City of Tuscaloosa, AL

SSO Reduction with Lucity & ArcGIS

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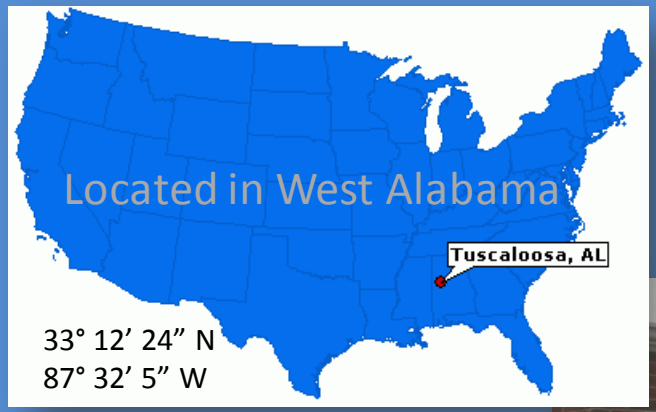
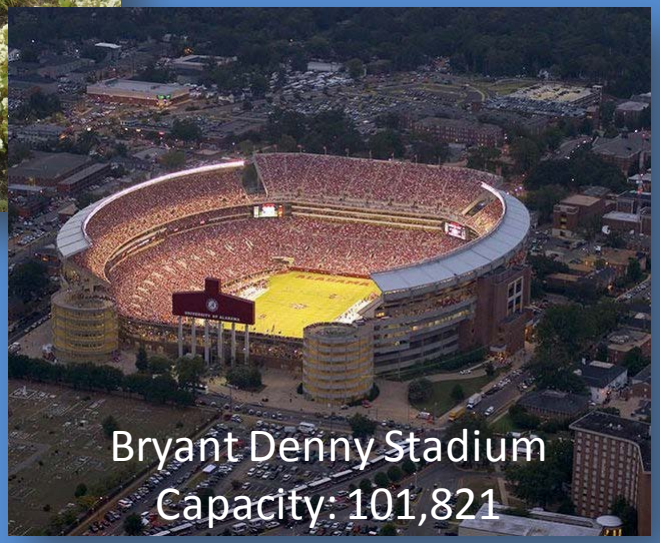
Tuscaloosa, Alabama



Population: 90,221

University of Alabama
33,602 Students



Bryant Denny Stadium
Capacity: 101,821

Daytime Population Change Due to Commuting: +19,615 (+21.74%)
Daytime Population Change Due to Football Games: +182,359 (+102.12%)

Wastewater System

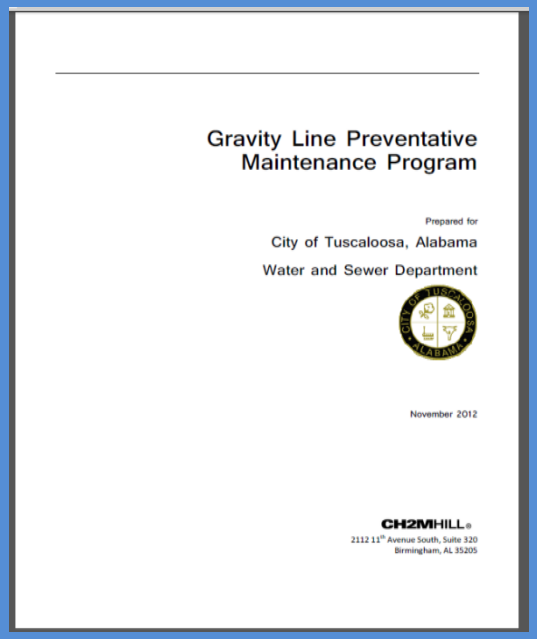
- 11,800 Manholes
- 554 Miles of Sewer Line
- 58 Pumping Stations

What was our Past?

- Started Using Lucity in 2003
- Consent Decree in 2009
- Did not have an Asset Management or Data Management Plan
- Reactive Maintenance Only

Consent Decree

- September 2009 City of Tuscaloosa Water and Sewer Department Entered into a Consent Decree with Alabama Department of Environmental Management
- One of the main requirements of the Consent Order was to address SSOs


Gravity Line Preventative Maintenance Program

Prepared for

City of Tuscaloosa, Alabama

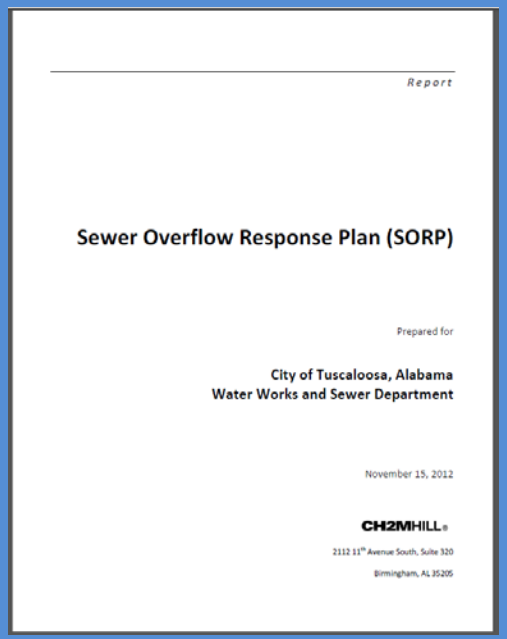
Water and Sewer Department

November 2012

CH2MHILL

2112 11th Avenue South, Suite 320

Birmingham, AL 35205


Report

Sewer Overflow Response Plan (SORP)

Prepared for

City of Tuscaloosa, Alabama

Water Works and Sewer Department

November 15, 2012

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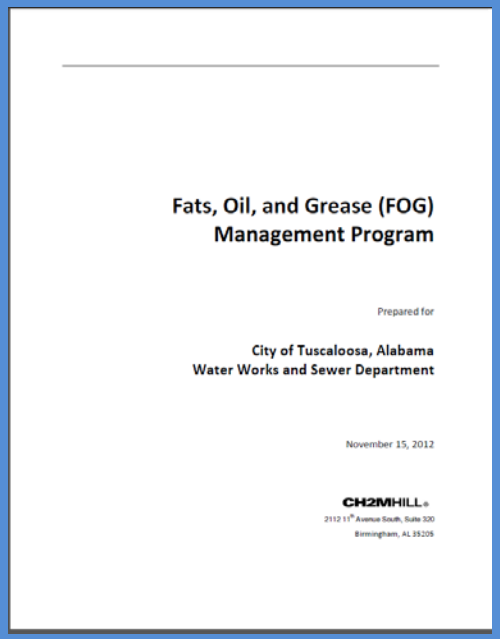
Birmingham, AL 35205


Fats, Oil, and Grease (FOG) Management Program

Prepared for

City of Tuscaloosa, Alabama

Water Works and Sewer Department

November 15, 2012

CH2MHILL

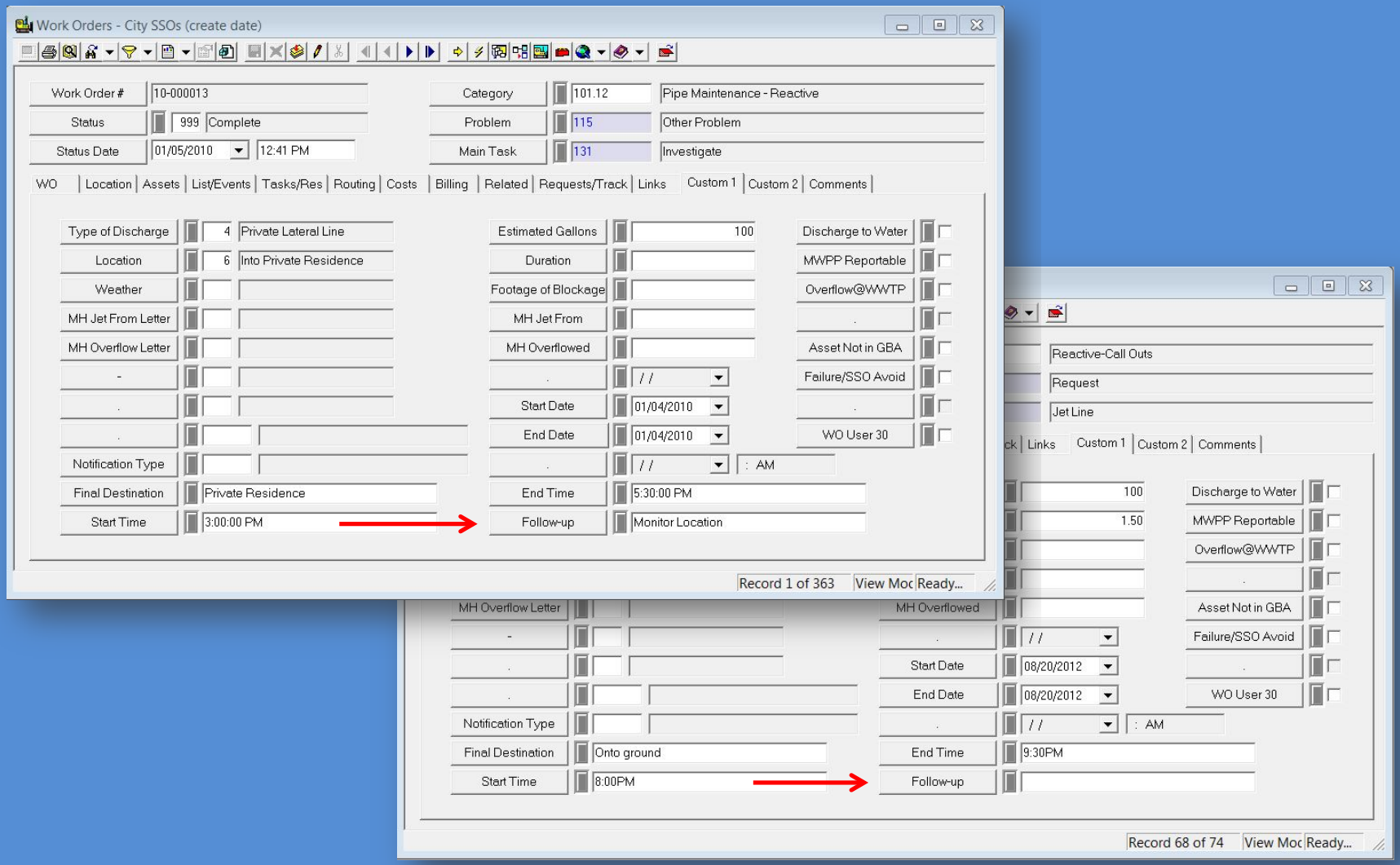
2112 11th Avenue South, Suite 320

Birmingham, AL 35205

Monthly SSOs between 2010-2012

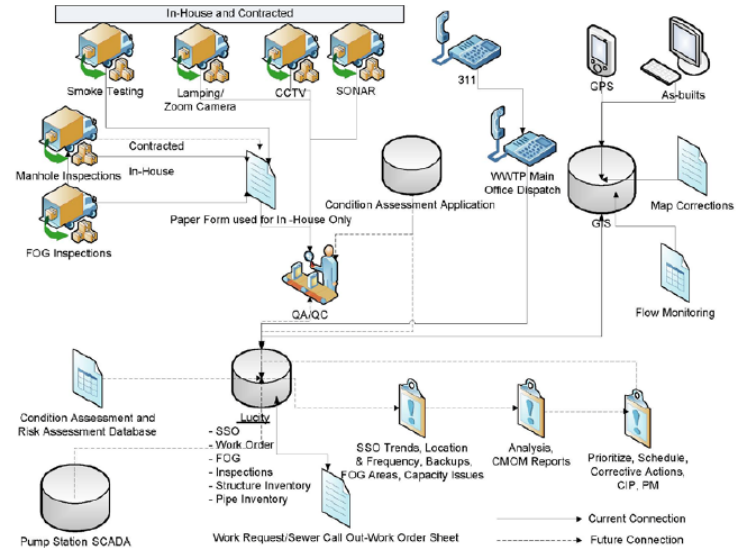
- Between 2010 – 2012 there were 581 SSOs recorded in Lucity.
- 118 were notifiable to ADEM.
- 463 were non-notifiable.

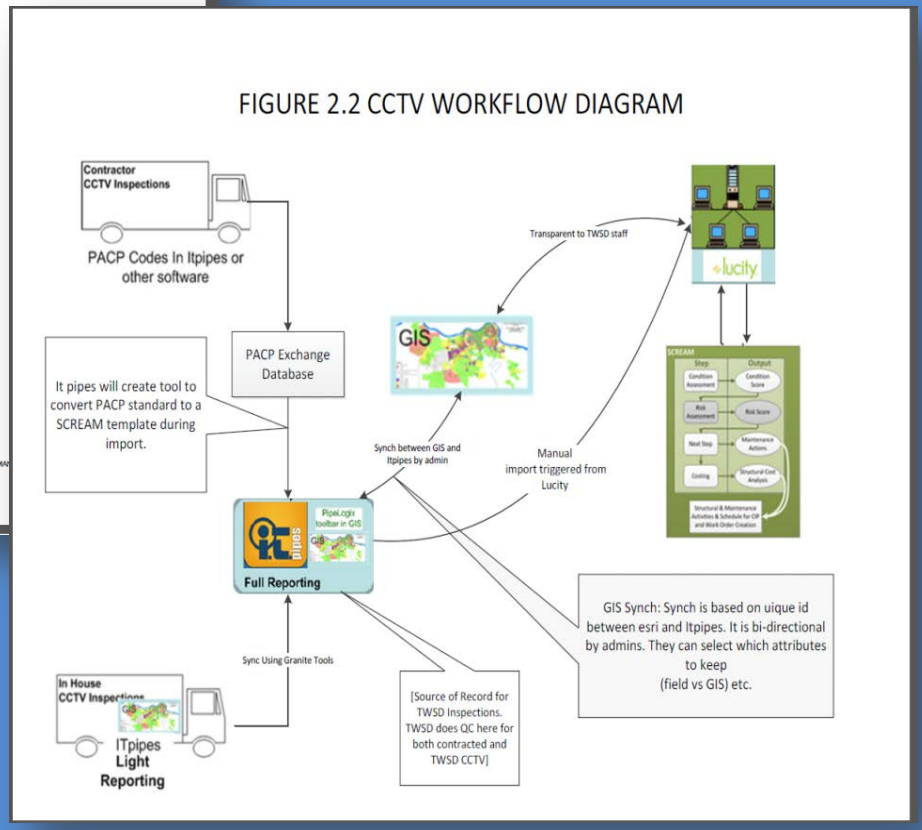
Reactive Only



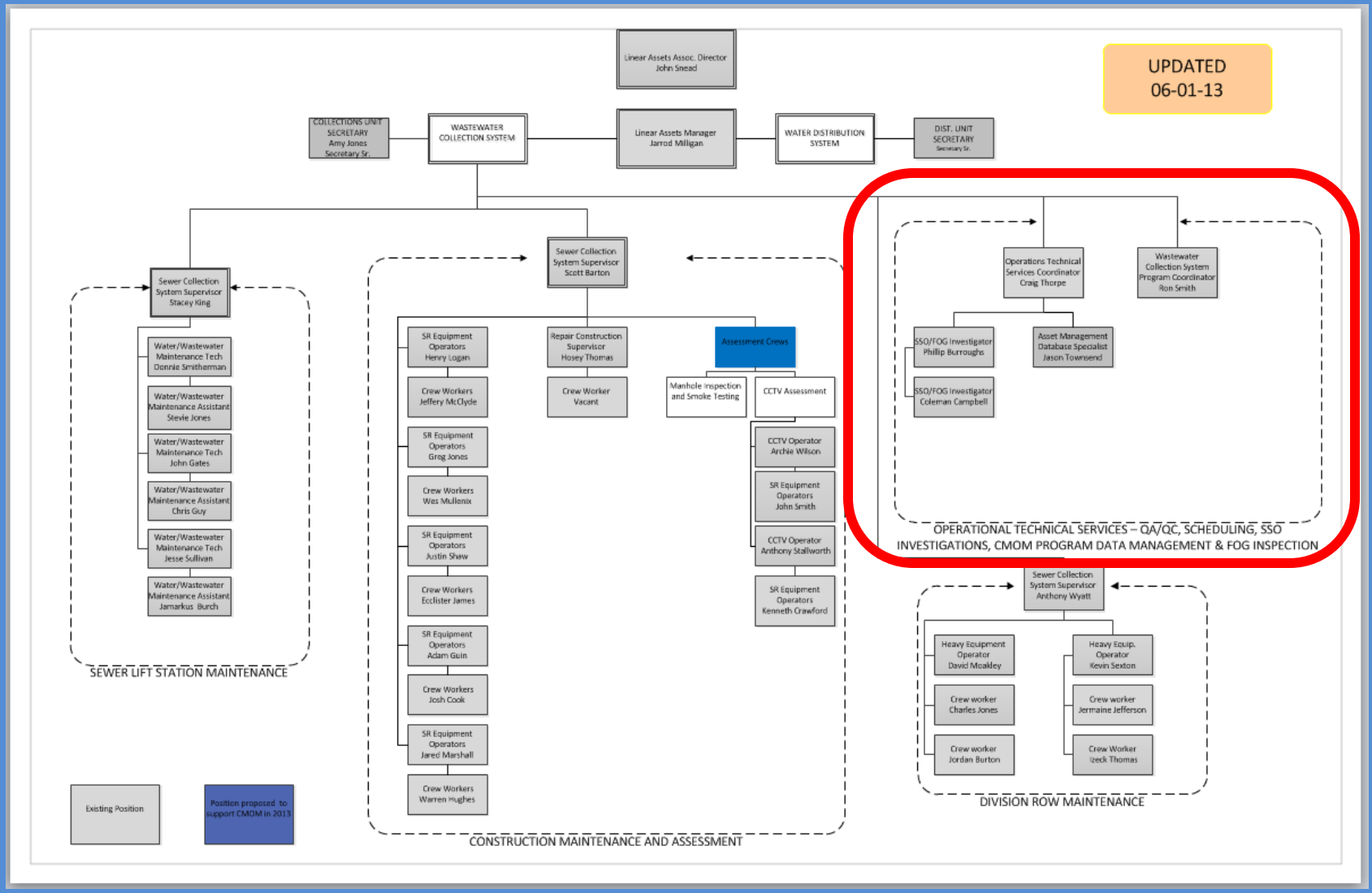
Data Management Plan

FIGURE 2-1
Data Management Flow Chart





Adding a New Division to the Org Chart



Plan Of Action

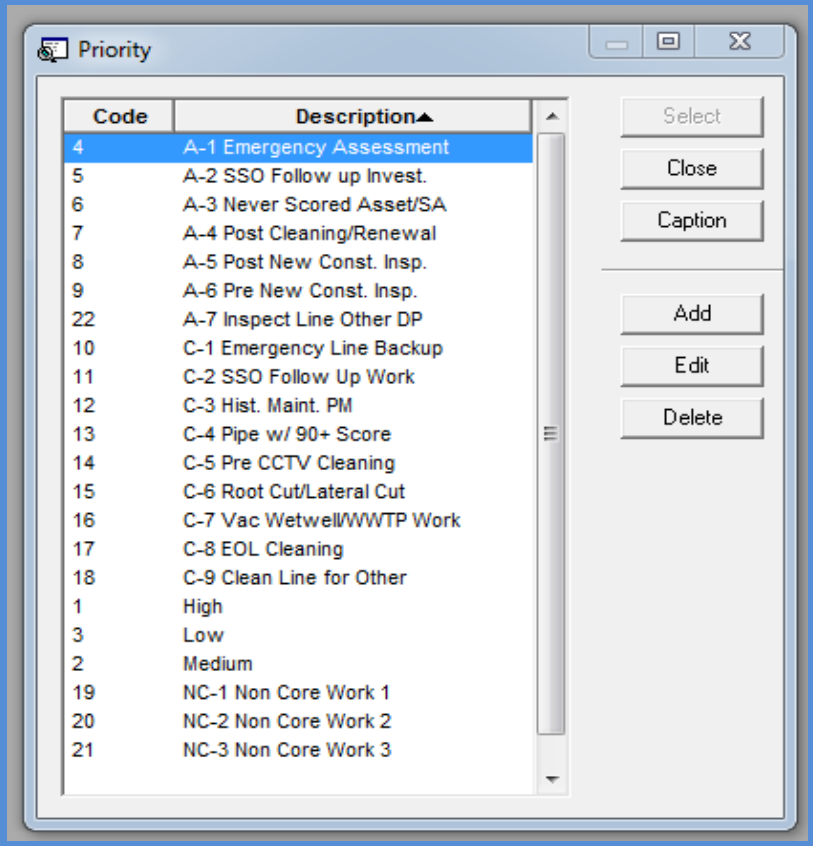
- Evaluate Existing Practices
- Conduct Evaluations of other top performing utilities
- Create an CMOM Implementation Plan
- Created Goals (Levels of Service)
- Measure our Goals
- Promote Asset Management Values

Evaluation of Past Procedures and Protocols

- Employee Moral
- Prioritization of Work
- Improve Efficiency and Accountability
- Improve Safety, Training and Equipping
- Improve Work Management
  - Better QA/QC
  - Improve Work Efficiency

Utility Site Visits

- Learned how we can prioritize work more efficiently
- Performance Measures
- Management Techniques
- Employee Accountability
- Safety
- Networking



CMOM Implementation

- Multiple Reorganizations
- Develop SORP, FOG, GLPM Plans and Data Management Plans
- Set up Implementation Schedules
- Identified safety goals

Setting Goals & Measuring Goals

- How many annual overflows per mile of pipe?
- Response Time?
- Building backups per year?
- Employee Accountability
- Cleaning and Assessment Goals

Pick Items that are measurable!!!

AND WE TRACK OUR PROGRESS!!!

Involve and communicate with the customer

Five Core Components of Asset Management

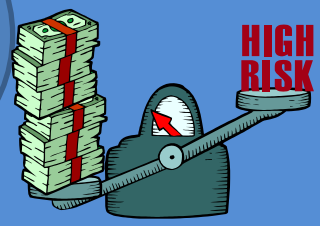
Current State of the Assets

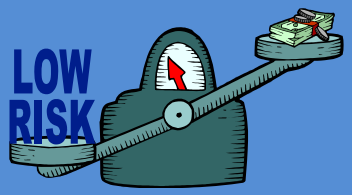
Required Level of Service

Asset Management

Long-term Funding Strategy

Critical Assets





Minimum Life Cycle Cost

Present

Where are we now?

Currently in 2013 we have experienced a 18% reduction in SSOs due to:

- Conducting follow-up investigations in Lucity on all SSOs
- Use of FOG Module
- Using information from Lucity to drive PM washing in basins with higher SSO numbers.
- Reorganizing PM Lists and Maintenance Crews
- Creating priority list to ensure higher priority work gets completed first.

Follow-up Investigations

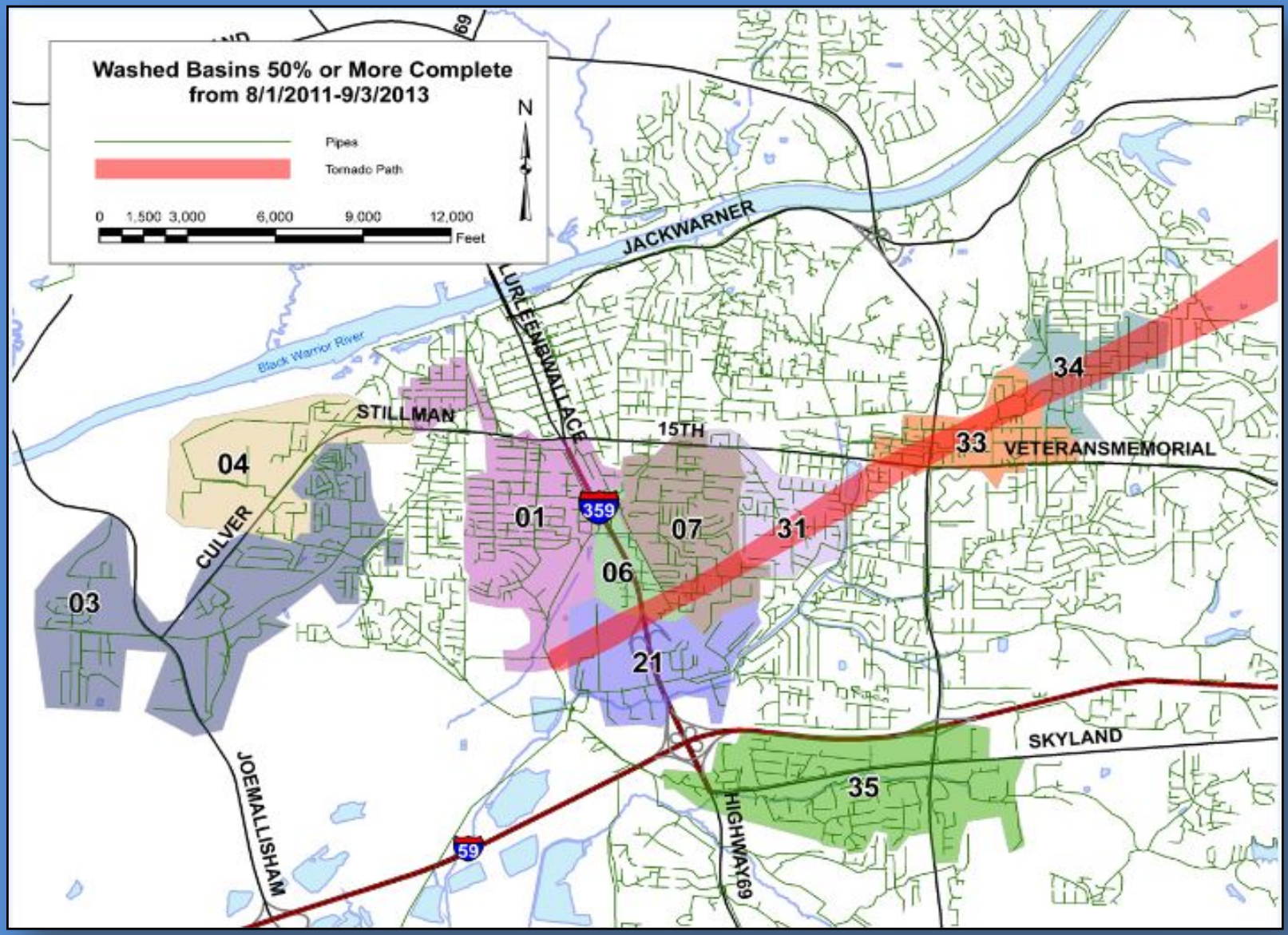
- Filter out previous SSO information for the asset in Lucity.
- View or review most current CCTV Investigation of the asset.
- Filter for past Maintenance of the asset in Lucity.
- Investigate the cause of the SSO.
- What follow-up work is needed and relate follow-up Work Order to the SSO Work Order.

Transition to FOG Module in Lucity

In Late 2012 FSE Information was moved from the Lateral ID Module to the FOG Module making it easier to:

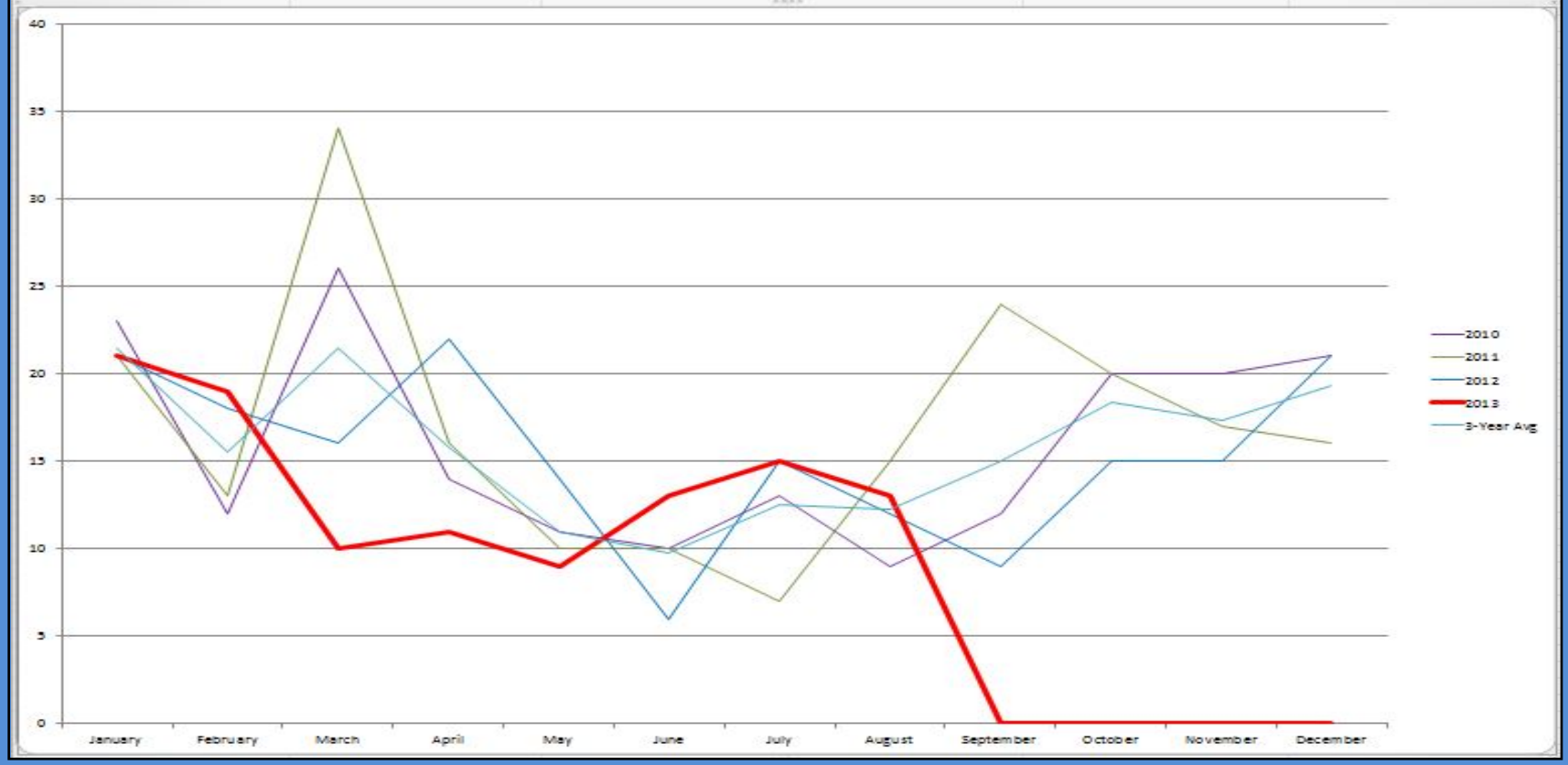
- Keep a record of BMP violations
- Have contact and facility information
- Keep up with FOG Hauler Information
- Know location of trap/interceptor
- See previous inspections of the FSE
- Filter for FSEs that are or are not compliant

Basins Washed in 2011-2013



Monthly SSO Track

Month	2010	2011	2012	2013	3-Year Avg
January	23	21	21	21	22
February	12	13	18	19	16
March	26	34	16	10	22
April	14	16	22	11	16
May	11	10	14	9	11
June	10	10	6	13	10
July	13	7	15	15	13
August	9	15	12	13	12
September	12	24	9		15
October	20	20	15		18
November	20	17	15		17
December	21	16	21		19
Annual Total	**191**	**203**	**184**	**111**	**190**

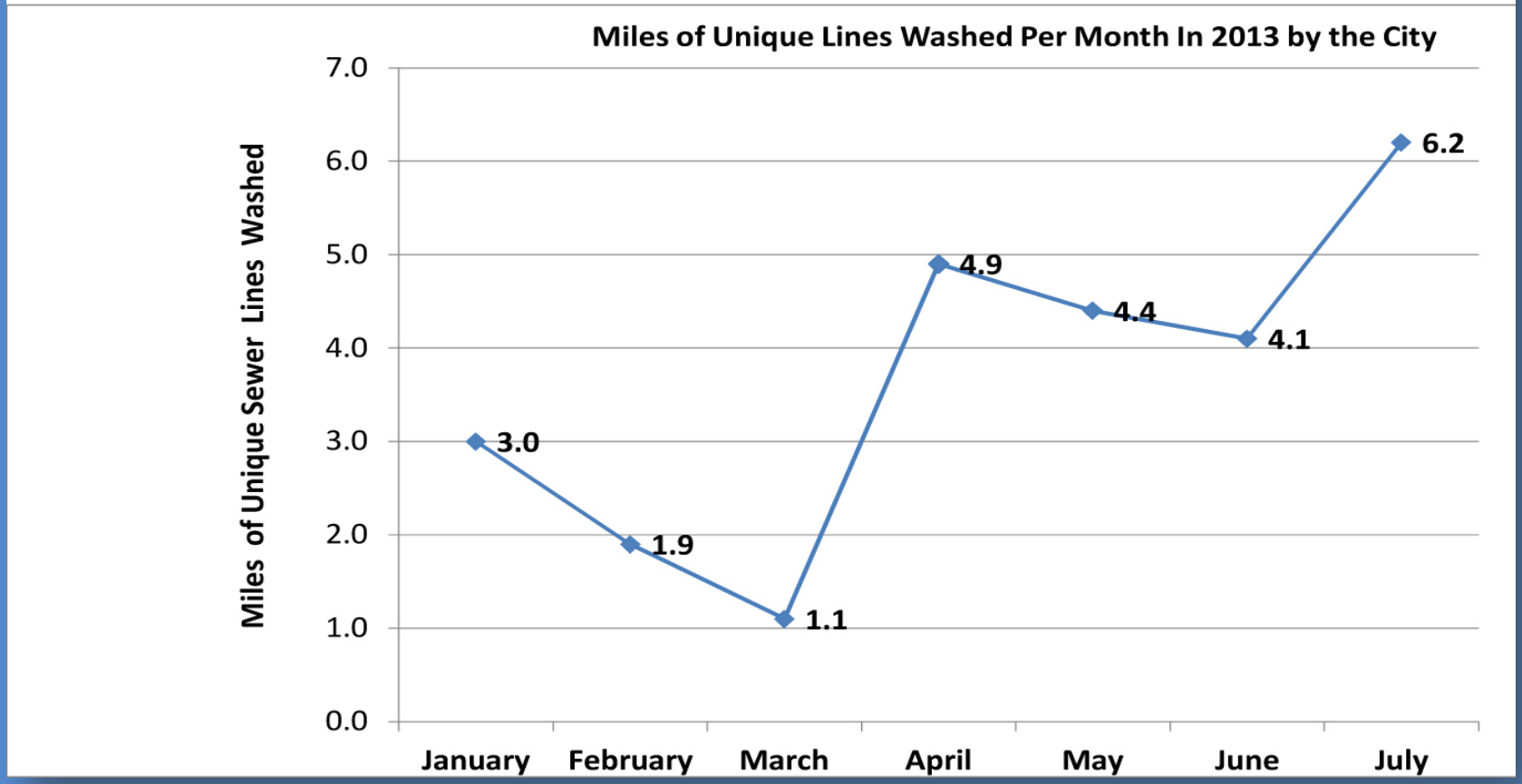


Reorganization of PM Lists

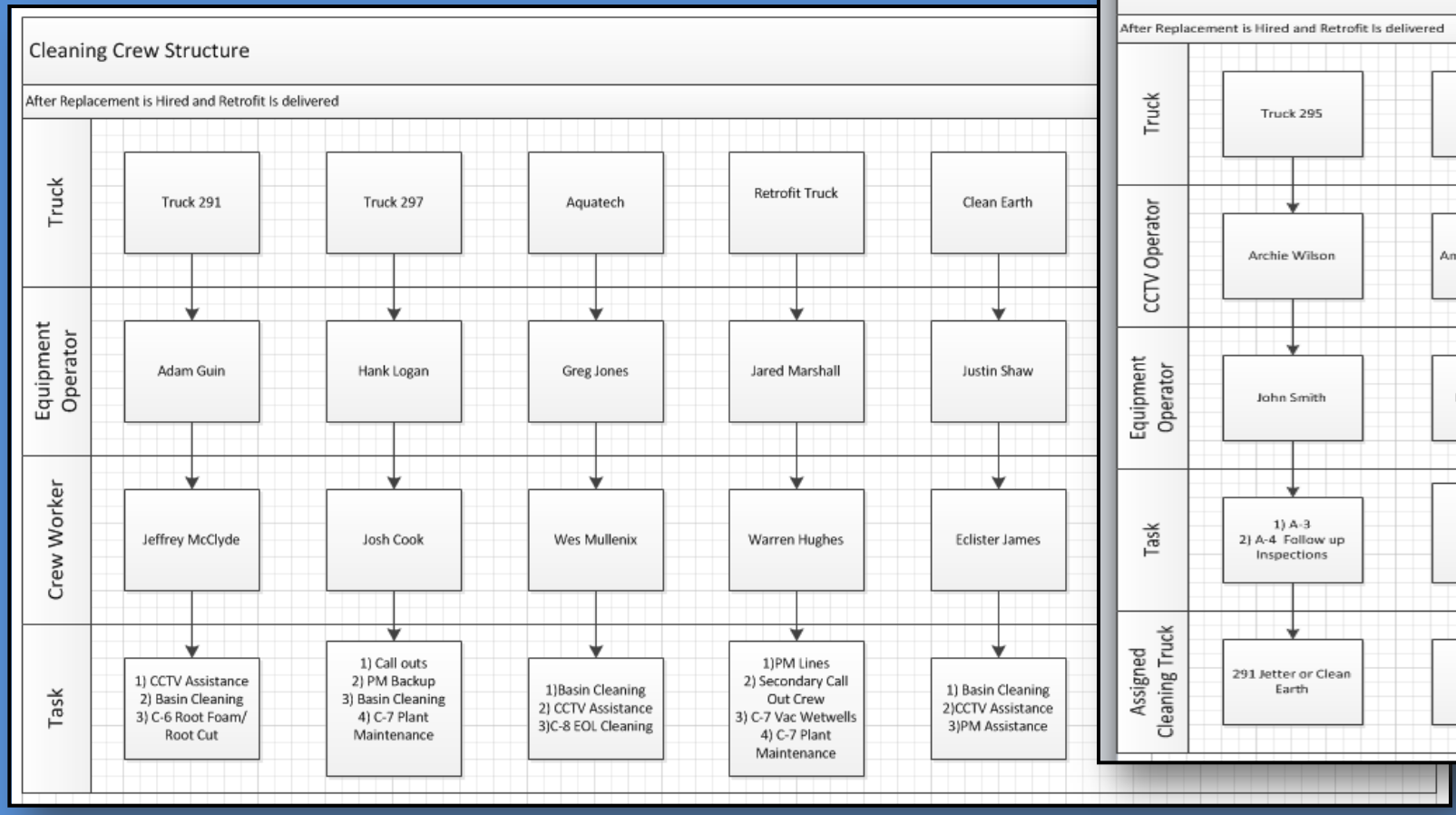
- Starting in late 2012, the PM lists were generated in Lucity at the beginning of each month.
- At the beginning of 2013, the 3 Monthly PM lists were mapped and reorganized by location.
- Monthly PM Lists were reviewed and a 6 Month PM list was created.
- Mapped siphons and created a 6 month PM list for washing siphons.

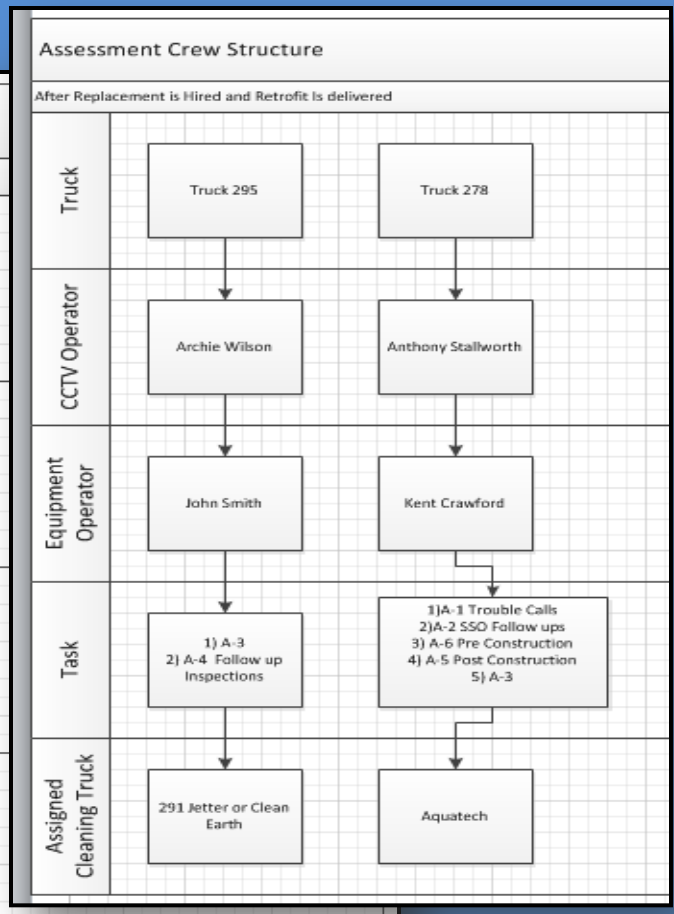
CMOM/Wastewater Collection System

2013	Miles of Unique Lines Washed Per Month In 2013
January	3.0
February	1.9
March	1.1
April	4.9
May	4.4
June	4.1
July	6.2
Total	**25.6**

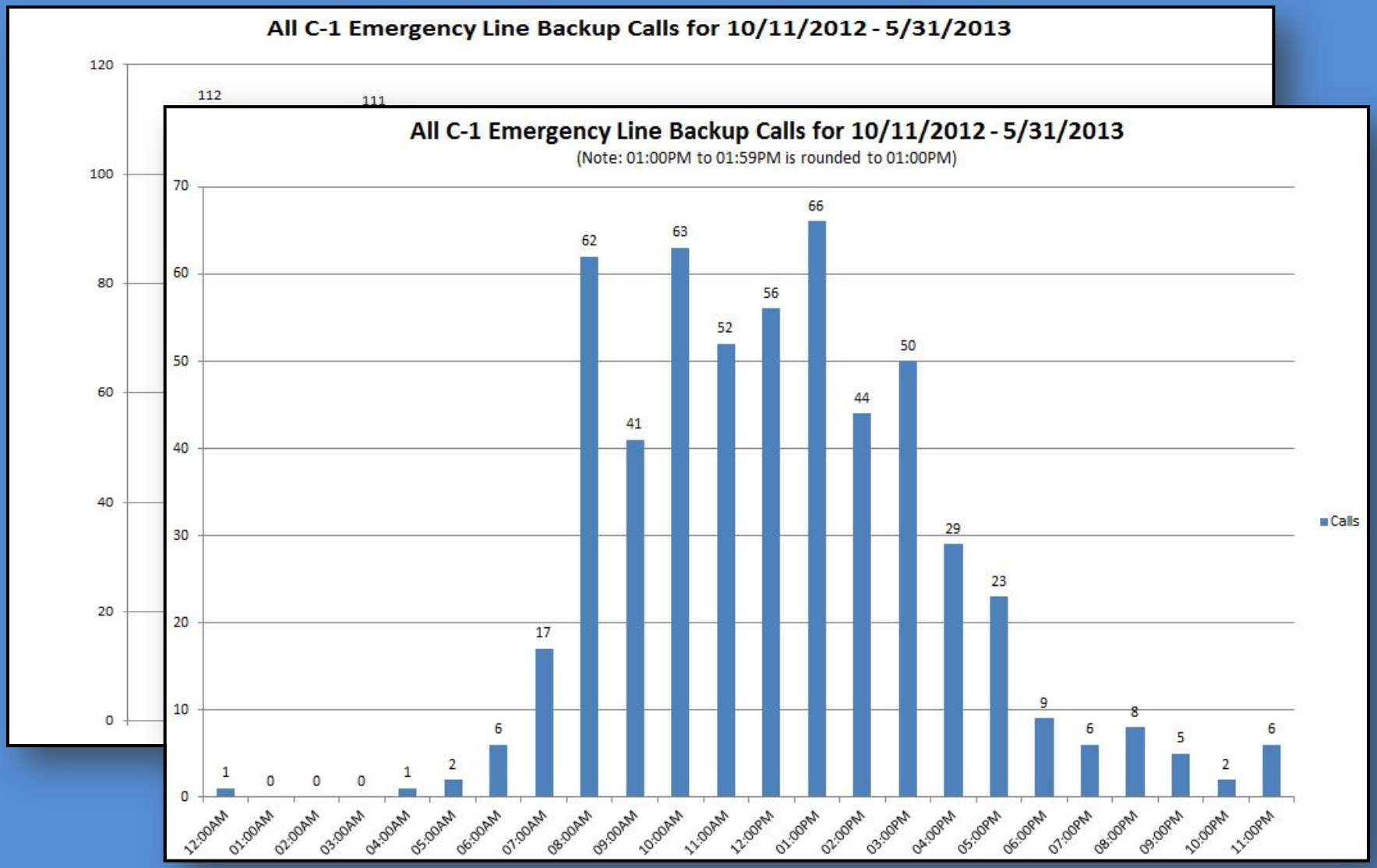


Reorganized Crews to Improve Efficiency





Staff Reorganization



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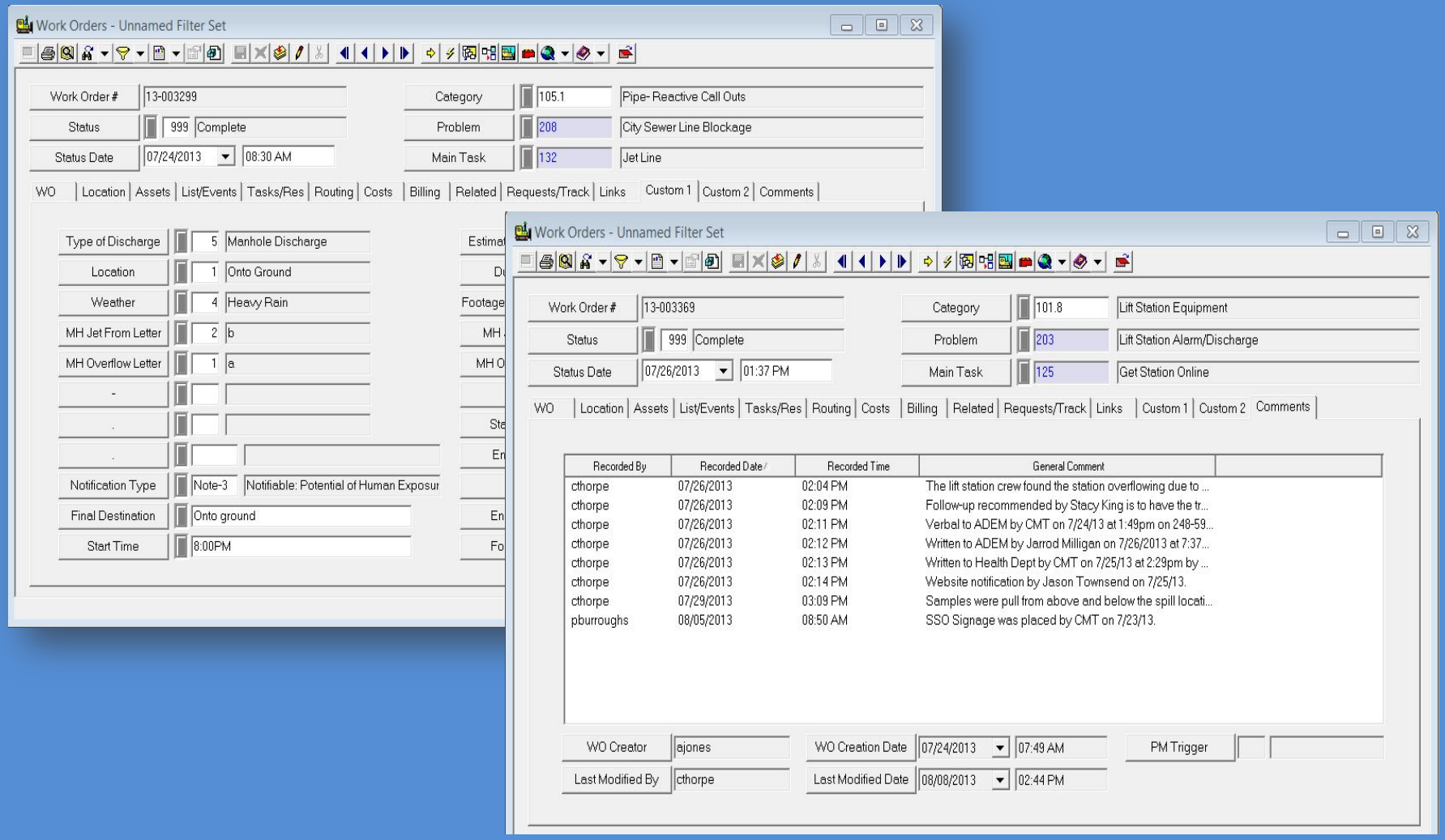
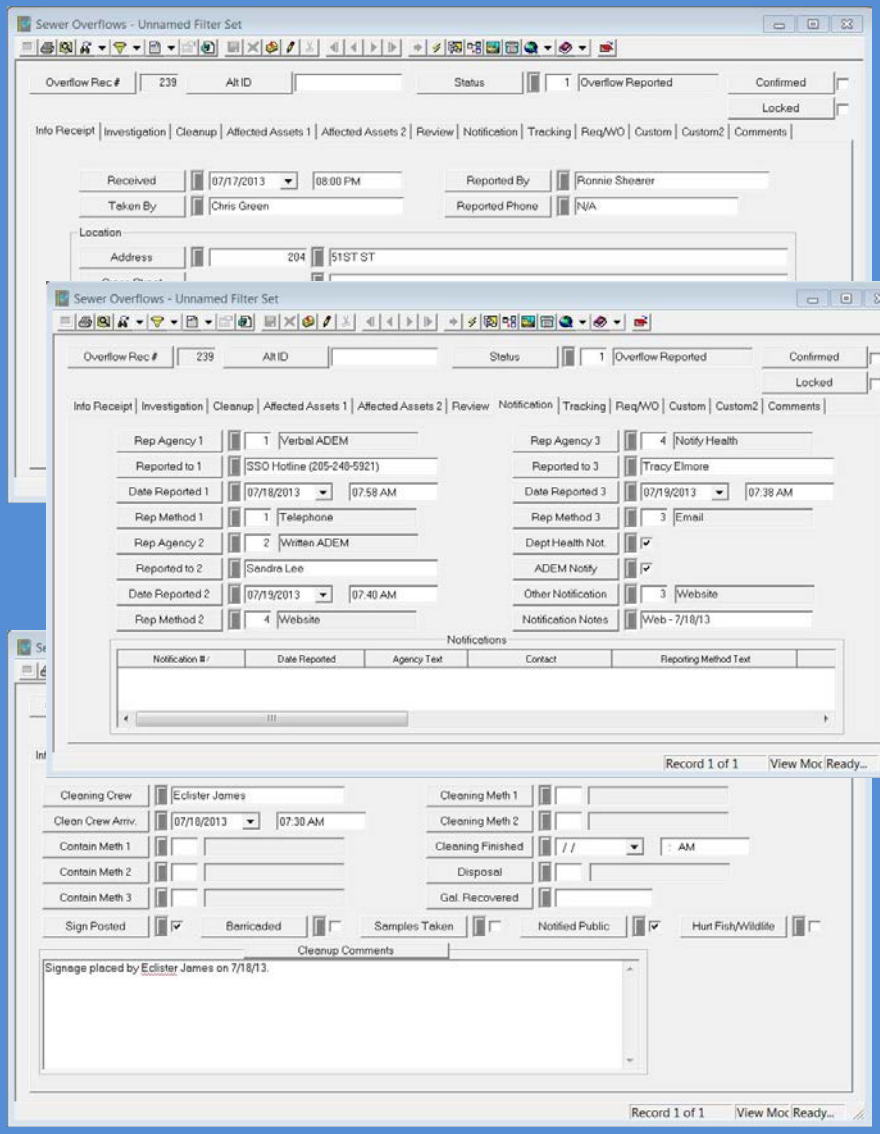
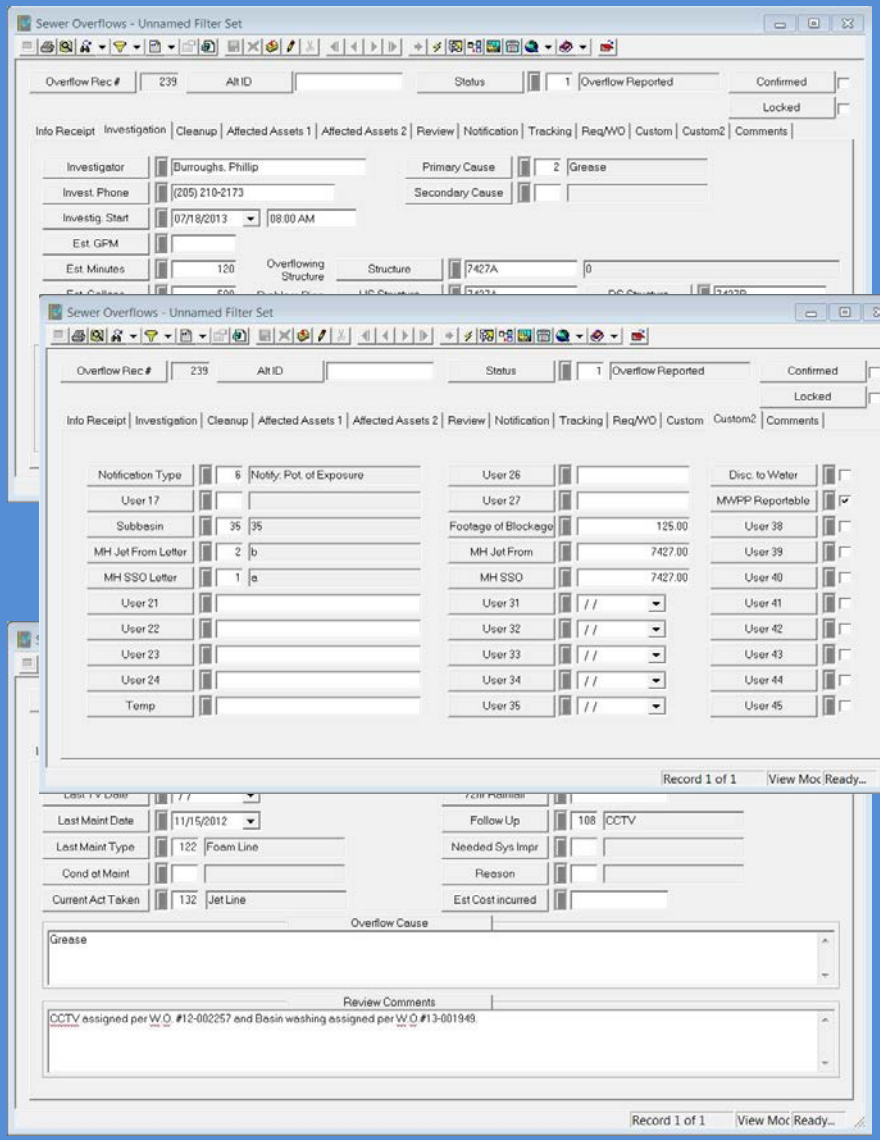
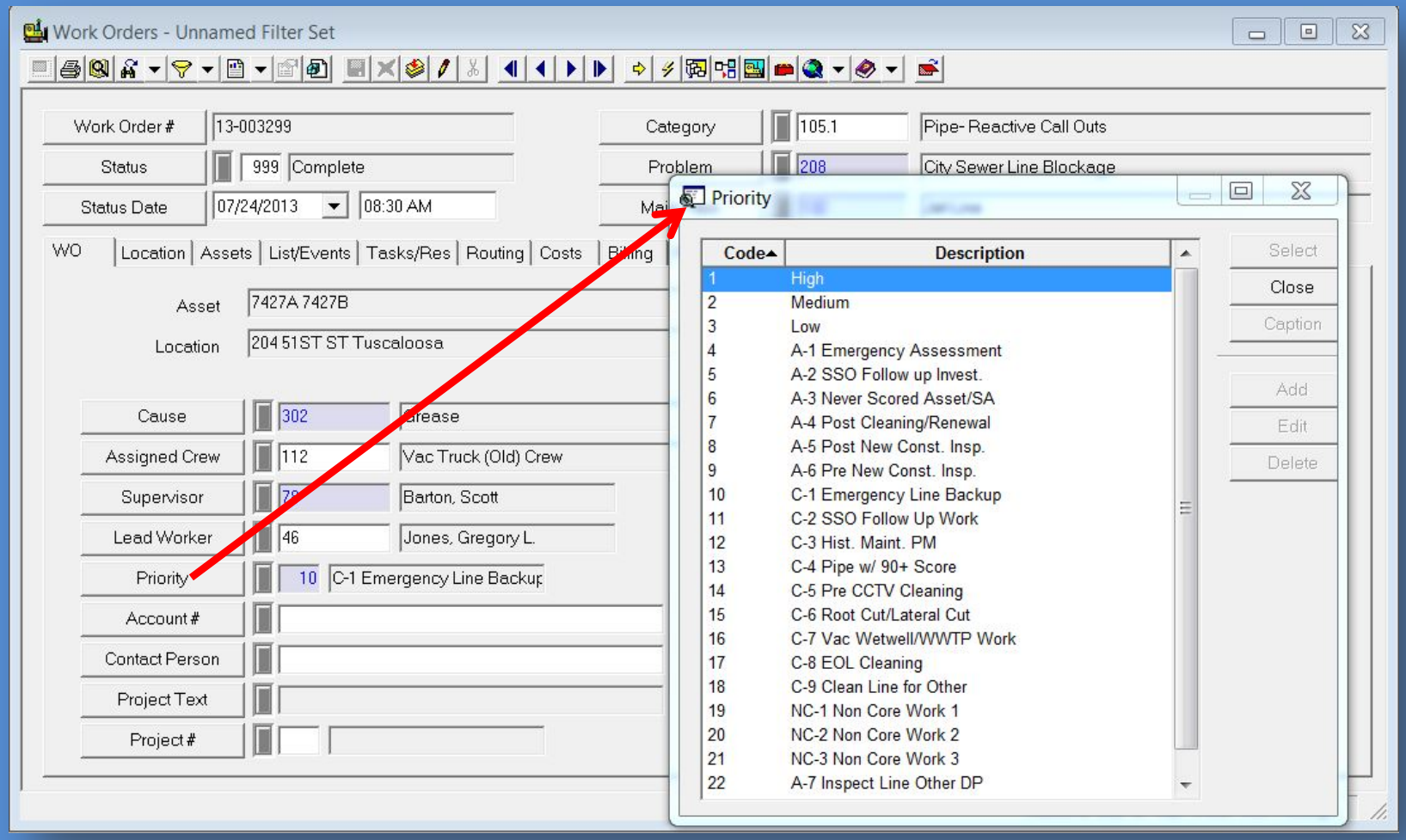


Overflow Module





Present Priorities



Where are we going?

The Future

- Fully Migrating all SSO data to the SSO Module
- Update to Current Lucity Version
- Sewer Condition Risk Evaluation Assessment Model (SCREAM) in conjunction with Lucity to drive Continuing Sewer Assessment Program
- Implementing Lucity and GIS in Water Distribution Division
- Implementing Lucity in Water and Wastewater Treatment Plants
- Lucity Mobile for Field Crews
- Dashboard for Supervisors & Management
- Scheduling Predictive Maintenance

Extensive Training

- Bi-Weekly Lucity and GIS Training Session with Supervisors
- SQL Training for Asset Management DB Specialist
- Crystal Report Training for Analyst Staff

Questions?