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

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THIS PRESENTATION WILL BLOW YOUR MIND...
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;
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)
What are we doing?

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>> Inter-jurisdictional pilot project (proof-of-concept)
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GIS

• Data availability
• Way to work together
• Common ‘dialect’
• Explore shared needs
• Cost reduction
• Efficiency
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
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THAT IS SO

FOUR SCORE AND SEVEN YEARS AGO
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...

No, Frodo, for the last time: you can NOT just toss it down a storm drain.

Awwww, man! I hate this quest!
Recent Events and Progress

Roads?

Parks and Trails?

Address Points?
Recent Events and Progress

- Roads: DONE!
- Parks and Trails: DONE!
- Address Points: Fall 2018
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Documenting the Business Needs

2013-2017: Informal info gathering
4/17/2018: Stormwater Data Data Summit
6/12/2018: CSWEA Presentation/Input
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4/17/2018: Stormwater Data Summit
Medina (Hennepin County)
Stakeholder Input…
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6/12/2018: CSWEA/H.R. Green (St. Paul)
General Business Cases for Stormwater System Geodata

- Mapping and Visualization
- Flow Modeling/Network Connectivity
- Asset Management
- Determination of Ownership
- Construction Planning
- Work Order/Repair Tracking
- Capital Improvement Projects
- Permit Compliance
- Permit Review
- Impact Analysis
- Site Determination for BMPs
- Erosion Control/Mitigation Analysis
- Determination of Infrastructure Conflicts
- 3D Modeling of Subsurface Features
- Other

Robotic video recordings of the inside of the pipe. Video files and still pictures are hyperlinked to the polylines in the GIS database.
Progress

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

Draft Project Charter

22 Member Project Steering Team
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)

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
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.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Unit or Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>(Domain of types)</td>
</tr>
<tr>
<td>Depth</td>
<td>(feet/inches)</td>
</tr>
<tr>
<td>Width (Diameter)</td>
<td>(feet/inches)</td>
</tr>
<tr>
<td>Length</td>
<td>(feet/inches)</td>
</tr>
<tr>
<td>Volume</td>
<td>(gallons)</td>
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<tr>
<td>Manufacturer</td>
<td>(name of mfg.)</td>
</tr>
<tr>
<td>Material</td>
<td>(Domain of types)</td>
</tr>
<tr>
<td>Other attributes needed/desired</td>
<td></td>
</tr>
</tbody>
</table>
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.
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.
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?
‘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

Overview & information
Downloadable 2 page FAQ
Stakeholder input
Contact info for team
Links to old studies & resources
Thank you!
Questions?

Geoff Maas, MetroGIS Coordinator
geoffrey.maas@metc.state.mn.us
651.602.1638