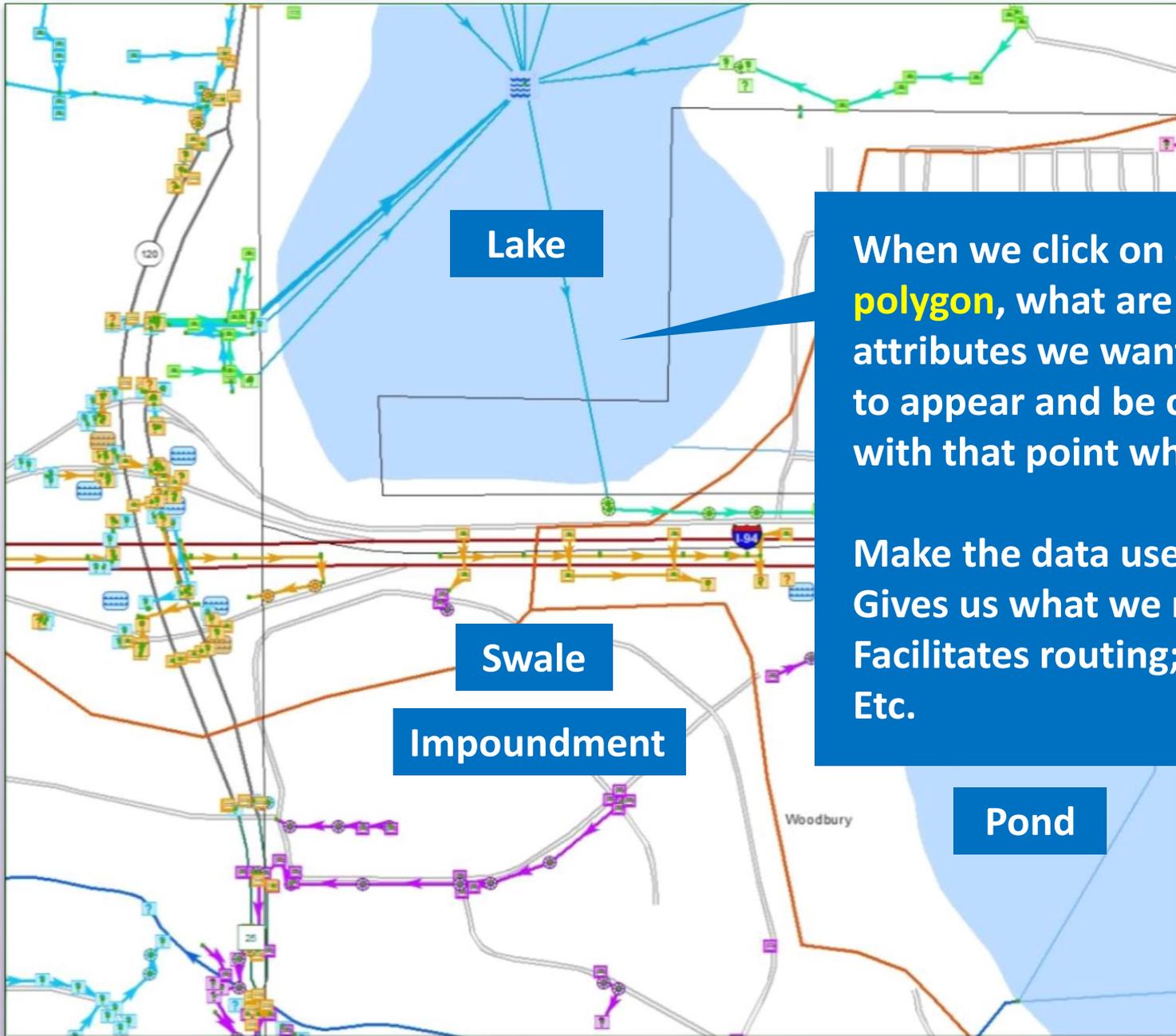
Pipe

Other Conveyances

Natural Path/Channel

When we click on a **line**,  
what are all the  
attributes we want/need  
to appear and be carried  
with that point which...

Make the data useful;  
Gives us what we need;  
Facilitates routing;  
Etc.



Lake

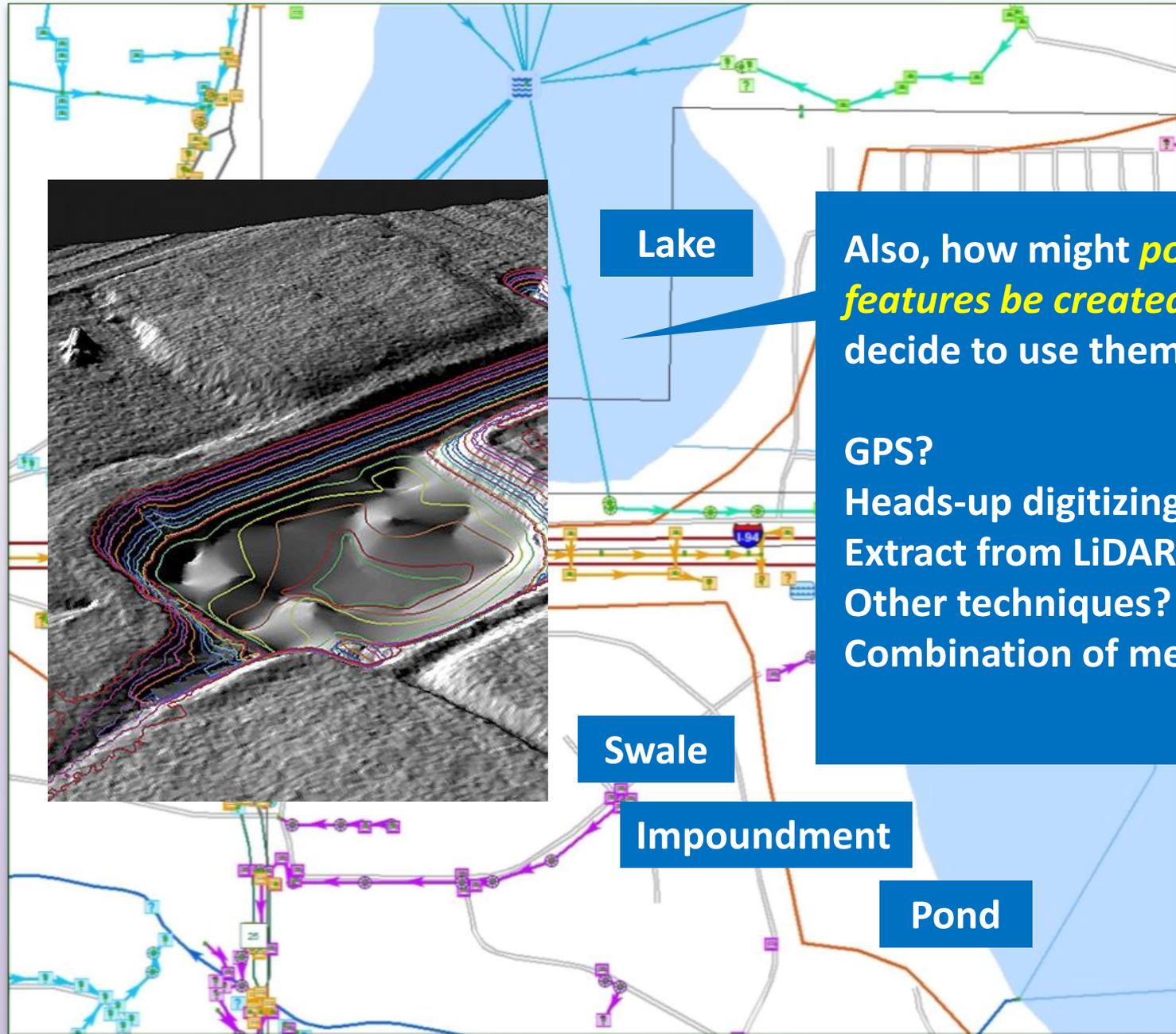
Swale

Impoundment

Pond

When we click on a **polygon**, what are all the attributes we want/need to appear and be carried with that point which...

Make the data useful;  
Gives us what we need;  
Facilitates routing;  
Etc.



Lake

Also, how might *polygon features be created* (if we decide to use them...)

- GPS?
- Heads-up digitizing
- Extract from LiDAR?
- Other techniques?
- Combination of methods?

Swale

Impoundment

Pond



# 'Flash' Teams

**Point Team**

**Line Team**

**Polygon Team**

**Asset Management Team**

**Routing Team**

**Data Policy Team**



# What's next?

Convene Steering Team on **8/28/2018** in Chaska  
**Carver County Water Management Association**

Assemble the work of the 'flash teams' + the old transfer standard (2010) and create a new prototype  
**"Stormwater Data Transfer Standard"**

**Select an area of metro: suitable for pilot project;**

**Continued research on data policy issues;**



# Resources and contact info

metrogis.org > Projects > Stormwater Dataset



## Metro Stormwater Geodata Project

The MetroGIS collaborative is working with a broad group of interested stakeholders toward the development of a stormwater data transfer standard and eventually a means to federate a regional stormwater system dataset to meet a range of known business needs.

Work on the Metro Stormwater Geodata Project (MSGP) commenced in earnest in Spring 2018, with presentations and stakeholder input sessions on April 17 (in Medina) and June 12 (in St. Paul) and the formation of a Steering Team convening for the first time on June 26, 2018 in Minneapolis.

### The MSGP project aims to:

- Engage both the data producer and data consumer communities to discover what business needs they have for an inter-jurisdictional stormwater dataset and accompanying data standard;
- Collaboratively work toward developing a data transfer standard and developing work flows, agreements and understandings between participating partners;
- Document and address policy issues surrounding data availability and protection of assets;
- To identify and capitalize on both existing formal and informal relationships in place among the partners in working toward federating the data together;

### Building on prior work:

The MSGP builds upon a significant body of prior work. In 2010, a Draft Digital Stormwater Data Exchange Transfer Standard was developed, as well as a pilot project focused on gathering and assessing data in the Battle Creek Sub-Watershed of the Ramsey-Washington-Metro Watershed District.

Documents on the original Draft Stormwater Standard can be found [here](#).

Overview & information

Downloadable 2 page FAQ

Stakeholder input

Contact info for team

Links to old studies & resources

Search MetroGIS

About MetroGIS

Get Data

How Do I Get...?

Projects

Project Templates

Work Plan + Budget

Metro Centerlines

Free + Open Data

Park + Trail Data

Address Point Aggregation

Address Point Editor

Public-Private Data Sharing

Stormwater Dataset

Teams + Governance

Why MetroGIS Matters

Affiliations

Archives



## Resources and contact info

[metrogis.org](http://metrogis.org) > Projects > Stormwater Dataset

**Thank you!**  
**Questions?**

Geoff Maas, MetroGIS Coordinator

[geoffrey.maas@metc.state.mn.us](mailto:geoffrey.maas@metc.state.mn.us)

651.602.1638