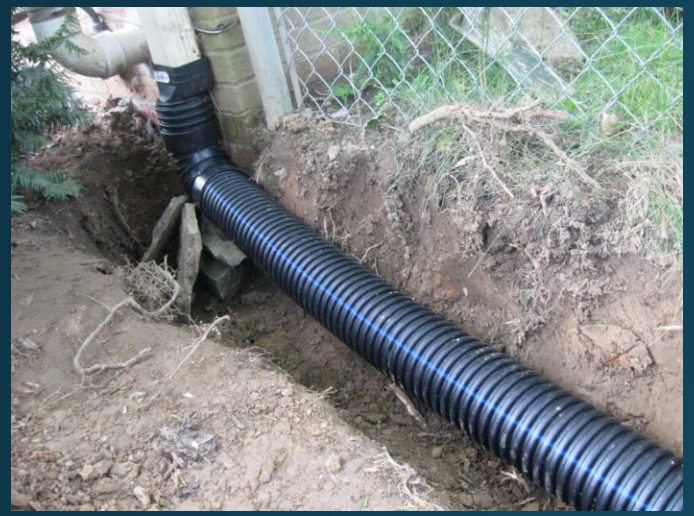
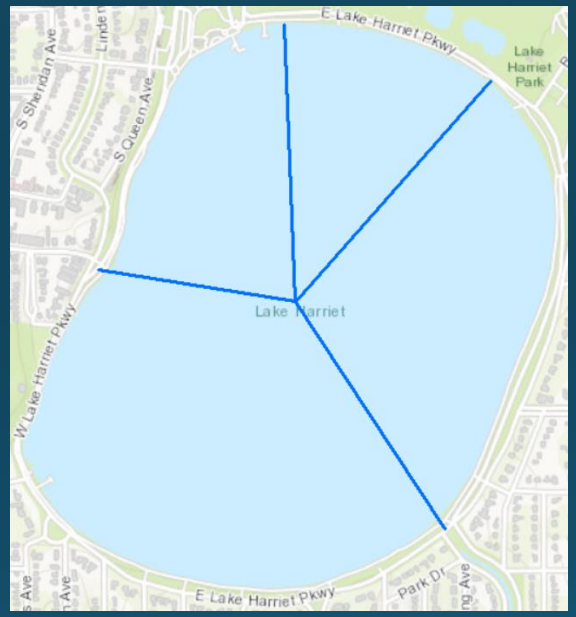
Metro Stormwater Geodata Project – Line Team Presentation





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Line Data Business Needs – Geometry & Attributes

Ownership

Up and downstream invert elevations

Material

Link to plan sets

Emergency overflow

Level of accuracy

Maintenance districts

Data collection source

Flow volume

Data source

Maintenance agreements

Maintenance districts

Diameter

Water flow centerline

Connectivity between agencies

Line Data Business Needs – Additional Concepts

Modeling

Asset management

Open data

Monitoring

Expression of data quality

Cartography

Metadata standardization

ms4 reporting

Data disclaimer

System to accommodate changing data

BMP efficacy assessment

Emergency response

Code enforcement

Which types of stormwater features are best represented as lines?

Pipes

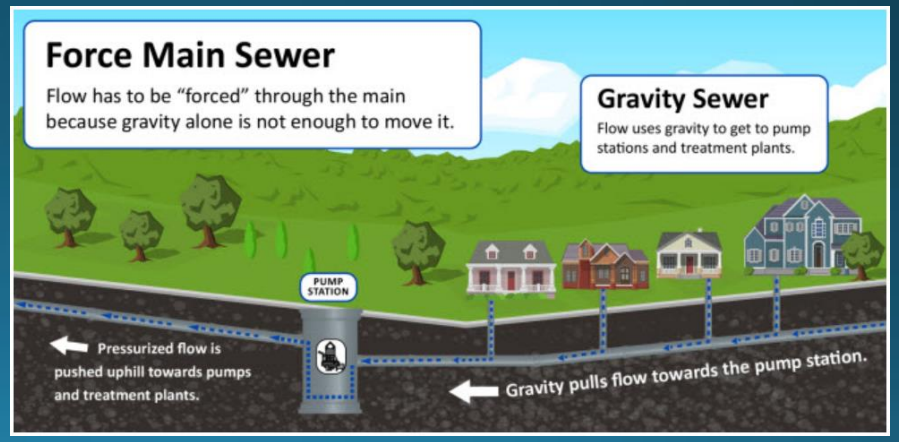
Channels

Linear structures

Artificial paths

Enclosed conduits designed and constructed to convey stormwater flow.

Gravity Mains, Force Mains, Culverts, Drain Pipes, Underdrain Pipes, Catch Basin Leads, Drain Tiles(?)



Pipe attribute fields

- Pipe ID
- Type
- Shape
- Material
- Diameter
- Length
- Upstream Invert Elevation
- Downstream Invert Elevation
- Owner Type
- Owner Name
- Maintenance Authority Type
- Maintenance Authority Name
- Installation Year
- Active Flag
- City/Township Name
- City/Township Code
- County Name
- County Code
- State Code
- Last Edited Date
- Data Source
- Comments

Which types of stormwater features are best represented as lines?

Pipes

Channels

Linear structures

Artificial paths

Natural or constructed conduit that conveys stormwater

Ditches, Swales, Streams, Lined Channels, Drain Tiles(?)

Channel attribute fields

- Channel ID
- Type
- Assessment Unit ID
- Height
- Width
- Length
- Shape
- Owner Type
- Owner Name
- Maintenance Authority Type
- Maintenance Authority Name
- Installation Year
- Active Flag
- City/Township Name
- City/Township Code
- County Name
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Which types of stormwater features are best represented as lines?

Pipes

Channels

Linear structures

Artificial paths

Stormwater management devices that are linear in nature, but do not convey stormwater

Weirs, Debris Barriers, Others?

Linear Structure attribute fields

Structure ID
Type
Length
Owner Type
Owner Name
Maintenance Authority Type
Maintenance Authority Name
Installation Year
Active Flag
City/Township Name
City/Township Code
County Name
County Code
State Code
Last Edited Date
Data Source
Comments

Which types of stormwater features are best represented as lines?

Pipes

Channels

Linear structures

Artificial paths

Provides a general conveyance connector for areas where an exact path isn't known or doesn't exist.

Lakes, Ponds, Wetlands

Artificial Path attribute fields

Artificial Path ID

Length

Active Flag

City/Township Name

City/Township Code

County Name

County Code

State Code

Last Edited Date

Data Source

Comments

Findings - General

- Existing materials (starter list, 2010 metro standard) cover many of the popular business needs
- Data are organized into 4 separate layers (pipes, channels, linear structures, artificial paths), but possibly could be combined – depending on field similarities
  - Implementation of data subtypes?
- "Linear structures" could be represented as points, depending on the need for cartographic representation or need for measuring structure length

Findings - Geometry

- Ideally, line features should be topologically connected with lines (junctions) and the other geometry types (points, polygons)
- If we are to include city/county ownership or location fields, lines will need to be split at jurisdictional boundaries
- Will need to find a way to resolve duplicate features/geometry
  - May be a challenge if data collection methodology and/or completeness is inconsistent amongst agencies

Findings - Attributes

- Unique ID will require some thought
  - Would be ideal to have logic built into ID (i.e. not random values)
  - How to best do this when features cross jurisdictional boundaries?
  - How do the IDs amongst other geometry types relate to each other?

Example ID: **State FIPS + County FIPS + CTU Code + "-" +Agency-produced ID**

27053181 88-SP12345QWH

- Location-based ID requires integrity in geometry (i.e. split at boundaries)
- Have others discussed unique ID schemes?

“Nice to Have” data elements

Condition ratings

Rim elevations

Slope

Data creation/acquisition methodology

Inspection reports

Inspection frequency

Link to plans/as-builts

% flow restriction

Emergency overflow

Asset photos/videos

Locational accuracy

Maintenance agreements

Maintenance needed

Last maintenance activity

Water quality

Flow volume

Thank you!