

**Esri Pacific User Meeting  
CA / HI / NV**

November 21, 2013 | Redlands, CA



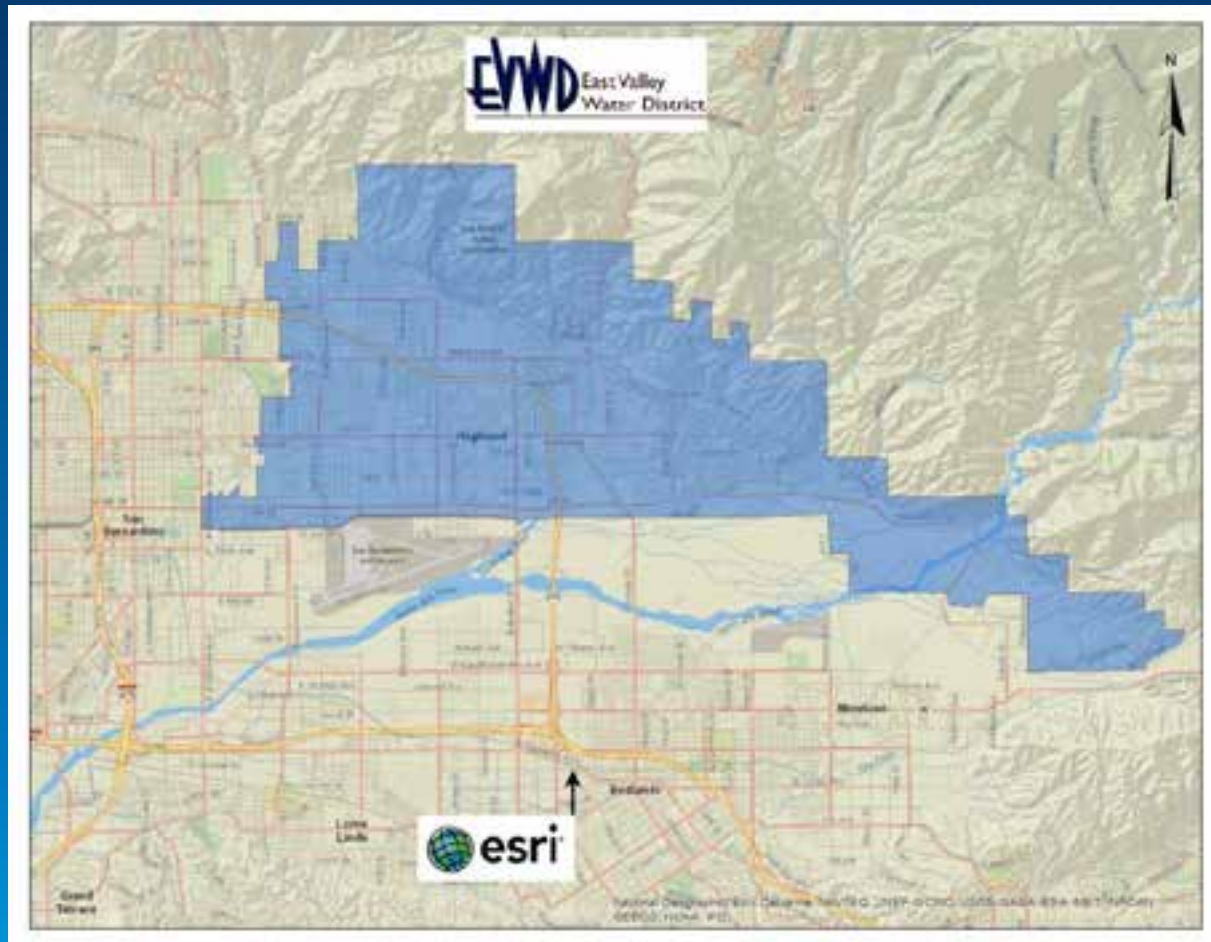
# **THE BENEFITS OF A STRATEGIC PLAN**

Leida Thomas

Bruce Miller, GISP



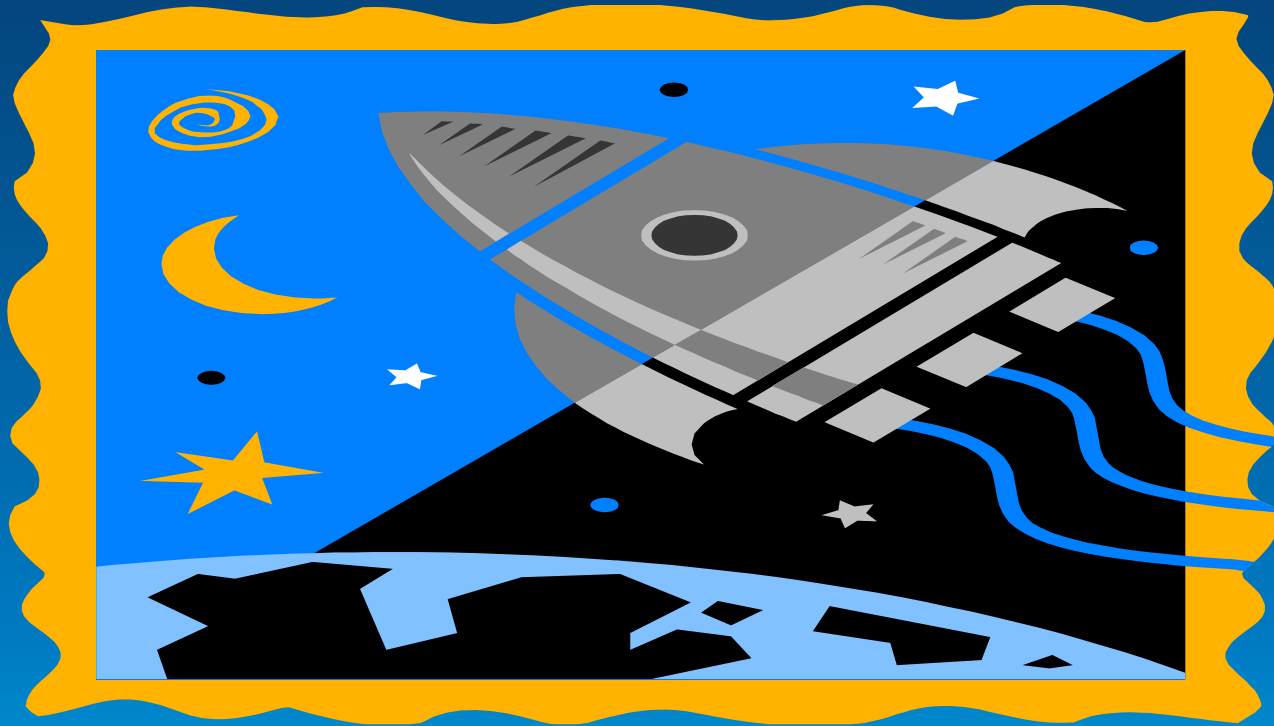
# WHERE ARE WE?

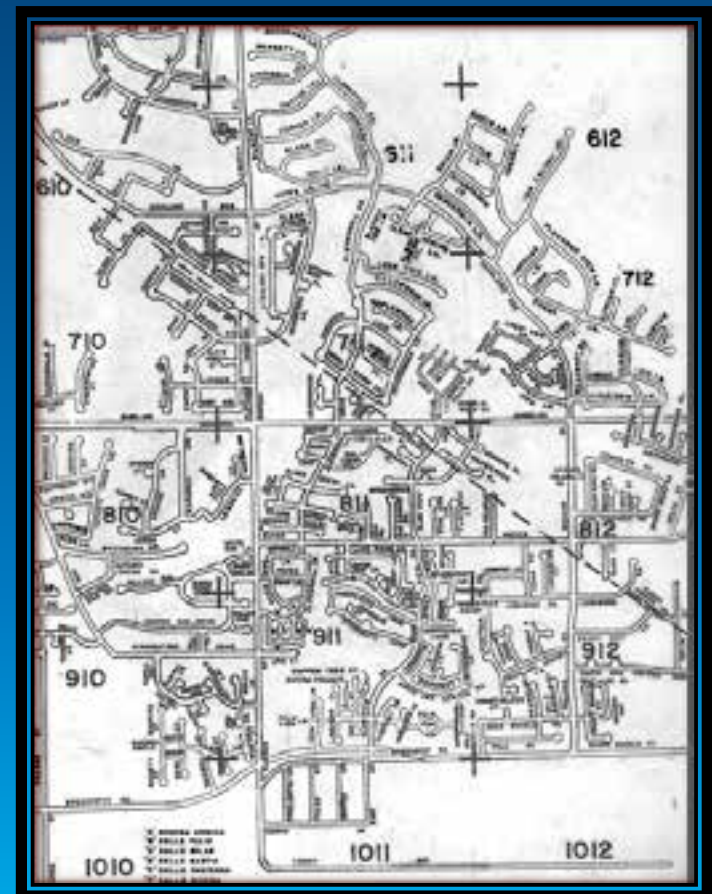
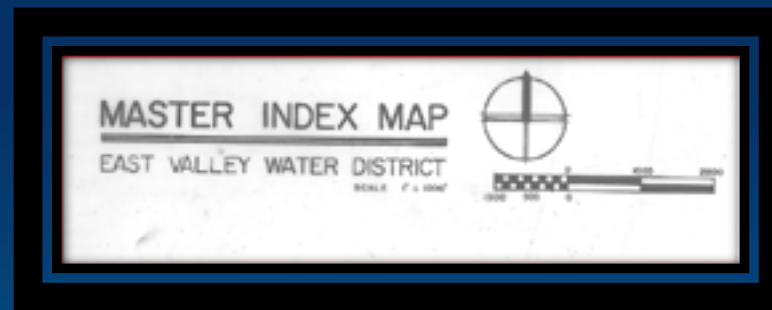


# EAST VALLEY WATER DISTRICT

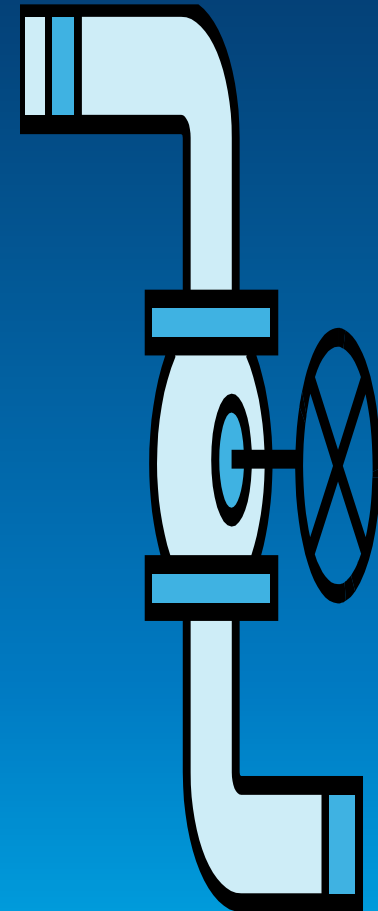
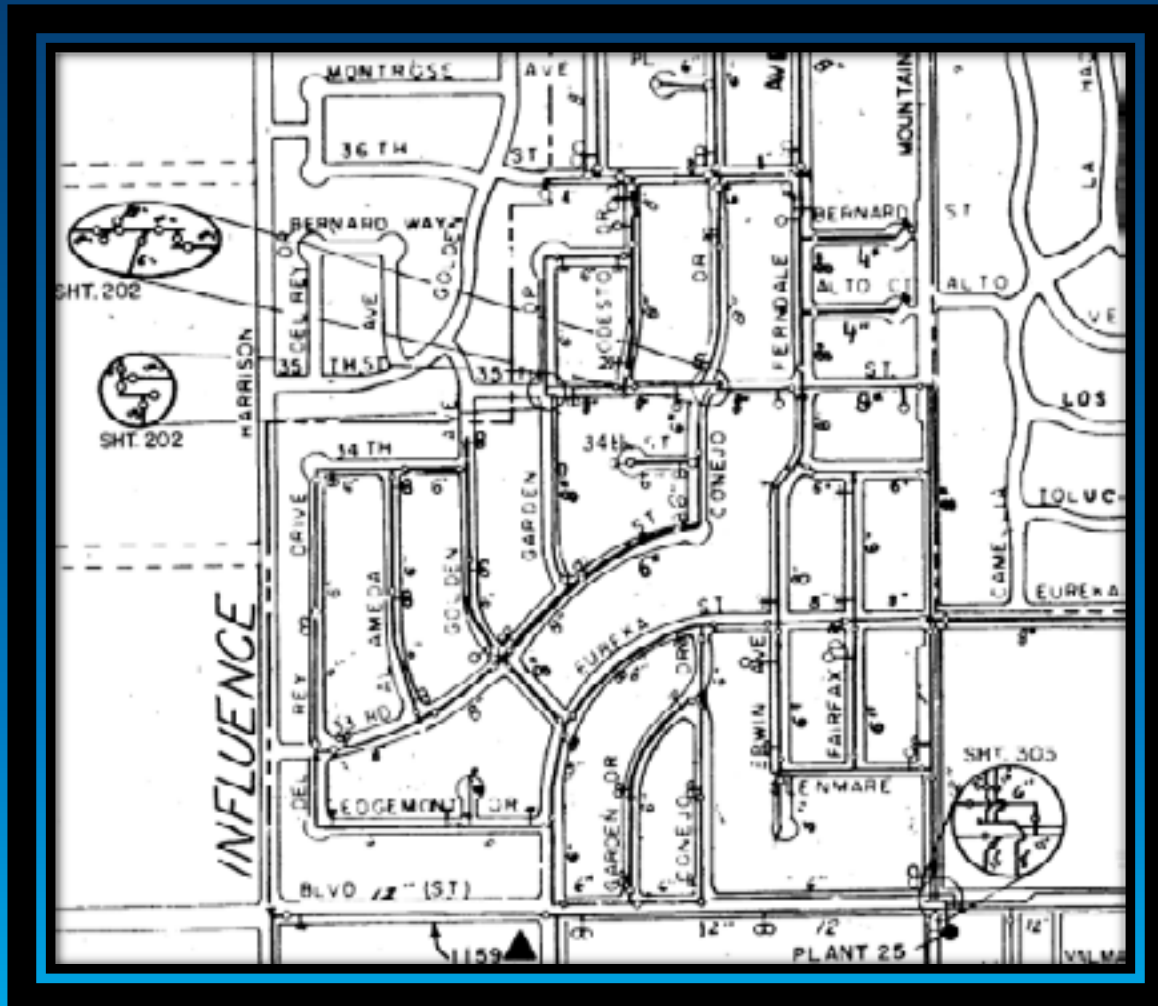
- 32 square mile service area
- 90,000 customers
- 295 miles of water mains
- 203 miles of sewer mains
- 30 well, booster, reservoir, treatment plants

# IN THE BEGINNING – 2001 A SPATIAL ODYSSEY



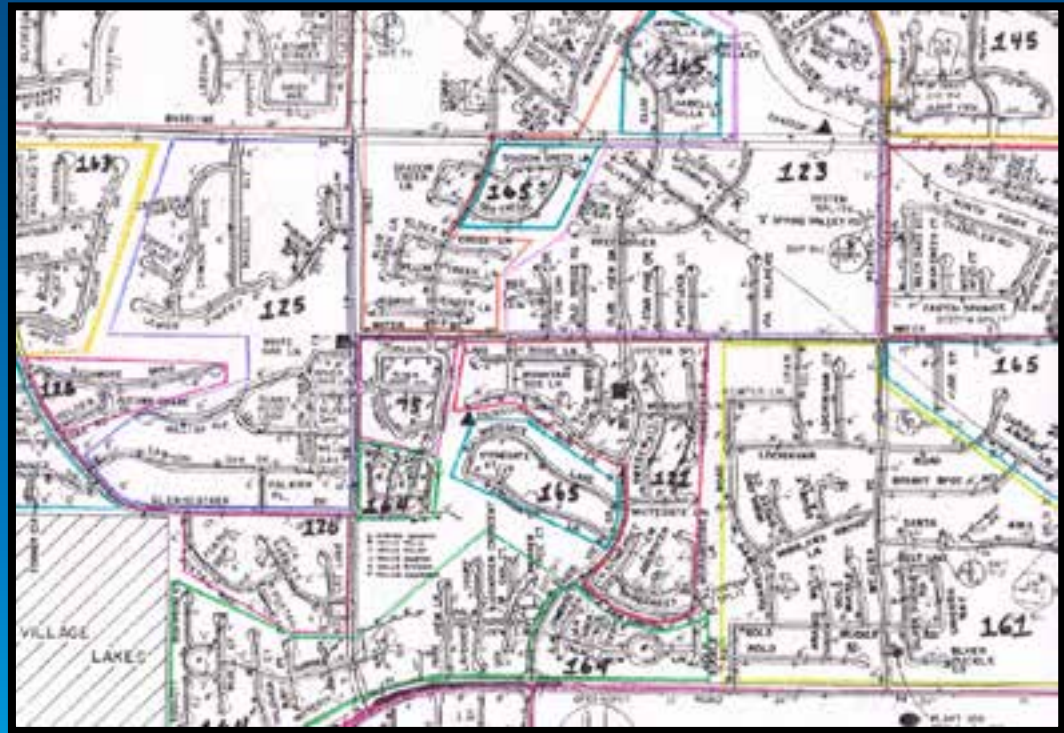


# WATER DISTRIBUTION SYSTEM





# HAND COLORED METER ROUTES



# 300' SCALE VALVE MAPS

USED FOR FIRE HYDRANT FLUSHING AND VALVE EXERCISING

FROM FIELD NOTES

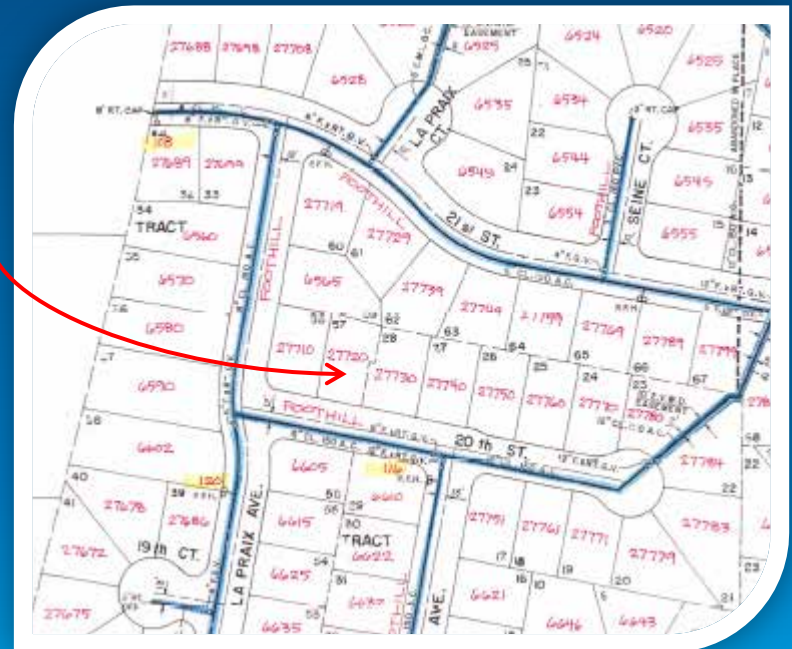
NOTE		VALVE LAST EASTING		EASTING		NORTH		ELEVATION		MARK	
				TYPED							
14				18°	21°						
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100				35°	21°						

WHERE IN THE DISTRICT  
ARE WE ?





# ATLAS SHEETS



100 WATER SHEETS  
100 SEWER SHEETS

HAND COLORED PIPES,  
ADDRESSED AND  
PRESSURES

# 12 DIFFERENT DOCUMENTS TO UP-DATE



CHECK LIST FOR DRAWING UP DATES		JOB # _____
		DWG # _____
PROJECT DESCRIPTION _____		
_____		
_____		
NEED TO DO		DONE
		NAME      Date
1	WATER ATLAS MAPS 1"=100'	<input type="checkbox"/> _____
2	WATER WALL MAPS 1"=800'	<input type="checkbox"/> _____
3	HYDRANT FLUSHING MAPS 1"=300'	<input type="checkbox"/> _____
4	HYDRANT FLUSHING LIST	<input type="checkbox"/> _____
5	WATER ATLAS SHEETS COLORED FOR PRESSURE ZONES, (2 SETS)	<input type="checkbox"/> _____
6	PLANT DRAWING	<input type="checkbox"/> _____
7	SEWER ATLAS MAPS 1"=100'	<input type="checkbox"/> _____
8	SEWER WALL MAPS 1"=800'	<input type="checkbox"/> _____
9	STREET INDEX MAP 1"=1000'	<input type="checkbox"/> _____
10	LASERFICHE	<input type="checkbox"/> _____
11	CAPITOL PIPELINE FACILITIES WORKSHEET	<input type="checkbox"/> _____
12	EASEMENTS PLOTTED	<input type="checkbox"/> _____
	_____	<input type="checkbox"/> _____
	_____	<input type="checkbox"/> _____
	_____	<input type="checkbox"/> _____

# GERRY DRAWS HIS LAST LINE



# GIS OR AUTOCAD ? THAT IS THE QUESTION

- Either way - entire district sewer and water distribution systems created from scratch
- I was the GIS
- Enterprise is the way to go
- Now what?

# 2009 - The Year We Make Contact

Phase 1: Framework  
Phase 2: Data Collection  
Phase 3: Integration  
5 year Implementation Plan

## GIS STRATEGIC PLAN

### Prepared for:

Ron Buchwald  
East Valley Water District  
3654 E. Highland Avenue, Suite 18  
Highland, California 92346  
Phone: 909-888-8986  
Fax: 909-383-1481

**Date:** January 12, 2009



# Phase 1 Tasks (Data Conversion)

- Goal: Replace paper atlas sheets
  - Develop Basemap for GIS
  - Convert Drawings to Digital Database
  - Develop Maintenance Plan/QC Workflows
  - Develop GIS Personnel

# Develop Basemap for GIS

- San Bernardino County Basemap data
  - Addresses, parcels and centerlines
  - Monthly Updates via downloads
- Imagery
  - Regional LIDAR project (3 inch)
  - SBVMWD (larger area)



# Convert Drawings to Digital Data

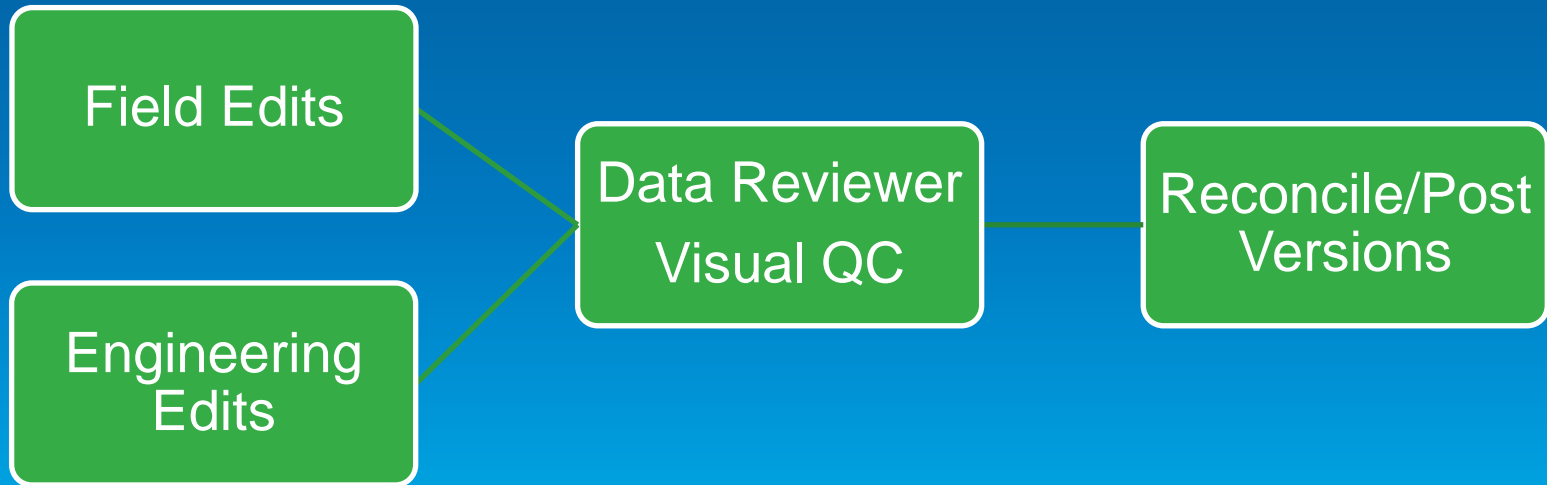
- Pilot (Esri and AIS)
- Data Conversion completed by Nobel Systems
- EVWD Quality Control (Office and Field)
- Completed in 1 year
- Atlas books distributed in hardcopy and PDF

# Atlas book in hardcopy and PDF



# Maintenance Plan

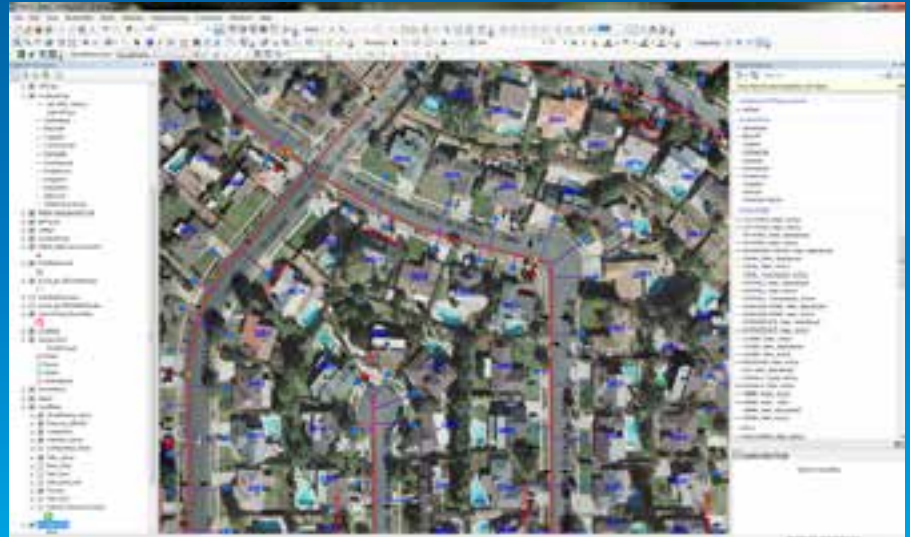
- GIS Maintained by Engineering
- 3 Engineering staff for edits, QC, and map requests (non fulltime GIS)
- Consultant provides other GIS support
  - DBA, Advanced Analysis, scripting, etc





# Software

- Esri ELA licensing
- ArcGIS Desktop/Server
- PLTS for Atlas Sheet creation
- Infrastructure tools for data maintenance (free)
- Data Reviewer (QC)



# Phase 2 Goals (Field Maintenance)

- Collect GIS Data in the Field
- Share GIS Information Across Organization
- Evaluate Integration Opportunities

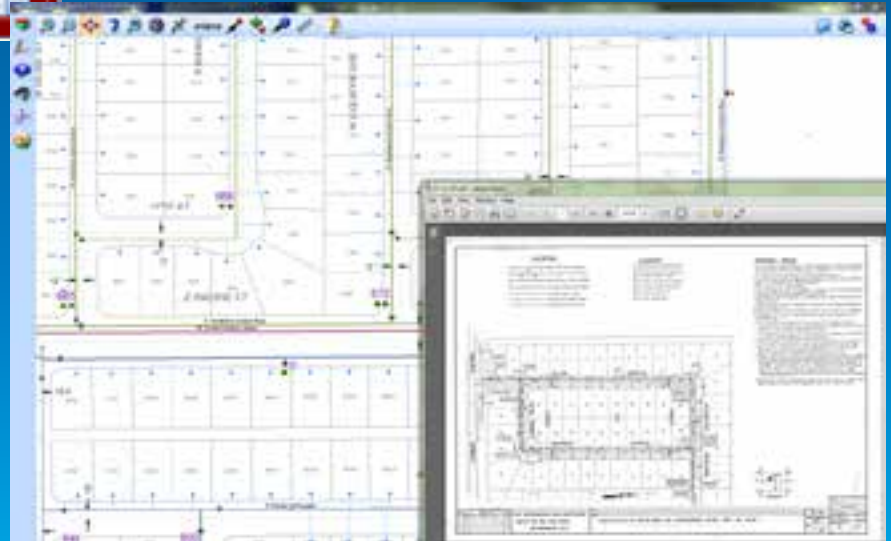


# InfraMAP

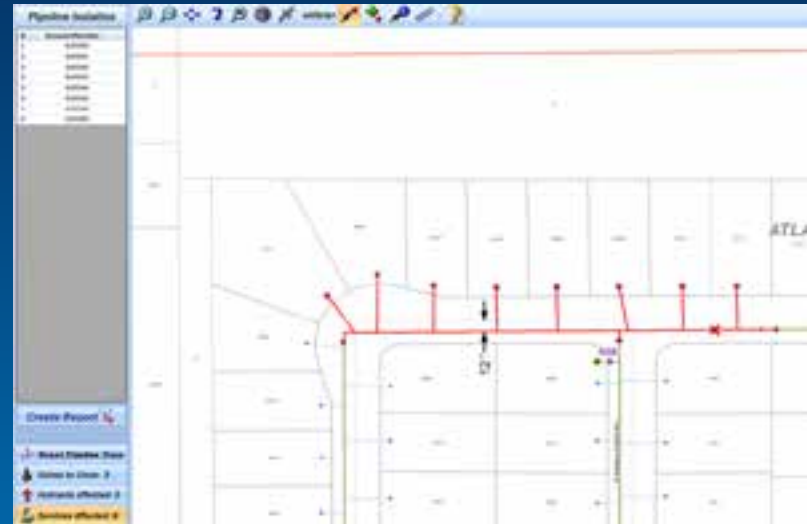
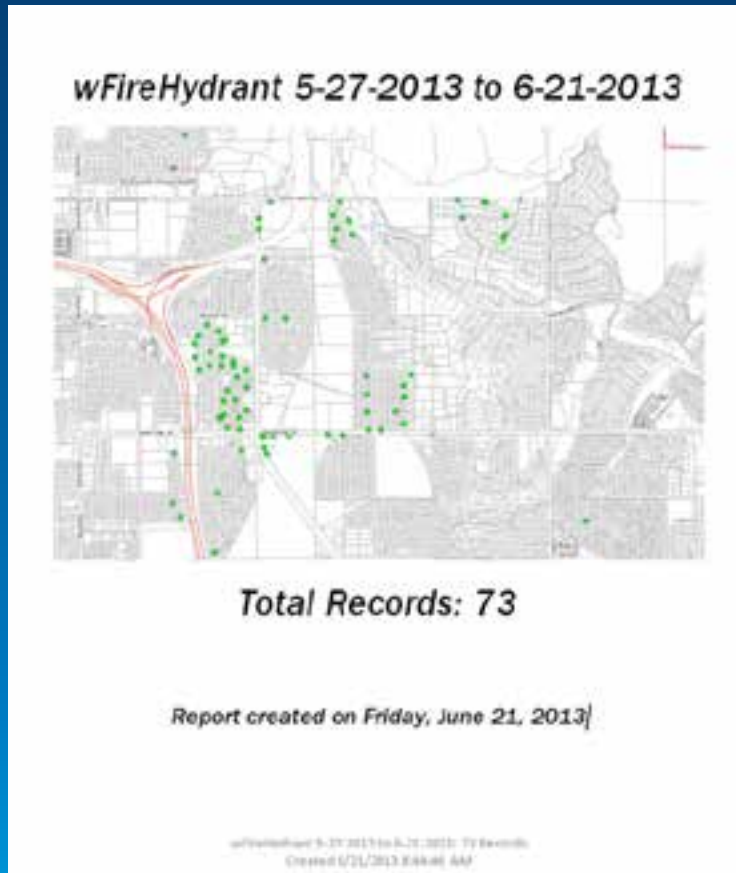
The screenshot shows the InfraMAP software interface. On the left, there is a sidebar with a map view and a list of activities. The main area displays a 'General' tab for a hydrant record. The form includes fields for Hydrant ID (17-115), Manufacturer (Mueller), Model Year (1979), Water Cond. (Clear), Discharge Loc. (Street), Hyd Type (Pumper), Static PSI (59), Flush Dur. (0), Meter Read (7389), Operational Status (OK), Case (Operational), Chain (Operational), Nozzles (Operational), Chains (Maintenance Req.), Packing (Operational), Drain Plug (Operational), Operating Nut (Operational), Valve and Seat (Operational), Paint (Maintenance Req.), Location Details, and Operation Comments (Graffiti).

General	
Hydrant ID	17-115
Manufacturer	Mueller
Model Year	1979
Water Cond.	Clear
Discharge Loc.	Street
Hyd Type	Pumper
Static PSI	59
Flush Dur.	0
Meter Read	7389
Operational Status	OK
Case	Operational
Chain	Operational
Nozzles	Operational
Chains	Maintenance Req.
Packing	Operational
Drain Plug	Operational
Operating Nut	Operational
Valve and Seat	Operational
Paint	Maintenance Req.
Location Details	
Operation Comments	Graffiti

- Easy to use
- Large text
- Fully disconnected
- Access to As-Builts
- Wachs Integration



# InfraMAP



- Easy reports
- Valve Isolation
- Requires 2 syncs/day
- Complete Copy of Geodatabase on tablets

# Integration Opportunities





# Phase 3 Goals (Work Order Implementation)

- Integrate GIS into Utility Workflows
- Use GIS to Support Operations
- Integrate Other Business Systems with GIS

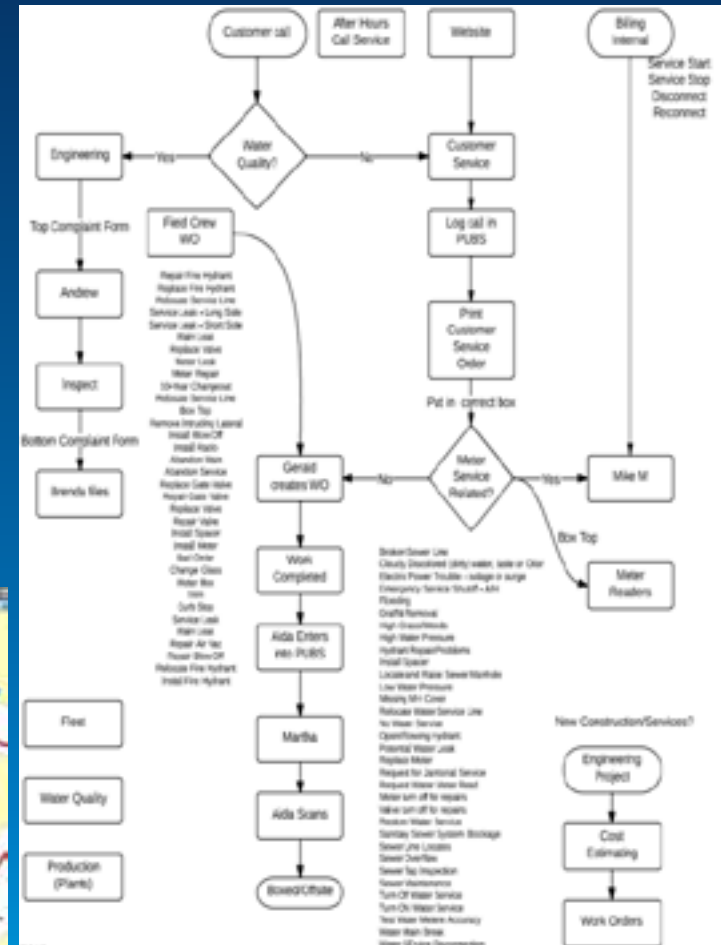
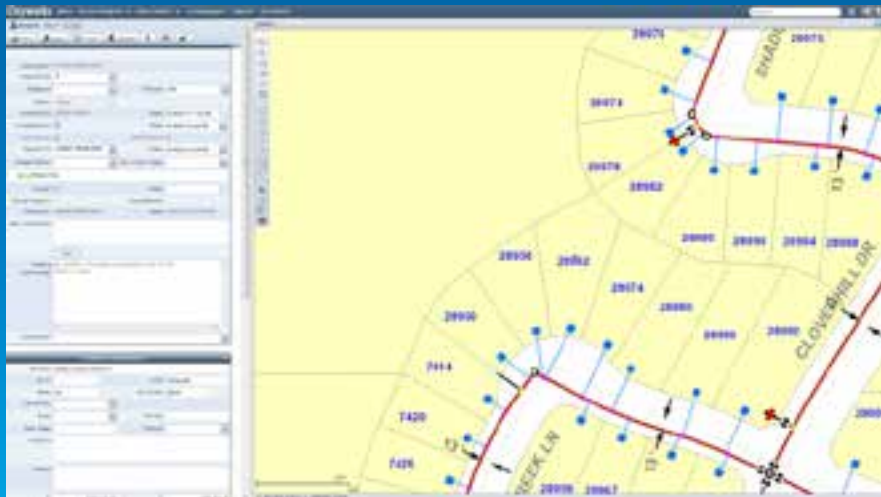
# Cityworks

- GIS Centric Solution
- AMS-No syncing (updates in field immediate)
- Service Requests/Work Orders/Inspections
- Scheduled Preventative Maintenance
- Manage more than GIS assets:
  - Buildings
  - Fleet
  - Computers



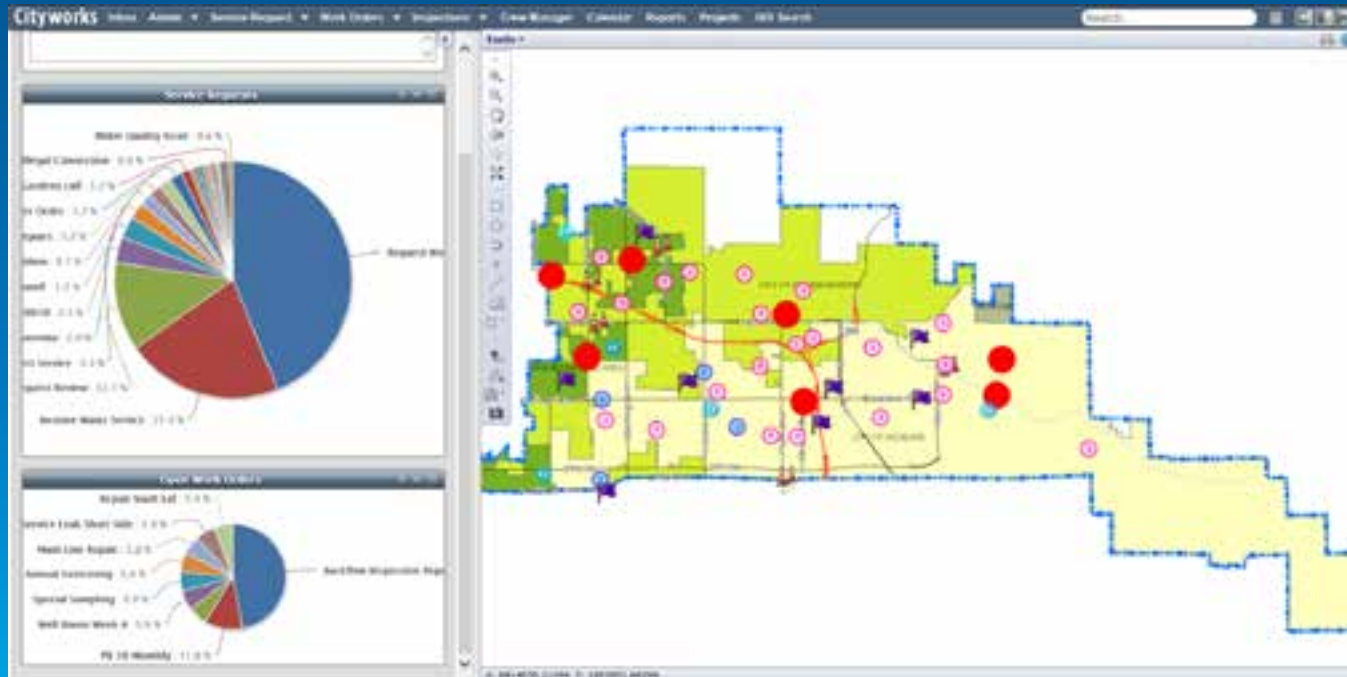
# Cityworks AMS

- GeoEngineers selected
- Quickstart Implementation
- LGT templates simplified setup
- Live in less than 2 months

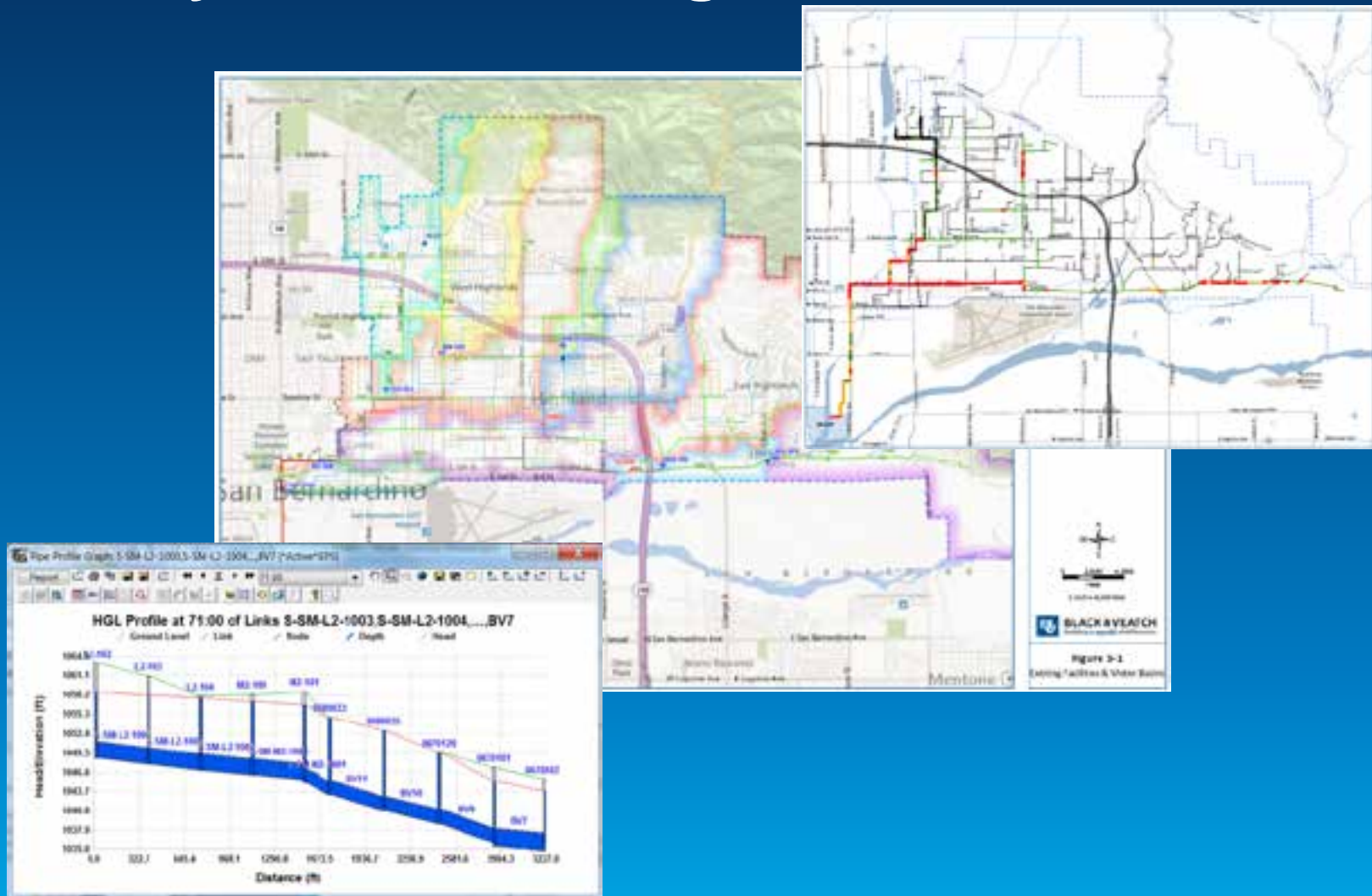


# Cityworks

- Field can use best device for job
  - Toughbooks/Motion Tablets
  - Windows Tablets
  - Android/iOS Phones



# Innovyze for Modeling



# Issues Encountered/Lessons Learned

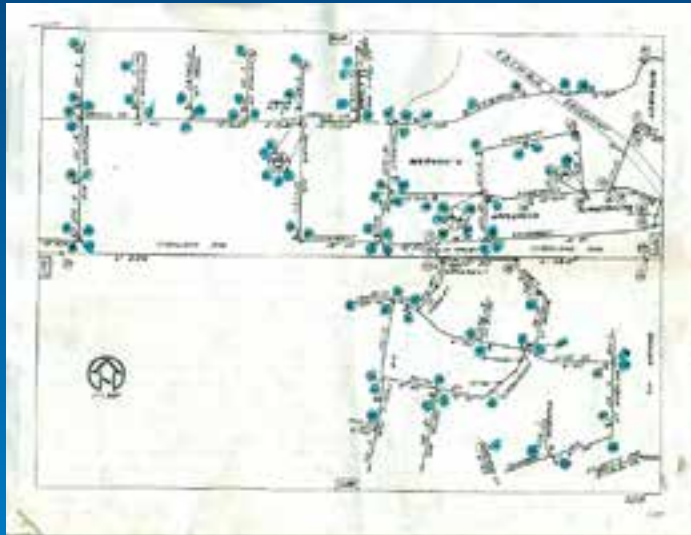
- Start with ArcGIS for Local Government Model
- Continue to review plan or road map
- There will be resistance to change so...
- Find champions in organization
- Need resources dedicated to maintaining GIS
- Management support needed
- Software versioning can be difficult to manage
- Keep it simple



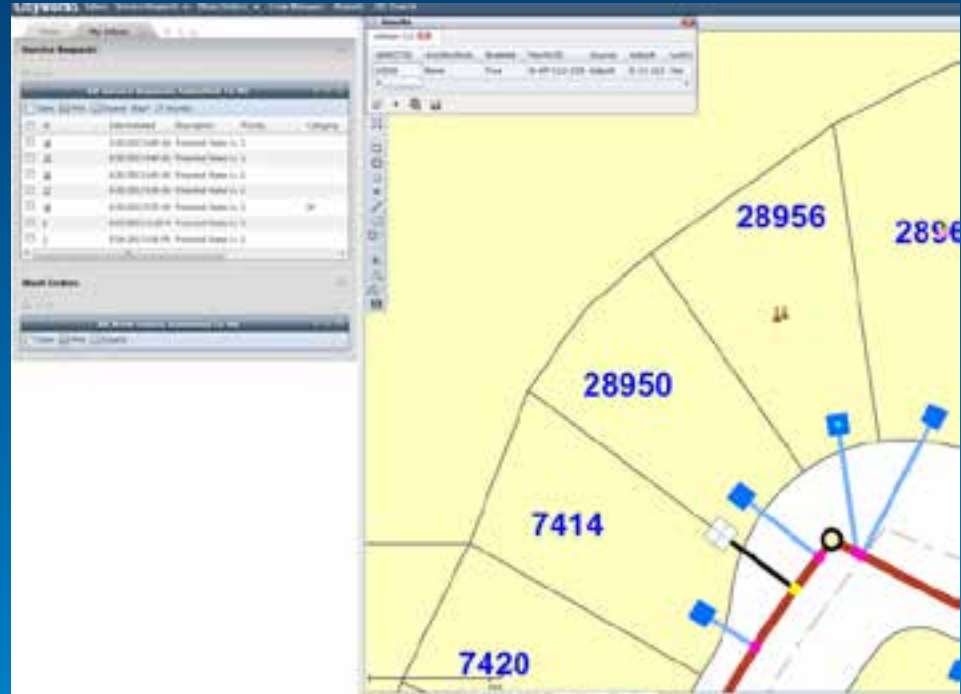
# Today...Meter Routes



# Today...Hydrant Flushing



# Today...Service Requests/Work Orders



# The Road Ahead

- Implementation of new finance/billing system (Tyler Incode)
- Internal Cityworks inter-department Committee
- Continue to Develop GIS and Cityworks
  - Fleet Management
  - Building Management
- Regional Coordination
  - Emergency Response (ERNIE)
  - Data sharing
  - ArcGIS.com



# Questions?

- Leida Thomas ([lthomas@eastvalley.org](mailto:lthomas@eastvalley.org))
- Bruce Miller([brucemiller@MillerSpatialServices.com](mailto:brucemiller@MillerSpatialServices.com))

# Thank You!!!