A Little About FLO

• Employee Owned
• Located in Portland and Seattle
• Experts in the design, implementation and use of GIS & data analytic solutions
How to get started with:

- Asset Management Systems (AMS/CMMS)
- Geographic Information Systems (GIS)
- Steps to ensure a successful implementation
Asset Management

The process of maintaining and managing assets once acquired or built
Role of an AMS/CMMS

- Manage lifecycle activities related to your assets
- Handle maintenance, work orders, etc.
- Stores asset and work history
- Valuable data that can be used to assess asset performance and identify issues
A system to gather, manage and analyze spatial data

- ROI through data visibility, new capabilities, integrations and efficiencies
GIS technology applies geographic science with tools for understanding and collaboration. It helps people reach a common goal: to gain actionable intelligence from all types of data.

Maps
Maps are the geographic container for the data layers and analytics you want to work with. GIS maps are easily shared and embedded in apps, and accessible by virtually everyone, everywhere.

Data
GIS integrates many different kinds of data layers using spatial location. Most data has a geographic component. GIS data includes imagery, features, and basemaps linked to spreadsheets and tables.

Analysis
Spatial analysis lets you evaluate suitability and capability, estimate and predict, interpret and understand, and much more, lending new perspectives to your insight and decision-making.

Apps
Apps provide focused user experiences for getting work done and bringing GIS to life for everyone. GIS apps work virtually everywhere: on your mobile phones, tablets, in web browsers, and on desktops.
Role of GIS

• Manage asset location, see related information (addresses, etc)
• Planning, design and construction
• Visualize assets by attributes – see condition across the network
• Analysis – asset failures, nearby assets, analyze consequences
AMS and GIS

- GIS handles the location, and often a number of attributes as well, but is not specialized at handling work orders etc.

- AMS handles the work orders, maintenance, and day to day field requirements, but doesn’t usually know the location or visualize well.

This is a match made in heaven!
GIS enables
Common “barriers”

• Complexity
• “We are too small”
• Unsure about GIS
• Costs too much
• Personnel and Skillsets
• Data Availability
• Not sure where to start!
Successful Implementation

• IACC 2019
• Make a Plan
• End Use Case
• Data and Inventory
• Data Maintenance
• And Beyond
Strategic Planning

Key Performance Indicators
A vision of what you would like to do with your ideal system

• Data, Tools
• Workflows and Processes
• Decision Making
• Efficiency and savings
Strategic Planning - Vision

- Planning, Construction & Design
- Plan Review
- Record Drawings

Customers
- Public
- Developers
- Contractors

Online Tools & Mobile Apps

Dashboard & Reporting

- Asset Lifecycle
- CCTV
- Condition
- Work orders
- Inspections
- Monitoring
- Tests

GIS
- Asset Management
- Operations/Maintenance
- Finance
- Project Management

FLO Analytics
Current Resources

• Staff skills and responsibilities
• What Data you have and how you get it
  – Asbuilts
  – CAD
  – Paper
  – Institutional Knowledge
GIS questions to ask an AMS vendor

• “Describe how you integrate GIS data”
• “Do you have an option to synchronize data between the AMS and GIS?”
• “Are there any special requirements around GIS data formats or schemas?”
Considerations

• Enough time to capture data
• Field crews: Workflow changes, available tools, devices?
• Office staff: What data and tasks?
• Do you have any existing software or data formats that may be affected?
Data Inventory

- Priority Task
- GIS First
- Data Sources
  - GIS
  - CAD/Electronic
  - PDF
  - Paper
  - Staff
Data/Inventory

• Establish asset inventory and locations
  – Attributes/Schema
  – Field capture
  – Records capture
  – Markup
No existing GIS data

Location of assets unknown or difficult to find (snow)

Entire utility system was mapped in 2.5 working days

- 657 features
- 19 feature types
- Down to 3" accuracy
Data Maintenance

Ongoing corrections and verification
Data Maintenance

• What parts of the data will be updated by who?
  – location vs attribute

• What processes will you need to use?
  – As-builts (standards)
  – Field updates
CAD as-built
CAD as-built in GIS
Integration

Combining data from different sources to provide a unified view

• Get the information required to do the job effectively
• Streamline reporting and management activities
Integration

• Most asset management systems are designed to work with GIS

• Your GIS can integrate with other systems readily

• Connecting systems can help maximize the return
Integration
Sewer Lines 24-876-24...
164 ft

Details

GIS ID: 24-876-24-882
Type: Gravity Main
Year: 2017
Name: SHADOW WOOD INTERCEPTOR
Size: 8 inch
Length: 164.30 feet
Material: Cured in Place
Owner: CRWWD
Condition: 1
High Inv: 98.81
Low Inv: 85.00
From:
To:

Field Survey123
Browser Survey123

Edit
Copy
Delete
Directions
Compass
Add to My Places
Data Visualization and use

- Maps
- Field/mobile tools
Permits, Inspections and assets
Dashboard

Sewer Main Lines
21
Last update: a few seconds ago

Sewer Main Lines (feet)
9,745.345
Last update: a few seconds ago

Sewer Manholes
20
Last update: a few seconds ago

Sewer Detention Pond Acreage
1.711
Last update: a few seconds ago

Stormwater Main Lines
5
Last update: a few seconds ago

Stormwater Mains (feet)
3,295.958
Last update: a few seconds ago

Stormwater Manholes
2
Last update: a few seconds ago

Water Main Lines
11
Last update: a few seconds ago

Water Main Line (feet)
5,567.838
Last update: a few seconds ago

Water Valves
7
Last update: a few seconds ago

Water Drains
4
Last update: a few seconds ago

Water Hydrants
5
Last update: a few seconds ago
Dashboard

Permits sold: 169 (Uninspected)

Permits Finaled: 590 (Last 90 Days)

Re-inspection Required: 285 (Closed in Drumway)

Permit Inspections: 8 (Today)

Permits Finaled: 2 (Today)

Permit Inspections: 55 (This Week)

Permits Finaled: 19 (This Week)

Permits Inspected: 104 (This Month)

Permits Finaled: 53 (This Month)

Number of Permits by Month:

- September 2019: 5
- October 2019: 10
- November 2019: 15
- December 2019: 20
- January 2020: 10
- February 2020: 5
- March 2020: 10
- April 2020: 15
- May 2020: 20

Inspection Visits:

- September 2019: 5
- October 2019: 10
- November 2019: 15
- December 2019: 20
- January 2020: 10
- February 2020: 5
- March 2020: 10
- April 2020: 15
- May 2020: 20
Summary and status

Clark Regional Wastewater District Development Program

1. District Developer Projects

2. Proposed

3. In Review

4. Approved
   The approved plans are sent back to the engineer with a signed Mylar cover sheet, and four copies of the approved plans are provided to the District in return. The District’s inspectors and project managers review the approved plans with the contractor at a pre-construction conference to ensure construction goes smoothly.

5. Under Construction

6. Physical Completion

7. Final Acceptance & Warranty
Summary

• Start with a general vision and some goals
• GIS data forms the foundation for your AMS
• System of record containing institutional knowledge
• GIS/AMS Integrations return tangible cost-savings
• Visualizations to answer questions
GIS Consortium

BUILDING SMARTER COMMUNITIES