

# OAKLAND, CA

QUOTE: Q-08050



**Cityworks | Azteca Systems, LLC.**

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Sandy, UT 84070  
Phone: 801-523-2751  
Website: Cityworks.com

**Cityworks**<sup>®</sup>  
Empowering GIS





Cityworks is designed and created to be the leading GIS-centric system for public asset management, that fully leverages the power of geographic information (GIS) and help communities work smarter, become more sustainable, resilient, and safe.



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# **SECTION 1**

COMPANY INFORMATION

# CITYWORKS® | AZTECA SYSTEMS®

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Founded in 1986, Azteca Systems, LLC began as a consulting firm that provided cartographic mapping support to federal agencies. Azteca Systems earned a reputation for GIS-centric solutions, and public works agencies began approaching us for help with their asset management strategy. In 1996, the Cityworks platform was born.

Cityworks is a powerful, flexible, and affordable web GIS-centric public asset management solution. Today, we support more than 650 organizations throughout the United States and around the world, from single-user sites to enterprise installations.

Our clients include public works agencies, transportation agencies, water and wastewater utility districts, airports, energy companies, community development agencies, and other organizations involved with the care and operation of public assets.

We are a full-service company—a financially strong and closely-held corporation. Focused on the development of GIS-centric software applications, Azteca Systems is capable of providing complete implementation, integration, data conversion, and process review services, as well as re-engineering, education, and ongoing maintenance.

GIS offers a robust and accurate representation of assets, modeled as they are in your community. Built exclusively on Esri's ArcGIS® Cityworks offers a robust system of record, engagement and insight for public asset management.

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**We recognize GIS as the authoritative system of record  
for local government and public service organizations.**

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# CORE VALUES

1. BUILD THE RIGHT TEAM
2. CREATE LASTING PARTNERSHIPS
3. ENABLE THE POWER OF GIS
4. IMPROVE COMMUNITIES

## **BUILD THE RIGHT TEAM**

Our employees are the lifeblood of Cityworks. We are passionate about creating a GIS-centric ecosystem to help you build a more resilient, sustainable, and safe community—a smart community. Our objective is simple: engage a culture of innovation and ongoing improvement for employees, customers, and strategic partners.

Our company is staffed by a comprehensive group of professionals capable of development, implementation, training, customer support, and marketing. As a Cityworks client, you will have access to the following teams:

- **Enterprise Solutions:** Support implementation and project management, education services, and the business partner program.
- **Products and Development:** Responsible for software development, testing, research and development, and documentation.
- **Customer Success Management (CSM):** Provide support before, during, and after implementation and ensure long-term client success.

# CREATE LASTING PARTNERSHIPS

The Cityworks community includes a network of business partners who embrace the value of superior customer service. From world-renowned civil engineering and technology integration firms to respected software companies and international distributors, our business partners all share a common belief in the value GIS.

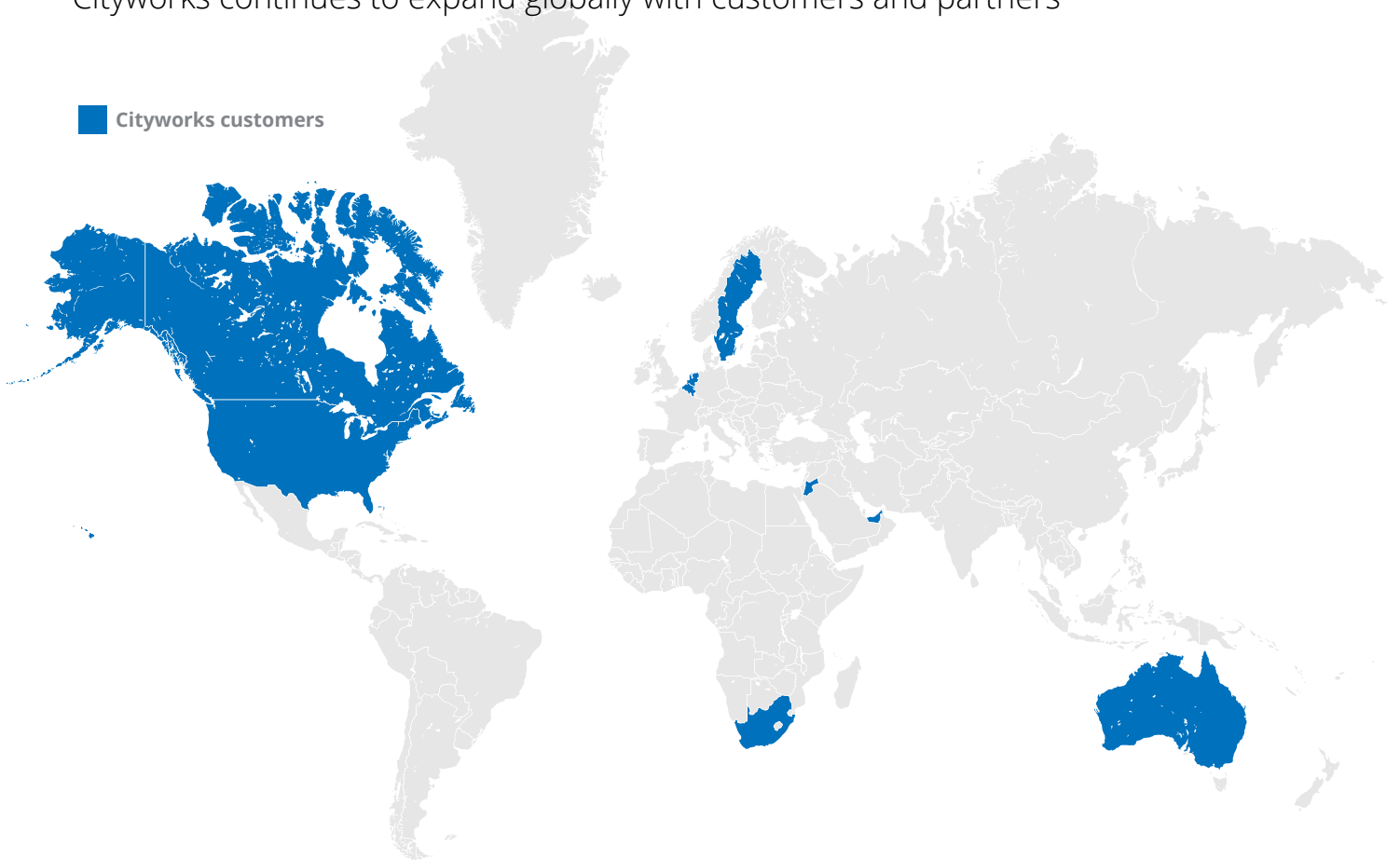
Our strategic partners, Esri and Trimble, provide long-range support in the core technology and business objectives we pursue with Cityworks. Implementation partners help you put Cityworks to use—efficiently, effectively, and as quickly as possible.

Several world-class software development companies help customers extend the reach of Cityworks with integrated solutions. These development partners support capabilities such as automated vehicle location (AVL) services, CCTV inspections, citizen engagement, utility location, pavement management, systems modeling, mobile solutions, utility billing, and so much more.

## EXPANDING GLOBALLY

Cityworks continues to expand globally with customers and partners

 Cityworks customers



# SECTION 2

QUOTE





Quote Number Q-08050-2  
 Created Date 10/24/2019  
 Expiration Date 1/23/2020

Contact Information

Contact Name: Prepared By Name: Joe Pilimai  
 Organization: Oakland (CA), City of Prepared By Phone: (801) 523-2751  
 Contact Address: 250 Frank H Ogawa Plaza  
 Oakland, CA  
 94612

Quote Lines

Product Name	Quantity/ Population	Net Unit Price
ELA - SERVER AMS PREMIUM	1.00	\$10,417.00
<b>TOTAL:</b>		\$10,417.00

Notes

Year 1 Dollar Value	\$10,417.00	Year 1 Date Range	01/01/2020 - 05/31/2020
Year 2 Dollar Value	\$145,000.00	Year 2 Date Range	06/01/2020 - 05/31/2021
Year 3 Dollar Value	\$160,000.00	Year 3 Date Range	06/01/2021 - 05/31/2022
Year 4 Dollar Value	\$180,000.00	Year 4 Date Range	06/01/2022 - 05/31/2023
Year 5 Dollar Value		Year 5 Date Range	

Quote Notes:

Quote upgrades current licensing to Premium AMS ELA.

Updated License:

Server AMS Premium Enterprise License Agreement (ELA), Includes Unlimited Quantities of the Identified Products:

- Office
- Respond
- Mobile Native Apps (for iOS/Android)

--Includes the following Add-ons:

- Storeroom
- Equipment Checkout
- Contracts
- Cityworks for Excel
- Cityworks Analytics for AMS
- eURL (Enterprise URL)

## Operational Insights

Workload

Web Hooks

Performance Budgeting

CCTV Interface for PACP

Pavement Interface

Local Government Templates (LGT)

Use of Cityworks AMS Application Programming Interfaces (APIs) with commercially available Cityworks-centric applications that are licensed and maintained by authorized Cityworks partners

Use of Cityworks AMS Application Programming Interfaces (APIs) with third party system integrations

License includes all departments at the City of Oakland, CA with the exception of Oakland International Airport.

Annual fee herein is based on 400,001 - 450,000 population range

\*Fee for Year 1 reflects pro-ration through 05/31/2020. Current Renewal Amount has previously been paid.

## Terms and Conditions

All quotations are valid for ninety-days (90) from the date above, unless otherwise stated in this quotation form. All prices quoted are in USD, unless specifically provided otherwise, above. These prices and terms are valid only for items purchased for use and delivery within the United States.

Unless otherwise referenced, this quotation is for the Cityworks software products referenced above only. Pricing for implementation services (installation, configuration, training, etc.), or other software applications is provided separately and upon request.

The procurement, installation and administration of the Esri software utilized in conjunction with Cityworks will be the responsibility of the customer.

The procurement, installation and administration of the RDBMS utilized in conjunction with Cityworks will be the responsibility of the customer. Currently, Cityworks supports Oracle and SQL Server. The procurement, installation and administration of the infrastructure (hardware and networking) utilized in conjunction with Cityworks will be the responsibility of the customer.

This quotation information is confidential and proprietary and may not be copied or released other than for the express purpose of the current system selection and purchase. This information may not be given to outside parties or used for any other purpose without written consent from Azteca Systems, LLC.

### Software Licensing

All Azteca Systems software offered in this quotation are commercial off-the-shelf (COTS) software developed at private expense, and is subject to the terms and conditions of the "Cityworks Software License Agreement" and any and all addendums or amendments thereto. A fully executed copy of the Software License Agreement and any addendum(s) is required before delivery and installation and usage of the software is subject to the terms of the current license agreement.

Delivery method is by way of download through Azteca Systems, LLC. customer support web portal.

### Payment Terms

Net thirty (30) days.

### Taxes

Prices quoted do not include any applicable state, sales, local, or use taxes unless so stated. In preparing your budget and/or Purchase Order, please allow for any applicable taxes, including, sales, state, local or use taxes as necessary. Azteca Systems reserves the right to collect any applicable sales, use or other taxes tax assessed by or as required by law. Azteca Systems reserves the right to add any applicable tax to the invoice, unless proof with the order is shown that your organization or entity is tax exempt or if it pays any applicable tax directly.

### International Customers

These items are controlled by the U.S. government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. government or as otherwise authorized by U.S. law and regulations.

**AZTECA SYSTEMS, LLC. COPYRIGHT 1995 - 2019**

\_\_\_\_\_  
Accepted by:

\_\_\_\_\_  
Title

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
Date

Azteca Systems LLC 11075 | South State Street Suite 24, Sandy, UT 84070 | Corporate Main 801-523-2751 | Corporate Fax 801-523-3734

# SECTION 3

CITYWORKS & ARCGIS

# CITYWORKS® AND ARCGIS®

## ENABLE THE POWER OF WHERE™ FOR PUBLIC ASSET MANAGEMENT

### **WEB GIS-CENTRIC**

We recognize GIS as the authoritative system of record for local government and public service organizations. Built exclusively on Esri's innovative ArcGIS® technology, Cityworks offers a robust system of record, engagement, and insight for public asset management.

The Azteca Systems partnership with Esri began in 1987. Over time, the tools we used grew and changed as Esri's technology grew and changed. Though other approaches may interface with a GIS—generally for map visualization—the Cityworks platform has always used ArcGIS as the authoritative data system of record.

Ultimately, this translates to a powerful user experience. End users can easily and seamlessly move between Cityworks to Esri applications to collect, view, and share data. Application developers can access ArcGIS and Cityworks to design and build applications that support unique end-user workflows. Together, Cityworks and Esri ArcGIS support a range of solutions to meet your needs.

### **SINGLE SIGN-ON**

Single Sign-on allows users to log in to Cityworks using their ArcGIS Online or Portal for ArcGIS credentials. This is helpful for administrators who want to manage user passwords in ArcGIS Online or Portal for ArcGIS rather than Cityworks. Single Sign-on also eliminates the need for the Esri Resource Proxy to be configured for secured GIS services to be consumed by the map. This function also allows users to view ArcGIS Online web maps in Cityworks.

When logged in via Single Sign-on, users have two additional map tools: ArcGIS Online Web Map Manager and Roads and Highways.

The ArcGIS Online Web Maps map tool allows users to incorporate add web maps from ArcGIS Online to their Cityworks map.

Roads and Highways is licensed under Single Sign-on and requires Esri's Roads and Highways license and extension. This app contains map tools which allows users to create a feature event on roadway assets and create work orders, inspections, and permits attached to the new event. Route marker pins are used along the assets to define the end points of the feature events. Data from Cityworks Roads and Highways can be viewed in Esri's Roads and Highways, providing powerful mapping, reporting, and analyses.

## **WEB MAP MANAGER**

Web Map Manager enables users to select and change their map in Cityworks to any shared web map found in Portal for ArcGIS and ArcGIS Online. In addition, an organization's saved Enterprise URLs can be dynamically added into a web map as a layer and ordered by the user interactively. This product requires licensing for EURL, and users must be logged in via Cityworks Single Sign-on.

## **COLLECTOR FOR ARCGIS**

Collector for ArcGIS is an Esri app that allows users to create and update GIS features while working in the field. Using the Cityworks mobile native apps for Android or iOS, Cityworks users logging in with their AGOL or Portal logins can open service requests, work orders, inspections, and PLL cases and navigate directly to that work extent in Collector. Since Cityworks and Collector leverage the same web map, that means users can move seamlessly between the two apps. It also means that any new features created, or updated, in Collector is available immediately in the Cityworks app.

## **NAVIGATOR FOR ARCGIS**

Navigator for ArcGIS is an Esri app for routing and navigation. Cityworks mobile native app users can use Navigator to get turn-by-turn directions to any address or asset. Navigator will also provide an optimized route if users need to navigate to multiple locations. Like the Cityworks mobile native apps, Navigator works online or offline. Navigator can be opened from service requests, work orders, inspections, and PLL cases and initiated for routing to the work activity or associated asset.

## **WORKFORCE FOR ARCGIS**

Workforce for ArcGIS is an Esri app that allows office staff to create and assign work to field crews, who also use the app to view their assignment in the field. Cityworks users logging in with their AGOL or Portal logins can open Workforce and access activities and seamlessly launch the Cityworks mobile native apps for Android and iOS to process the work order. This allows Cityworks users to record additional information in the Cityworks Native Apps, complete the work and update Workforce.

## **CROWDSOURCE REPORTER**

Crowdsourcing Reporter is an Esri app that allows citizens to report concerns and issues. Those reports can be brought into Cityworks as service requests where they can be managed and follow up activities can be generated. As these are processed in Cityworks, updates can also be delivered back to Crowdsourcing Reporter for citizens to view.

# ENABLE THE POWER OF WEB GIS-CENTRIC

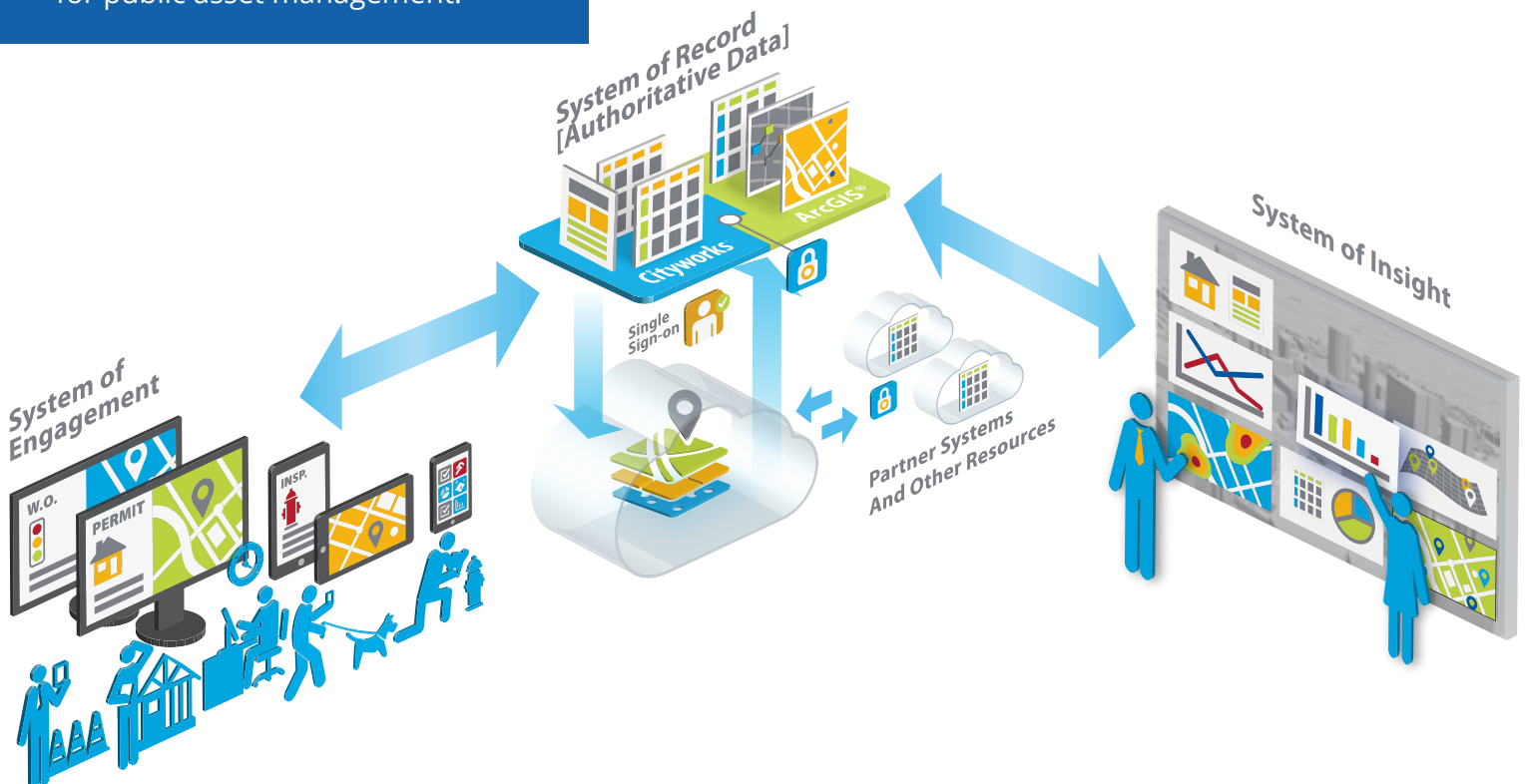
As a global leader for public asset management, Cityworks Designs, Creates, Promotes and Advocates GIS-centric software as a best practice to strengthen smart communities. We recognize GIS as the authoritative system of record for local government and public service organizations. Built exclusively on Esri's innovative ArcGIS® technology, Cityworks offers a robust system of record, engagement, and insight for public asset management.

The Cityworks platform has always used ArcGIS as the authoritative data system of record. Ultimately, this translates to a powerful user experience. End users can easily and seamlessly move between Cityworks to Esri applications to collect, view, and share data. Application developers can access ArcGIS and Cityworks to design and build applications that support unique end-user workflows.

Together, Cityworks, Esri ArcGIS, and our partners support a range of solutions to meet your public asset management and infrastructure needs.

## CITYWORKS AND ARCGIS

together provide powerful systems of engagement, record, and insight for public asset management.



# Esri's ArcGIS®

## COMMON PATTERNS OF USE



### Mapping & Visualization

Understand locations and relationships with maps and visual representations



### Data Management

Collect, organize, and maintain accurate locations and details about assets and resources



### Field Mobility

Manage and enable a mobile workforce to collect and access information in the field



### Monitoring

Track, manage, and monitor assets and resources in real-time



### Analytics

Discover, quantify, and predict trends and patterns to improve outcomes



### Design & Planning

Evaluate alternative solutions and create optimal designs



### Decision Support

Gain situational awareness, and enable information-driven decision making



### Constituent Engagement

Communicate and collaborate with citizens and external communities of interest



### Sharing & Collaboration

Empower everyone to easily discover, use, make, and share geographic information



# IMPROVE COMMUNITIES

Local governments and public service organizations across the world use Cityworks and ArcGIS to make their communities more resilient, sustainable, and safe. Esri recently identified nine ways organizations typically use GIS. In public asset management, this translates to four key activities that help organizations realize a greater return on investment:

- **Constituent Engagement:** Encourage residents, business owners, and policy makers to provide input, remain informed, and monitor progress with the help of Cityworks data and Esri web maps.
- **Organization Empowerment:** Empower management and staff to collaborate, communicate, and interact with asset data.
- **Organization Decision Support:** Use asset data to better understand cost, risk, labor, and capital investment priorities. Help management and staff make better real-time, data-driven decisions.
- **Organization Design and Planning:** Evaluate alternatives and develop initiatives that improve management, budgeting, planning, and design.

## GIS-CENTRIC CHARACTERISTICS OF PUBLIC ASSET MANAGEMENT



### NO REDUNDANCY

ArcGIS is the authoritative system of record with no writing or syncing to other asset data tables.



### FULLY CONFIGURABLE

Cityworks can support any geodatabase design for your assets—including linear, dispersed, or condensed.



### NON-PROPRIETARY

We build on the geodatabase with well-known and understood data structure elements. Your organization owns and fully controls its data.



### ARCGIS UPDATES

Cityworks relies solely on ArcGIS feature services to update the authoritative asset data to ensure data integrity.



### ARCGIS WEB MAP

Any application can access an ArcGIS web map without constraints, allowing you to find and view asset data at a glance.



### SINGLE SIGN-ON

Our software supports a single-sign on identity. All associated apps will support the preferred identity storehouse—ArcGIS Online or Portal for ArcGIS.



### ANALYTICS & REPORTING

Cityworks uses ArcGIS tools for data analytics and powerful visualizations to support decision-making.

# SECTION 4

PRODUCTS & OPTIONAL ADD-ONS

# PRODUCTS

The Cityworks platform is designed to utilize Esri ArcGIS and contains Cityworks AMS and PLL core products which are available through their respective Office and Tablet apps. These apps provide the end user with an optimized office or mobile experience. Each contains full AMS or PLL functionality, along with integrated map tools. ***Products listed are for informational purposes only. Please refer to the quote in Section 2 for actual products to be licensed.***

## **Core products include the following:**

- Office for AMS
- Tablet for AMS
- Office for PLL
- Tablet for PLL

**Add-on software applications have been designed to extend the Cityworks platform by providing additional specialized capabilities. These are licensed separately, and include the following:**

- Respond
- Mobile Native Apps (for iOS/Android)
- Storeroom
- Equipment Checkout
- Contracts
- Cityworks for Excel®
- Cityworks Analytics
- eURL
- Public Access
- Operational Insights
- Workload
- Web Hooks
- Performance Budgeting
- CCTV Interface
- PAVER Interface
- JSON web services APIs

# CITYWORKS AMS

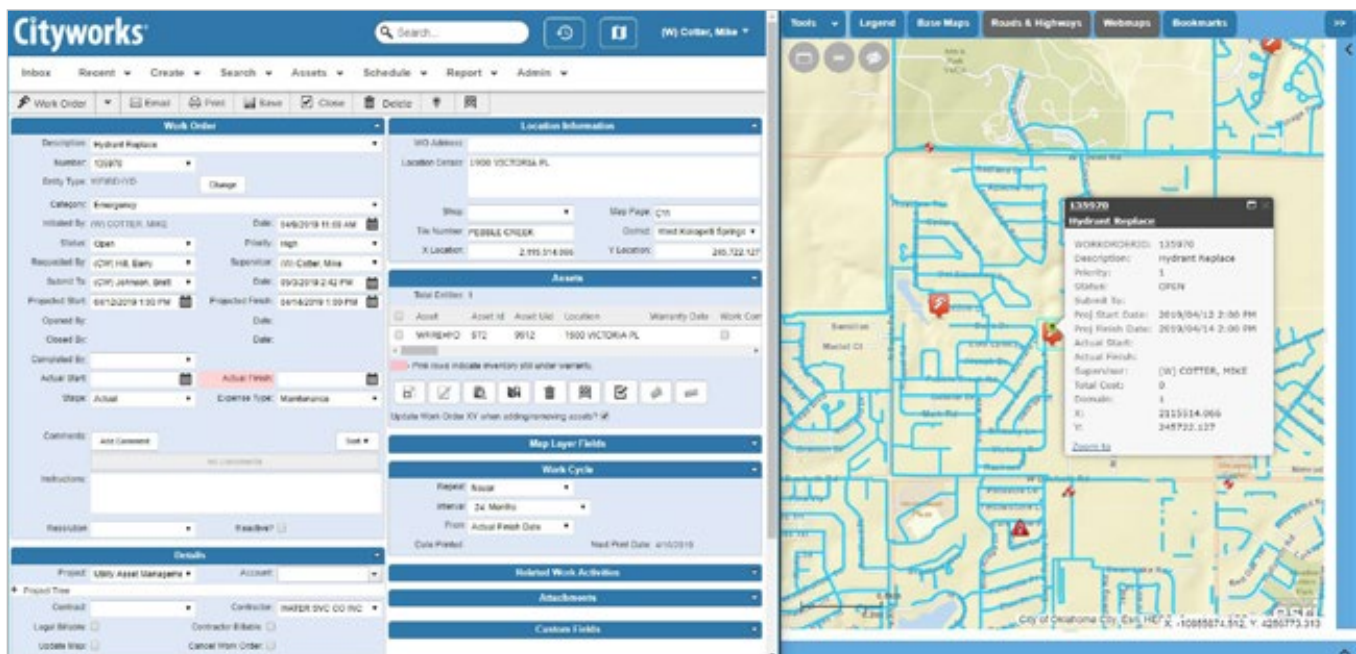
Cityworks AMS is a web GIS-centric public asset management solution platform designed with built-in Office for AMS and Tablet for AMS apps. Each app incorporates a palette of tools, tabs, and links in a highly customizable environment, allowing Cityworks to be served across a department, a division, or an entire organization.

Cityworks Office for AMS and Tablet for AMS apps are designed for maintenance and operations. These apps allow users to utilize GIS functionality while managing and tracking maintenance operations involving service requests, work orders, and inspections within an office or mobile environment.

Users can schedule and track preventative maintenance with cyclical work orders and inspections. Emergency and other reactive work orders are also managed. These are often generated from customer calls and service requests.

Maintenance data relating to specific public assets is tracked and managed, and includes: location, assets, resource usage and costs, assignments, tasks, comments, dates, and more. Caller histories as well as asset maintenance histories are readily available using Cityworks searches. Maintenance searches can be configured with tabular and/or spatial data. Specialized reports can be generated using Crystal Reports.

A map interface includes tools for map display, navigation, feature selection, activity creation, event layers, asset searches, navigation, location, redline, heat mapping, and more.



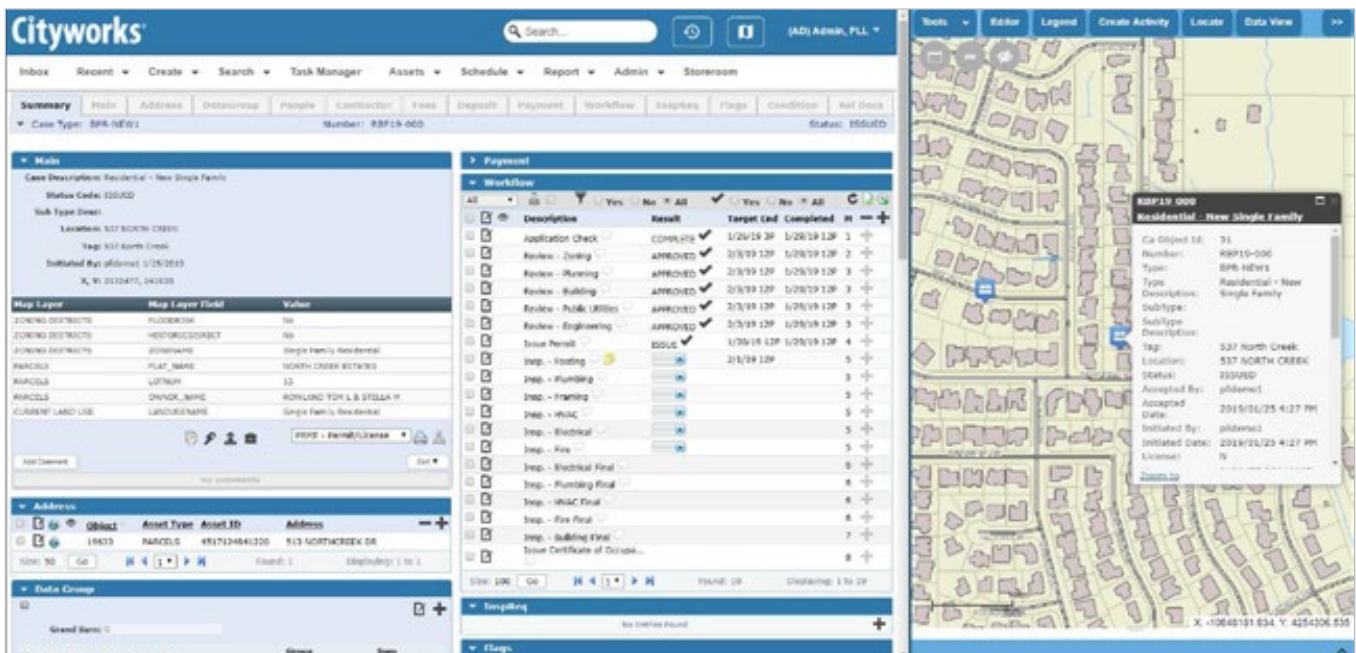
# CITYWORKS PLL

Cityworks PLL is a web GIS-centric permits, licensing, and land platform designed to manage development projects, code enforcement cases, and other similar projects from inception to completion. It facilitates the use of ArcGIS mapping functions at all relevant levels. It is not only functional for private land development, but it can be used for utilities, highways, parades, festivals, and other public projects.

Cityworks PLL is designed with built-in Office for PLL and Tablet for PLL apps, which provide the end user with an optimized office or mobile experience. These apps contain full permits, license, and case management functionality and are designed for office computers, mobile laptops, and tablets.

Cityworks PLL gives jurisdictions direct control over their business processes. Basic functional forms are highly adaptable and can be tailored to each organization's unique structure and needs. Customized templates help manage the required data for specific processes. As many or as few templates as necessary can be designed to streamline the development process. PLL can be configured to allow access by multiple departments within an organization, such as land management, legal department, public utilities, and others.

Workflows efficiently track applicable tasks from application or request, through reviews, fee collection, inspections, commission meetings, hearings and abatement, license renewal, and more. GIS features can be associated to records and may include parcels, street segments, intersections, addresses, or any other defined GIS features.



# Rs RESPOND

Respond extends Cityworks AMS and PLL functionality to a mobile setting, such as on a tablet at a job site. Respond is designed differently than Office and Tablet, and focuses on service request, work order, inspection, and PLL case management.

Respond enables mobile work on an interface optimized for tablets and includes a map. The map interface is designed with the following tools: base maps, bookmarks, create activity, data view, editor, heat maps, layer search, legend, locate, measure, navigation, printing, redline, routing, and selection. Respond requires a constant connection and uses a responsive design that is not supported in Internet Explorer.

The screenshot displays the Respond mobile application interface, divided into two main sections: 'Work Order' and 'Work Cycle'.

**Work Order Section:**

- Description:** Meter Changeout
- Number:** 135041
- Entry Type:** WMETER
- Category:** (Dropdown menu)
- Change:** (Blue button)
- Initiated By:** (W) BOYCE, DARRIN
- Initiated Date:** 03/16/2015 3:32 PM
- Status:** Open
- Priority:** Medium
- Requested By:** (Dropdown menu)
- Supervisor:** (W) BOYCE, DARRIN
- Submit To:** (Dropdown menu)
- Submit Date:** 02/16/2016 11:54 AM
- Projected Start:** 03/23/2015 10:30 AM
- Projected Finish:** 03/23/2015 2:30 PM
- Opened By:** BOYCE, DARRIN
- Open Date:** 09/21/2016
- Closed By:** (Dropdown menu)
- Close Date:** (Dropdown menu)
- Completed By:** (Dropdown menu)
- Actual start:** (Calendar icon)
- Actual Finish:** (Calendar icon)
- Stage:** Actual
- Expense Type:** Maintenance

**Work Cycle Section:**

- Record:** Never
- Interval:** 6 (Dropdown menu) | Month (Dropdown menu)
- From:** Actual Finish Date (Calendar icon)
- Next Post Date:** 03/18/2015
- Date Printed:** (Dropdown menu)

**Related Work Activities Section:**

- Inspections Table:**

ID	Type	Description	Entry ID	Entry Type	Date
15500	1	Residential Water Meter	29818261	WMETER	

Showing 1 to 1 of 1

- Requests Table:**

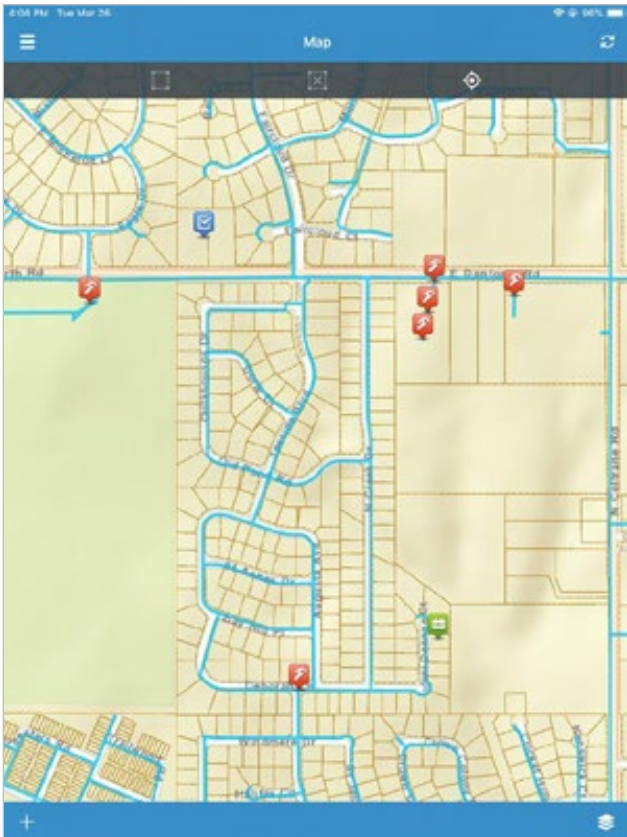
ID	Date Initiated	Description	Priority	Category	Submit To	Dispatch To
There is no data to display						

Showing 0 to 0 of 0

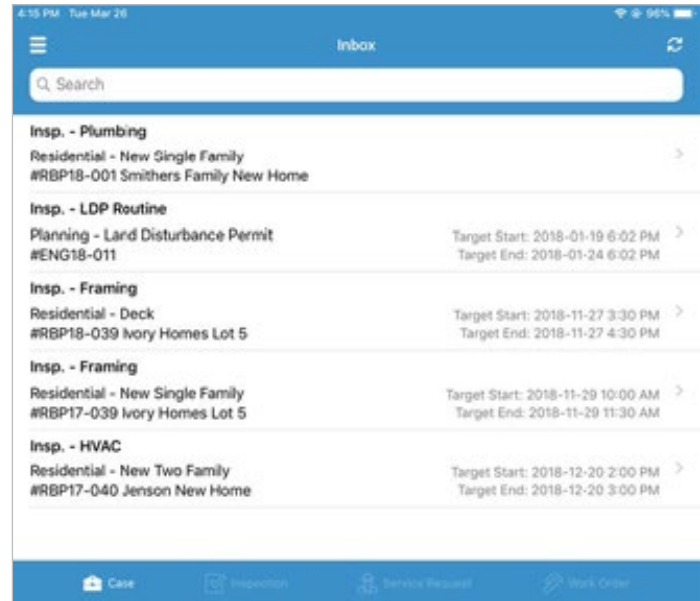
*Performance Budgeting—Budget variables*

# MOBILE NATIVE APPS FOR IOS AND ANDROID

These apps allow Cityworks to be used in a disconnected environment. Users can create service requests, work orders, and inspections, and edit service requests, work orders, inspections, and cases using iOS or Android devices. Work activities, tasks, and cases can be viewed on the map and marked as completed with comments.



iOS app—Map example



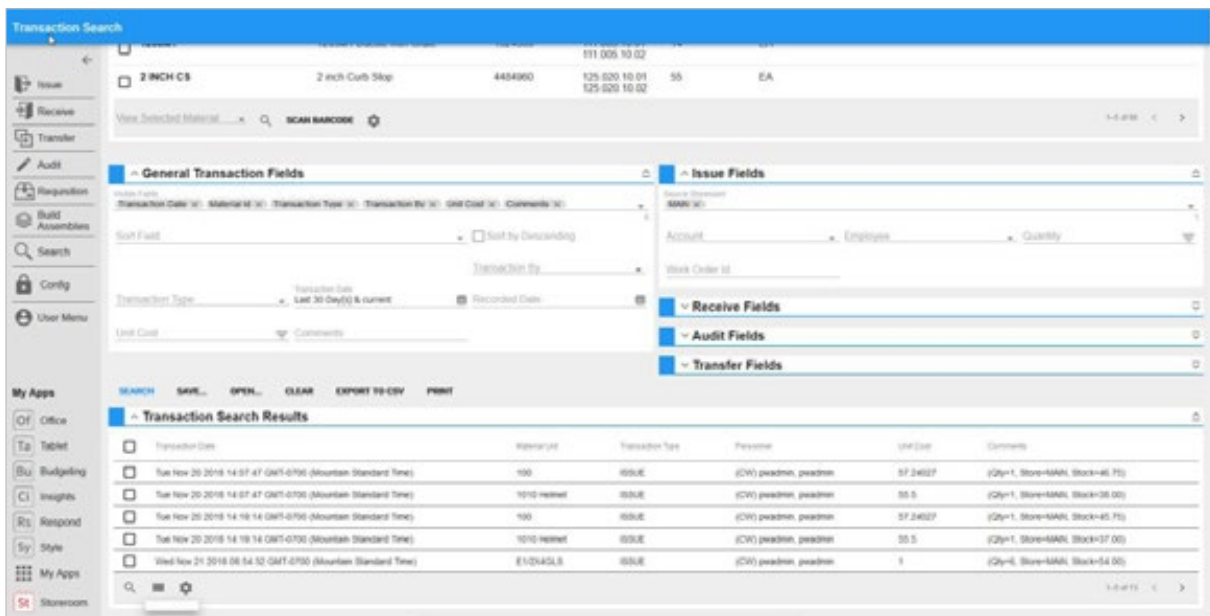
iOS app—Inbox case example



# St STOREROOM

Cityworks Storeroom is a product designed to track incoming and outgoing materials from multiple storage areas, including work vehicles, as well as manage stock, material cost, suppliers, and requisitions.

Storeroom functions are integrated with work orders created in Cityworks AMS. When materials are added to a work order, issue transactions are written to Storeroom to adjust the available stock. If materials are removed from the work order, or if the work order is canceled, receive transactions are recorded in Storeroom to return unused materials.



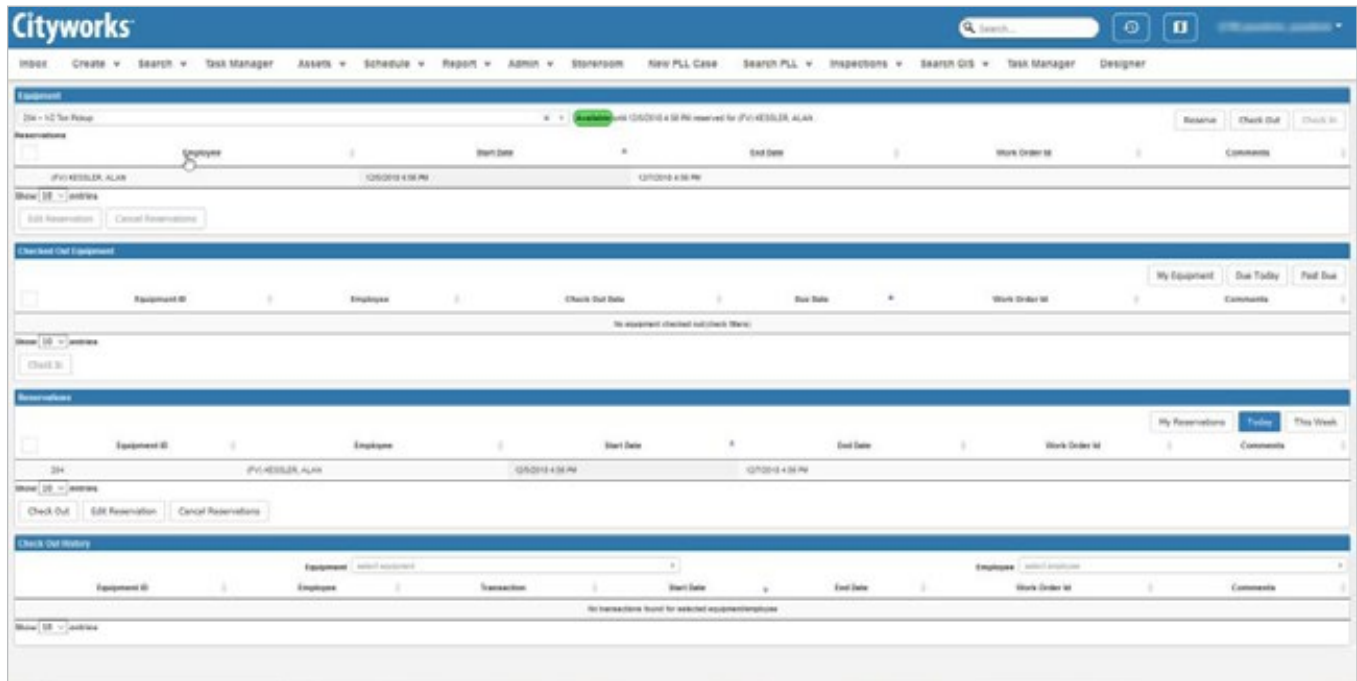
## Storeroom functions include the following:

- Materials can be defined with a description, location, part number, supplier, etc.
- Requisitions can be created for individual materials or from a search on the reorder quantity.
- Material transfers from storeroom to storeroom can be tracked.
- Receive transactions can track the materials coming from a supplier or from a work order return.
- Issue transactions track materials issued to an account, employee, or work order.
- Audit transactions can be used to record adjustments made to material quantities and costs.
- Supplier information is tracked and associated to materials.
- Material cost types include LIFO, FIFO, Weighted Average, or Current cost.
- All materials transactions are recorded, whether entered from Storeroom or from a work order.
- Material assemblies comprised of several materials is supported.
- Barcode technology and Cityworks Analytics reporting are supported.



# EQUIPMENT CHECK OUT

Equipment Check Out is used for checking out, returning, reserving, and tracking work order equipment, as well as keeping a history of equipment and employee usage.



Tablet for AMS—Equipment Check Out

# CONTRACTS

Contracts is used to track asset maintenance activities contracted to entities outside of your organization. These activities can include design, estimated costs, bid process, and more. Contracts can have a set budget; track a set of tasks, materials, or equipment; track estimated costs; record reported costs by line item; and track work completion and cost approval. Contracts can also spread materials and costs across multiple activities.

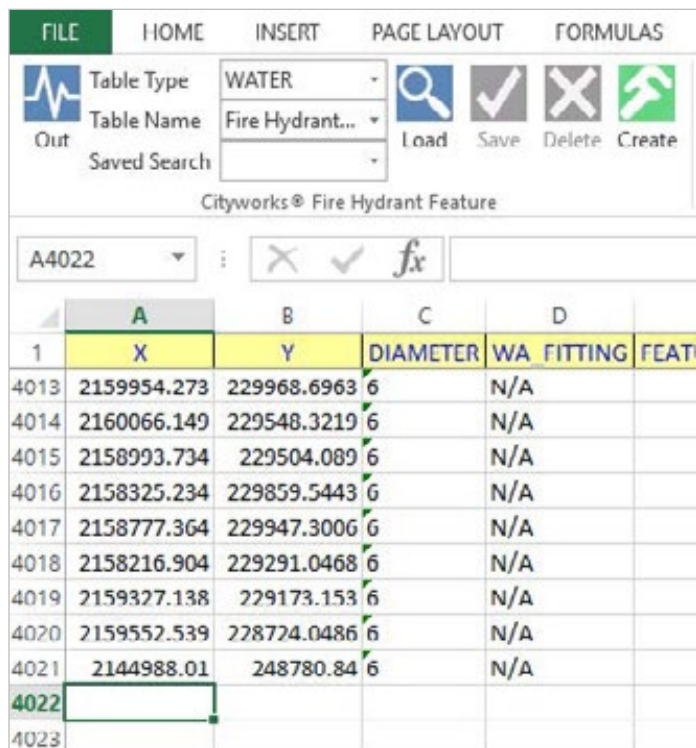
The screenshot displays the Cityworks web application interface for managing contracts. The top navigation bar includes the Cityworks logo, a search bar, and various menu items like 'Inbox', 'Create', 'Search', 'Task Manager', 'Assets', 'Schedule', 'Report', 'Admin', 'Storeroom', 'New PLL Case', 'Search PLL', 'Inspections', and 'Search GIS'. Below the navigation bar, there are tabs for 'Contract', 'Line Items', 'Save', and 'Delete'. A 'Line Item Summary' table is visible, showing columns for Item Number, Item Description, Unit of Measure, Unit Quantity (Engineer's Estimate), Unit Cost (Engineer's Estimate), Total Cost (Engineer's Estimate), Unit Cost (Contract Bid), Unit Quantity (Design), Total Cost (Design), and % Unit Quantity. The main content area is divided into three panels: 'Contract Information', 'Contractor Information', and 'Attachments'. The 'Contract Information' panel shows details for Contract ID 4037, Contract No. From: 2012-4-30 11:24 AM, Type: General Maintenance Sv, Status: Active, Account Wgt: (T) WFNZ, AUSTIN, and Account: (T) WFNZ, AUSTIN. The 'Contractor Information' panel shows fields for Name, Address, City, State, Zip, Cell Phone, Office Phone, Fax, Other Phone, Email, Lock?, Comments, Federal Tax ID, FRS No, Registration Date, PIN, and Registration Date. The 'Attachments' panel shows a list of attachments with columns for Liability Ins Certificate, Liability Ins Effective Date, Liability Ins Amount, and Liability Ins Date. The 'Attachments' panel also includes buttons for '+ Add attachment...' and 'Remove all attachments', and a drag-and-drop area for attaching files.

Tablet for AMS—Contract sample

# CITYWORKS FOR EXCEL

Cityworks for Excel allows users to make changes to the Cityworks database and geodatabase tables from one place with an easy-to-use interface.

Work orders and inspections can also be created using this application. Cityworks for Excel supports Excel 2013, 2016, and Excel 365 (desktop version) on Windows. This software requires an AMS Edit+ license.



The screenshot displays the Cityworks for Excel application interface. At the top, there is a ribbon with tabs for FILE, HOME, INSERT, PAGE LAYOUT, and FORMULAS. Below the ribbon, there are several controls: a 'Table Type' dropdown menu set to 'WATER', a 'Table Name' dropdown menu set to 'Fire Hydrant...', and a 'Saved Search' dropdown menu. To the right of these dropdowns are four icons: a magnifying glass (Load), a checkmark (Save), an 'X' (Delete), and a green arrow (Create). Below these controls, the text 'Cityworks® Fire Hydrant Feature' is visible. In the center, there is a search bar containing 'A4022' and a formula bar with a function icon (fx). Below the search and formula bars is a data table with columns labeled A, B, C, and D. The table has a header row with columns 'X', 'Y', 'DIAMETER', 'WA FITTING', and 'FEAT'. The data rows show hydrant IDs from 4013 to 4021, with coordinates and diameters. The row for ID 4022 is highlighted in green, indicating it is the current record being viewed or edited.

	A	B	C	D	
1	X	Y	DIAMETER	WA FITTING	FEAT
4013	2159954.273	229968.6963	6	N/A	
4014	2160066.149	229548.3219	6	N/A	
4015	2158993.734	229504.089	6	N/A	
4016	2158325.234	229859.5443	6	N/A	
4017	2158777.364	229947.3006	6	N/A	
4018	2158216.904	229291.0468	6	N/A	
4019	2159327.138	229173.153	6	N/A	
4020	2159552.539	228774.0486	6	N/A	
4021	2144988.01	248780.84	6	N/A	
4022					
4023					

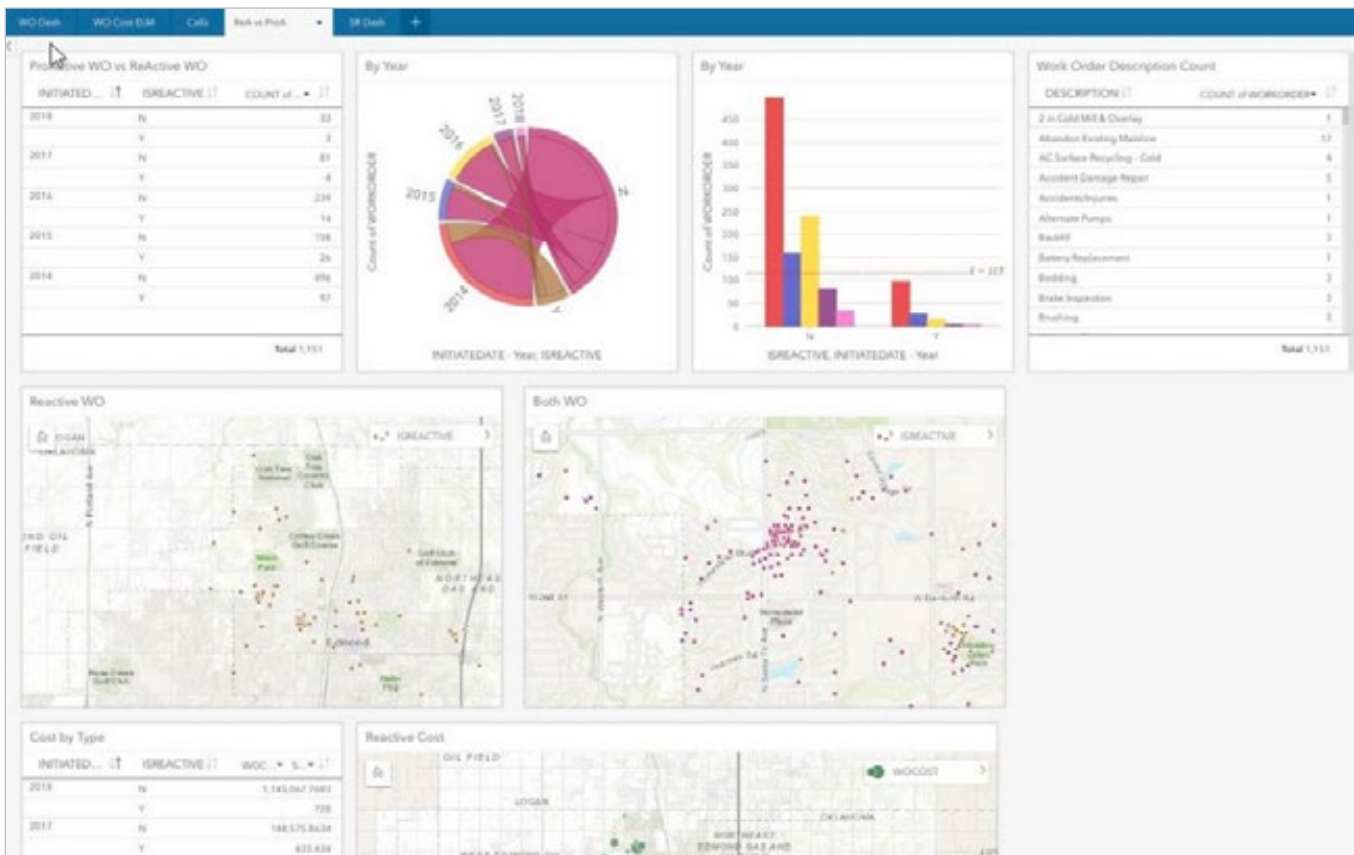
Cityworks for Excel—Table data example

# ANALYTICS

Cityworks Analytics is an app which enables organizations to quickly create detailed reports using the information in their database. These powerful reports are used to graphically analyze the organization's performance.

Analytics is delivered as a web service with a series of predefined, yet customizable templates, reports, and KPIs. Users can simply configure the data connection and use existing out-of-the-box tools or attend a comprehensive training program to learn more about modifying and creating analytical tools. This app is integrated with Insights for ArcGIS, Esri's data analytics software made for advanced location intelligence.

Using Cityworks Analytics with Insights for ArcGIS allows users to visualize asset data in maps, charts, graphs, and tables. Together, these tools provide valuable information about the operational performance of your organization.

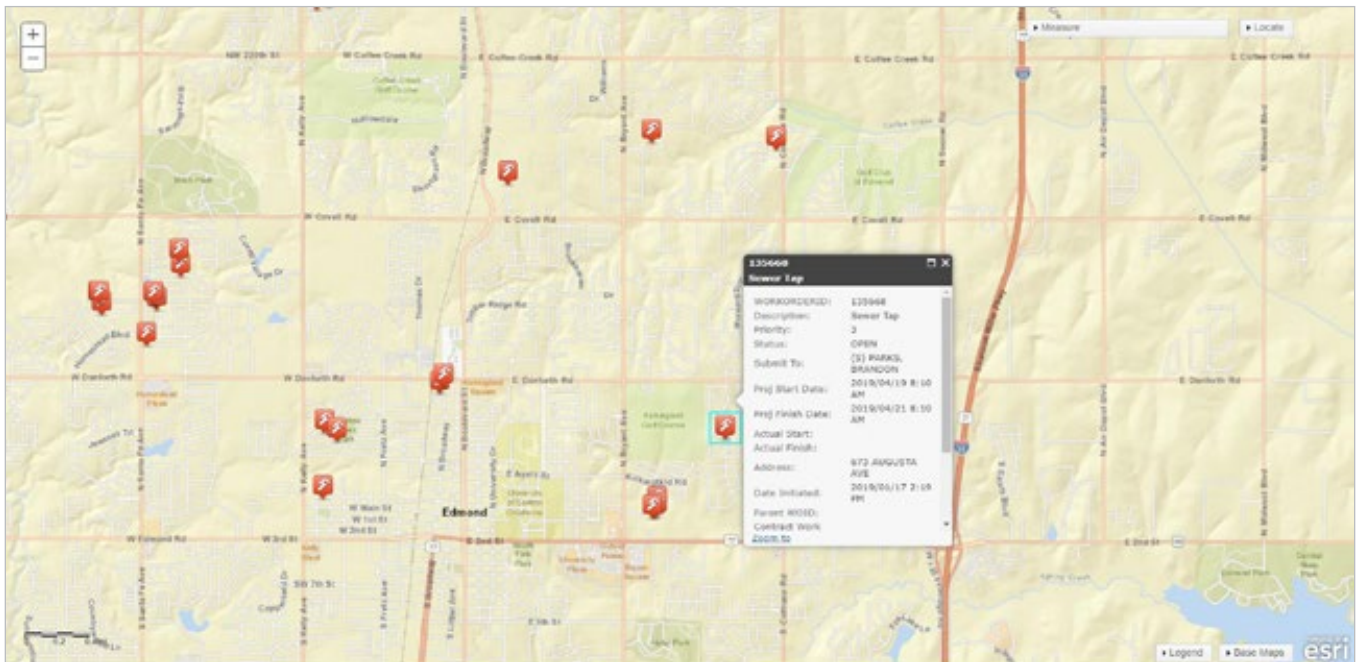


Cityworks Analytics with Esri's Insights for ArcGIS

# EURL

EURL enables Cityworks saved searches to be published as REST services for sharing of maps internally or outside an organization. This includes searches or event layers created through inspection, service request, work order, PLL cases, GIS searches, and asset calculations.

EURL can be used with Cityworks Office and Tablet apps, Operational Insights, Web Map Manager, and Single Sign-on/Roads and Highways.



# PUBLIC ACCESS

Public Access is the citizen portal to Office and Tablet for PLL. It allows citizens and contractors to apply for and track the progress of permits and licenses, start the application process, or finish an incomplete application. Once the permit or license has been created, the user can request inspections, check inspection status, cancel an inspection, and pay permit fees. This app contains a message board and a map with navigation tools.

**Cityworks** Create Application

Submitted

Submitted Applications

1 to 5 of 34 Items

Application ID	Applicant Name	Status	Created
Utility Permit - New Well WSP18-046	604 JON DEANNE CT No Application Name	In Review Actions	Created 11/20/2018
Residential - New Two Family RDP18-047	604 JON DEANNE CT No Application Name	In Review Actions	Created 11/20/2018
Residential - New Multi Family CRP18-048	No Location Specified No Application Name	In Review Actions	Created 11/20/2018
Residential - New Two Family RDP18-044	No Location Specified No Application Name	In Review Actions	Created 11/13/2018
License - Commercial Business LIC18-043	No Location Specified No Application Name	In Review Actions	Created 11/12/2018

Map Size

Edmond

City of Oklahoma City, Est. 1890, Garrison, INCREMENT # NGA, USGS

Public Access—Main page

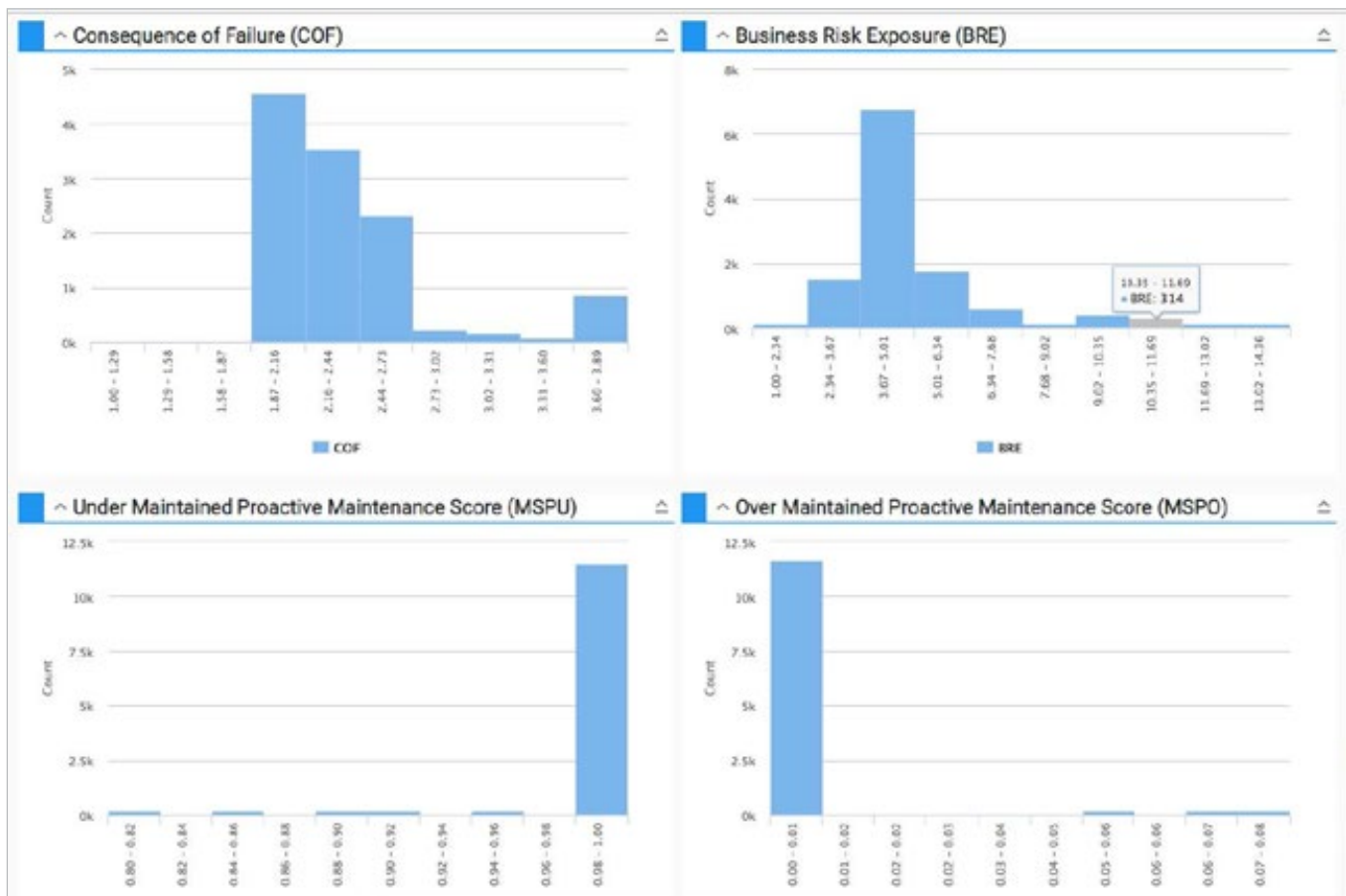


# In OPERATIONAL INSIGHTS

Operational Insights generates KPIs used for business risk analysis related to the health of an organization's assets. These KPIs are calculated using information from GIS attributes and tracked maintenance in combination with user defined asset strategies and maintenance strategies. Potential problem assets can be identified on the map, and work orders can be created using map tools.

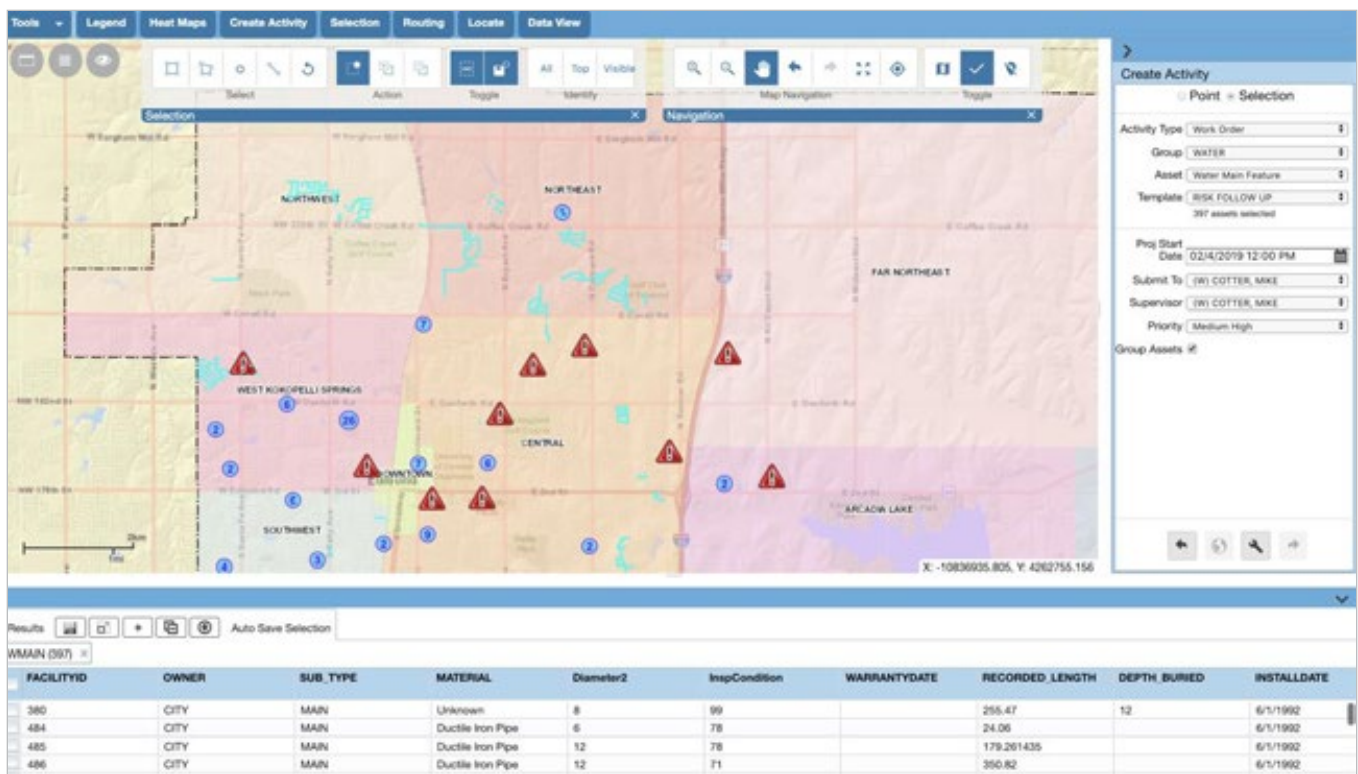
Asset strategies identify asset types, their rating levels, rating methods, and values or ranges. Asset strategies combine with key GIS field values, their risk factors, and factor ratings to generate values for three risk factors: consequence of failure, probability of failure, and risk mitigation. These risk factors respectively indicate failure impact, failure probability, and effort taken to reduce the impact of asset failure; multiplied together, these three factors generate values for business risk exposure.

Maintenance strategies identify asset types, key dates, and strategy details. These strategies combine with proactive and reactive work order templates, their activities, intervals, weighting factors, and number of repairs which are used to generate maintenance scores: proactive over-maintained, proactive under-maintained, and strategy threshold (estimated repairs).



## Operational Insights generates the following KPI output:

- Probability of Failure (POF)
- Consequence of Failure (COF)
- Business Risk Exposure (BRE)
- Under Maintained Proactive Maintenance Score (MSPU)
- Over Maintained Proactive Maintenance Score (MSPO)
- POF vs. COF
- POF vs. MSPU
- BRE vs. MSPU



Operational Insights—Mapped data

Operational Insights is integrated with Esri's Insights for ArcGIS, which enables further analysis of your Operational Insights KPI data. Data generated in Operational Insights can be displayed on a map in Insights for ArcGIS through use of the Cityworks EURL function, which enables saving searches and sharing the maps. Insights for ArcGIS displays your KPI data and can interactively identify critical assets and hot spots on the map based on selected variables used in calculating the risk factors.



# Wk WORKLOAD

Workload assigns work activities to employees, which include: inspections, work orders, and PLL tasks. The map displays unassigned activities and activities assigned to individual employees. These activities are easily reassigned using drag-and-drop from one list to another, or from the map to a selected employee. Overdue activity assignments are highlighted in pink.

Each activity requires an asset or geocoded address tied to the record for it to show on the map. The map displays activities using an entered projected date range for AMS records or target range for PLL records.

Work Orders

From 12/5/2018 To 12/5/2018

All

**ADAM (FAC) JONES**

ID	Address	Description	Projected Start	Projected Finish	Status
136181	184 N Park Concession	Cleaning	12/3/2018 4:24 PM	12/17/2018 4:24 PM	PENDING
136184	200 N KELLY AVE	Grounds Maintenance	12/4/2018 4:10 PM	12/18/2018 4:10 PM	PENDING

**ADAM (FV) MCCABE**

ID	Address	Description	Projected Start	Projected Finish	Status
136183	315 SW 33rd St	Engine Failure Repair	12/6/2018 4:00 PM	12/19/2018 4:00 PM	PENDING

**ALAN (FV) KESSLER**

ID	Address	Description	Projected Start	Projected Finish	Status
136187	10 S Lister	FM Building PM	12/5/2018 12:00 PM	12/5/2018 12:00 PM	PENDING
136186	Haller Park	Inspection - Standard	12/6/2018 2:00 PM	12/17/2018 2:00 PM	PENDING

**ALLAN (PRD) HOPKINS**

ID	Address	Description	Projected Start	Projected Finish	Status
136182	482 Aracade dam rd	Trench Repair	12/6/2018 2:00 PM	12/17/2018 2:00 PM	PENDING

**Unassigned**

No assignments

Powered by Esri

Workload—Activity assignments



# Bu PERFORMANCE BUDGETING

Performance Budgeting generates daily and yearly budgets based on projected costs and budgetary constraints of an organization's assets. Budget projections are based on work order templates, maintenance factors, cost factors, plus actual and projected work. Performance Budgeting can help to accurately predict future budgets and determine cost projection, productivity, optimal crew size, etc.

**WO Template**

Type: Mowing and Spraying Areas | Assets: Mowing | Year: 2016

Buttons: Lock Budget, SAVE DATA, ADD BUDGET YEAR

**Maintenance**

Unit Description: Large Mowing | Activity Program: Mow

**Cost**

Description Code	Average Crew Size	Daily Budget	Yearly Budget
Average Crew TWT-04	2	\$141.66	\$18160.00
Crew Labor LS	117.911666666667	\$443.56	\$7,0579.83
Fuel Cost 100019-25	17.13	\$	\$
Daily Equipment 00	96	\$18	\$1827.2

Buttons: REFRESH CALCULATED DATA

**Work**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	Target
Percent	1	1	1	1	1	1	1	1	1	1	1	1	100	100
Crew Days	4	4	4	4	4	4	4	4	4	4	4	4	116	116
Labor Days	13	13	13	13	13	13	13	13	13	13	13	13	236	236

Performance Budgeting—Budget variables

# CCTV INTERFACE

The CCTV Interface links directly to PACP-compliant (Pipeline Assessment and Certification Program) closed circuit television (CCTV) inspection systems. The interface is a bidirectional application allowing users to pass data from the Cityworks database to a PACP database and back again.

Cityworks Utilities - CCTV Interface

Program

Export Import Configure

Submit To: BANKOWSKI, AMY Project Start Date: 12/18/2012 Get Work Orders

Work Orders

Work Order ID	Description	Supervisor	Initiated By	Initiate Date	Project Start Date	Ac
131166	Hydrant Flushing	COTTER, MIKE	PWADMIN,	11/8/2011 1:57:02 PM	10/17/2012 4:56:52 PM	1/
133317	Hydrant Flushing	COTTER, MIKE	STONE, JENNIFER	6/14/2012 10:25:02 AM	10/22/2012 1:24:57 PM	1/

Work Order Entities

Work Order ID	Entity UID	Entity Type	Feature ID	Feature Type	Object ID	Location
133317	10848	WFIREHYD	1905	WFIREHYD	2074893	2517 GLEN HOLLOW RD
133317	10847	WFIREHYD	1904	WFIREHYD	2074894	524 STILL HOLLOW RD
133317	10846	WFIREHYD	1903	WFIREHYD	2074895	2500 FERNWOOD DR
131166	9933	WFIREHYD	993	WFIREHYD	2072398	2108 MARK RD

Successfully loaded 4 entities for export.

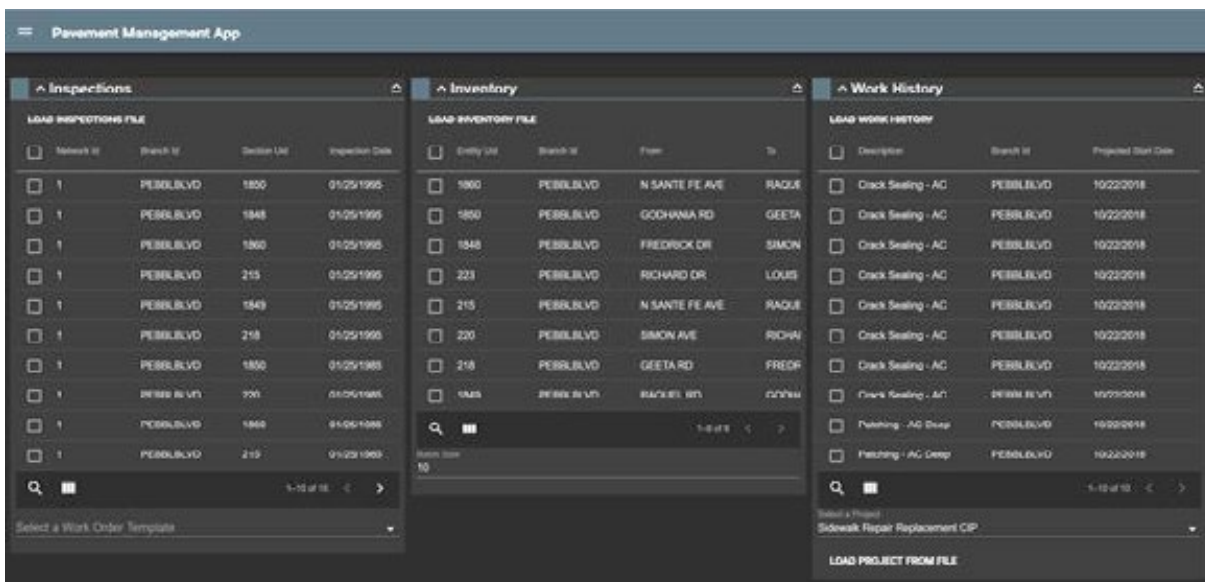
# PAVEMENT MANAGEMENT

Cityworks Pavement Management app is the interface between Cityworks and third-party pavement solutions such as PAVER, a program for pavement management created by the U.S. Army Construction Engineering Research Laboratories (USACERL).

Designed to fully leverage your GIS investment, Pavement Management eliminates the need for costly duplication of asset data. Pavement managers create and maintain pavement (asset) inventory in the geodatabase, rather than building a database as tabular entries and shape files with unique identifiers in Pavement Management. Pavement inventory is managed within the geodatabase and exported to Pavement Management via Cityworks, which links the geodatabase fields to corresponding fields in Pavement Management.

Pavement inventory, work activities, and inspections are established and maintained in Cityworks. This information is exported to Pavement Management to calculate the PCI (Pavement Condition Index), perform pavement analysis, and utilize past pavement work histories to predict future pavement conditions.

Pavement Management is also of significant value in planning pavement maintenance and rehabilitation (M&R) because it can set priorities of work to be done according to pavement condition and/or limit the work to a budgeted amount and available resources. This information can be used to schedule and track the recommended work activities. PCI, last construction date, and current surface type can also be imported into the geodatabase and symbolized on the map.



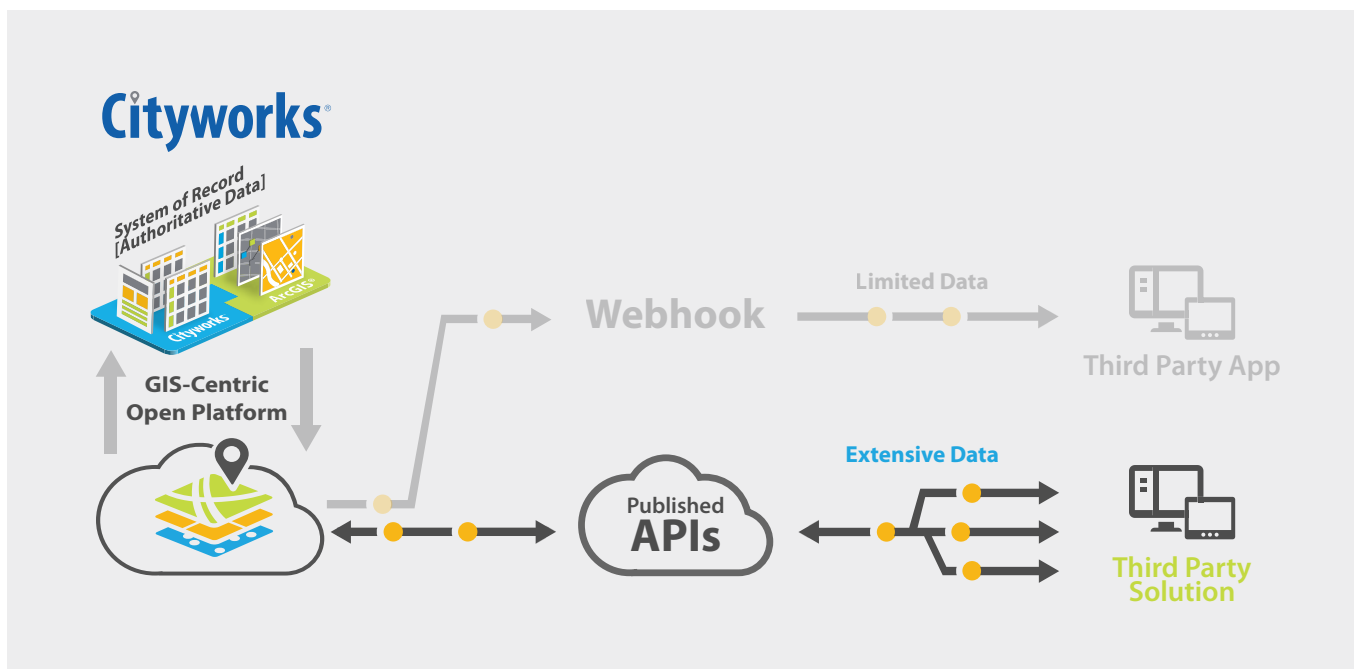
After completing any evaluation or analysis in the third-party system, the import functionality allows the user to bring in the inspection files and generate actionable steps via work orders and inspections, therefore capturing valuable information and saving it to the GIS as attributes.

# APPLICATION PROGRAMMING INTERFACES (APIS)

A variety of APIs have been developed to allow clients to extend the Cityworks platform through custom applications and integrations with third-party systems, accessing data and functionality. These JavaScript Object Notation (JSON) web services APIs are licensed individually, or can be bundled as part of an ELA, and require configuration services.

## The following JSON web services APIs are available for the Cityworks platform:

Citizen Engagement API	PLL Case API Basic	WO API Basic
Document Management API	PLL Case API Extended	WO API Extended
Inspection API	SR API	
Metrics API	Storeroom API	



# **SECTION 5**

## SYSTEM SPECIFICATIONS

# SYSTEM SPECIFICATIONS

## CITYWORKS 15.4 SYSTEM SPECIFICATIONS

*(Last updated: June 2019)*

### **CITYWORKS DATABASE SERVER\***

#### **Specifications for a Database (Intel®) Server:**

- Windows Server 2012 (64-bit)
- Windows Server 2012 R2 (64-bit)
- Windows Server 2016 (64-bit)
- 32 GB RAM (or better)
- Current Intel Xeon®/server class processor 3.46 GHz (or better)

*\* Database server assumes a machine hosting the organization's SDE geodatabase (supporting both editors and viewers) and Cityworks database (supporting users of Cityworks AMS/PLL). Please contact Azteca Systems with any questions.*

### **CITYWORKS SERVER AMS OR PLL**

*Client*

#### **Specifications for a PC (Intel®) Client:**

- 2.0 GHz Intel Core® processor (or better)
- 2 GB RAM (or better)
- Windows 10 (32/64-bit) or Windows 8/8.1 (32/64-bit) or Windows 7 Professional® (32/64-bit)
- Firefox 45-57
- Microsoft Edge\*
- Chrome 43-63 (There is a known issue in Storeroom with Chrome 46)

*\*Microsoft announced upcoming changes to the Edge browser to support the Chromium rendering engine. Due to these changes, we have limited support for Microsoft Edge.*

### **CITYWORKS SERVER AMS OR PLL**

*(~40 users)*

#### **Specifications for an Application (Intel®) Server:**

- Windows Server 2012 or 2012 R2, IIS 8.0/8.5
- Windows Server 2016 (64-bit), IIS 10
- 12 GB RAM (or better)
- Current Intel Xeon®/server class processor 3.46 GHz (or better)
- Application consumes 1 GB of disk space (500 MB on system drive)
- .NET 4.5 Framework Windows Server features (.NET Extensibility 4.5 only if using Windows Server 2012/R2)

*Continued on next page*



**CITYWORKS SERVER  
AMS OR PLL**  
*CONTINUED*  
(~40 users)

- .NET 4.6.2 Framework (installed on both application and GIS servers). Requires Crystal Reports Runtime 13.0.16–13.0.20.
- .NET Framework 4.7.1 is required for the Cityworks application server as well as the GIS server if the Cityworks SOE is used.

*We do not provide disk space requirements because it is dependent on factors like the size and quantity of attachments and map images.*

**CITYWORKS SERVER  
AMS OR PLL**  
(~80 users)

**Specifications for an Application (Intel®) Server:**

- Windows Server 2012 or 2012 R2, IIS 8.0/8.5
- Windows Server 2016 (64-bit), IIS 10
- 24 GB RAM (or better)
- Current Intel Xeon®/server class processor 3.46 GHz (or better)
- Application consumes 1 GB of disk space (500MB on system drive)
- .NET 4.5 Framework Windows Server features (.NET Extensibility 4.5 only if using Windows Server 2012/R2)
- .NET 4.6.2 Framework (installed on both application and GIS servers). Requires Crystal Reports Runtime 13.0.16–13.0.20.
- .NET Framework 4.7.1 is required for the Cityworks application server as well as the GIS server if the Cityworks SOE is used.

*We do not provide disk space requirements because it is dependent on factors like the size and quantity of attachments and map images.*

**CITYWORKS  
ADD-ONS**

**Cityworks Utilities interface for pavement management**

- PAVER versions 5.3.7–6.5.7

**Pavement Management 1.0 app**

- PAVER version 7.x

**Cityworks Utilities interface for CCTV**

- PACP versions 4.4 and 6.0

**SUPPORTED ESRI  
PLATFORMS**

**Esri Enterprise Platforms:** 10.3, 10.3.1, 10.4, 10.4.1, 10.5, 10.5.1, 10.6, 10.6.1, and 10.7

**Esri Workgroup Platforms:** 10.3, 10.3.1, 10.4, 10.4.1; 10.5, 10.5.1, 10.6, 10.6.1, and 10.7

**SUPPORTED RDBMS  
PLATFORMS**

Oracle 11g R1, Oracle 11g R2, Oracle 12c, Oracle 12c R1, SQL Server 2012, SQL Server 2014, SQL Server 2016, SQL Server 2017, and Oracle 12c R2

**SUPPORTED RDBMS  
EXPRESS PLATFORMS**

SQL Server Express 2012, SQL Server Express 2014, SQL Server Express 2016, and SQL Server Express 2017

**ESRI PLATFORM  
NOTES**

\*ArcGIS Enterprise 10.7 is compatible with 15.4.2 and newer.

\*Feature Access via a map service requires the GIS data to be stored in an ArcSDE geodatabase; a file geodatabase is not sufficient here. To learn more about how Cityworks AMS/PLL provides comprehensive access to the geodatabase, contact Azteca Systems.

\*ArcGIS 10.6.1 is only compatible with Cityworks 15.3.1 and newer.

\*eURLs from Cityworks 15.3.1 sites are not compatible with Portal for ArcGIS 10.6.1 and Insights for ArcGIS 3.0. eURLs from Cityworks 15.3.2 and newer sites are compatible.

# SECTION 6

## MAINTENANCE

# MAINTENANCE

One of the most important aspects of corporate software is the timeliness of user support. At Cityworks, our goal is to have the very best customer support in the industry. We recognize that if a user cannot use the software to their fullest expectation, then it doesn't matter how great the software is. If an issue is caused by a software problem, the product development staff's main priority becomes the resolution of that problem.

This section outlines Cityworks support features. For additional information, see the Cityworks Standard License and Maintenance Agreement.

## **METHODS OF SUPPORT**

Azteca Systems offers telephone support, online support, and other support services on our website.

### **Telephone support is provided as follows:**

- Regular business hours, 8:00 a.m.–5:00 p.m. MST.
- Help Desk is available weekdays, excluding holidays. An emergency phone number or pager number of a technical analyst is provided in the event of a critical problem occurring after-hours.
- Customer support phone number: (801) 990-1888.

### **Online support is provided as follows:**

- Regular business hours, 8:00 a.m.–5:00 p.m. MST.
- Weekdays, excluding holidays.
- Internet support utilizes GoToAssist or Zoom software. An Internet browser connected to the system is required.
- VPN and web access require secure access to the system.

### **Website support is offered as follows:**

- The [www.cityworks.com](http://www.cityworks.com) website includes general information, which includes: news releases, event listings, partner news, client news, media videos, webinar recordings, Cityworks Magazine, contact information, a link to the MyCityworks support website, and more.
- The MyCityworks website is a registered user support site, which includes: community news, documentation, quick-start and user guides, training announcements and resources, downloads of software, developer articles, partner resources, and more.

**Documentation:**

- Online help can be accessed from within the Cityworks Office, Tablet, and Respond environments.
- Clients can access and download product user guides from the MyCityworks support website.
- Cityworks magazine is published twice a year, and posted on the [www.cityworks.com](http://www.cityworks.com) general information website.
- Database diagrams are available to clients on the MyCityworks support website.
- Instructional videos are available on MyCityworks which display specific functionality, What's New in Cityworks, and other information.

**User Groups and conferences:**

- Cityworks regional user group meetings are held periodically at client sites and at our offices located in West Bend, Wisconsin, and DeSoto, Texas.
- Cityworks Conference is held approximately every year-and-a-half in Salt Lake City, Utah. The next conference is scheduled May 9–11, 2018.

**FIXES AND ENHANCEMENTS**

The Update and Support Agreement allows clients to receive all subsequent upgrades, enhancements, and bug fixes for all future releases of the licensed applications if the client renews the agreement annually.

Problems must be re-created by the user and isolated down to a specific software component. Problems can then be submitted to Cityworks by phone, voicemail, chat, or self-service portal. In each case, the information is logged and the customer support team will provide an answer to the question or resolution to the problem. Any support request that is not immediately resolved is assigned to a technical support representative. Verified bugs are submitted to the development team for scheduling, prioritization, assignment, and testing.

Enhancement suggestions are managed through the project manager during a project's initial implementation, the customer support representative during ongoing maintenance, through Ideas entries on the MyCityworks site, or the sales representatives and competitive issues brought forth in presentations. These suggestions are reviewed by the Cityworks software development committee which is composed of upper management representing key areas of the company.

Enhancement priority is based on many factors, including: user response for new ideas tracked on MyCityworks, information gained from the Cityworks Conference, market drivers, magnitude of effort, the needs of the user community, timing of software releases, comparison to other initiatives, and decisions made by the software development committee.

## **RELEASE SCHEDULE**

The Cityworks platform is designed with built-in core apps: Office for AMS, Tablet for AMS, Office for PLL, and Tablet for PLL. Other apps are developed outside of the platform and released on their individual schedules at regular intervals, and will correspond with specific platform releases. These optional apps include: Analytics, Operational Insights, Performance Budgeting, Public Access, Respond, Storeroom, Workload, and mobile native apps for iOS and Android.

Major and minor platform releases contain major enhancements and fixes and are designed to be as problem-free as possible through heavy testing and quality control. These releases contain bug fixes and enhancements. Previews of the next major release are available to qualifying clients. Enhancements that cannot be developed or stabilized in time for a platform release are furloughed to the next preview.

Major versions are intended to have a maintained lifespan of at least two years. Azteca Systems fully supports the current version and the previous version of software with patch updates. Beyond two versions, Azteca Systems will no longer release software service packs for that product except for data corruption issues.

Minor versions are released on an approximately 12-month cycle followed by patches released every month or two until the next minor version release, and as needed until the subsequent major or minor release.

## **SOFTWARE NOTIFICATION AND DISTRIBUTION**

Clients are notified of major releases and service pack releases by email announcement or posts on MyCityworks. For clients with a current Update and Support Agreement, Cityworks will make new releases and supporting documents available on MyCityworks.

## **UPGRADE INSTALLATION**

Upgrade installation is the responsibility of the client. New software can be downloaded by current clients and includes upgrade details and instructions. When problems are encountered during upgrade or installation of Cityworks while following the Cityworks Install Guide or the Cityworks Upgrade Guide, Cityworks technical support staff is available to remotely assist the client.



Smart communities create hubs of innovation that connect people with smart technology tools to make better decisions and improve the quality of life. At Cityworks, we've partnered with local government and utilities for decades, engaging employees, constituents, and partners with the GIS-centric technology they need to build smart, sustainable communities.

