

GIS-Centric Asset Management implementation for Public Works

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This presentation is conducted using an ESRI story map.

The following are screenshots of the Story Map.

URL:<http://bit.ly/ULta70>



powering1.maps.arcgis.com/arcgis/MapTour?appid=e4f12b46c404f315e3f188b4e41084e

GIS-Centric Asset Management Implementation for Public Works

City of Hesperia, CA, moved from legacy CMMS to a cloud-based application for a rapidly changing environment of the GIS center. The new system provides a single source of truth for the city's public works management system, which includes 25,000 assets. The new system also provides a single source of truth for the city's public works management system, which includes 25,000 assets. The new system also provides a single source of truth for the city's public works management system, which includes 25,000 assets.

Switch to Builder Mode




GIS-Centric Asset Management Implementation for Public Works

Presented By




39 Eric Greene, GIS Manager, Hesperia, CA

Introduction: Eric Greene is the GIS Manager at the City of Hesperia, CA. Hesperia is a city of 70,000 located in the High Desert west of LA. Bill Hasington is a Senior Consultant with POWER Engineers and has been working with the City since 2006.




GIS-Centric Asset Management Implementation for Public Works

Switch to
builder mode

City of Pomona, CA, used Esri's ArcGIS Online (AGOL) to implement a GIS-centric asset management system for its public works department. Using the same map coverage, the existing GIS work management system will be replaced. Watch the presentation for more about the asset management system and how Public Works will use the system to track work, coordinate and produce the schedule for the city's public works department.

In January, 2006 the City began the implementation of a "City Wide" Geographical Information System. Nebel Systems, from San Bernardino digitized the City's utility infrastructure from AutoCad and A/E built plans into ESRI software.



GIS-Centric Asset Management Implementation for Public Works

City of Henderson, NV, needed more efficient GIS and geospatial asset applications to a variety of connected departments of the Office of Operations Service. After assessing, using the existing map content, the priority of Public Works management projects will be explained. Look to the progression from the current state of their asset management system, and how Public Works use the system to the 3 work categories and produce the valuable data the city can use to make better decisions.

SWITCH TO
BUILDER MODE

The screenshot displays a GIS application interface. On the left is an aerial map with a red marker. Overlaid on the map is a 'Work Order' form for 'Hansen'. The form includes fields for 'Work Order #', 'Asset', 'Address', 'Activity', 'Status', 'Scheduled', 'Due', 'Assigned By', 'Project', 'Subject #', 'Status', 'Completed', 'Comp By', 'Plan', 'Open Type', 'Service', 'Main Type', 'Priority', 'Service #', 'Period', 'Condition', 'Quantity', 'Main Tab', 'Authorization', 'Assigned To', 'Date', 'Out of Service', 'Planned Service Request', 'Estimate #', 'Estimate', 'Plan Depth', and 'Measured Flow'. To the right of the form is a diagram titled 'Migration Application' showing a hierarchical flow of data. Below the diagram is a table with columns for 'Work Order', 'Asset', and 'Status'. At the bottom of the interface is a series of thumbnails representing different views or data layers.

In August, 2007 the City selected Power Engineers, formerly Velocity, to migrate asset data from the City's existing Hansen 7 asset management system into a fully functional GIS-Centric asset management system through the use of Cityworks Desktop 4.5 from Arcata.



GIS-Centric Asset Management Implementation for Public Works

Training Call-Use_4

City of Houston, TX, needed field service (FMS) for its engine based work force in a heavily congested deployment of the 2007 assets. The city of Houston is a large city with a population of 2.1 million. The city is a major hub for public works and the city is a major hub for public works. The city is a major hub for public works and the city is a major hub for public works.

Switch to builder mode



40. System Architecture

GIS-Centric Asset Management system deploy in 2007. Deployed using Citrix to field crews and on power user's desktops. Field users have remote access using VPN and wireless cards.



GIS-Centric Asset Management Implementation for Public Works

City of Tempe, AZ, moved from a paper CMMS to a digital asset management system using the ArcGIS Cityworks Server AMS solution. Using the ArcGIS Cityworks Server AMS solution, the City of Tempe, AZ, moved from a paper CMMS to a digital asset management system using the ArcGIS Cityworks Server AMS solution. Using the ArcGIS Cityworks Server AMS solution, the City of Tempe, AZ, moved from a paper CMMS to a digital asset management system using the ArcGIS Cityworks Server AMS solution.

Switch to
builder mode

5 Cityworks Server AMS

Cityworks Server AMS is the current system. This system uses ArcGIS Server and provides asset and work management using a web browser.



GIS-Centric Asset Management Implementation for Public Works

SHARE TO
SLIDESHOW MODE

The City of Phoenix, AZ, joined Power Engineers (PE) to address a need associated with a primary corporate objective of the City: to improve citizen service. Utilizing the City's map through the example of Public Works, PE's asset management system will be required to track the progression to the current state of the asset management system and how Public Works use the system to track work completed and produce the resulting data for City management's reports.



Cityworks is used to track a number of work processes at the City. We currently track Public Works including: Water, Sewer, Signs, CCTV, Roads, Graffiti Removal. We try to track all work that is completed on an asset. We also use this system to track Service Requests from Citizens.



GIS-Centric Asset Management Implementation for Public Works

Loading... (Save for trail)

Switch to
Full Screen

1 of 17 images, U.S. Street View image 12470 is highlighted. Asset Management is a newly comprehensive management of the City's assets. Cityworks leverages ArcGIS Online using the ArcGIS Cloud platform, the power of mobile devices, and a cloud-based management system will be employed. Track the progress of the current state of the asset management system and how Public Works uses the system to track work, communicate and produce the results for the City of Phoenix.

The screenshot displays a GIS application interface. On the left, there is a vertical toolbar with icons for home, search, and other navigation functions. The main area shows an aerial map of a city street intersection. A red pin is placed on the map, and a sidebar on the right contains a list of data layers and a detailed view of a selected asset. The sidebar includes a 'Details' section with various fields and a 'Cross connection backflow test and customer surveys' section. Below the map, there is a horizontal scroll bar with thumbnails of other map views.

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Cross connection backflow test and customer surveys are tracked within Cityworks by the City's water quality technician. The data is then submitted to the State Health board for their review.



GIS-Centric Asset Management Implementation for Public Works

Switch to
Darker Mode

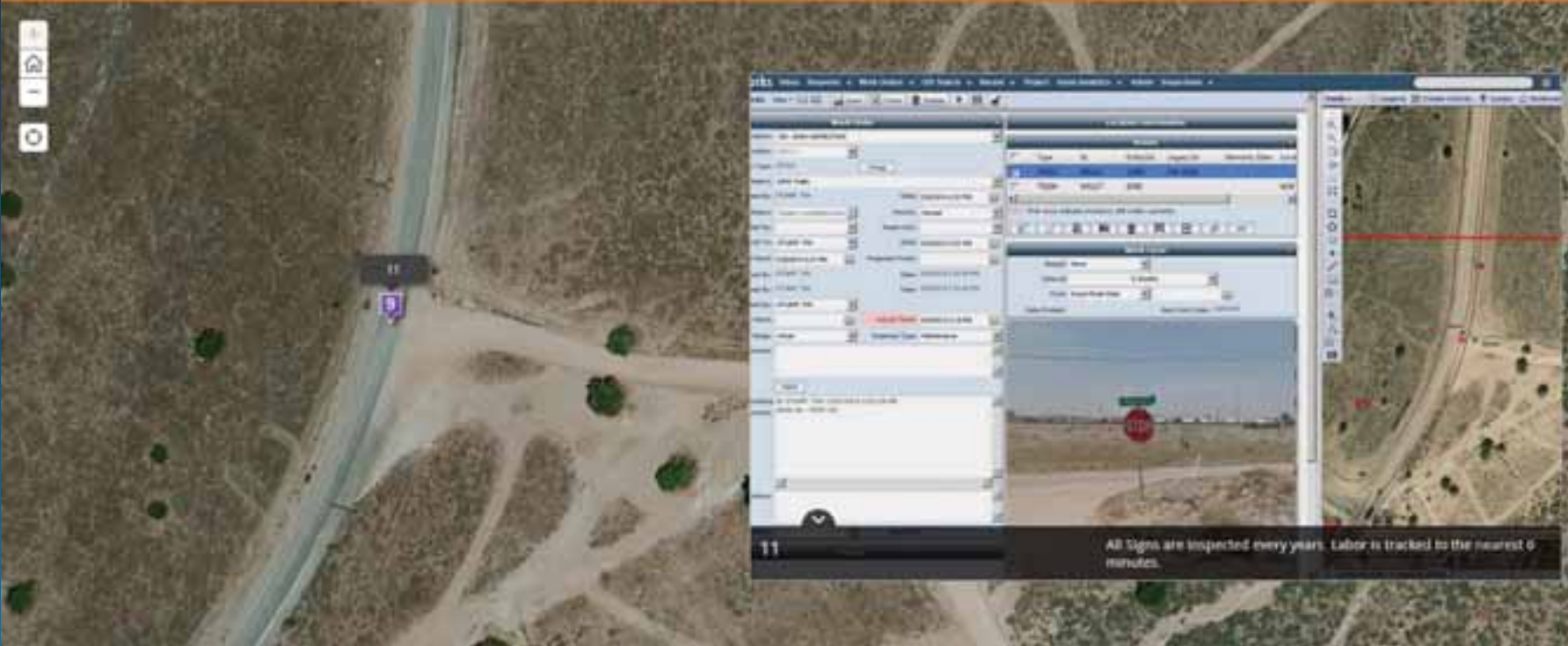
City of Phoenix, AZ, moved from a paper-centric to an online asset management system to a fully integrated system of the city's utility & power center. City workers add location using the GIS map interface, the purpose of Public Works Asset Management System will be explained. Watch the progress of the current state of the asset management system and how Public Works use the system to track work, coordinate and produce the valuable data they need to make better business decisions.



ID	Asset Type	Location	Status	Notes
101	Manhole	1234 Main St	Open	Inspection
102	Manhole	5678 Main St	Closed	Repaired
103	Manhole	9012 Main St	Open	Inspection
104	Manhole	3456 Main St	Closed	Repaired
105	Manhole	7890 Main St	Open	Inspection

10 All sewer work is tracked in Cityworks



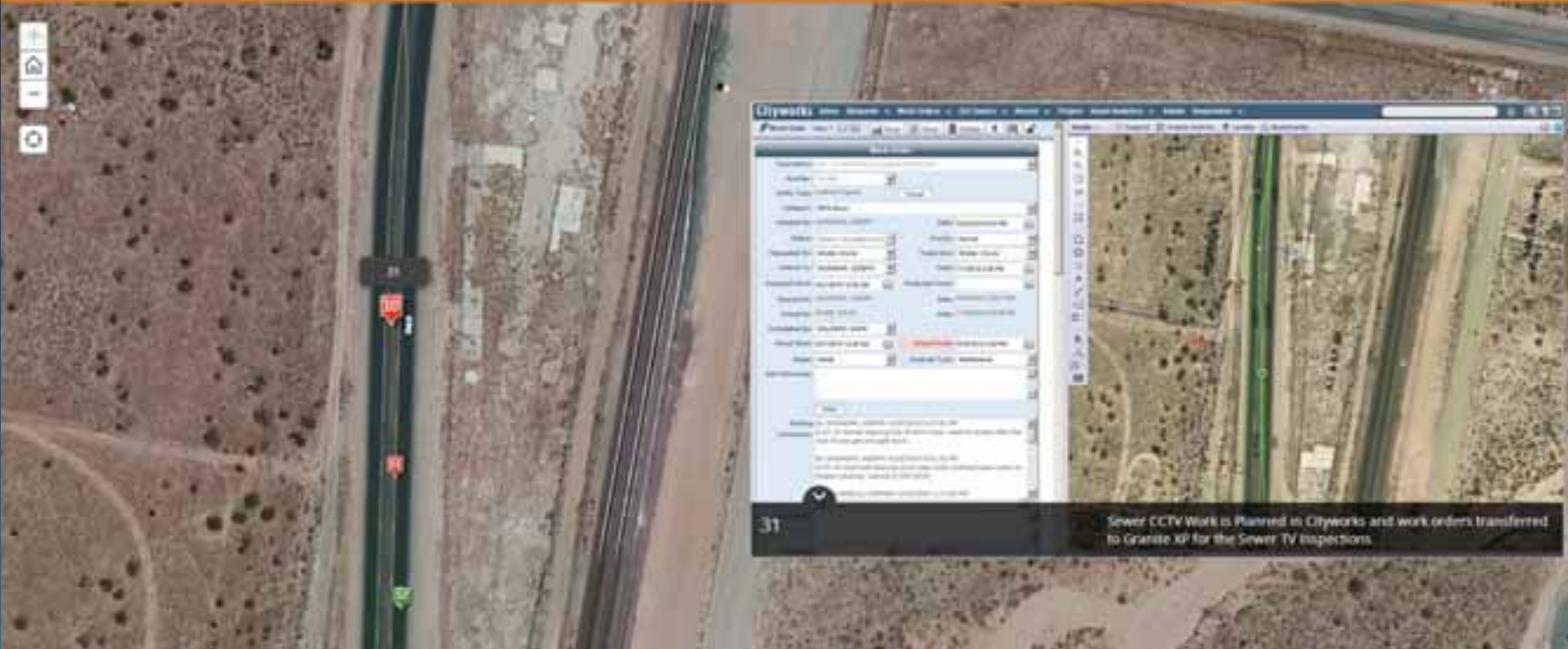


GIS-Centric Asset Management Implementation for Public Works

Swing Home Back

Switch to
Full Screen

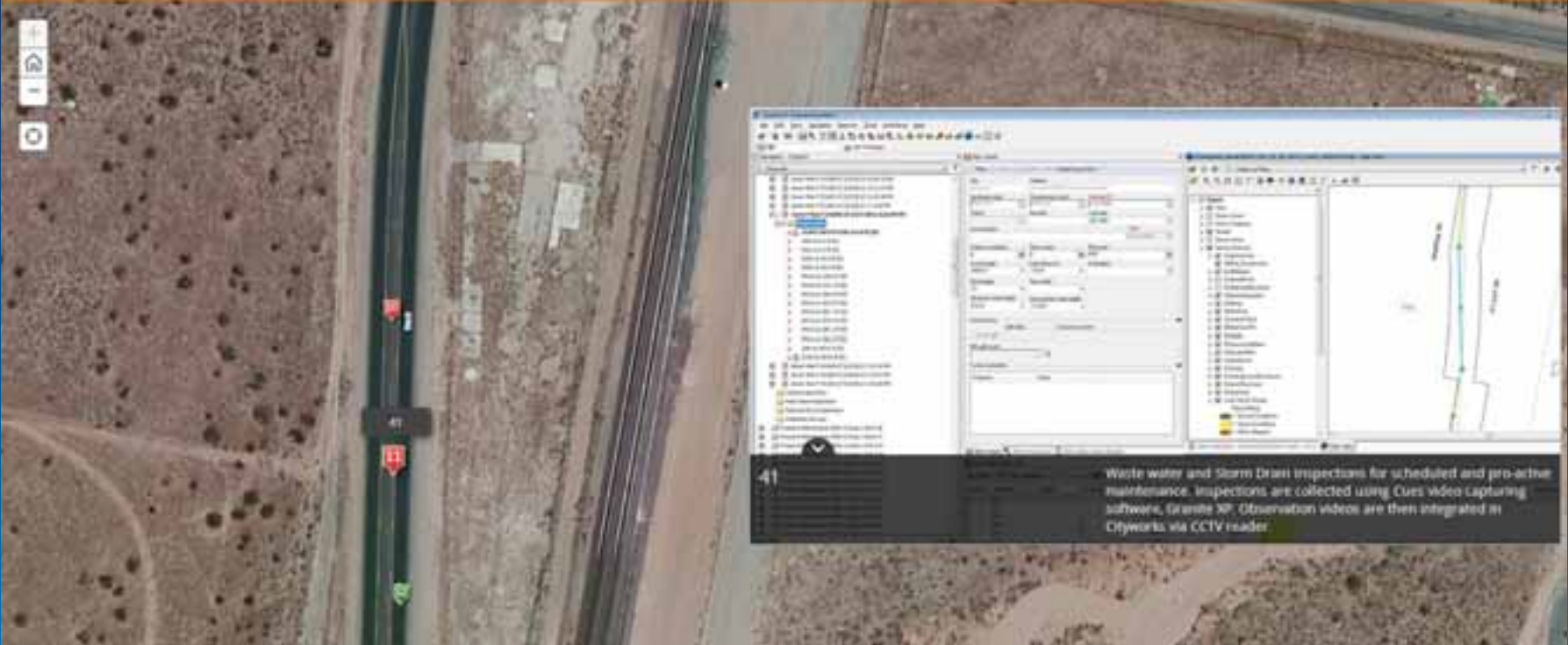
City of Phoenix, AZ, moved from traditional CMIS to a GIS-based asset management system. The City of Phoenix, AZ, is a newly completed implementation of the GIS-centric Cityworks 2015 software. Using the newly implemented, the joining of Public Works Management system will be expected. From the progression to the current point of asset management system and how Public Works used the system to track work completion and provide the accurate data for the city's asset management system.



GIS-Centric Asset Management Implementation for Public Works

City of Fremont, CA, used ArcGIS to create a GIS-centric asset management system for public works. The system provides a centralized view of the city's assets, including streets, water mains, and storm drains. The system also provides a mobile application for field workers to collect data and report issues. The system is designed to be scalable and flexible, allowing the city to add new assets and data as needed. The system is also designed to be user-friendly, allowing non-technical staff to use the system effectively. The system is currently in use by the City of Fremont and is expected to be expanded to other departments in the future.

Switch to
Builder mode



GIS-Centric Asset Management Implementation for Public Works

City of Phoenix, AZ, moved from a paper-centric to an online asset management system for a variety of reasons & forward when asset location using the GIS map interface. The purpose of Public Works Asset Management System will be explained. Walks the progression in the current state of the asset management system and how Public Works use the system to log & work completed and produce the accurate data they require for their report system.

SWITCH TO
GUIDE MODE

The screenshot shows a GIS application interface. On the left, there are navigation icons for home, back, and search. The main area is an aerial map showing a pipe with a red arrow pointing to it. A data entry form is overlaid on the right side of the map. The form has several sections:

- General:**
 - Pipe ID: A122000
 - Pipe Type: 200KVT144016
 - Pipe Location: [Text Field]
 - Pipe Number: [Text Field]
 - Length: 88.5%
 - Diameter: 10.00
 - Height: [Text Field]
 - Material: [Dropdown]
 - Flow Depth: 2%
 - Flow Depth: 2%
 - Flow to Sewer (ft): 10.0
 - Flow to Sewer (ft): 12.0
 - Flow to Grade (ft): [Text Field]
 - Flow to Grade: [Text Field]
 - Joint Type: [Dropdown]
 - Joint Length: 7%
 - Laying Method: [Dropdown]
 - Year Laid: 1999
 - Year Replaced: [Text Field]
 - Rehab Status: [Dropdown]
- Upstream:**
 - Upstream ID: A12-000
 - Upstream Type: [Text Field]
 - Location: [Text Field]
 - [Submit]
- Downstream:**
 - Downstream ID: A12-000
 - Downstream Type: [Text Field]
 - Location: [Text Field]
 - [Submit]

At the bottom of the form, there is a 'Next' dropdown and a 'Test' button.



GIS-Centric Asset Management Implementation for Public Works

City of Phoenix, AZ, selected Esri's ArcGIS Cityworks as well as its field applications to a recently completed deployment of the GIS-centric Cityworks v10.0 software using the ArcGIS Map Series. The power of Phoenix's new management system will be realized through the progression of the current and the next asset management system and how Public Works can use the system to track work completed and produce the valuable data they need to make better decisions.

Switch to builder mode

30

Cityworks is used to track one of the City's Water Conservation program, Cash for Grass. Property owners can receive a rebate cash incentive to remove living and maintained lawn and replace it with water-efficient landscaping. Rebates are offered to single family residential customers within the Maricopa Water Agency service area at \$0.50 per square foot, up to \$5,000, to replace lawn with low water-use landscaping. This program offers a financial incentive to customers by offsetting a portion of the cost of converting water-thirsty lawn to native and desert adaptive landscapes. Program funding is limited and on a first-come, first-served basis.



Work Order

Description: CASH FOR GRASS INSPECTION

Number: 10772

Entry Type: INSPECTION

Category: CASH FOR GRASS

Assigned By: HERNANDEZ, MIKE Date: 2/20/14 1:02 PM

Status: OPEN

Requested By: HERNANDEZ, MIKE Supervisor: HERNANDEZ, MIKE Date: 2/20/14 1:02 PM

Submitted To: HERNANDEZ, MIKE Date: 2/20/14 1:02 PM

Project Start: 2/20/14 1:02 PM Project End: 2/20/14 1:02 PM

Created By: HERNANDEZ, MIKE Date: 2/20/14 1:02 PM

Assigned By: HERNANDEZ, MIKE Date: 2/20/14 1:02 PM

Actual Start: 2/20/14 12:15 AM Actual End: 2/20/14 12:44 AM

Step: ASIA

Resource Type: WATERWORK

GIS Comments:

Location Information

GIS Address: 1044 WEST WILLOW DR

Location Details: CASH FOR GRASS 1044 DR

Shape: ASIA

The Number: 10772

Location: 6,732,000.00 1,979,000.00

Assets

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Another Cash for Grass example. The City tracks the SQ FT of grass before the conversion and the SQ FT of the new landscaping after the project has been completed.



GIS-Centric Asset Management Implementation for Public Works

Switch to
Full Screen

City of Henderson, NV, moved from traditional GIS to an ArcGIS-based application to a centrally managed management of the city's assets. Cityworks leverages GIS capabilities, using the mobile map interface, the journey of Public Works asset management is more efficient. Track the progress of the current data on the asset management system and how Public Works use the system to track work completed and produce the evidence data for city council and management reports.

Asset ID	Asset Name	Asset Type	Status	Location
15	Storm Damage	Road	Completed	43
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Cityworks is used to track FEMA events. The documentation produced after event simplifies the reimbursement process through FEMA. The City doesn't experience many FEMA events, but they do happen. This example is for a flash flood that destroyed a portion of the road way.



GIS-Centric Asset Management Implementation for Public Works

Switch to
Full Screen

City of Henderson, NV, moved from traditional GIS to an ArcGIS-based application to a centrally managed management of the city's assets. Cityworks leverages GIS capabilities, using the mobile map interface, the journey of Public Works asset management is more efficient. Track the progress of the current data on the asset management system and how Public Works use the system to track work completed and produce the evidence data for city council and management reports.

The screenshot displays the Cityworks GIS interface. On the left, a vertical toolbar contains icons for home, zoom in, zoom out, and full screen. The main area shows an aerial map of a residential street with a red marker labeled '43' indicating a location. A semi-transparent window is overlaid on the map, showing a data table with columns for 'ID', 'Name', 'Status', and 'Type'. Below the table are two photo thumbnails. The rightmost photo is labeled 'Storm Damage' in red text. At the bottom of the window, a dark grey box contains the following text: 'Cityworks is used to track FEMA events. The documentation produced after event simplifies the reimbursement process through FEMA. The City doesn't experience many FEMA events, but they do happen. This example is for a flash flood that destroyed a portion of the road way'. At the bottom of the entire application, a horizontal scroll bar shows a series of thumbnail images representing different map views or data layers.



GIS-Centric Asset Management Implementation for Public Works

Spring, New Year (2014)

The City of Phoenix, AZ, moved from a paper-based to an online asset management system to a web-based GIS-centric asset management system. The GIS-centric asset management system will be replacing the current paper-based asset management system and the Public Works user interface to the GIS-centric asset management system. The GIS-centric asset management system will be replacing the current paper-based asset management system and the Public Works user interface to the GIS-centric asset management system.

Switch to
Darker Mode



Work Orders in Outlook

Outlook Calendar Appointments

28 The City tries to reduce data entry and simplify the end user experience using application integrations. Examples include the CCTV program, MS Outlook and Material Inventory interface for New World



GIS-Centric Asset Management Implementation for Public Works

Spring, California

The City of Rosemead, CA, moved from a traditional CMMS to a GIS-centric asset management system. The City is now able to track and report on work completed by the Public Works department using the City's new system. The success of Public Works Management System will be reported. Watch the progress on the current state-of-the-art asset management system and how Public Works used the system to track work completion and produce the valuable reports they need for their business.

SWITCH TO BUDGET MODE

The screenshot displays a GIS web application interface. On the left is an aerial map of a residential neighborhood. On the right, a sidebar contains several panels:

- Custom Reports:** A section titled "Service Request Summary" with a table listing various request types and their counts.

Request Type	Count	Work	Cost
ASPHALT PATCHING	4	1	1
ASPHALT PATCHING (1/4" OR DEEPER)	1	1	1
ASPHALT PATCHING (1/2" OR DEEPER)	1	1	1
ASPHALT PATCHING (3/4" OR DEEPER)	1	1	1
ASPHALT PATCHING (1" OR DEEPER)	1	1	1
ASPHALT PATCHING (1 1/2" OR DEEPER)	1	1	1
ASPHALT PATCHING (2" OR DEEPER)	1	1	1
ASPHALT PATCHING (3" OR DEEPER)	1	1	1
ASPHALT PATCHING (4" OR DEEPER)	1	1	1
ASPHALT PATCHING (5" OR DEEPER)	1	1	1
ASPHALT PATCHING (6" OR DEEPER)	1	1	1
ASPHALT PATCHING (7" OR DEEPER)	1	1	1
ASPHALT PATCHING (8" OR DEEPER)	1	1	1
ASPHALT PATCHING (9" OR DEEPER)	1	1	1
ASPHALT PATCHING (10" OR DEEPER)	1	1	1
ASPHALT PATCHING (11" OR DEEPER)	1	1	1
ASPHALT PATCHING (12" OR DEEPER)	1	1	1
ASPHALT PATCHING (13" OR DEEPER)	1	1	1
ASPHALT PATCHING (14" OR DEEPER)	1	1	1
ASPHALT PATCHING (15" OR DEEPER)	1	1	1
ASPHALT PATCHING (16" OR DEEPER)	1	1	1
ASPHALT PATCHING (17" OR DEEPER)	1	1	1
ASPHALT PATCHING (18" OR DEEPER)	1	1	1
ASPHALT PATCHING (19" OR DEEPER)	1	1	1
ASPHALT PATCHING (20" OR DEEPER)	1	1	1
- Cost Summary:** A table showing cost breakdowns for different categories.

Category	Cost	Work	Cost
ASPHALT PATCHING	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (1/4" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (1/2" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (3/4" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (1" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (1 1/2" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (2" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (3" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (4" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (5" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (6" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (7" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (8" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (9" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (10" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (11" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (12" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (13" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (14" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (15" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (16" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (17" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (18" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (19" OR DEEPER)	\$1,000.00	1	\$1,000.00
ASPHALT PATCHING (20" OR DEEPER)	\$1,000.00	1	\$1,000.00
- Work History:** A table showing a list of work items with their status and dates.
- Searches:** A section for tracking search history.

At the bottom of the sidebar, there is a navigation bar with numbered thumbnails (1-20) representing different views or reports.

34 The City realizing a number of benefits from using a GIS-Centric Asset Management System. Most work completed by the Public Works department is tracked and can be reported on using the search tools or by creating a custom report. Cityworks has functionality to build reports using both the CMMS and GIS Asset Information.



GIS-Centric Asset Management Implementation for Public Works

Switch to
builder mode

The City of Riverside, CA, selected from various CMMS an enterprise-level asset management system to address the City's existing asset management of the City's various Citywide services and locations. Using this new, more powerful, the journey of Public Works asset management system will be explained. It tracks the progression in the current state of the asset management system and how Public Works used the system to track work, coordinate and maintain the valuable capacity of the City's assets.



Highlighted System Source

What is Recycled Water

Recycled water is water that has been treated to a high quality standard and is safe for use in a wide variety of applications. It is a valuable resource that can help conserve water and reduce the demand on natural water sources.

Recycled water is used for a variety of purposes, including irrigation, industrial processes, and municipal uses. It is a safe and effective way to conserve water and protect the environment.

Recycled water is a valuable resource that can help conserve water and reduce the demand on natural water sources. It is a safe and effective way to conserve water and protect the environment.

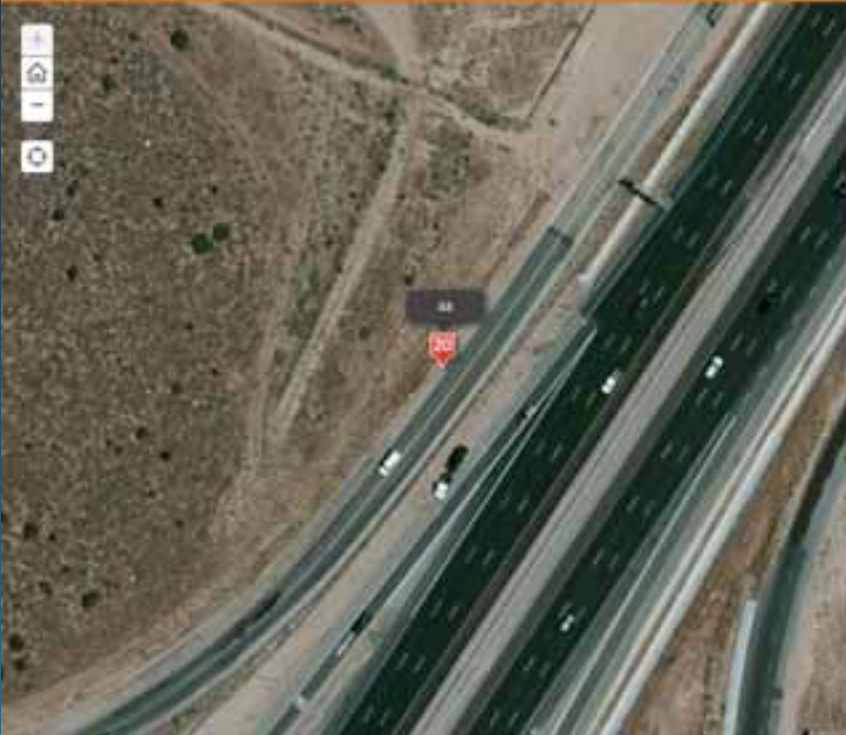
45 The City is in the process of adding Reclaimed Water Assets. The system will be used to irrigate the City's golf course. The planning, construction and operations activities will all be tracked in Cityworks.



GIS-Centric Asset Management Implementation for Public Works

Switch to
Builder mode

The City of Lancaster, CA, is implementing a GIS-centric asset management system to enhance the efficiency of its public works department. The system will be used to manage the city's assets, including the progression to the central database about asset management system and how public works use the system to track work progress and produce the results data the city needs for long-term analysis.



Questions?

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