

Cityworks Overview

Steve Hine – CEO

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Institute of Municipal
Engineering of
Southern Africa

Cityworks®



Introduction to Giscoe

- **Who we are**

- Specialised information management company focusing on spatially enabled (GIS) databases and municipal enterprise business processes

- **What we do**

- Develop spatially enabled information systems, and computer assisted business processes focused on ensuring industry best practices are followed and ensuring the correct information is captured. Provides strong support for mSCOA standards and implementation requirements.

- **What is our experience**

- We have been building spatially-enabled (GIS) information management systems and databases for over 25 years. Building spatially enabled fixed asset registers since 2012.
- We have delivered solutions to Local Authorities ranging from large Metro's (Johannesburg, Tshwane and Cape Town), to medium (Centlec) and smaller size towns (Govan Mbeki, Royal Bafokeng Administration)

Giscoe & Cityworks

- Giscoe is the Cityworks distribution partner in South Africa
- Giscoe had both the appropriate municipal and GIS expertise needed to develop and support Cityworks
- Cityworks can leverage off existing ArcGIS (GIS) infrastructure and do land-focused asset management that is mSCOA compliant
- Cityworks has numerous well-established sites across North America and Giscoe has just implemented its 1st site at a major SA utility



What Does Cityworks Do?



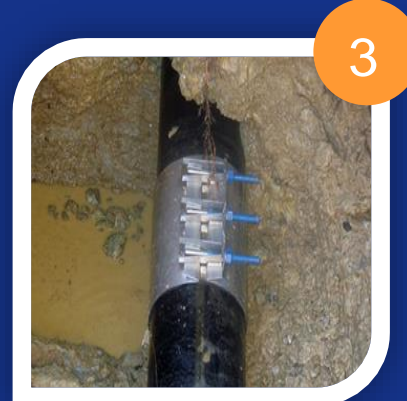
Public enquiry – **Service Request**

- Water main break
- Signal malfunction
- Street pothole
- Graffiti
- Tree down
- Street light out



Investigation - **Inspection**

- Asset identified
- Asset attributes reviewed
- Prior work reviewed
- Crew scheduled/dispatched



Action Taken – **Work Order**

- Record information such as supervisor, dates, work performed
- Resource utilization: labor, material, equipment



Review - **Report**

- Cumulative reports: where, when, how much?
- Lifecycle: Where and when can we expect issues?
- Planning: Followup inspections and related work

React – Prevent – Review

Common Workflows of Asset Management

Cityworks - An Enterprise Platform



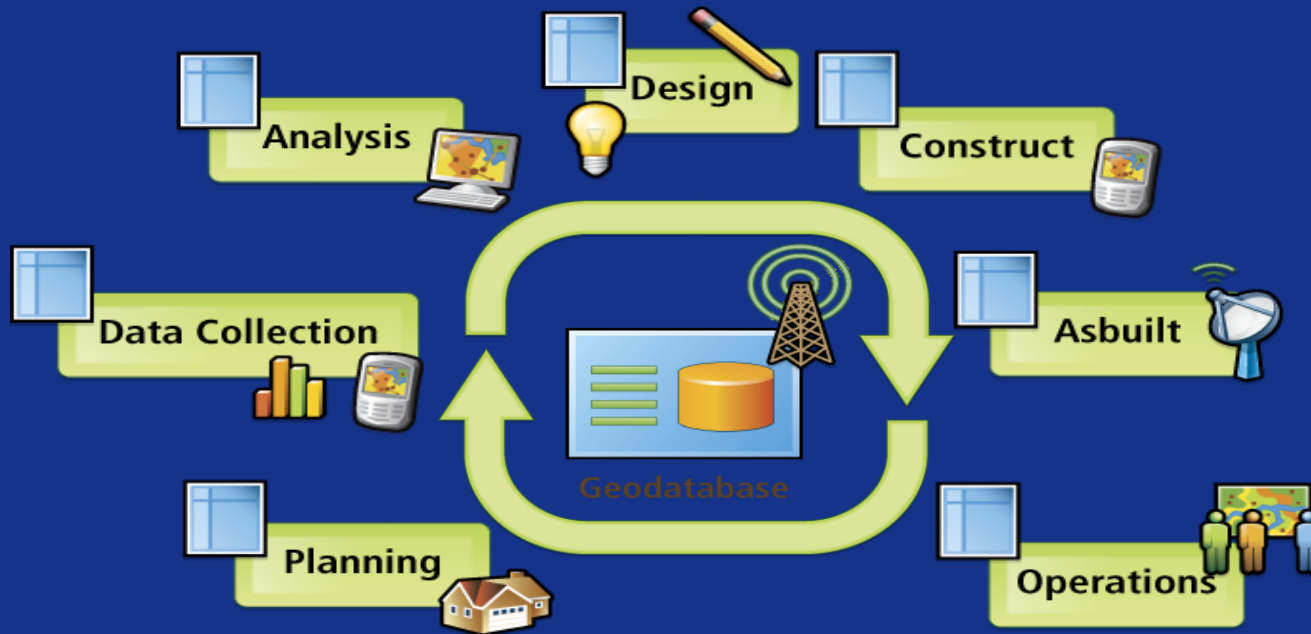
Non GIS-centric



GIS-centric

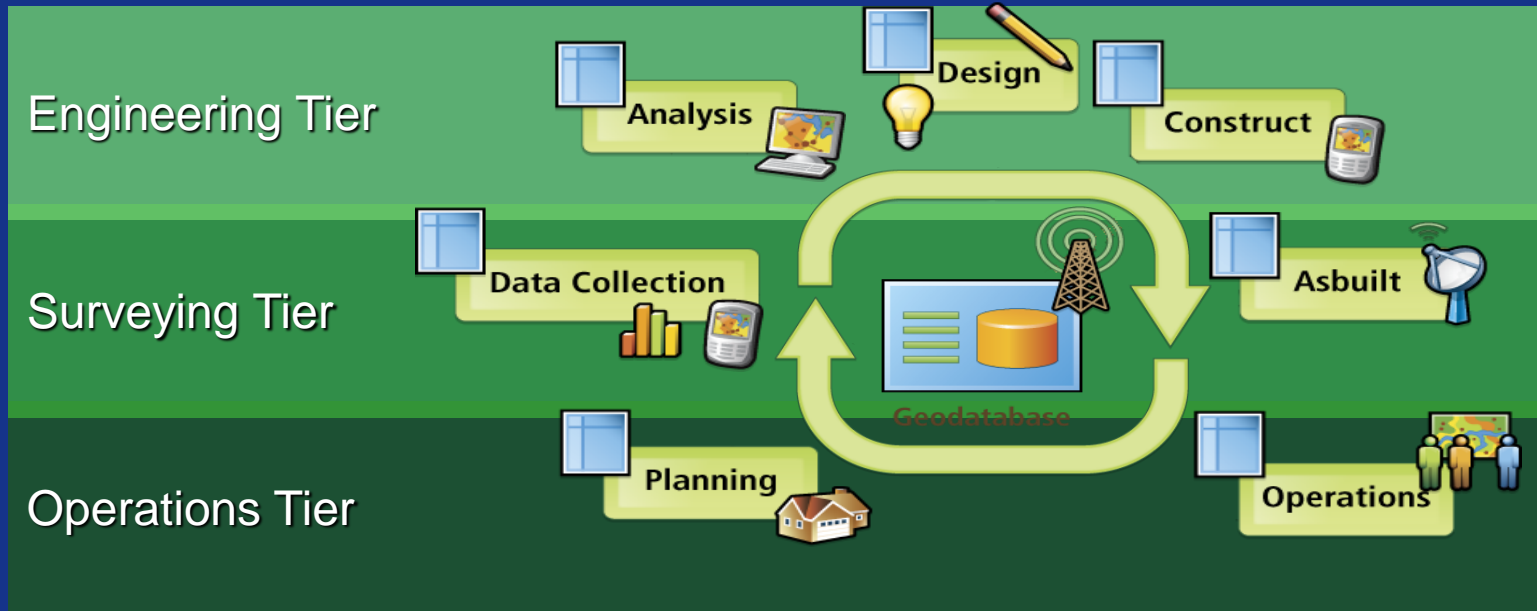


Cityworks Supports the infrastructure lifecycle...



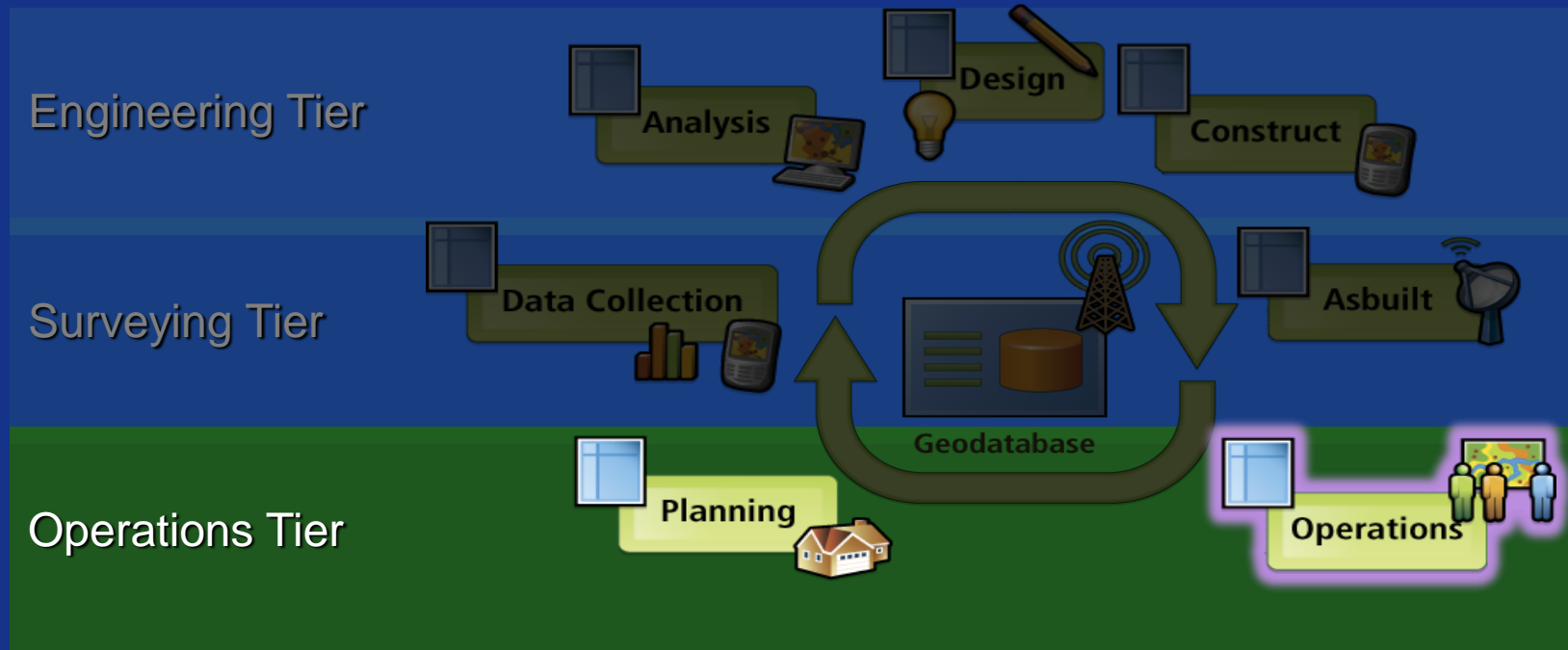
Improves Planning, Management and Decision Making...

Cityworks Supports the infrastructure lifecycle...



Improves Planning, Management and Decision Making...

Cityworks Supports the infrastructure lifecycle...



Improves Planning, Management and Decision Making...

What is Cityworks Asset Management System?

1. Customer Service and Call Center

- Recording problems and logging customer calls

2. Service Requests and Inspections

- Manage, dispatch investigations and record findings
- Record labor costs and create work orders as needed

3. Work Order Management

- Job codes and templates
- Preventive and Reactive maintenance
- Cost summaries and history
- See where they are, “live” in GIS

4. Resource and Equipment Management

- Resource and Warehouse Inventory
- Labor, Material, Equipment

5. Reporting and Management

- Extensive query tools
- Data Export tools
- Predefined and Custom reporting



Any GIS Database

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Cityworks Is An Enterprise Solution

Scalable throughout the organization through a wide variety of users



Cityworks®



Designed the Way Your Organization Works

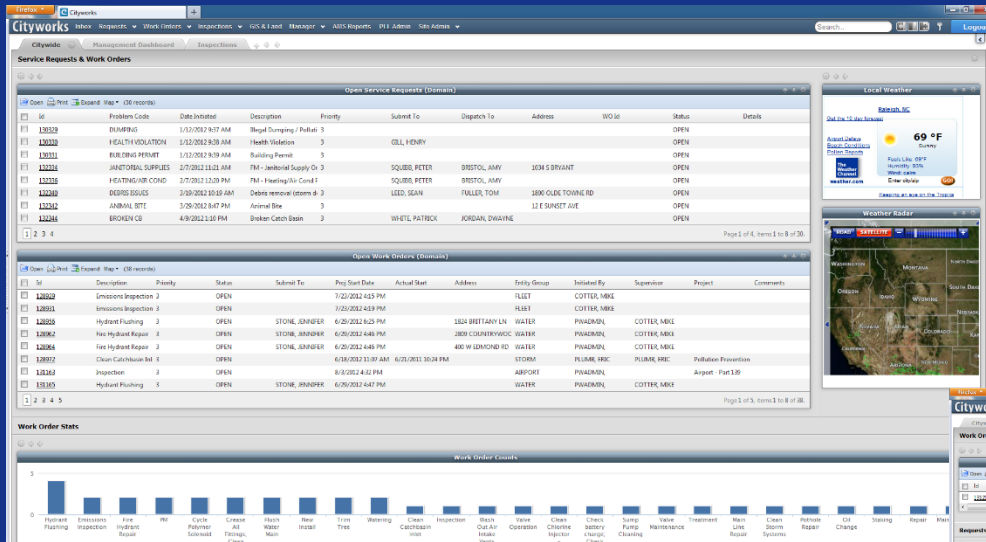


Cityworks®

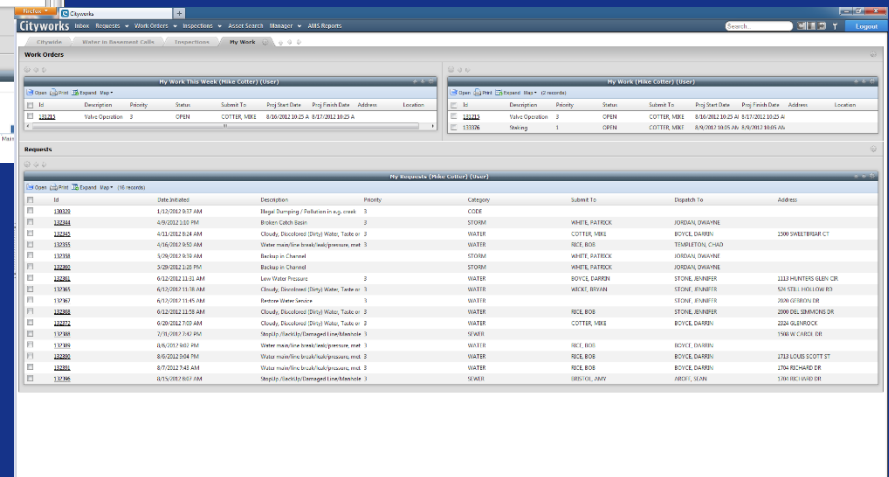


Cityworks Inbox – Dashboard

By organization, group or individual



Customizable User Inbox (To-Do's)



Call Center & Dashboards

Location, Priorities Status

The screenshot displays the Cityworks web application interface within a Firefox browser window. The interface is divided into several sections:

- Call Center**: A sidebar on the left with tabs for **Service Requests**, **Open Service Requests**, and **2013 YTD Service Requests**.
- Past Due High Priority Service Requests**: A table with 4 records showing requests that are past due and high priority.
- Open Service Requests**: A table with 33 records showing currently open service requests.
- 2013 YTD Service Requests**: A horizontal bar chart showing the frequency of various service request types throughout the year 2013.
- Map**: A satellite map on the right side of the interface showing the geographic distribution of service requests. A tooltip for request 132450 is visible, indicating a "Cloudy, Discolored (Dirty) Water, Taste or Odor" issue.

Past Due High Priority Service Requests

Id	Date Initiated	Description
132468	6/27/2013 9:21 AM	Lighting/Electr
132501	9/25/2013 9:50 PM	Water Leak
132506	10/30/2013 7:53 AM	Water Leak
132507	10/31/2013 1:48 PM	Water Leak

Open Service Requests

Id	Problem Code	Date Initiated
132450	WATER QUALITY	7/18/2013 9:36 AM
132463	WATER QUALITY	7/26/2013 2:08 PM
132464	WATER QUALITY	7/26/2013 2:10 PM
132467	PAINTING	6/27/2013 9:19 AM
132468	LIGHTING/ELECTR	6/27/2013 9:21 AM
132470	HEATING/AIR COI	6/27/2013 10:20 AM
132473	SEWER ODOR	7/10/2013 3:23 PM
132474	LOW WATER PRE:	7/29/2013 7:23 AM
132475	WATER QUALITY	8/7/2013 7:44 AM

2013 YTD Service Requests

Service Request Type	Frequency (Approximate)
Low Water Pressure	10
Cloudy, Discolored (Dirty) Water, Taste or Odor	10
Sewer Odor Complaint	8
Water Leak	5
Water Hydrant Problem or Damaged	4
Pavement issue with existing road	3
Street Flooding, Water in Street, Ditch, Culvert	3
Animal Bite	2
Wastewater Overflow	2
City Tree Is Blocking Street Lights	1
Locate and Uncover Sewer Manhole	1

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Find address on map, select Problem Code, caller and scripted questions



SERVICE REQUEST - Processing

Assignment and notifications, notes, resolution, escalation

Service Request

Description: Debris removal (storm debris, debris in road, etc)

Request Id: 132397

Category: STREET Priority: Medium

Status: Open

Initiated By: PWADMIN, Date: 8/17/2012 6:27 AM

Investigation: ☐ Date:

Emergency: ☐ WO Needed: ☐

Submit To: LEED, SEAN Date: 8/17/2012 6:27:45 AM

Dispatch To: FULLER, TOM Date: 8/17/2012 6:27:45 AM

Project Name: Prj. Comp. Date:

Project Tree

Cancel Reason:

Closed By:

New Comments:

Select

Escalating By: PWADMIN, 8/17/2012 6:20:34 AM

Comments: Large items, furniture, trees, and smaller items

Resolution:

Incident Information

Address: 325 ENZ DR

Apt #:

City: KONOPELU SPRINGS

State: New Mexico Zip Code:

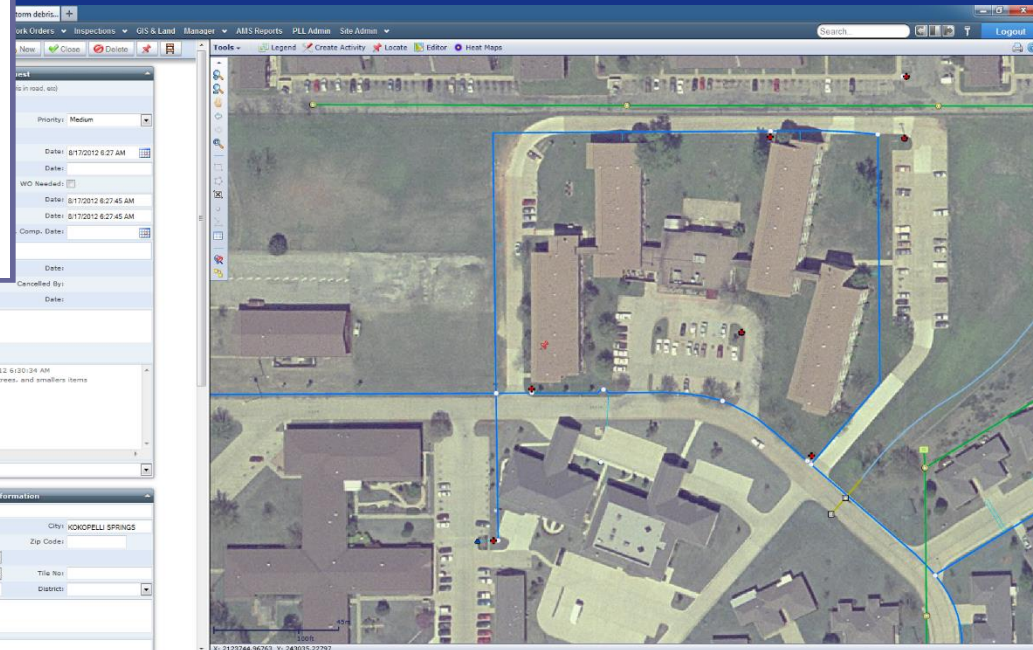
Landmark:

Shop:

Map Page:

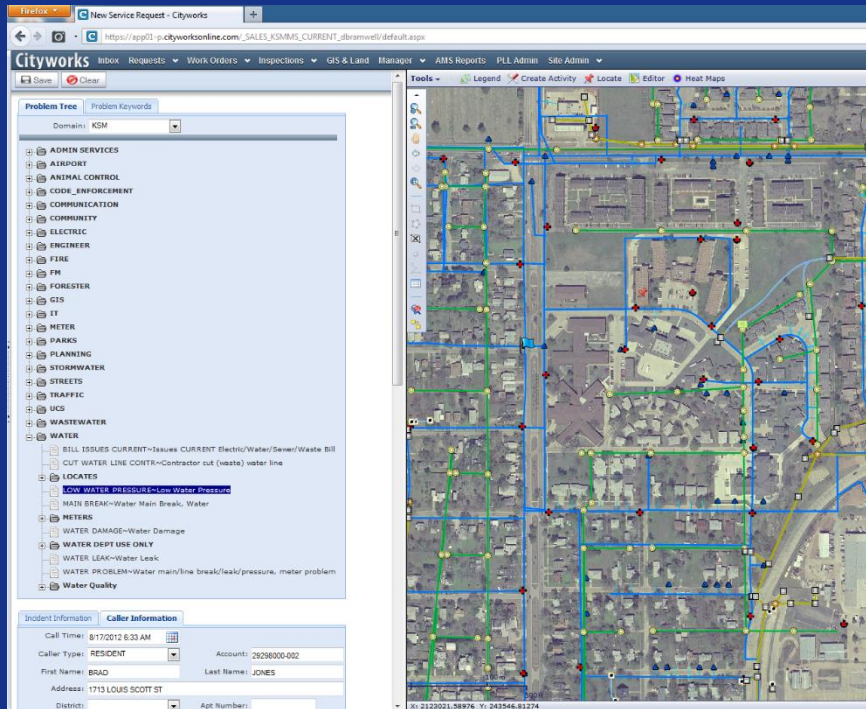
Location:

Details:



SERVICE REQUEST – Caller Info

Pull from Customer Database if Desired



Incident Information		Caller Information	
Call Time:	8/17/2012 6:32 AM	Account:	29298000-002
Caller Type:		Last Name:	JONES
First Name:	BRAD	Apt Number:	
Address:	1713 LOUIS SCOTT ST		
District:		City:	KOKOPELLI SPRINGS
State:	NEW MEXICO	Zip Code:	55555
Day Phone:		Work Phone:	
Cell Phone:		Other Phone:	
Email:		Fax:	
Caller Information:			
Owner?	<input type="checkbox"/>	Follow-up Call?	<input type="checkbox"/>

Caller Lookup						
Search						
Enter caller data and press 'Search' to look for existing customers. Select desired record to populate caller information.						
	Account	Title	First Name	M. I.	Last Name	Address
<input type="checkbox"/>	22268000-002		JACKIE		JONES	2617 EL
<input type="checkbox"/>	22567719-777		CONNIE		JONES	1301 SH
<input type="checkbox"/>	52756000-002		JAMES V		JONES	532 REI
<input type="checkbox"/>	53846000-002		SHELIA K		JONES	3924 DI
<input checked="" type="checkbox"/>	29298000-002		BRAD		JONES	1713 LO
<input type="checkbox"/>	61063000-002		TONI		JONES	716 HA
<input type="checkbox"/>	69646000-002		TANGI R		JONES	2500 TH
<input type="checkbox"/>	52603000-002		WENDY		JONES	1704 RI

Spatial Assets

GIS is the Asset Database

Cityworks | Select Features / Objects - Cityworks | Search...

Feature / Object Selection

- Gravity Mainline Feature (4)
 - ☒ 1721
 - ☒ 1722
 - ☒ 1723
 - ☒ 1724

Feature / Object Field Values

Field	Value
WW_UPNODE	1769
WW_DNNODE	1768
PIPENODE_E	1721
PIPENODE_FM	1721
PIPENODE_M	0
REVISED	
ENG_NUM	837
DIAMETER	8
SLOPE	0.4
MATERIAL	VCP
UPS_ELEV	1144
DWN_ELEV	1142.73
IP_DEPTH	12.04

Tools | Legend | Create Activity | Locate | Bookmarks | Condition | Heat Maps

Results

X: -10854572.4979 Y: 4255671.2621

Create Work Order

Select an Asset, Work Type, assign and schedule

Work Order

Description: Maintenance

Number: 133381

Entity Type: TSGNIPOL [Change](#)

Category:

Initiated By: BENZ, AUSTIN Date: 8/17/2012 6:47 AM

Status: Open Priority: Medium

Requested By: ALLEN, STEVE Supervisor: BOWERS, NORAH

Submit To: BANKS, OSCAR Date: 8/17/2012 8:47:59 AM

Projected Start: 8/17/2012 6:47 AM Projected Finish: 8/19/2012 6:47 AM

Opened By: Date:

Closed By: Date:

Completed By:

Actual Start: Actual Finish:

Stage: Actual Expense Type: Maintenance

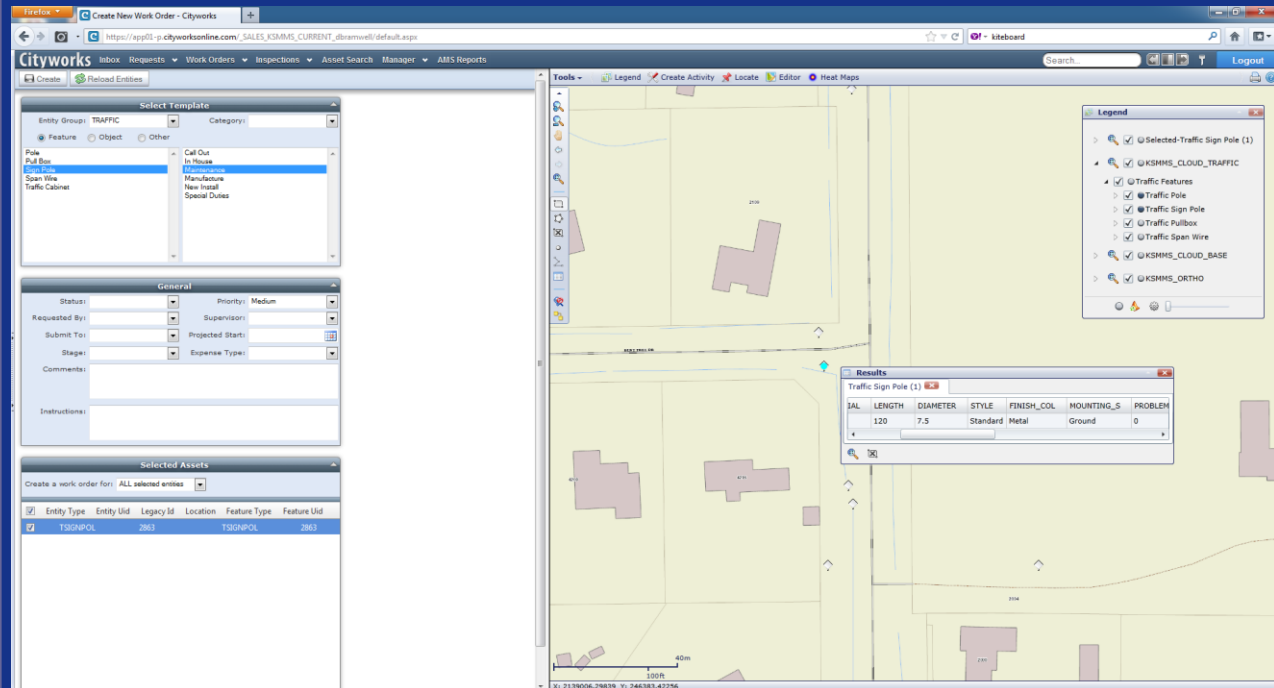
Add Comments:

Select

Existing By BENZ, AUSTIN: 8/17/2012 6:48:37 AM
Comments: Check visibility

Instructions:

Resolution



Assign, Record Resources Used

Labor, Materials, Equipment for total cost of ownership

The main interface displays a map with a traffic sign pole location. A 'Results' window shows the following data:

SAL	LENGTH	DIAMETER	STYLE	FINISH_COL	MOUNTING_S	PROBLEM
120	7.5	Standard	Metal	Ground	0	

On the left, there are panels for 'Assets/Task', 'Labor', 'Material', and 'Equipment'. The 'Labor' panel shows a table with columns for Employee, Hours, and a 'Find Employees' button. The 'Material' panel shows a table with columns for Material, Units, and a 'Find Material' button. The 'Equipment' panel shows a table with columns for Equipment, Units, and a 'Find Equipment' button.

The 'Details' panel shows the following information:

- Project: Public Participation/Inv...
- Contract: [Dropdown]
- Legal Billable: [Dropdown]
- Update Map: [Dropdown]
- Cancelled By: [Dropdown]
- Cancel Reason: [Dropdown]
- Units Accomplished: [Dropdown]
- Labor Cost: \$122.25
- Equipment Cost: \$57.00
- Total WO Cost: \$187.75

The 'Location Information' panel shows the following information:

- WO Address: Brent Tree Dr
- Location Details: [Dropdown]
- Shop: Sign
- Map Page: G12
- Title Number: BENT TREE ESTATES
- District: Central
- X Location: 2,139,235
- Y Location: 246,285.79

The 'Assets' panel shows a table with columns for Type, Id, EntitySid, Legacy Id, Warranty Date, Location, and Work Compl. The table contains one row with the following data:

Type	Id	EntitySid	Legacy Id	Warranty Date	Location	Work Compl
TSIGNPOL	2863	1696				

A note below the table states: 'Pink rows indicate inventory still under warranty'.

Work Orders on Fixed Assets

Search by any attribute, select from list, create work order

Cityworks Inbox Requests Work Orders Inspections Asset Search Manager AMS Reports

Search Query (Results limited to 500 records)

Visible Fields in Search Results

OBJECTID FACILITYID NAME ADDRESS EXT LOCATION LOC_NUMBER TYPE

WARRANTYDATE FEATURE_ID IMAGE Building Identifier

Building Name Long Name Use Built date Archived Date Floor count Description Condition

ConditionDate

Drag a column header and drop it here to group by that column

OBJECTID	FACILITYID	NAME
70	111	Wellie 23
71	112	Wellie 32
72	113	Wellie 33
73	114	Wellie 04
74	115	Wellie 09
75	116	Wellie 44
76	117	Wellie 57
77	118	Wellie 58
78	119	Wellie 59
79	120	Wellie 61
80	121	Wellie 60
81	122	KSCVB
82	41	Graceland Cemetery
83	13	Arcadia Lake Project Office
84	42	Aquatic Center
85	43	Kickingbird Tennis Center
86	44	Kickingbird Golf Course
87	45	Police
88	29	Animal Control
89	36	Mitch Park
90	46	Police Gym
91	34	Police Meats
92	33	Administration Building
93	32	Public Works Authority
94	28	Downtown Community Center
95	27	KSEC Department
96	47	Council Chambers
97	30	Facility Maintenance
98	20	

Search on Asset by any field

View assets in facility

Cityworks Inbox Requests Work Orders Inspections Asset Search Manager AMS Reports

Create Search Create Search

Feature / Object Selection

- Facilities (1)
 - Aquatic Center
 - Facility Electrical Equipment (1)
 - KSAQGEN1
 - Fire Protection Equipment (3)
 - KSAQGEN_HOSE
 - KSAQGEN_SENS1
 - KSAQGEN_SENS2
 - Floors (1)
 - AQCEGRND1
 - HVAC (3)
 - AQCEHEATEXCH
 - AQCNTRCOMP
 - AQCNTRCOND
 - Plumbing (5)
 - AQCEEN_MSHW1
 - AQCEEN_MSHW2
 - AQCEEN_WSHW1
 - AQCEEN_WSHW2
 - AQCNTRURNL1

Create PM or reactive maintenance

Cityworks Inbox Requests Work Orders Inspections Asset Search Manager AMS Reports

Create Reload Entities

Select Template

Entity Group: FACILITIES Category: Maintenance

Feature Object Other

Facility Assets Facility Conveyance Facility Electrical Equipment Facility Sections Facility Spaces Fire Protection Equipment Floors Plumbing Roof

Cleaning Inspection Maintenance Testing

General

Status: Approved Priority: Medium

Requested By: TRUET, RYAN Supervisor: SQUIBB, PETER

Submit To: Projected Start: 8/20/2012 10:36 AM

Stage: Actual Expense Type: Maintenance

Comments: Check fittings since last month's replacement

Instructions:

Work Order History

Select Asset and look at Work History

The screenshot displays the Cityworks web application interface. The top navigation bar includes links for Inbox, Requests, Work Orders, Inspections, Asset Search, Manager, and AMS Reports. The main content area is divided into two sections: 'Asset Costs' and 'Work Order History'.

Asset Costs Section:

- Total Cost: \$18,933.36
- Total Labor Hours: 265.00

Work Order Costs Table:

Id	Asset Type	Asset Id	Work Activity	Date Closed	Total Hours	Labor Cost	Material Cost	Equipment Cost
100187	DENDTRMT	3476	Repair	9/25/2008	132.50000	\$6,325.87	\$1,106.50	\$2,034.31
100187	DPIPE	2704	Repair	9/25/2008	132.50000	\$6,325.87	\$1,106.50	\$2,034.31

Inspections Table:

Id	Asset Type	Asset Id	Type	Description	Date	Inspected By	Location	Work Order
9590	DPIPE	2704	INSP	Inlet Inspection_Cond	2/9/2012 10:23:51 AM			

The right side of the interface shows a map view with a 'Results' window displaying data for Storm Manholes, Storm Inlets, and Storm End Treatment. A legend on the right lists various assets and features, including Storm Collection System, Open Streams, Storm Cleanouts, Storm Detention Basins, Storm Retention Basins, Storm End Treatment, Storm Inlets, Storm Lift Stations, Storm Outfalls, Storm Channels, Storm Culverts, Storm Gravity Mains, and KSMMMS_CLOUD_BASE.

Searching and Reporting

Ad-Hoc report, export, build inboxes and event layers on map

Search on any field
(water work closed in last year)

General | Details | Tasks | Custom Fields | Labor Fields | GIS

General

WO ID(s): Domain:

Entity Group: **WATER** Entity Type:

Category: Description:

Status: **Closed** Priority:

Requested By: Initiated By:

Submit To: Supervisor:

Projected Start: Projected Finish:

Opened By: Closed By:

Completed By: Resolution:

Actual Start: Actual Finish:

Unattached?: Past Due:

Stage: Expense Type:

Has Request: Has Inspection:

Closed?:

Search Query

Status: Closed.
Entity Group: WATER.
Closed By: All within the last 1 years.

Fields Visible in Search Results

Sort

Entity Type
Description
Priority
Status
Closed By
Proj Start Date
Proj Finish Date
Actual Start
Actual Finish
Shop
Map Page
Tie No
A/E

Pick which fields to display and group (cost by description)
Print or export to Excel

Cityworks | Inbox | Requests | Work Orders | Inspections | Asset Search | Manager | AMS Reports

Work Order | Open Selected | Calendar | Work Order Frequency | Data | Maps

Description

	WorkOrder	Description	Priority	Status	Submit To	Actual Star	Actual Fini	Total Cost	Labor Cost	Material Cr	Equipment	Permit Cos
Description: Backflow Inspection : (83) 63.85 %												
Description: Fire Hydrant Maintenance : (5) 3.85 %												
<input type="checkbox"/>	128850	Fire Hydrant 3	CLOSED			3/18/2011	1069.28	1069.28	0.00	0.00	0.00	
<input type="checkbox"/>	128852	Fire Hydrant 3	CLOSED	BOYCE, DA		3/28/2011	525.42	427.50	97.92	0.00	0.00	
<input type="checkbox"/>	128878	Fire Hydrant 3	CLOSED	BOYCE, DA		5/18/2011	99.50	99.50	0.00	0.00	0.00	
<input type="checkbox"/>	128887	Fire Hydrant 3	CLOSED	BOYCE, DA		6/20/2011	427.50	427.50	0.00	0.00	0.00	
<input type="checkbox"/>	128952	Fire Hydrant 3	CLOSED	BOYCE, DA		8/11/2011	427.49	427.49	0.00	0.00	0.00	
Description: Fire Hydrant Repair : (6) 4.62 %												
<input type="checkbox"/>	128958	Fire Hydrant 3	CLOSED	BARN, RAY		8/9/2011	7: 201.00	113.00	0.00	88.00	0.00	
<input type="checkbox"/>	128960	Fire Hydrant 3	CLOSED	BARKLEY, J		8/31/2011	0.00	0.00	0.00	0.00	0.00	
<input type="checkbox"/>	128961	Fire Hydrant 3	CLOSED	BATES, WA		8/31/2011	100.50	56.50	0.00	44.00	0.00	
<input type="checkbox"/>	128963	Fire Hydrant 3	CLOSED	BATES, WA		8/31/2011	56.50	56.50	0.00	0.00	0.00	
<input type="checkbox"/>	128965	Fire Hydrant 1	CLOSED	BALDWIN,		8/9/2011	7: 100.50	56.50	0.00	44.00	0.00	
<input type="checkbox"/>	128978	Fire Hydrant 1	CLOSED	BOYCE, DA		8/31/2011	0.00	0.00	0.00	0.00	0.00	
Description: Flush Water Main : (4) 3.08 %												
<input type="checkbox"/>	128842	Flush Wate 3	CLOSED	COTTER, M		3/1/2011	1: 0.00	0.00	0.00	0.00	0.00	
<input type="checkbox"/>	128884	Flush Wate 3	CLOSED			8/9/2011	5: 679.60	427.60	0.00	252.00	0.00	
<input type="checkbox"/>	128918	Flush Wate 3	CLOSED	DEKON, TIM		11/7/2011	679.50	427.50	0.00	252.00	0.00	
<input type="checkbox"/>	131162	Flush Wate 2	CLOSED	BOYCE, DA		11/7/2011	679.50	427.50	0.00	252.00	0.00	
Description: Hydrant Flushing : (16) (Showing 2 of 16 items. Group continues on the next page.) 12.31 %												
<input type="checkbox"/>	128841	Hydrant Flk 3	CLOSED	COTTER, M		3/1/2011	1: 0.00	0.00	0.00	0.00	0.00	
<input type="checkbox"/>	128843	Hydrant Flk 3	CLOSED	ADKINS, TE		2/25/2011	387.00	387.00	0.00	0.00	0.00	

Show this on a map or
save search for inbox, common reports



Inspections and Condition Analysis

Select Asset, see attributes, schedule and assign

The screenshot displays the Cityworks web application interface. The main window shows a map of a residential area with sewer lines. On the left, there are several panels: 'Location' (Id: 14705, District: West Kokopell Springs), 'Status' (Closed, Priority: Medium, Initiated By: HUBBARD, CAROL), 'Attachments' (Add attachments, Remove all attachments), 'Work Order' (Create), and 'Assets' (SGMAIN). On the right, there is a 'Create an Inspection' dialog box with 'Entity Group: SEWER' and 'Apply To Entity: Gravity Mainline Feature'. Below this, a 'Currently Selected Assets' table lists assets with Type, Id, Legacy Id, and Location. A 'Results' table is also visible, showing data for 'Sewer Gravity Mains (2)'.

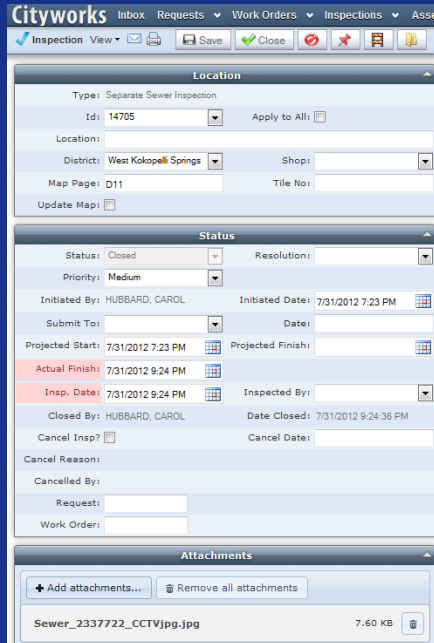
Type	Id	Legacy Id	Location
SGMAIN	3915		
SGMAIN	3914		

DWN_ELEV	UP_DEPTH	DWN_DEPTH	FEATURE_ID	SUB_TYPE	BASIS
1206.91	10.13	-9	44112	MAIN	
1206.64	-9	12.2	44113	MAIN	

Inspections and Condition Analysis

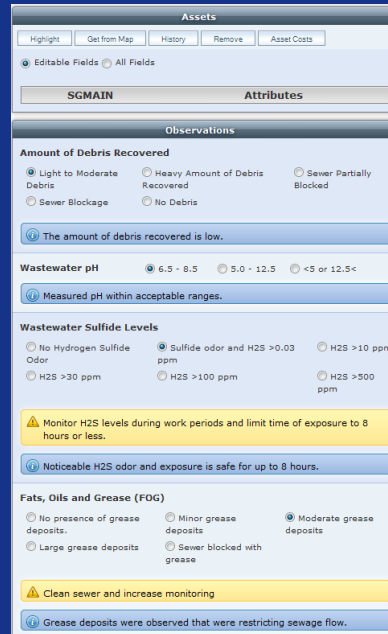
Collect and store data on asset for planning and PM's

Schedule, attached any files (CCTV)



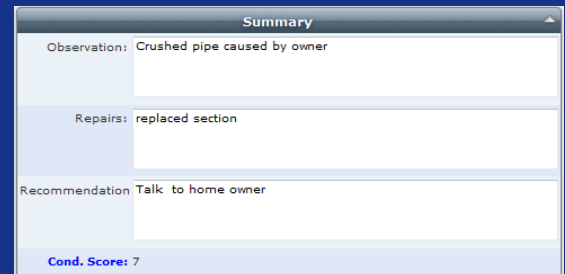
The screenshot shows the 'Inspection View' form in Cityworks. It includes sections for Location (Type: Separate Sewer Inspection, Id: 14705, District: West Kokopeli Springs), Status (Status: Closed, Priority: Medium, Initiated By: HUBBARD, CAROL, Initiated Date: 7/31/2012 7:23 PM), and Attachments (Sewer_2337722_CCTV.jpg, 7.60 KB). The form also has fields for Projected Start/Finish, Actual Finish, Inspection Date, and Inspected By.

Enter data from template
(100's provided)



The screenshot shows the 'Assets' form with the 'Observations' tab selected. It includes sections for Amount of Debris Recovered (Light to Moderate Debris, Heavy Amount of Debris Recovered, Sewer Partially Blocked, Sewer Blockage, No Debris), Wastewater pH (6.5 - 8.5, 5.0 - 12.5, <5 or 12.5+), Wastewater Sulfide Levels (No Hydrogen Sulfide Odor, Sulfide odor and H2S >0.03 ppm, H2S >10 ppm, H2S >30 ppm, H2S >100 ppm, H2S >500 ppm), and Fats, Oils and Grease (FOG) (No presence of grease deposits, Minor grease deposits, Moderate grease deposits, Large grease deposits, Sewer blocked with grease). The form also includes a 'Summary' section with Observation, Repairs, and Recommendation.

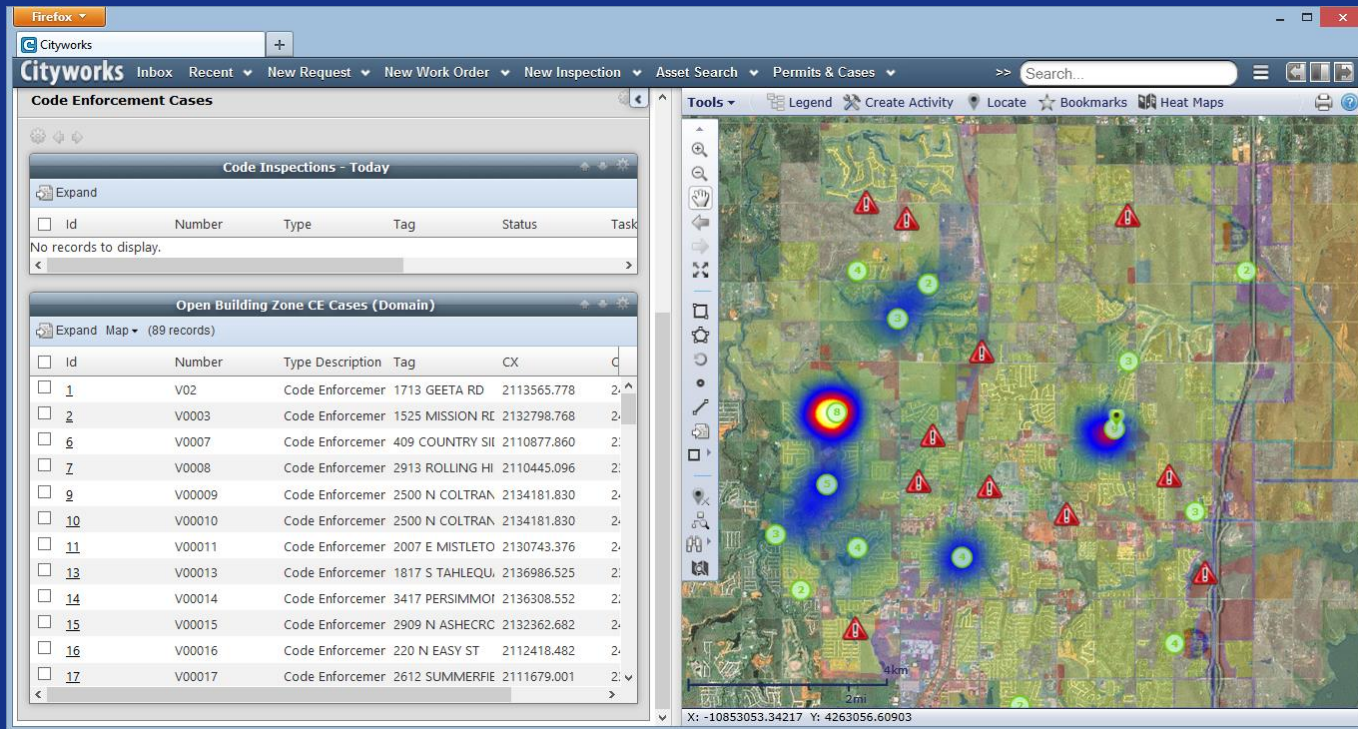
Other info, system calculates Condition Score



The screenshot shows the 'Summary' form in Cityworks. It includes sections for Observation (Crushed pipe caused by owner), Repairs (replaced section), Recommendation (Talk to home owner), and Condition Score (Cond. Score: 7).

Spatial Analysis

See Trends and Hotspots



Asset Condition

Find Problem Assets

The screenshot displays the Cityworks web application interface. The top navigation bar includes links for Inbox, Recent, New Request, New Work Order, New Inspection, Asset Search, and Manager. A search bar is located on the right. The left sidebar shows 'Streets Dept Activity' with tabs for 'Unassigned Work' and 'Pothole Program'. Under 'Service Requests', there are sections for 'Past Due Streets Service Requests' (showing 'No records to display') and 'Open Streets Service Requests' (showing 7 records). The 'Open Streets Service Requests' table lists the following data:

Id	Date Initiated	Description	Priority
132483	8/23/2013 7:51 AM	ADA Program	3
132484	8/23/2013 7:55 AM	Sidewalk Partners	3
132491	9/16/2013 12:58 PM	Pavement issue w	3
132493	9/17/2013 4:56 PM	Street Flooding, V	2
132495	9/17/2013 5:07 PM	Street Flooding, V	3
132508	11/11/2013 8:37 AM	Pavement issue w	1
132509	11/21/2013 12:20 PM	Pavement issue w	1

The main area shows a map with a 'Condition' overlay. The overlay includes a line graph, a score of 94, and a dropdown menu for 'Attribute' set to 'SPEED_LIMIT'. Below the graph is a table showing the distribution of values:

Value	Count
25	57
40	2
45	3

The map also features a scale bar (0 to 2000ft) and coordinates (X: -10857090.02794, Y: 4256621.0467). The bottom right corner of the map shows the text 'Generate Selection' and 'Start Over'.

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Cityworks®



Complete Picture

Visualize and see all events

The screenshot displays the Cityworks web application interface, which is a comprehensive tool for managing municipal services. The interface is divided into several sections:

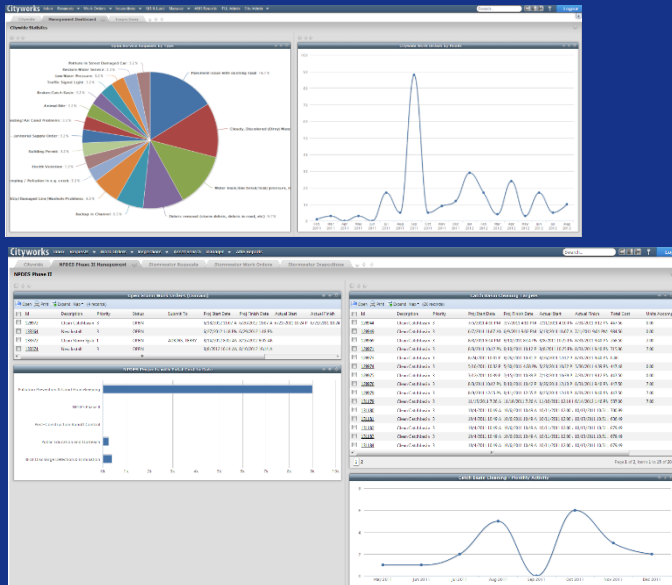
- Top Navigation Bar:** Includes tabs for 'Inbox', 'Recent', 'New Request', 'New Work Order', 'New Inspection', 'Asset Search', and 'Manager'. A search bar is also present.
- Left Sidebar:** Contains 'Streets Dept Activity' and 'Pothole Program' sections. It lists 'Service Requests' and 'Work Orders' with options to 'Open', 'Print', and 'Expand'.
- Main Map Area:** A central map showing a residential area with various colored markers (red, yellow, green) indicating different types of service requests or work orders. A 'Locate' window is open, showing a search for '1701 LOUIS SCOTT ST' with a score of 100.
- Right Panel:** Displays three tables of data:
 - Request (3):** A table with columns: Id, Date Initiated, Description, Priority, Category, Submit To, Dispatch To, Address. It lists three requests related to 'Wastewater Overflow' and 'Low Water Pressure'.
 - Work Order (3):** A table with columns: Id, Description, Priority, Status, Submit To, Proj Start Date, Proj Finish Date, Actual Start, Actual Finish. It lists three work orders for 'GPS Hydrant', 'SSO Overflow Event', and 'Hydrant Flushing'.
 - Assets (17):** A table with columns: Id, Number, Type, Type Description, Subtype, Tag, Location, Status, Accepted Date, Initiated Date. It lists various assets like 'CE-BLD_ZONE', 'R-ELECT', 'R-DECK', and 'R-IFAM'.

The bottom of the screen shows a Windows taskbar with various application icons and a system clock indicating 12:11 AM on 12/10/2013.

Management Tools

Dashboards, custom reports, budgeting decision tools

Dashboards and Inboxes



Custom Reports

Report Listing

Name
<input type="checkbox"/> STORE - Stock Valuation Report
<input type="checkbox"/> WO - Sewer Overflow Events
<input type="checkbox"/> SR - Open Service Requests By Description
<input type="checkbox"/> SR - Citizen Calls and Work Order Results
<input type="checkbox"/> WO - Work Order Count by Type Includes Cost Detail & Summary
<input type="checkbox"/> WO - Monthly Water Main Breaks
<input type="checkbox"/> WO - 2008 Distribution Department Activity Costs
<input type="checkbox"/> ADMIN - Wastewater Dept Employee Utilization
<input type="checkbox"/> ADMIN - Employee Scheduling
<input type="checkbox"/> WO - Multiple Work Order Detail
<input type="checkbox"/> WO - Work Order

View Report Add Report Edit

Thousandville Detail Cost Summary Report

Category	Item	Unit	Quantity	Unit Cost	Total Cost
CONCRETE	Concrete Slab (4" Thick)	Sq Yd	100	\$12.00	\$1,200.00
	Concrete Slab (6" Thick)	Sq Yd	50	\$15.00	\$750.00
	Concrete Slab (8" Thick)	Sq Yd	25	\$18.00	\$450.00
	Concrete Slab (10" Thick)	Sq Yd	10	\$20.00	\$200.00
METALWORK	Steel Pipe (12" Dia)	Lb	500	\$0.50	\$250.00
	Steel Pipe (14" Dia)	Lb	300	\$0.60	\$180.00
	Steel Pipe (16" Dia)	Lb	200	\$0.70	\$140.00
	Steel Pipe (18" Dia)	Lb	100	\$0.80	\$80.00

Budgets

Cityworks Budgets

Projects	Budget	Expended	Remaining
Capital Improvement Projects	\$120,000.00	\$621.40	\$119,378.60
2008 Capital	\$4,500,000.00	\$4,500.00	\$4,495,500.00
2009 Capital	\$150,000.00	\$150.00	\$149,850.00
2010 Capital	\$5,000,000.00	\$5,000.00	\$4,995,000.00
2011 Capital	\$15,000,000.00	\$15,000.00	\$14,985,000.00
FEMA Projects	\$15,437.82	\$15,437.82	\$0.00
Regulatory Compliance	\$7,500,000.00	\$300.00	\$7,499,700.00
Consent Decree (SSO)	\$3,750,000.00	\$35,140.91	\$3,714,859.09
Cross Connection Control Program	\$2,500,000.00	\$405.00	\$2,499,595.00
CWA	\$750,000.00	\$405.00	\$749,595.00
LTPC (CSD)	\$9,000,000.00	\$0.00	\$9,000,000.00
NPDES Phase II	\$1,200,000.00	\$9,832.25	\$1,190,167.75

2011 Capital

This project has no sub projects. The budget cannot be over or under allocated.

The amount expended is above the acceptable threshold.

Project Budget: \$5,000,000.00
Sub Project Budget: \$0.00
Unallocated Budget: \$5,000,000.00

Project Expended: \$6,438.39
Sub Project Expended: \$0.00
Total Expended: \$6,438.39

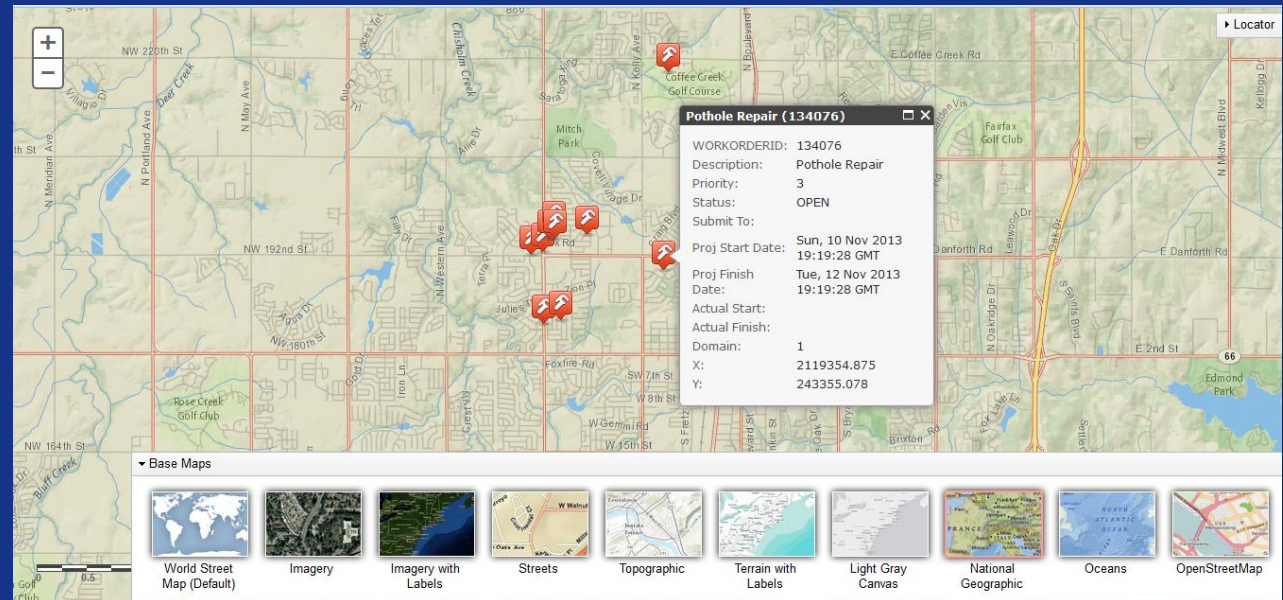
Actual Budget: \$0.00
Total Expended: \$6,438.39
Remaining Budget: \$4,993,561.61

Assigned To: Not Set
Project Status: Active
Last Modified: 10/18/2011
Start Date: 1/1/2011
Finish Date: 12/31/2011
Comments:

Publish Web Map Services

Push to Front office

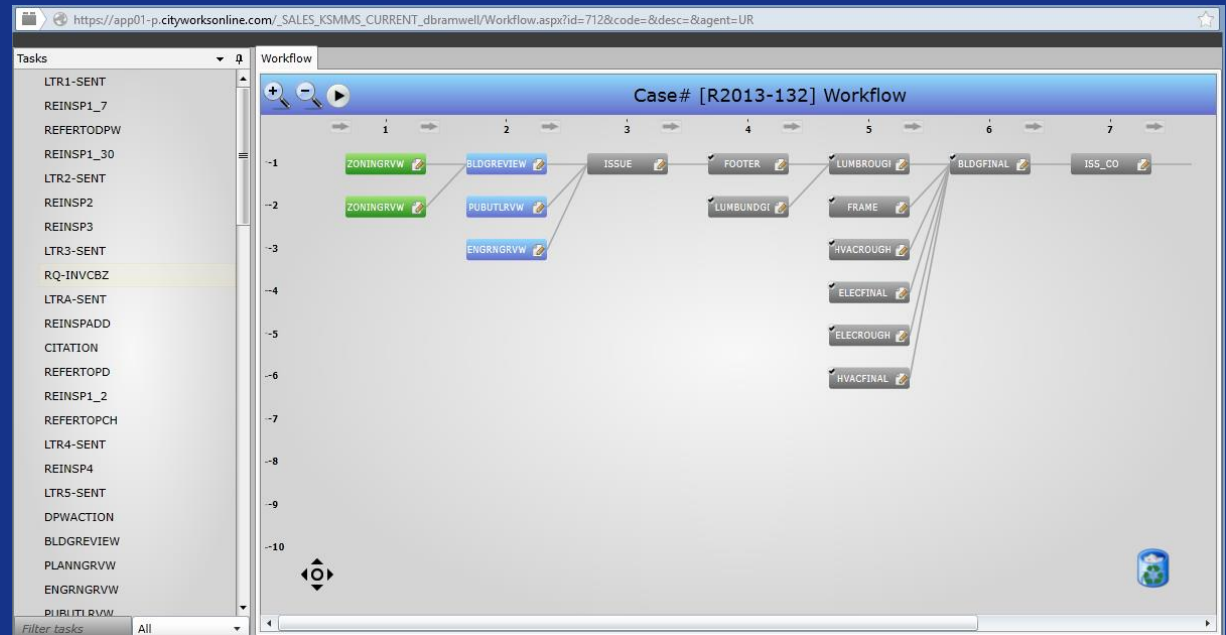
- Management
- Technical
- Public
- Front Office



Work Flow Modeling

Case Management

- Tasks
- Sequences
- Prerequisites
- Parallel tasks
- Spanning tasks

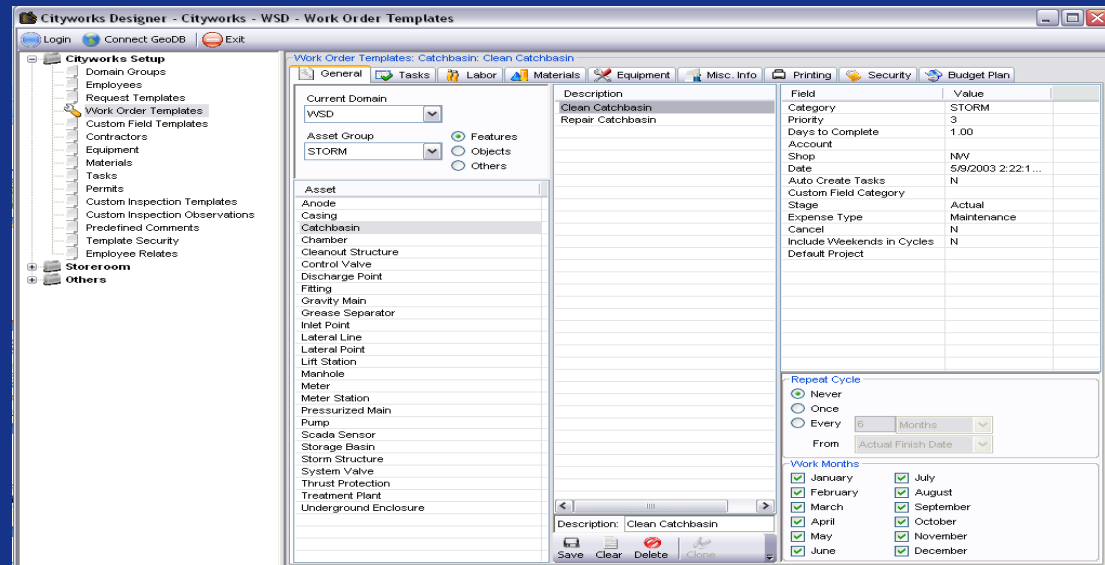


Cityworks Designer (ADMIN)

“Configuration not Customization” to match your business

- Properties not scripting
- Lower startup costs
- Lower system maintenance costs

Total Ownership for
future expansion



Cityworks Asset Analysis

Condition, Maintenance Score, Costs

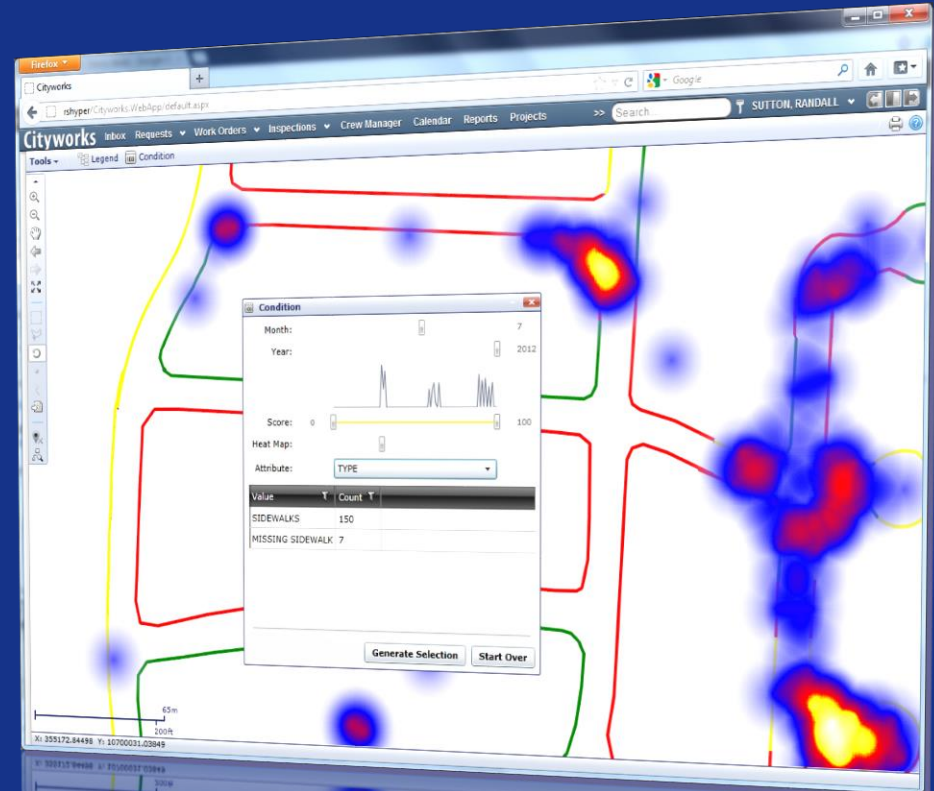


Destructive Testing

Non-destructive Testing

Visual Inspections

Maintenance History



Cityworks®



Predefined Reports

The screenshot displays the Cityworks Server web application interface. The top navigation bar includes links for Search, Requests, Work Orders, Inspections, Crew Manager, Manager, Reports, and MMS Admin. The 'Work Orders' section is active, showing a list of work orders with columns for Description, WorkOrderID, Actual Start, Actual Finish, Total Cost, Labor Cost, Material Cost, and Equipment Cost. The 'Reports' section is also visible, showing a list of reports with columns for Description, WorkOrderID, Actual Start, Actual Finish, Total Cost, Labor Cost, Material Cost, and Equipment Cost. The 'Search Query' section shows the search criteria: Entity Group: WATER, Initiated By: BENZ, AUSTIN, Stage: PROPOSED. The 'Visible Fields in Search Results' section lists the fields: Entity Type, Description, Priority, Status, Submit To, Proj Start Date, Proj Finish Date, Actual Start, Actual Finish, and Show. The 'Work Orders contained within the following map coordinates...' section shows the map coordinates: X Min: , X Max: , Y Min: , Y Max: . The 'Search Results' section shows a list of work orders with columns for Description, WorkOrderID, Actual Start, Actual Finish, Total Cost, Labor Cost, Material Cost, and Equipment Cost. The 'Description' section shows a list of descriptions: Description: 6 IN DIP Main Line Repair (1), Description: Contractor Assistance (42), Description: Expose Water Main (3), and Description: Main Line Repair (54). The 'Table' section shows a table with columns for WorkOrderID, Actual Start, Actual Finish, Total Cost, Labor Cost, Material Cost, and Equipment Cost. The table contains three rows of data:

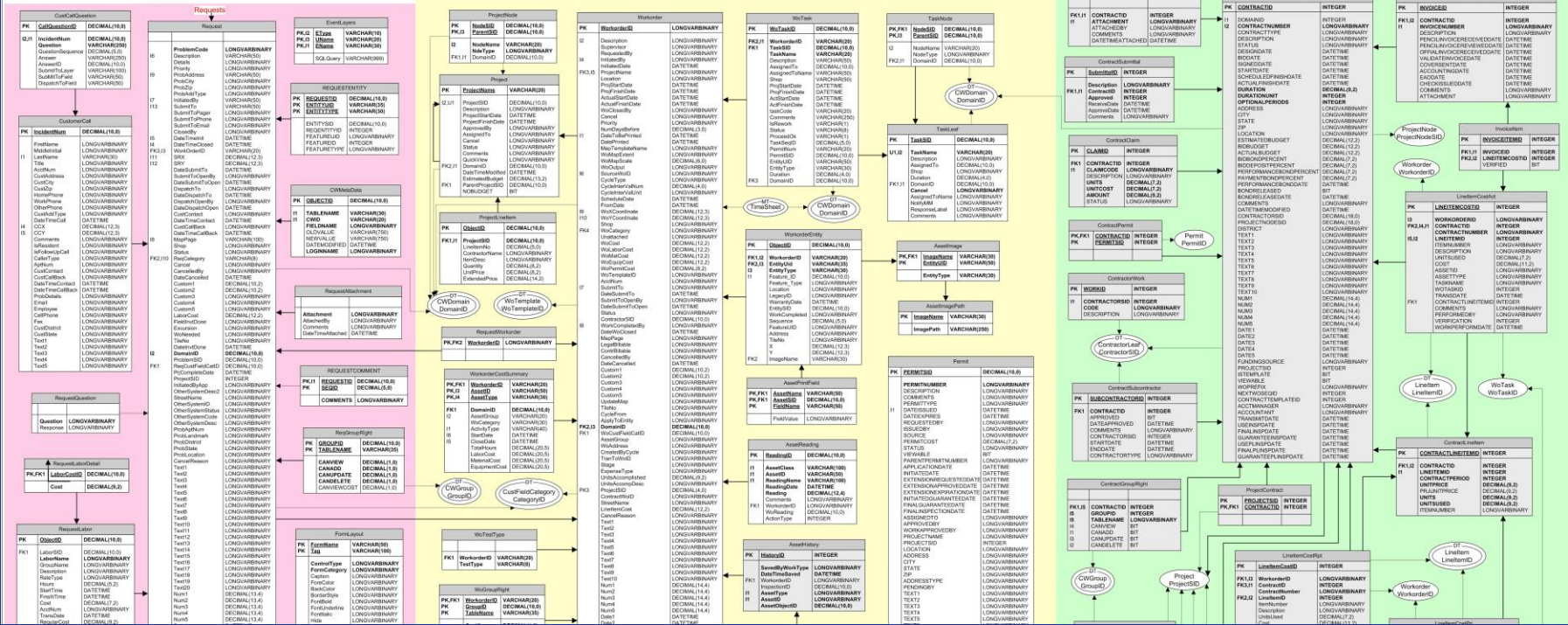
WorkOrderID	Actual Start	Actual Finish	Total Cost	Labor Cost	Material Cost	Equipment Cost
94824	4/23/2008 12:00 AM	4/29/2008 12:00 AM	\$497.66	\$363.41	\$0.00	\$134.25
91967	3/10/2008 12:00 AM	4/21/2008 12:00 AM	\$2,234.56	\$1,647.56	\$72.00	\$515.00
102770	8/28/2008 12:00 AM	9/2/2008 12:00 AM	\$3,993.71	\$2,700.16	\$529.55	\$764.00

Open Database Structure

Cityworks

Work Management Tables—(WT)

Cityworks 2013, January 2013
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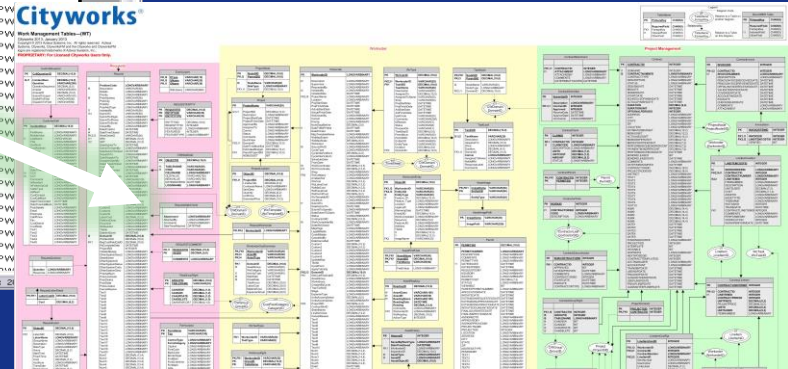
Cityworks



With Report Writers

[illegible]


Cityworks ERD



Crystal Reports

Example Reports

Work Orders


Report Date 10/26/2009

Thomasville Detail Cost Summary Report

WORKORDERID 410

DESCRIPTION Jettig

ACTUALSTARTDATE 1/2/2001 12:00:00AM

ACTUALFINISHDATE 1/4/2001 12:00:00AM

WOCLOSEDBY Azteca Systems

LOCATION OVER THERE BY THE DRUG STORE

COMMENTS The Following Features/Devices are under warranty.
SOMAIN 1742 until 6/26/2009
Azteca Systems Changed SubmitTo to Stephens, Jarrold D on 5/22/2002 2:34:51 PM

LABOR						
Employee	Hours	Regular Cost	Overtime Cost	Overtime Rate	Regular Rate	Cost
Munson, Kristie	2.00	\$53.00	\$0.00	\$36.00	\$26.50	\$53.00
Marshall, Jim B	2.00	\$33.00	\$0.00	\$36.00	\$16.50	\$33.00
Fischer, Gene	2.00	\$57.00	\$0.00	\$36.00	\$28.50	\$57.00
Chestnut, Rob J	2.00	\$28.00	\$0.00	\$36.00	\$14.00	\$28.00
Munson, Kristie	1.00	\$0.00	\$9.54	\$36.00	\$26.50	\$9.54
TOTALS	9.00	\$173.00	\$9.54			\$190.54

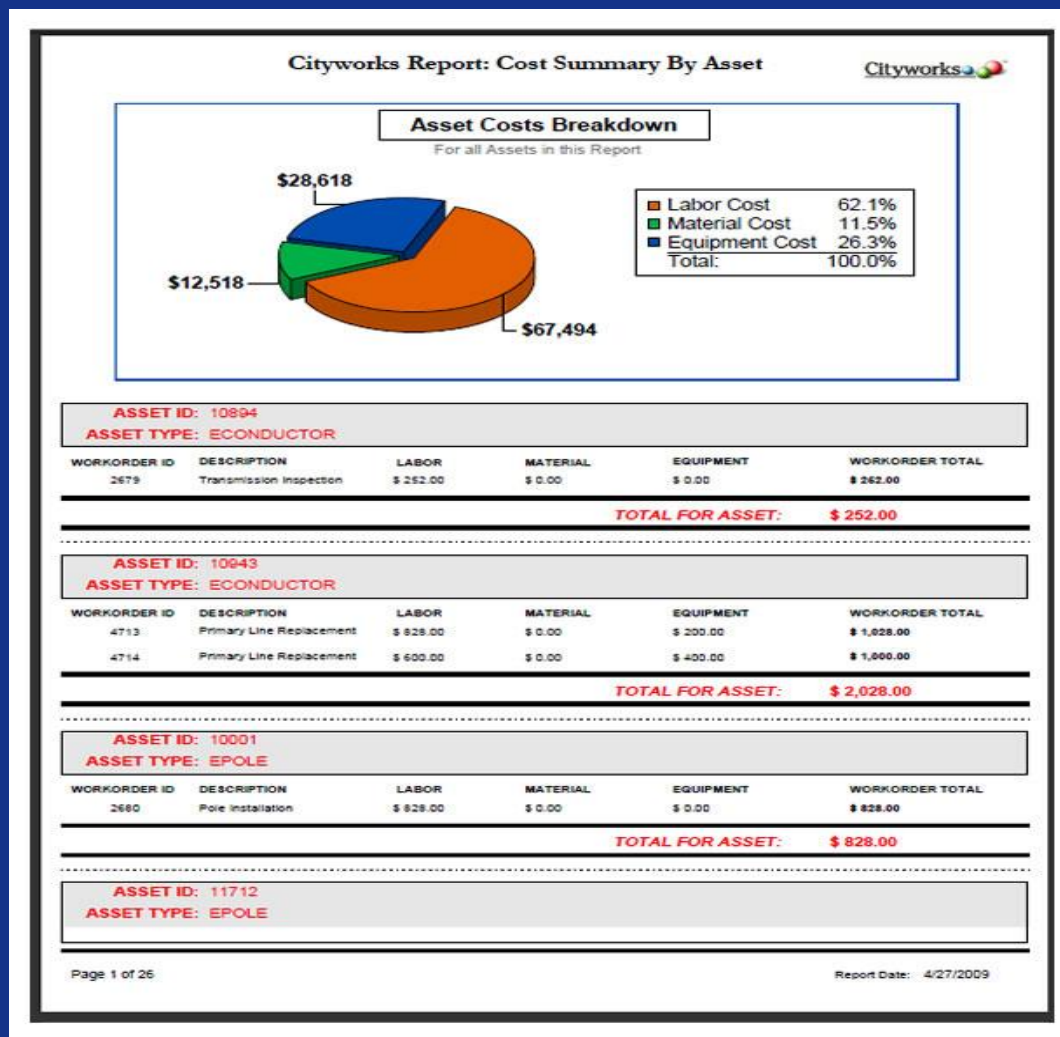
EQUIPMENT			
Equipment ID	Units	Hours	Unit Cost
Goldstar high velocity cleaner	1.00	2.00	\$57.80
Traffic barricade	2.00	2.00	\$2.34
Traffic arrow board	1.00	2.00	\$5.77
TOTALS	4.00	6.00	\$66.91

MATERIALS			
Description	Units	Measure	Unit Cost
Ear Plugs without cord	4.00		\$0.14
5 Mil Disposable Gloves	4.00		\$0.09
Respirator for dust and mists	4.00		\$0.83
1 pint 10.0 pH buffer	1.00		\$5.81
1 pint 10.0 pH buffer	-1.00		\$5.81
TOTALS	12.00		\$12.68

Work Order Number	Labor	Equipment	Material	Total Costs
410	\$190.54	\$136.50	\$4.24	\$386.28

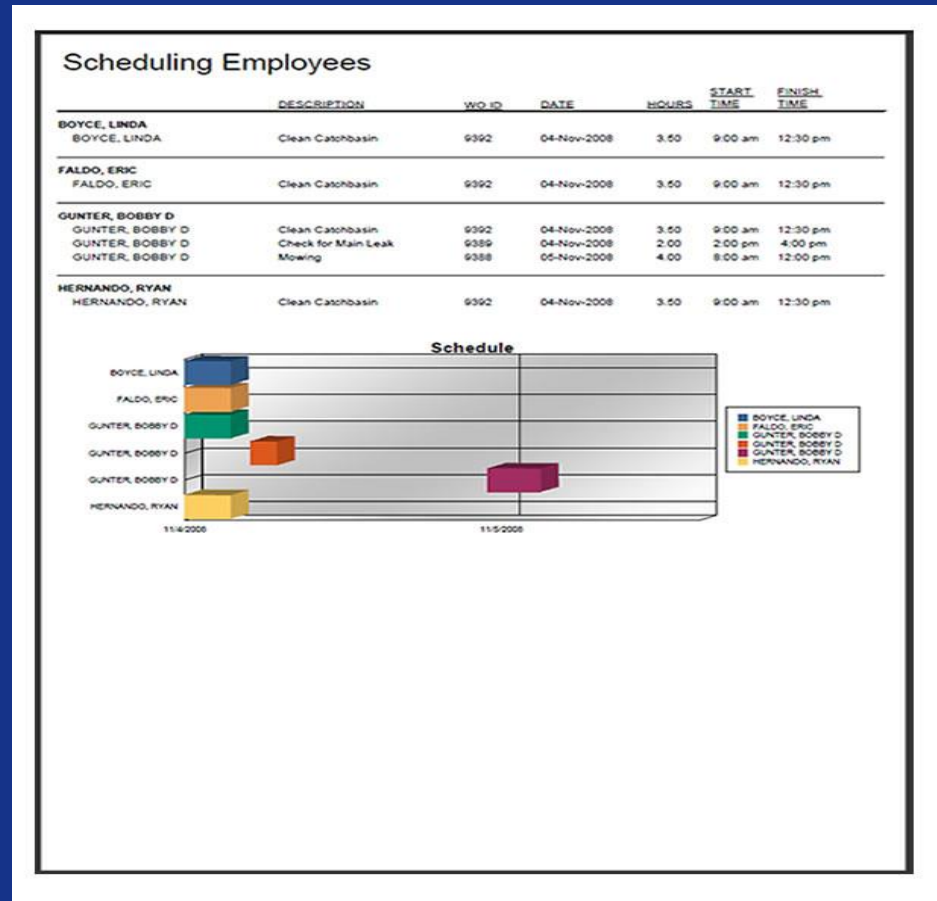
Example Reports

Assets



Example Reports


Reports by Employees



Example Reports

Inspections

Azteca Systems, Inc.



Report Designer: Bryan Chadwick
Email: abriggs@cityworks.com
bchadwick@cityworks.com

**Inspections with Corresponding
Work Orders**

11/17/2008 3:35:00PM

Custom Inspections - All

Facility ID/Feature: 0 PFENCE		Work Order ID: 4766	
-------------------------------	--	---------------------	--

Inspection ID	FacilityID	Feature	Inspection Date	Inspected By	Location
6012	0	PFENCE	12/28/2005 8:11:00AM		
Observations		Repairs	Recommendations		

Work Order ID: 4766	Description: Inspect Fence	Status: OPEN	Address: MAIN	Initiated By: PW, PW	Date/Time Initiated: 12/28/2005 2:56:00PM
---------------------	----------------------------	--------------	---------------	----------------------	---

Facility ID/Feature: 1830 SGRAVITYMAIN		Work Order ID: 634	
--	--	--------------------	--

Inspection ID	FacilityID	Feature	Inspection Date	Inspected By	Location
5002	1830	SGRAVITYMAIN	3/21/2003 12:00:00AM		
Observations		Repairs	Recommendations		

Work Order ID: 634	Description: Inspect	Status: CLOSED	Address:	Initiated By: HORTON, DAVID R	Date/Time Initiated: 3/20/2003 9:30:00AM
--------------------	----------------------	----------------	----------	-------------------------------	--

Facility ID/Feature: 994 SGRAVITYMAIN		Work Order ID: 590	
---------------------------------------	--	--------------------	--

Inspection ID	FacilityID	Feature	Inspection Date	Inspected By	Location
5001	994	SGRAVITYMAIN	12/6/2002 12:00:00AM	FISCHER, GENE	3350 Riviera Cir
Observations		Repairs	Recommendations		

Work Order ID: 590	Description: Inspect	Status: IP	Address:	Initiated By: HORTON, DAVID R	Date/Time Initiated: 12/6/2002 12:57:00PM
--------------------	----------------------	------------	----------	-------------------------------	---

Grand Total (Custom Inspections):

Facility ID/Feature	# of Inspections
0 PFENCE	1
Facility ID/Feature	# of Inspections
1830 SGRAVITYMAIN	1
Facility ID/Feature	# of Inspections
994 SGRAVITYMAIN	1

Page 1 of 15

Example Reports

Lifecycle Costs Maintenance Replacement Install



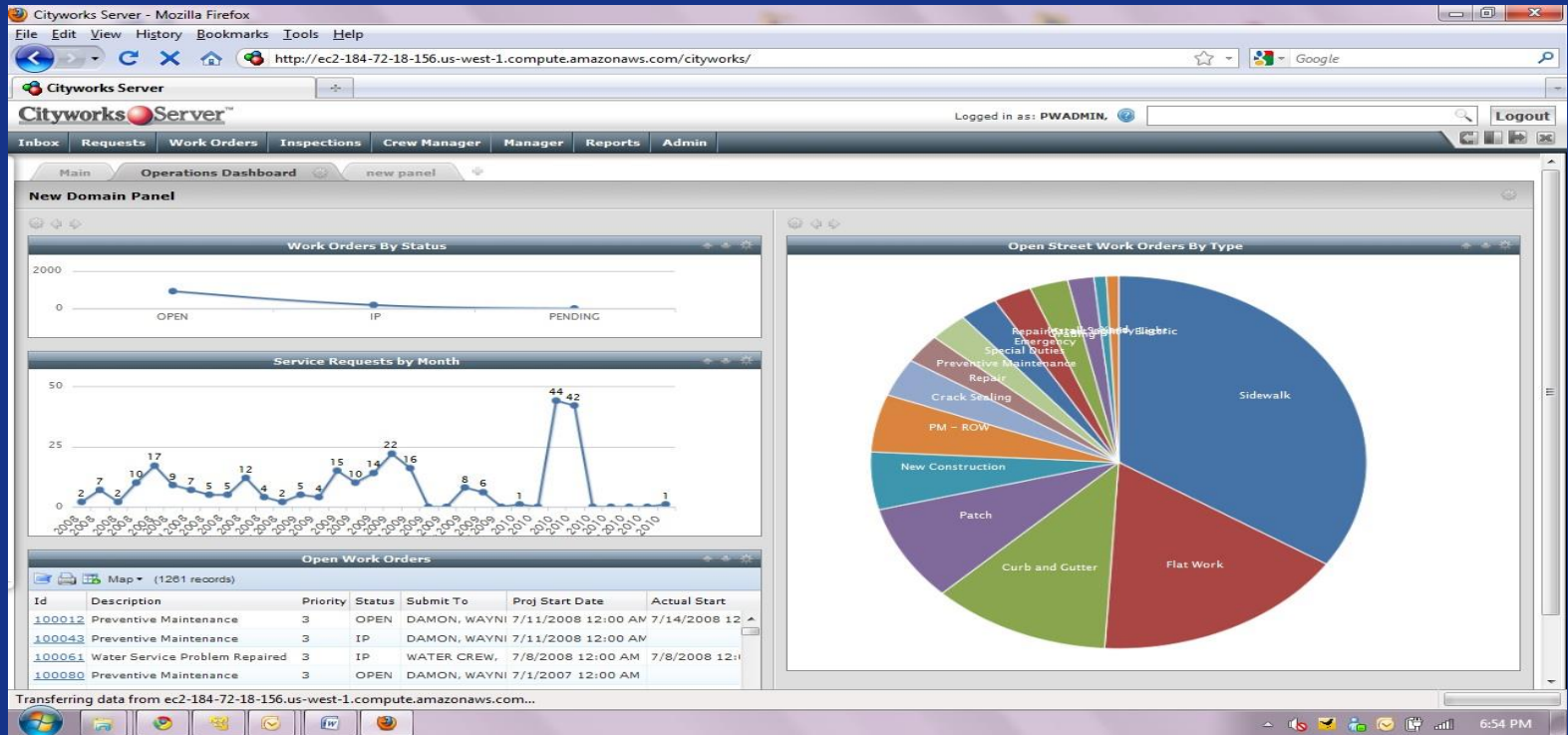
Lifecycle Costs Per Water Main Asset

Lifecycle Cost, Criticality and Condition

1/17/2011 10:56:26PM

Facility ID: 8142					Lifecycle Maintenance Cost	Replacement Cost	Install Cost	Criticality Rating	Asset Condition
Equipment Cost	+	Labor Cost	+	Material Cost	=				
\$ 15.02		1.81		\$ 0.00		\$16.83	\$57,084.00	19327	Poor
Facility ID: 8144					Lifecycle Maintenance Cost	Replacement Cost	Install Cost	Criticality Rating	Asset Condition
Equipment Cost	+	Labor Cost	+	Material Cost	=				
\$ 0.72		1.81		\$ 0.00		\$2.53	\$57,531.00	19334	Poor
Facility ID: 8145					Lifecycle Maintenance Cost	Replacement Cost	Install Cost	Criticality Rating	Asset Condition
Equipment Cost	+	Labor Cost	+	Material Cost	=				
\$ 0.72		1.81		\$ 0.00		\$2.53	\$5,406.00	1830	Poor
Facility ID: 8146					Lifecycle Maintenance Cost	Replacement Cost	Install Cost	Criticality Rating	Asset Condition
Equipment Cost	+	Labor Cost	+	Material Cost	=				
\$ 0.72		1.81		\$ 0.00		\$2.53	\$478.00	161.981	Good
Facility ID: 8148					Lifecycle Maintenance Cost	Replacement Cost	Install Cost	Criticality Rating	Asset Condition
Equipment Cost	+	Labor Cost	+	Material Cost	=				
\$ 2.16		1.81		\$ 0.00		\$3.98	\$4,018.00	1360.391	Poor

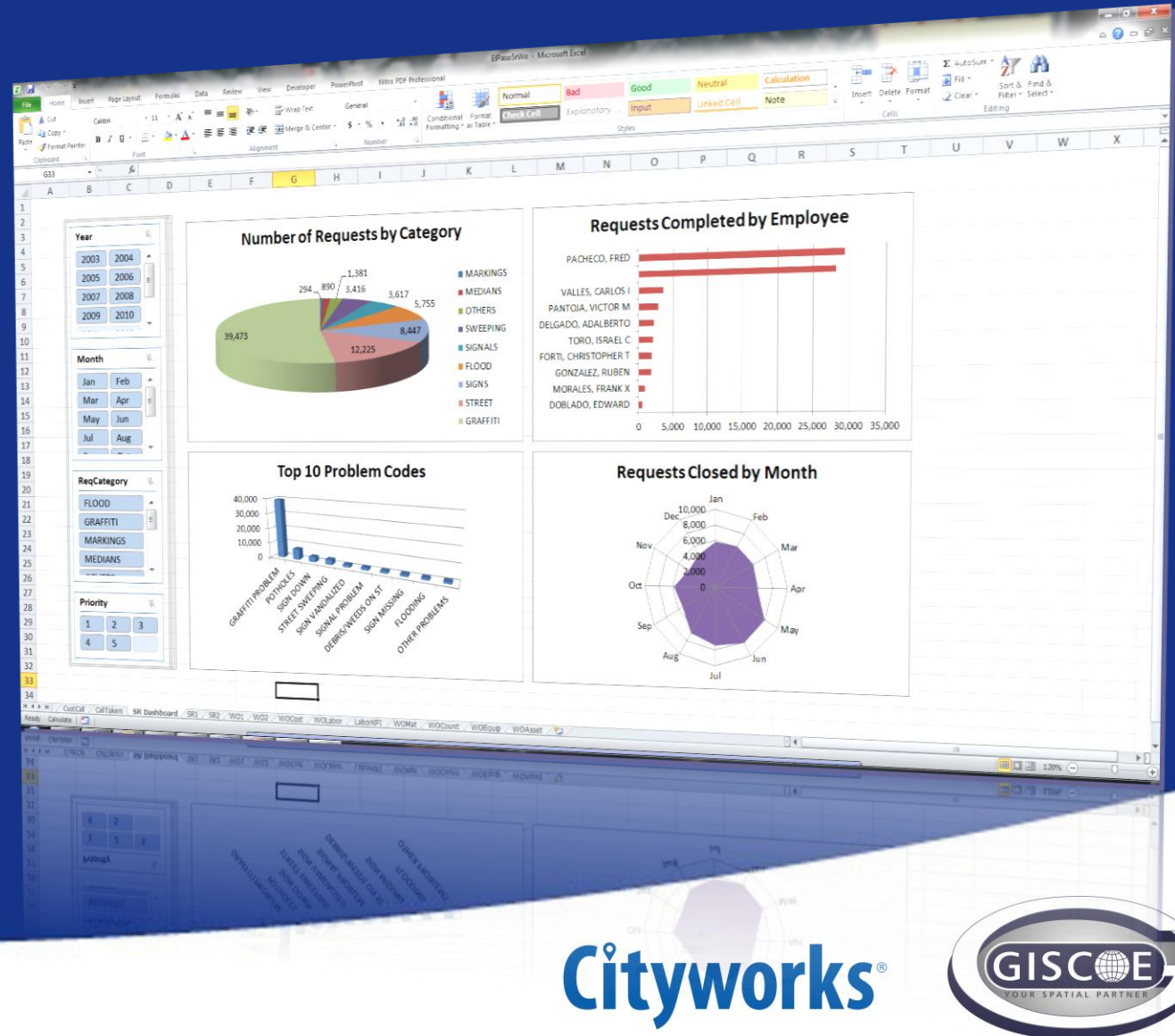
Manager Dashboards



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Cityworks Analytics

Business Intelligence




Inventory Management

- [illegible]

Example Reports

Reports for Materials Minimum Order Points

Cityworks 

Report Date 11/18/2009

Thomasville Materials Below Minimum Quantity

Material ID	Stock on Hand	Bin	Minimum Quantity	Minimum Order Size
ESIDE Store room				
PVCPRM12PT	10	A	24	14
AABATTERY	10	A	48	38
DBATTERY	12	A	48	36
Q500WLIGHT	10	A	24	14
Q500WLIGHT	10	A	24	14
2AAMDNLIGHT	10	A	24	14
K3FLASHLIGHT	10	A	12	2
GLORNPAIN	10	A	25	15
PTGRNPAIN	9	A	25	16
LCBX45	10	A	15	5
LPVC3-4X45	10	A	15	5
LC34X90	10	A	15	5
PIPEPVC20X125LJ	4	A	10	6
GLOVES5MIL	10	A	100	90
EARPLUG5WOCORD	10	A	100	90
RESPD&M	10	A	20	10
DYETABBLUE	10	A	100	90
PIPEPVC20X65LJ	2	A	5	3
PIPECON20X145LJ	9	A	10	1
SONPOLESFT5TL	9	A	10	1
R1-1	10	A	15	5
R1-2	10	A	15	5
MYCTREESAVER	10	A	100	90
MYCTREEECTODIP	10	A	20	10
HEALTHYSTART12-S-8	10	A	250	240
MedPatch	-13	A	10	23
PRVPVCHIGH1_2	4		10	6
PRVPVCHIGH3_4	4		12	8
PRVPTEHIGH	2		12	10
PRVPTEHIGH1_2	3		17	14
PRVPTEHIGH3_4	2		8	6
PRVPTEHIGH1	1		5	4
PRVPTEHIGH2	2		10	8
PRVPTEHIGH3	2		5	3
PRVPVCMED	2		15	13
PRVPVCMED1_2	7		22	15
PRVPVCMED3_4	4		9	5
PRVPTEMED	3		11	8
PRVPTEMED1_2	2		13	11
PRVPTEMED3_4	3		10	7
PRVPVLOW1_2	3		8	5
PRVPVLOW3_4	3		5	2
PRVPVLOW1	4		13	9

Page 1 of 3

Public Website for Service Requests

- Allows input from public for problems and service requests
- Integrates with various mapping services with address locators
- Easy to use drop down lists
- Uses Web Services
- Fully customizable

Map

Questions

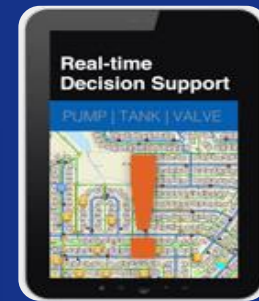
Contact Info

Security

The screenshot shows a web browser window displaying the 'Citizen Request System' for the City of Ann Arbor. The browser's address bar shows the URL 'http://www2.a2gov.org/A2CSR/CSRRequest.aspx'. The page has a blue header with the city logo and navigation links. The main content area is divided into a sidebar on the left and a main form area. The sidebar contains links for 'Home', 'Government', 'Public Services', and 'Citizen Service'. The main form area is titled 'Citizen Request System | Check Status' and includes a map of Ann Arbor with a location marker. Below the map are sections for 'Required steps', 'Step 1' (Find Service Location), 'Step 2' (Park Maintenance), 'Step 3' (What is the park problem?), 'Step 4' (Provide Comments), 'Step 5' (Provide Contact Information), and 'Step 6' (Submit Request). The form also includes a 'Request Instructions' sidebar on the right with steps 1 through 7.

Cityworks Mobility

- Configurable
- Device independent
- IOS & Android



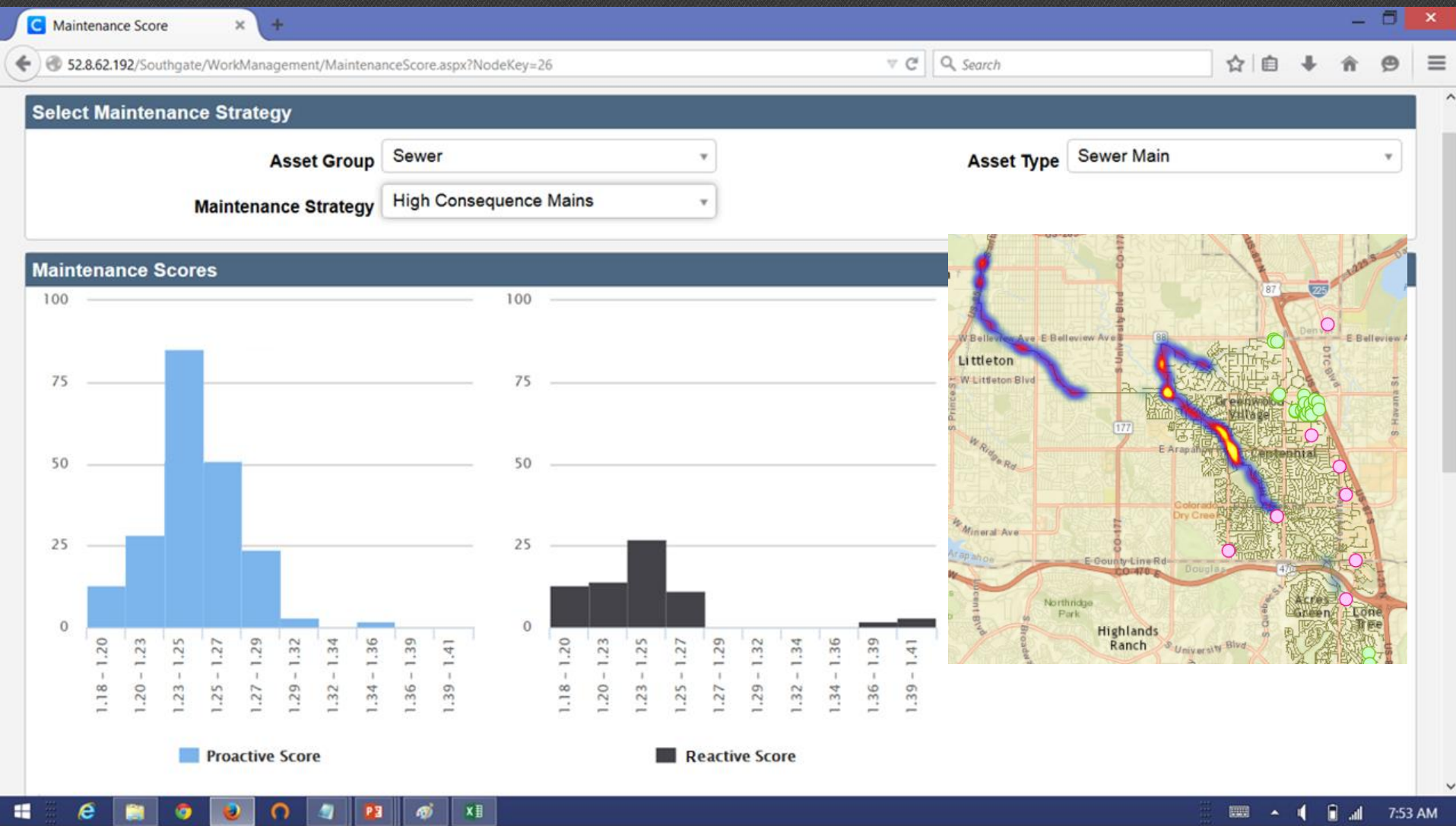
Example Screen dumps

Over Maintained, Under Maintained, Reactively Maintained

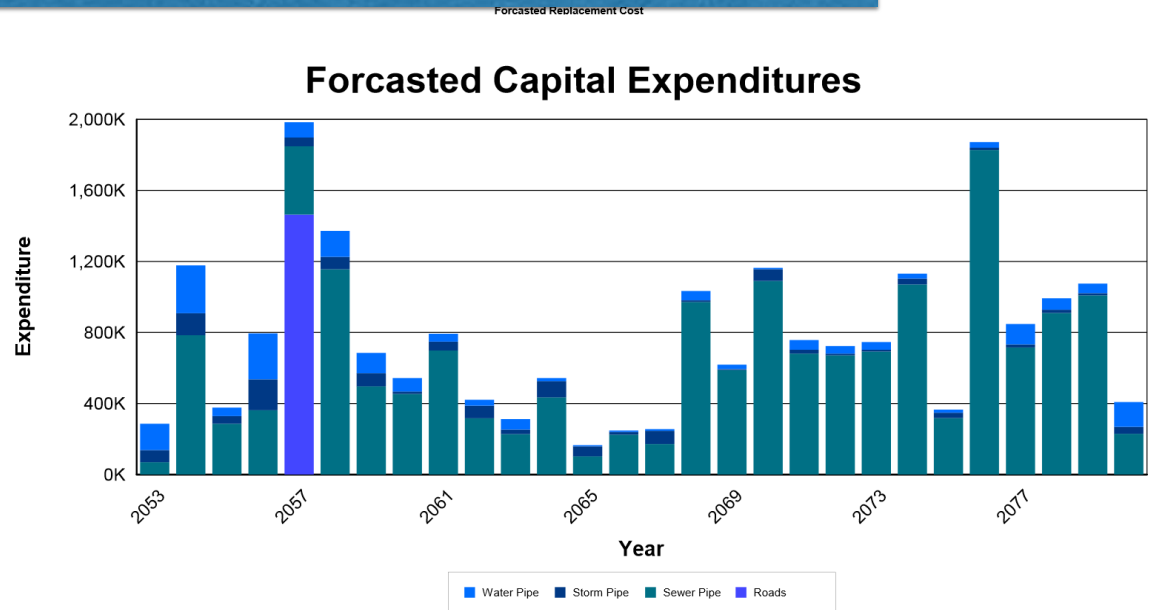
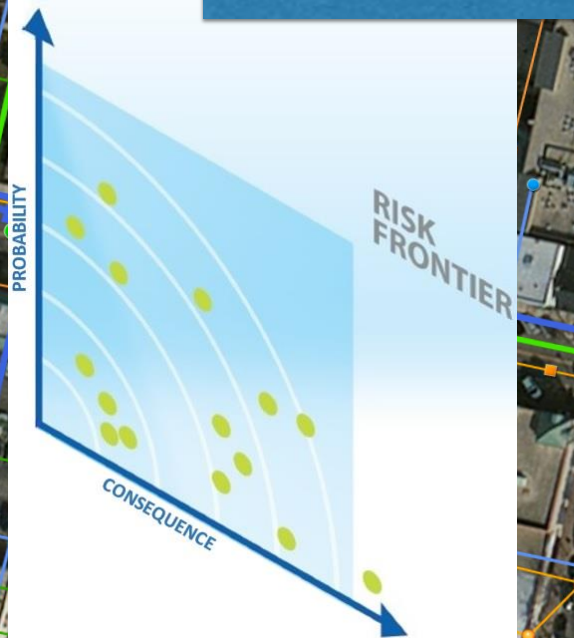
Which Assets, Where, By How Much



Maintenance Score

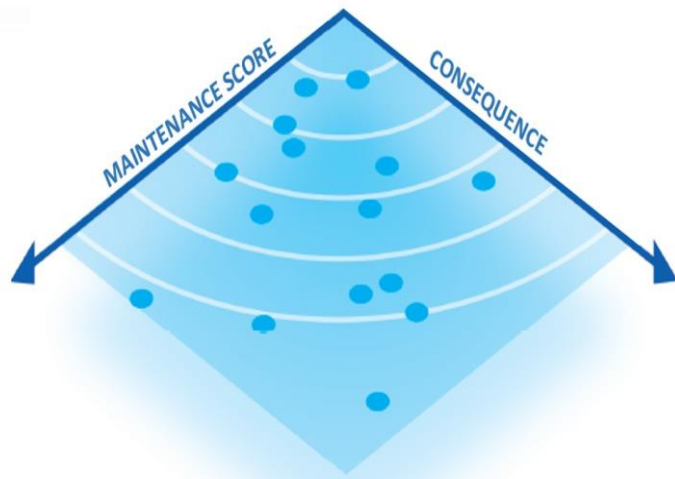


Risk is fundamental to infrastructure decision making



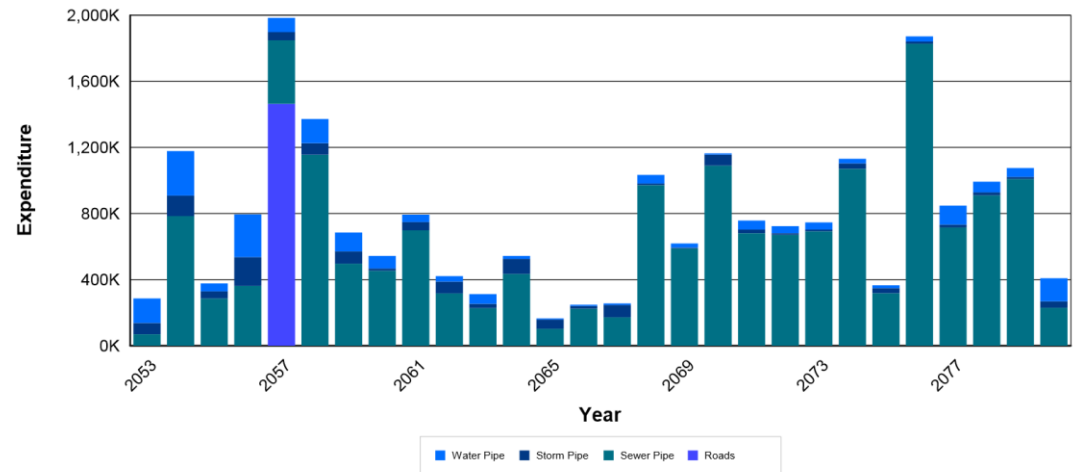
Consequence X Probability = Risk

Align Operations & Maintenance With Asset Risk

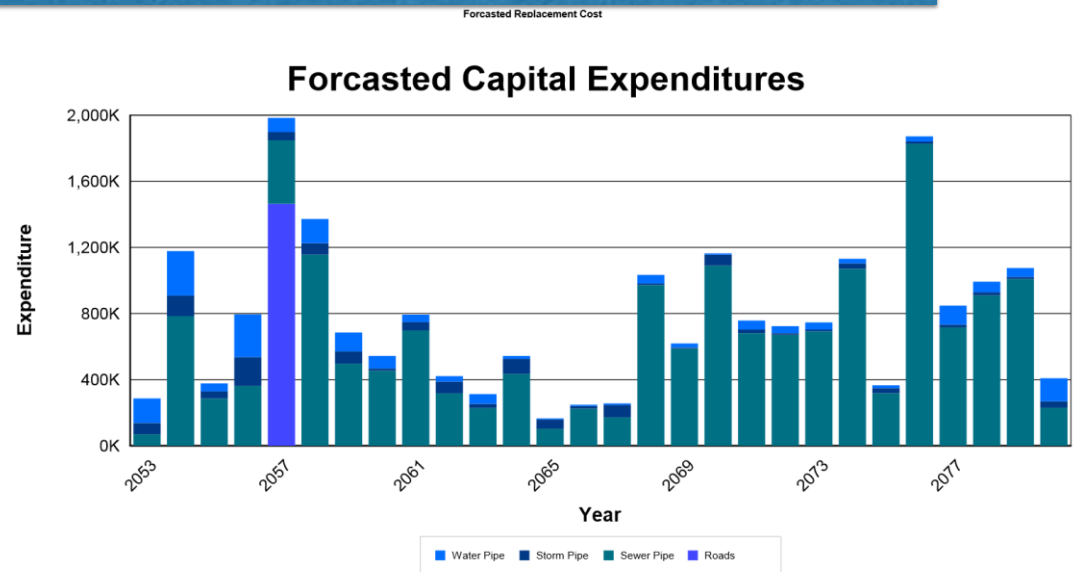
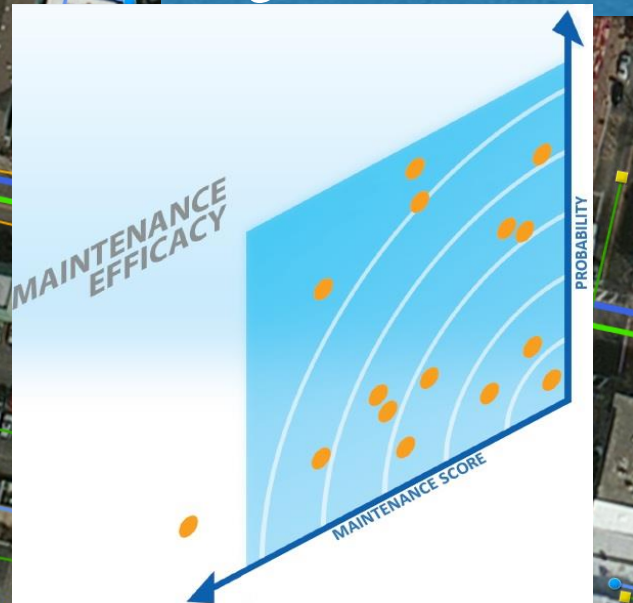


MAINTENANCE FRONTIER

Forecasted Capital Expenditures



Align Maintenance Strategies With Desired Condition



Are there any Questions?

