Developing a Surface Water Asset Inventory for Municipalities
What is a Surface Water Asset?

- Surface water assets are structures that help direct rainwater into a sub-surface, piped drainage system.
What is a Surface Water Asset?
Surface Water Asset Examples

- Catch basins
- Inlets
Surface Water Asset Examples

- Ditches
- Culverts
Surface Water Asset Examples

- Sandboxes
- Junction Boxes
Project Drivers

- National Pollutant Discharge Elimination System (NPDES) Stormwater Permit (2007 & 2013)
  - “No later than 24 months after the effective date of this permit each Permitee shall begin implementing a program to inspect catch basins owned or operated by the Permitee.”
  - Penalties for non-compliance can include: $32,000 per day per violation
Project Drivers

- If an asset isn’t captured in GIS, it doesn’t exist in SPU’s Work Management System (MAXIMO).

This means:

- Some assets are not being maintained
- Claims, public safety risks, etc..
- Help to identify and report possible issues
Structures needing maintenance
Identify Potential Flooding Issues
Identify Potential Problem Areas
Surface Water Asset Mapping Project (SWAMP)

- Multi-year initiative to map SPU’s surface water assets
- GPS field data collection and updating the City’s GIS
- 120,000 assets to verify
- Asset rehabilitation and replacement tracking
Catch Basin – Grated Top (CBL)-

A catch basin – grated top has the same function as a catch basin, but has a metal grate on top to collect surface flow and usually a larger capacity. Catch basin - grated tops usually have a trap to prevent floating debris from entering and clogging the sewer or drainage line.

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Workflow – From Fieldwork to GIS
Equipment & Software

- Trimble GeoExplorer 6000 GeoXH
- Trimble Zephyr GPS antenna
- ArcPad 10.0.2
- Trimble GPS Correct 3.40
- 4G Verizon mi-fi card
- Washington State Reference Network (WSRN)
- 10 cm accuracy (no-post processing)
Real-Time Network
WSRN Network Grid

CWU PANGA Lab and Seattle Public Utilities Data Processing Centers

Network Grid
Data Check-Out

- Check-out Feature Class through ArcPad Data Manager Extension in ArcMap
- Transfer onto GPS
Fieldwork and Inventory
Data Check-In

- Transfer from GPS to PC
- Check-in Feature Class through ArcPad Data Manager
- Digitize points
- QC and post to GIS
Before SWAMP...
After SWAMP...
Project Status

- Project started on 07/2010
  - 250 miles walked
  - 25,000 assets investigated
  - 25% of the City completed
Questions?

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