

How Cityworks Flows Through Green Bay Water

Jean Pucel and John Jarnagin



Cityworks®

Green Bay Water Utility - Cityworks Client

Green Bay Water Utility

- Became a Cityworks client in 2007
- Desktop CW 4.31 SP5 – 5 licenses
- Storeroom – 1 license
- Implemented in Distribution area



Green Bay Water Utility - Cityworks Client

Client Stats

- In February 2009
- Added two more Cityworks Desktop licenses – CW 4.5
- Implemented in Pumping and Filter Plant for WO management using standalone databases

Green Bay Water Utility - Cityworks Client

Client Stats

- In September 2014 – Cityworks 2014 SP3
- **ELA license** – Desktop, Anywhere, AMS, Contracts, Analytics, Mobile Native Apps, Equipment Checkout, Storeroom, e-URL
- Implementation throughout entire utility

Green Bay Water Utility - Cityworks Client

Client Stats

- **POWER Engineers** – Green Bay Water Utility's system integrator from the start with ESRI GIS Model and Cityworks Asset Management



Green Bay Water Utility - Cityworks Client

Asset Management:

- **WO's Management** - Water distribution features, meters, customer service, storage/reservoirs and water treatment
- **Condition Assessment Inspections** - Water distribution features, hydrants for flushing, checking and painting, valves for turning and meters down to the toilet/shower level

Green Bay Water Utility - Cityworks Client

Asset Management:

- **Reporting** – PSC Accounting, State Compliance on Meters, DNR Sampling and Water Loss
- **Modeling / Risk Analysis** – Critical Customers, Usage Data, Leaks and Freeze Up data

Green Bay Water Utility - Cityworks Client

Green Bay Water Utility, Green Bay, WI

33,000 Residential

3,000 Commercial/Multi-Family

175 Industrial

225 Public Authority

Three wholesale customers:

2006-Village of Ashwaubenon

2006- Town of Scott

2011-Village of Hobart

The water is still being drawn from **Lake Michigan**, 27 miles to the east of Green Bay, just north of the City of Kewaunee.

The City has a current estimated population of **104,500**. Since 1960, the City of Green Bay has grown physically from 15.5 square miles to a present area covering approximately **46.1** square miles.



Green Bay Water Utility - Cityworks Client

Green Bay Water Users

- 45 Cityworks Users
- 35 Esri ArcMap Users



Cityworks[®]
Empowering GIS[™]



Cityworks[®]

From The Start Working Together

Green Bay Water

- Landbase
- WPS Software
- Conversion of Records
- GIS

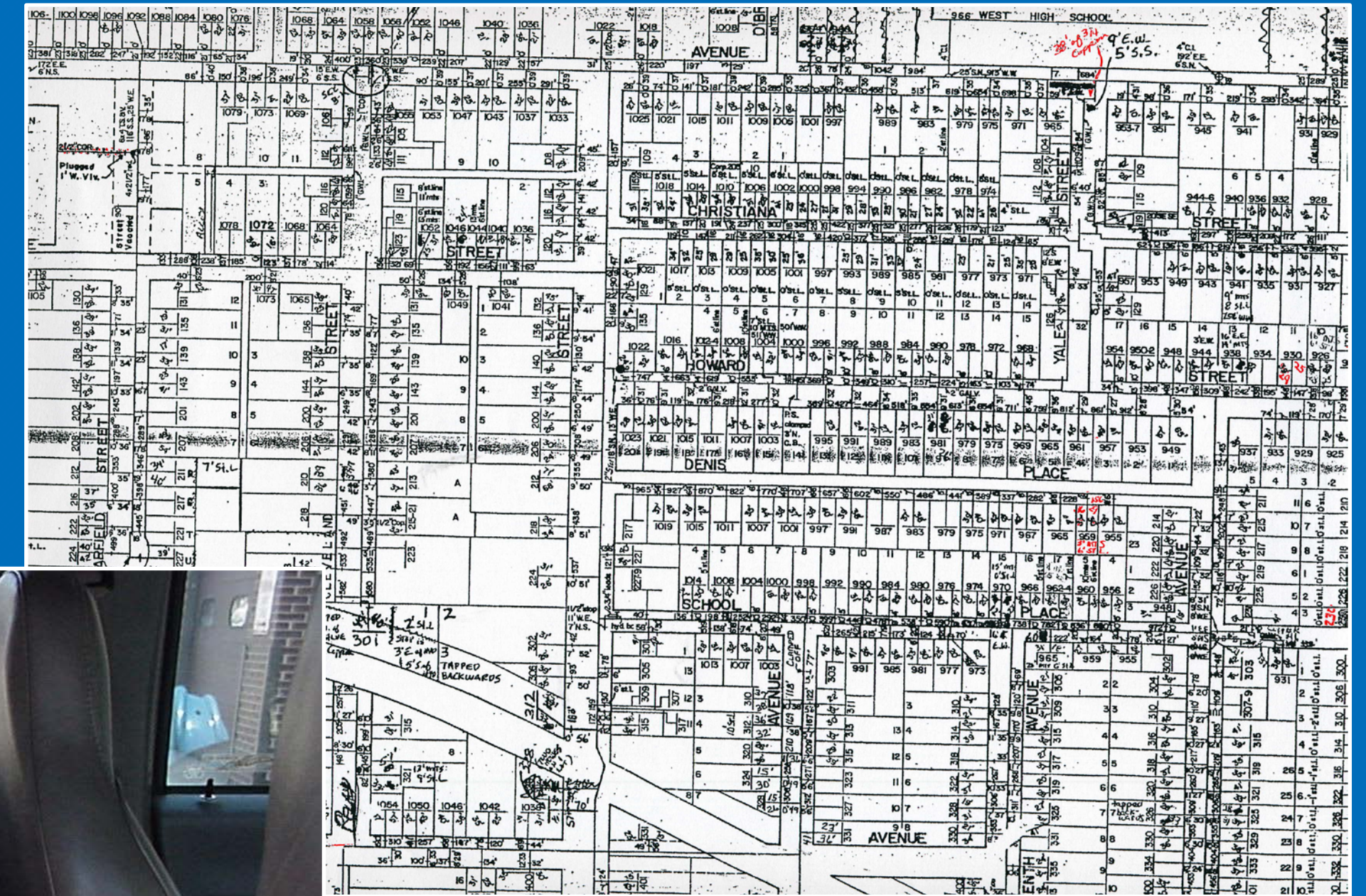
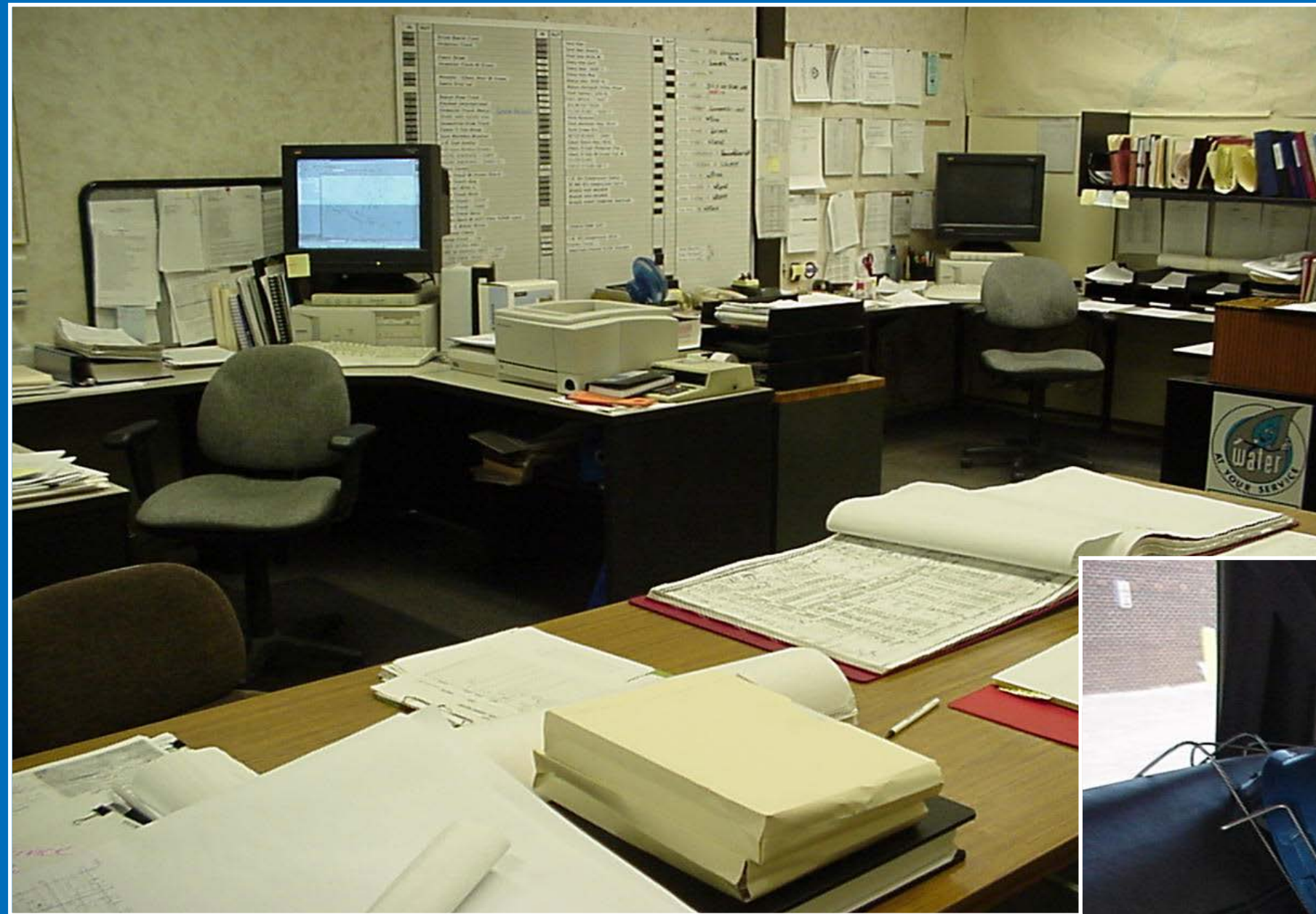
Esri

- GIS
- ArcView
- Editor

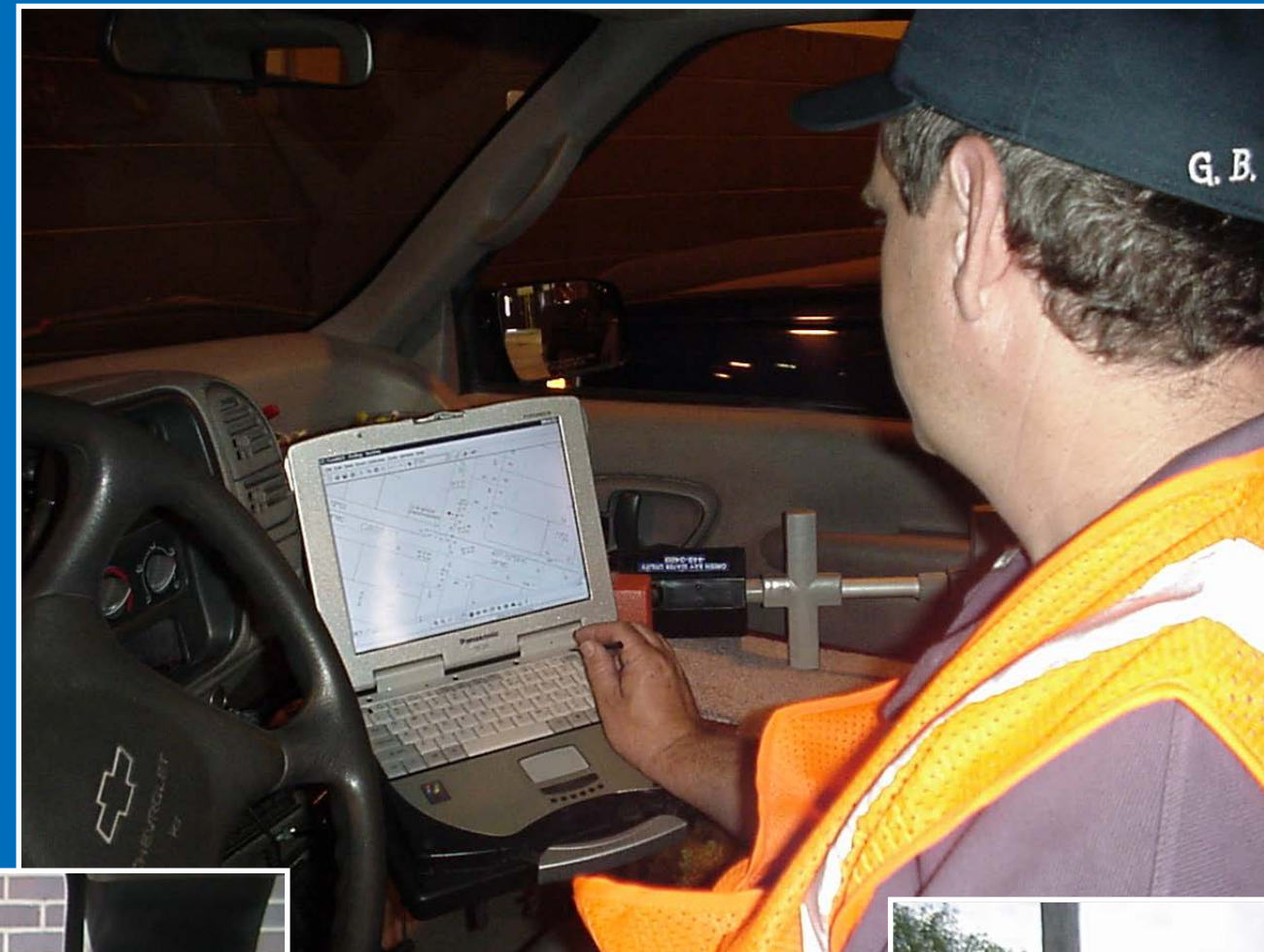
Cityworks

- Desktop
- Storeroom
- DataPump

Conversion of Paper Records



Mobile GIS



FLOW through Distribution

Distribution Office

Office Staff – Work Orders, Equipment, Materials, Labor, Tasks, DataPump, Storeroom with GIS on their Desktops

Outside Crew – Paper Records with GIS on their Laptops in the Trucks using GoSync for data updates weekly

Construction/Engineering Services – Work Orders, Materials, Storeroom with GIS on their Desktops

Goals

- WO Tracking
- Equipment, Materials, Labor Entry
- Inventory Tracking
- Facilities Maintenance

FLOW through Pumping/Filter Plant

Pumping Office / Filter Plant

Managers / Staff - Work Orders and Tasks on 2
Desktops

Goals

- WO Tracking
- Facilities Maintenance

FLOW Stopped to a drop!

2011-2014

- Cityworks – stable at CW 4.5
- GIS – stable at 9.2 – started falling behind
- Metering and Customer Service

Timing was not right with the Meter Reading and Billing Systems Software, but they knew they would need a change



Server Upgrade - Server Based Software

Server Upgrade

SQL 2008 to SQL 2014

Windows 2008 to Windows 2012 R2



Cityworks

Desktop CW 4.5 to Cityworks Server 2014 SP3



ArcGIS

ArcGIS v9.2 to ArcGIS v10.2.1

New FLOW through Metering

Metering

Office Managers– Work Orders, Tasks, Inspections with GIS in Cityworks Mapping and GIS on their Desktops

Outside Crew – Work Orders, Tasks, Inspections with Cityworks Mapping and GIS on their Laptops in the Trucks using GoSync for data updates weekly

Goals

- WO Tracking
- Scheduling Tasks
- Automated Inspections
- GIS Mapping
- Outside Crew Mobile Updates
- Cityworks integration to NorthStar (CIS)

Metering

The screenshot displays the Cityworks web application interface, split into two main sections. The left section shows a list of inspection records, and the right section shows a detailed view of a specific inspection with an associated GIS map.

Left Panel: Inspection List

5/8", .75", 1" Meters

Id	Description	Status	Submit To	Proj Start Date
159380	Residential (5/8", 3/4", 1") M	OPEN	ELSNER, JULIANNE	6/9/201
159382	Residential (5/8", 3/4", 1") M	OPEN	ELSNER, JULIANNE	6/9/201
159387	Residential (5/8", 3/4", 1") M	OPEN	ELSNER, JULIANNE	6/9/201
159396	Residential (5/8", 3/4", 1") M	OPEN	ELSNER, JULIANNE	6/10/20
159401	Residential (5/8", 3/4", 1") M	OPEN	ELSNER, JULIANNE	6/10/20
159408	Residential (5/8", 3/4", 1") M	OPEN	ELSNER, JULIANNE	6/10/20
159423	Residential (5/8", 3/4", 1") M	OPEN	ELSNER, JULIANNE	6/10/20
159449	Residential (5/8", 3/4", 1") M	OPEN	ELSNER, JULIANNE	6/13/20
159494	Residential (5/8", 3/4", 1") M	OPEN	ELSNER, JULIANNE	6/14/20

Completed

Id	Description	Status	Submit To	Actual Start
159529	Residential (5/8", 3/4", 1") Meter Test & Exchange	COMPLETED	CIESLEWICZ, JULIE	6/15/2016
159934	Residential (5/8", 3/4", 1") Meter Test & Exchange	COMPLETED	CIESLEWICZ, JULIE	6/22/2016
159944	Residential (5/8", 3/4", 1") Meter Test & Exchange	COMPLETED	CIESLEWICZ, JULIE	6/23/2016
159946	Residential (5/8", 3/4", 1") Meter Test & Exchange	COMPLETED	CIESLEWICZ, JULIE	6/23/2016
159963	Residential (5/8", 3/4", 1") Meter Test & Exchange	COMPLETED	CIESLEWICZ, JULIE	6/23/2016
159976	Residential (5/8", 3/4", 1") Meter Test & Exchange	COMPLETED	CIESLEWICZ, JULIE	6/23/2016

Right Panel: Inspection Details

IN #15694 METER TEST, 17...

Id: 15694
Location: 1732 LILAC LN
Status: [Dropdown]
Insp. Date: [Calendar]
Resolution: [Dropdown]
Inspected By: [Dropdown]

Comments

Observation: T.E. METER 95386618 MTU 1965081. ACT. 16610

Repairs: [Text Area]

Recommendation: [Text Area]

Cond. Score: 0

Observations

Question: Meter Reading - Before Repair

Answer: [Text Area]

Next Question

Map

The map shows an aerial view of a residential neighborhood with property lines and house numbers. A blue line indicates a street layout, and red lines show specific meter locations. A purple pin is placed on the map. Text on the map includes "21' W.E 1' N.N.", "23'", "29'", "SCHWARTZ ST", "LILAC LN", and house numbers 1035, 1739, 1726, 1732, 1738, 1742-46, 16602, 16610, 16611, 16613, 16614, 16613, 16613, 16613.

New FLOW through Customer Service

Customer Service

Office Managers – Service Requests, Work Orders, Tasks, with GIS in Cityworks Mapping and GIS on their Desktops

Front Office Staff - Service Requests, Work Orders, Tasks, with GIS in Cityworks Mapping

Goals

- Service Request Calls
- WO Tracking
- Scheduling Tasks
- GIS Mapping

Customer Service

The screenshot displays the Cityworks web application interface, which is used for managing customer service requests. The interface is divided into several main sections:

- Navigation and Menu:** Located at the top, it includes tabs for 'My Work', 'SEASONAL', 'CSR', 'Will Call', 'SERVICE REQUESTS', and 'Bad Shut Offs'. Below these are sub-categories like 'CC Residential', 'CC Res Crew Inspections', 'CC Residential Completed', and 'CC Residential Non-Cor'.
- Open Meter Work List:** A table on the left side showing a list of 48 records. Each record includes an 'Id', 'Route', 'Cycle', 'Description', and 'Status'.

Id	Route	Cycle	Description	Status
157544			Meter Turn On & Set	OPEN
157571			Meter Turn On & Set	OPEN
157572			Meter Turn On & Set	OPEN
157573			Meter Turn On & Set	OPEN
157574			Meter Turn On & Set	OPEN
157578	300	25	Meter Turn On & Set	OPEN
159951	602	4	Meter Turn On & Set	OPEN
159999	574	3	Meter Turn On & Set	OPEN
160004	436	13	Meter Turn On & Set	OPEN
158363	652	9	Meter Off & Out	OPEN
159721	417	11	Meter Off & Out	OPEN
157608	720	11	Meter Issue	OPEN
158305	630	6	Meter Issue	OPEN
159460	508	16	Meter Issue	OPEN
159514	411	11	Meter Issue	OPEN
159515	411	11	Meter Issue	OPEN
- Request Detail View:** A central panel showing details for 'Request Id: 14749'. It includes fields for 'Category: DISTRIBUTION', 'Priority: Medium Low', 'Status: Closed', and 'Initiated By: HOWEY, CHRIS'. It also shows dates for initiation (6/22/2016 5:59 PM) and investigation (6/23/2016 1:06 PM). A 'Project Tree' and 'Incident Information' section are also visible.
- GIS Map:** An aerial map on the right side showing utility lines and property boundaries. Key streets labeled include 'LINCOLN ST' and 'AUGUSTA ST'. Utility lines are color-coded (red for water, blue for gas) and labeled with sizes like '6" CI' and '1" COP'. Property addresses such as 1007, 1003, 1002, 1006, and 1008 are visible. The map also shows dimensions like '24' E.W. 84' N.N.' and '20' N.S. 1' E.E.'.

Upgrade FLOW through Distribution

Distribution Office

Office Staff – Work Orders, ELM, Tasks, Storeroom with GIS on their Desktops

Construction/Engineering Services – Work Orders, Materials, Storeroom with GIS on their Desktops

Outside Crew – Service Requests, live WO creation, submitting and closing. Entering ELM, Inspections, Redlining, attaching photos and live GIS edits thru Cityworks and a (static backup GIS) on their Laptops in the Trucks using GoSync for data updates

Goals

- Cityworks Server Live
- Mobile Data to/from Outside Crews Live
- Paperless

New FLOW through Distribution Crews

Distribution Crews

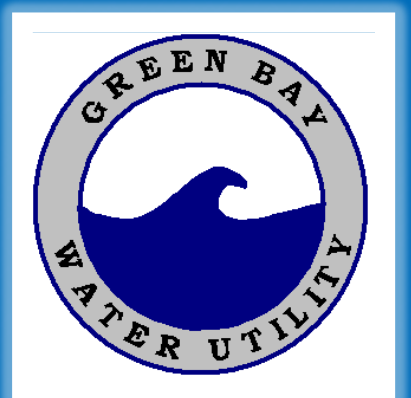
- Service Requests
- WO Management
- ELM
- Inspections
- Redlining
- Attachments
- GIS Edits

Training

- Cityworks
- POWER Engineers
- Internal Customized Training



Cityworks[®]
CAMPUS
EMPOWERING U



POWER[®]
ENGINEERS

DISTRIBUTION OUTSIDE CREWS

The screenshot displays the Cityworks GIS interface. At the top, there is a navigation menu with options like 'Inbox', 'Service Request', 'Work Orders', 'Inspections', 'GIS Search', 'Reports', 'Projects', and 'Storeroom'. Below this is a search bar and a set of filter tabs for 'My Work', 'ALL OPEN WO', 'High Priority', 'Crew Work', 'Restoration', 'ALL PENDING WO', 'ALL CLOSED WO', 'SERVICE REQUESTS', 'HYDRANT PAINTING', 'HYDRANT INSPECTIONS', 'DEAD END FLUSHING', 'VALVE TURNING', 'HYDRANT FLUSHING', 'PRIVATE WELLS', and 'LEAD SERVICES'. The main map area shows a street grid with labels for 'CASS ST', 'JEFFERSON ST', '706', and '712'. A 'Tools' panel is visible on the left side of the map. Overlaid on the map is a 'Select Template' dialog box. This dialog has an 'Entity Group' dropdown set to 'WATER' and a 'Category' dropdown. It contains two columns of templates: 'WFLUSHINGSTRUCTURE', 'WHYDRANT', 'WMAIN', 'WPIPEFITTING', 'WPRIVATEWELLS', 'WSERVICE', 'WSERVICECONNECTION', 'WSERVICEVALVE', 'WSTATIONUNIT', 'WSYSTEMVALVE', and 'WVAULT' in the left column; and '618-Transmission Main Repairs (EX)', '618-Transmission Main Repairs (MT)', '673-Other - Main (EX)', '673-Repair Main Leak (EX)', '673-Repair Other than Leak (EX)', '677-Branch Repair Other than Leak (EX)', '677-Repair Hydrant Branch Leak (EX)', '677-Repair Leak On Hydrant Branch (EX)', '77-Construction Install/Replace Hydrant Branch (Const)', '77-Construction Install/Replace Main (Const)', '88011-Construction Install/Replace Hydrant Branch (Const)', '88-Construction Install/Replace Main (Const)', and '88-Crew Install/Replace Main (EX)' in the right column. To the right of the map is a 'General' form with fields for 'Address', 'Status', 'Priority' (set to 'Medium Low'), 'Requested By', 'Submit To', 'Stage', 'Location', 'Supervisor', 'Projected Start', 'Expense Type', 'Comments', and 'Instructions'. At the bottom left, a 'CREW WORK JOBS SETUP (Domain)' table is visible, listing various work orders with columns for 'Id', 'Description', 'Tile No', 'Address', and 'Task Name'. The status bar at the bottom shows coordinates: 'X: 98717.63726 Y: 564000.58886'.

Id	Description	Tile No	Address	Task Name
157882	88-Crew Install/R	2016-26-17526	1119 SMITH ST	Locates
159376	88-Crew Install/R	2016-26-17517	1056 SHAWANO	Locates
159377	88-Crew Install/R	2016-26-17521	1058 SHAWANO	Locates
157360	88-Crew Install/R	2016-26-17511	1673 DOUSMAN	Locates
159601	88009-Crew Insta	2016-26-00593	W MASON @ 27	Locates
159619	677-Other Hydra	2016-26-02564	NE Cor ROCKDAI	Locates
159625	677-Other Hydra	2016-26-03100	1506 ROCKDALE	Locates
159626	677-Other Hydra	2016-26-03121	NE Cor Rockdale	Locates
159627	677-Other Hydra	2016-26-03148	1426 ROCKDALE	Locates
159629	677-Other Hydra	2016-26-03177	NE Cor ROCKDAI	Locates
97914	88010-Replace/ir	2016-25-10619	JACKSON ST - 10	Locates
157912	88-Crew Install/R	2016-25-14100	1133 SMITH ST	Locates
157913	88-Crew Install/R	2016-25-14104	1137 SMITH ST	Locates
157915	88-Crew Install/R	2016-25-14118	1143 SMITH ST	Locates
157505	88-Crew Install/R	2016-25-14186	400 S FISK ST	Locates
157965	88-Crew Install/R	2016-25-14161	1207 SMITH ST	Locates
157966	88-Crew Install/R	2016-25-14164	1214 SMITH ST	Locates
157967	88-Crew Install/R	2016-25-14166	1215 SMITH ST	Locates

DISTRIBUTION OUTSIDE CREWS

Work Order

Description: 88-Crew Install/Replace Service (EX) ▼

Number: 157882 ▼

Entity Type: WSERVICE Change

Category: Excavation ▼

Initiated By: BO-DIST, BRENDA Date: 5/4/2016 3:18 PM

Status: OPEN ▼ Priority: Medium Low ▼

Requested By: ▼ Supervisor: ▼

Submit To: ▼ Date: ▼

Projected Start: 6/29/2016 7:01 AM Projected Finish: ▼

Opened By: Date: ▼

Closed By: Date: ▼

Completed By: ▼

Actual Start: ▼ Actual Finish: ▼

Stage: Actual ▼ Expense Type: Capital Improvement ▼

Add Comments:

Select

Existing Comments:

Tasks

Work Order ID: 157882 ▼

SeqId	Name	Description	Status	Proceed	Rework	Assigned To	Shop	Start Date	Finish Date	Proj. Start	Proj. Finish	AssetId	Asset	PermitSid	Permit
1	Locates	Diggers Locates	CURRENT	False	False			6/29/2016		6/29/2016	7/8/2016			0	
2	Marking	Marking for Street and Terrace Repair	PENDING	False	False	STELLBRINK, BRENDA									
3	StreetRepair	Street Repair	PENDING	False	False										
4	TerraceRepair	Terrace Repair	PENDING	False	False										

New Edit Delete

Task/Entity

Search By: Name ▼

Keyword: Find

Description	Assigned To	Shop
CC - Generate Non-Reply Disconnect Notice	ELSNER, JULIANNE	
CC - Mail Compliance Confirmation Letter	ELSNER, JULIANNE	
CC - Provide Notice of Non-Compliance	ELSNER, JULIANNE	
CC - Schedule Inspection	ELSNER, JULIANNE	
CC - Create Testable Assembly Inspection	ELSNER, JULIANNE	
CC - Update CC Inspection 30-day Re-Inspect Task	ELSNER, JULIANNE	
CC - Commercial Apartment Initial Letter	ELSNER, JULIANNE	
CC- Red Tag		
Diggers Locates		
Marking for Street and Terrace Repair	STELLBRINK, BRENDA	
Street Repair		

Asset	Asset Id	Location	Warranty Date
WSERVICE	270612	1119 SMITH ST	

Details

Sequence: Response:

Assigned To: Status:

Shop: Permit No.:

Comments:

Projected Start: 6/25/2016 12:08 AM Projected Finish:

Actual Start: Actual Finish:

Rework: Proceed:

Save

DISTRIBUTION OUTSIDE CREWS

Crew: Crew 0

Assets/Tasks Labor Material Equipment

Assets Tasks

Id	Asset	SID	Legacy ID
270612	WSERVICE	27924	115022

Standard Contractor

Labor

Start Date:

Finish Date:

Account:

Description:

Rate: Regular

Hours:

Proportioned:

Find Employee:

Employee	Hours
----------	-------

Material

Date:

Cut (L x W):

Storeroom: GBWU Warehouse

Units:

Proportioned:

Find Material:

Material Hierarchy

Material	Units	Stock
----------	-------	-------

Equipment

Start Date:

Finish Date:

Account:

Units:

Hours:

Proportioned:

Find Equipment:

Equipment Hierarchy

Equipment	Units	Hours
A-PICK-UP TRUCK-PI...		
V-VACUUM EXCAVATO...		

Attachments

+ Add attachments... Remove all attachments

Redline

Request Work Order Inspection

Id:

File name:

Comments:

measured from left side of garage

DISTRIBUTION OUTSIDE CREWS

Create an Inspection

Entity Group: WATER

	Apply To Entity	Template
Feature	WFLUSHINGSTRUCTURE WHYDRANT WMAIN WPIPEFITTING WPRIVATEWELLS	LEAK REPORT TRENCHING
Object	WSERVICE WSERVICECONNECTION WSERVICEVALVE	
Other	WSTATIONUNIT WSYSTEMVALVE WVAULT	

Inspection View Save Close

Inspection Details

Id: 15703 Apply to All:

Location: 1119 SMITH ST

Status: Resolution:

Insp. Date: Inspected By:

Observations

Trenching Reason

Competent Person

Soil Classification

Soil Classification Comments

Surface Encumberments

Surface Encumberments Comments

Utilities Involved

Utilities Involved Comments

Overhead Lines

Overhead Lines Comments

DISTRIBUTION OUTSIDE CREWS

The screenshot displays the Cityworks web application interface. The top navigation bar includes 'Cityworks', 'Inbox', 'Service Request', 'Work Orders', 'Inspections', 'GIS Search', 'Reports', 'Projects', and 'Storeroom'. A search bar is located on the right. The main content area is divided into several sections:

- Feature / Object Selection:** Shows a tree view with 'WHYDRANT (1)' and a selected item with ID '579854'. Buttons for 'Expand', 'Check', and 'Uncheck' are visible.
- Feature / Object Fields:** A table listing various attributes and their values.
- Edit Form:** A central window titled 'WHYDRANT - Cityworks - Mozilla Firefox' containing a form for editing hydrant details. The form fields include:
 - Diameter: 5.25"
 - ELEVATION: (empty)
 - EMPLOYEE_INITIALS: (empty)
 - Enabled: True
 - FEATUREID: 579854
 - FINAL_CHLORINE: (empty)
 - GPM: (empty)
 - HYDMAINTCOMMENTS: (empty)
 - HYDMAINTCOMMENTS_2: (empty)
 - HYDRANTID: (empty)
 - HydrantType: 4 1/2-NST
 - INITIAL_CHLORINE: (empty)
 - JRL_DIRECTION: Hydrant Branch Restrained
 - Landuse: (empty)
 - LEGACYID: (empty)
 - LifecycleStatus: In-Service
 - Location: Rockdale St. - 425' W. of Fisk St. - South side
 - Manufacturer: Mueller
 - Model: Centurion 2013
 - MTH: 9'
 - MTV: 1'
 - NOTE1: No Hydrant Extension
 - NOTE2: (empty)
 - OBJECTID: 25320
 - OpenDirection: Open Right
- Map:** A GIS map showing street layouts and hydrant locations. Labels for '1506', '1498', and '1499' are visible. A scale bar at the bottom indicates 25m and 80ft. Coordinates 'X: 85878.7568 Y: 566561.21108' are shown at the bottom.

Upgrade FLOW through Pumping/Filter Plant

Pumping Office / Filter Plant

Managers / Staff - Office Staff – Work Orders, Tasks, Inspections with GIS on their Desktops

Goals

- WO Tracking
- Facilities Maintenance

FUTURE FLOW

IT Leaders



What I Think I Do



What My Mom Thinks I Do



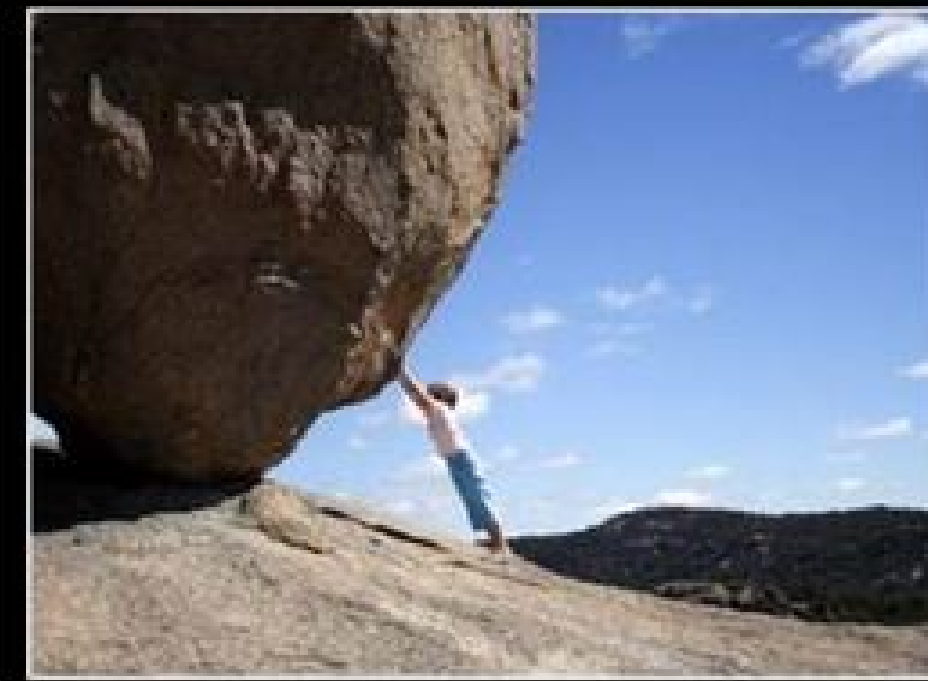
What Finance Thinks I Do



What Business Users
Think I Do



What Business Users
Want Me To Do



What I'm Actually Doing

ESRI Conference Presentation

Backflow Preventions and Cross Connection Tracking

Wednesday, June 29th 8:30am-9:45am Room 23B

Bill Hoisington, POWER Engineers

This presentation will discuss how we manage the inspection and maintenance of our meters and backflow preventers in Cityworks, using GIS, improved work flows and integrating the process with our CIS system.



Maintenance ★

Wednesday, June 29
8:30 AM – 9:45 AM
Room 23 B
San Diego Convention Center

Share

DESCRIPTION

Operating and maintaining an aging system can be challenging and expensive. GIS provides the information needed to prioritize maintenance and improve workflow, saving you time and money.

MAP

Floor 3

POWERED BY esri



Cityworks®

Thank You / Questions?

Thank You

- Cityworks
- ESRI
- Water UC Meeting Group

Questions

- Cityworks – John
- Green Bay Water – Jean

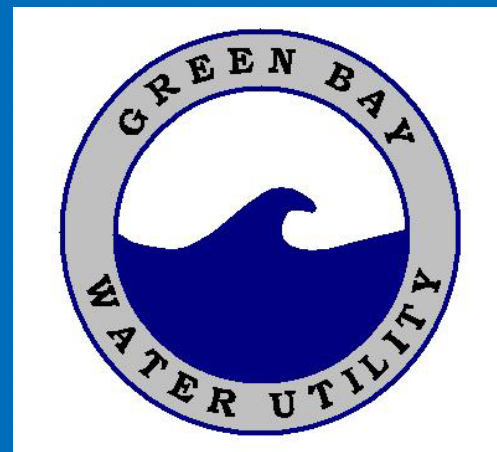


Contact Information

Jean Pucel

GIS Specialist

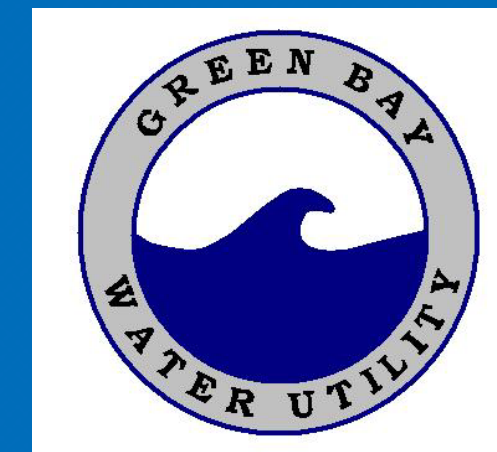
jeanpu@greenbaywi.gov



Green Bay Water Utility

631 South Adams Street

Green Bay, WI 54301



Contact Information

John W. Jarnagin

Educational Services Manager

jjarnagin@cityworks.com

