

Cityworks®

- A Better Way to Manage Assets and Infrastructure

InfoGraph



Cityworks® Official
Distributor

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InfoGraph



- **InfoGraph Specialty** is Geographic Information Systems (GIS) & Remote Sensing software products, services, and applications .
- **The Company's know-how** is centered on the (ArcGIS) family of GIS software developed by ESRI.
- During the past twenty five years, InfoGraph has supplied ESRI GIS products and provided services related to the development of successful GIS projects at a number of major institutions in Jordan and in the region.

Define: CMMS - Asset Management

A CMMS maintains a computer database of information about an organization's maintenance operations. This information is intended to help maintenance workers do their jobs more effectively and to help management make informed decisions.



Asset Repository
Database



Maintenance
History
Database



Condition
Assessment



Enterprise Asset
Management Plan

InfoGraph Proposing Cityworks Solution...

Each asset can have 10 to 30 attributes

Manhole

FEATURE_ID	100926
ASSET_TYPE	MH
BARREL_DIA	4.00
BASIN	LITCHFIELD
CONDITION	96
CONDITIONDATE	9/27/2007
CONTRACTOR	WATSON CONST
DATE_INSTALLED	1984
DEPTH	12.00
ELEV_RIM	1143.50
ENABLED	TRUE
ENG_NUM	1014
FACILITYID	18490
FEATURE_ID	23520
IMAGE	
LID_DIAMETER	36.00
LID_MATERIAL	IRON
LOCATION	1ST ST & 6 AV
MATERIAL	CON
MH_WIDTH	48.00
OWNER	CITY
STATUS	Active
SUB_BASIN	LITCHFIELD WEST
SUB_TYPE	MH

Water Main

FEATURE_ID	25
ASSET_TYPE	MAIN
CONDITION	19
CONDITIONDATE	12/13/2009
CONTRACTOR	MISSION BAY
CP_MATERIAL	FBG
CRITICALITY	LOW
DEPTH_BURIED	6
DESIGN_PRESSURE	200
ENABLED	TRUE
EST_EFF_LIFE	50
INSTALL_COST	125000
INSTALLDATE	6/1/1992 0:00
LOCATION	South Weston St
MATERIAL	Cast Iron Pipe
OPERATE_PRESSURE	75
OWNER	CITY
PIPENO_FM	836
PRESSURE_SYSTEM	LITCHFIELD WEST
RECORDED_LENGTH	235.23
REPLACEMENT_COST	32227
SUB_TYPE	MAIN
FEATURE_ID	25
ASSET_TYPE	MAIN
CONDITION	19
CONDITIONDATE	12/13/2009
CONTRACTOR	MISSION BAY
CP_MATERIAL	FBG
CRITICALITY	LOW

Sewer Main

FEATURE_ID	40760
OBJECTID	446
ASSET_TYPE	MAIN
SURFACE_TYPE	ASPHALT
AVG_FLOW	12.00
BASIN	LITCHFIELD
CONDITION	17
CONDITIONDATE	11/12/2008
CONTRACTOR	WIXOM CONST
DATE_INSTALLED	1972
DESIGN_FLOW	35.00
DIAMETER	8.00
DWN_DEPTH	-9.00
DWN_ELEV	1136.89
DWN_FACILITYID	4837
DWN_NODETYPE	SNODE
ENG_NUM	837
FACILITYID	562
LOCATION	509 S SANTA FE AVE
MATERIAL	CIP
MAX_FLOW	50.00
MIN_FLOW	0.00
PIPENO_E	562
PIPENO_FM	562
PIPENO_M	40
RECORDED_LENGTH	85.00
REHAB_STATUS	NA
RGH_COEFFICIENT	0.02
SLOPE	0.40
UP_DEPTH	-9.00
UP_FACILITYID	4838
UP_NODETYPE	SNODE
UPS_ELEV	1137.23

Hydrant

FEATURE_ID	73253425
ANCILLARYROLE	None
ASSET_TYPE	HYDRANT
CONDITION	7
CONDITIONDATE	7/31/2012 22:14
CONTRACTOR	MILLESON
DIAMETER	6
ENABLED	TRUE
FACILITYID	8968
IMAGE	
IMPORTANCE	Critical Asset
Insp Condition	0
INSTALLDATE	8/1/1996 0:00
LEGACY_ID	
LOCATION	1700 FOXFIRE RD
MAP	1
OWNER	CITY
PNT	835
PRESSURE	
PRESSURE_SYS	LITCHFIELD WEST
STATUS	Active
WA_FITTING	N/A
WARRANTYDATE	12/30/1899 12:00:00 AM
X	2115143.04
Y	237161.71

A city of 75,000 can have over 500,000 assets

Asset	# Count
Water (pipes, hydrants, valves, meters, fittings, tanks, etc.)	148,000
Wastewater (pipes, manholes, lift stations, laterals, valves, etc.)	111,300
Storm (channels, culverts, end treatments, pipes, inlets, outfalls, etc.)	21,500
Water Treatment Plants	880
Wastewater Treatment Plants	120
Airports (taxiways, runways, lights, signs, storm, equipment, terminals)	7,000
Electrical (poles, meters, wires, streetlights, transformers, supporting equipment)	164,500
Misc. (fences, parking lots, other paved areas)	44,000
Streets	9,750
Traffic (signals, signs, traffic cabinets, poles, etc.)	16,500
Total	~525,000
*Does not include, curb,/gutter, sidewalks, parks, trees, city buildings or other offices	

GIS-centric leverages existing investment and eliminates Asset Replication



What can Cityworks do?

1. Customer Service and Call Center

- + Recording problems and logging customer calls

2. Service Requests and Inspections

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

3. Work Order Management

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

5. Analytics

- + Condition Assessment, Heat Maps
- + Project Management and Budgeting

6. Reporting

- + Data export tools
- + Predefined and Custom reporting

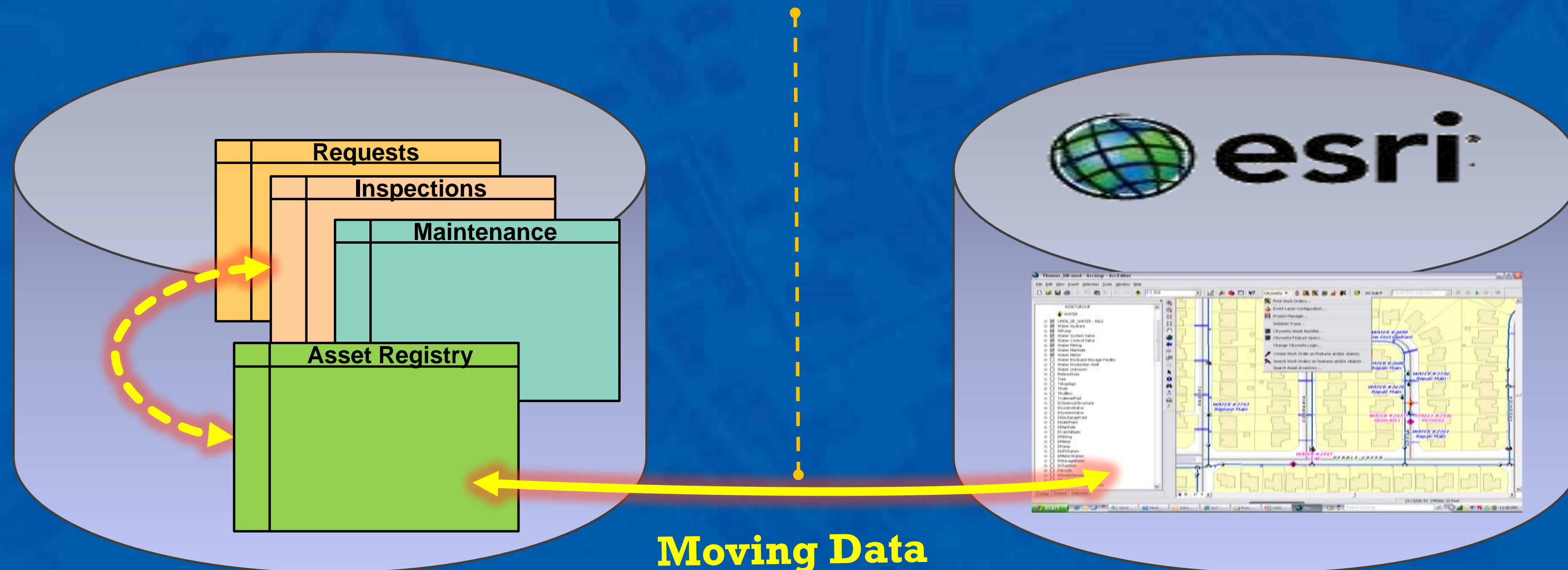
6. Add-on functionality such as Storeroom, CW Analytics, eURL

- + Actual / estimated labor
- + Warehouse inventory quantities
- + KPI, Budget Analysis



Traditional approach to Asset Management (non-GIS Centric - interface approach)

**Requires middleware or interface to synchronize
redundant asset data.**

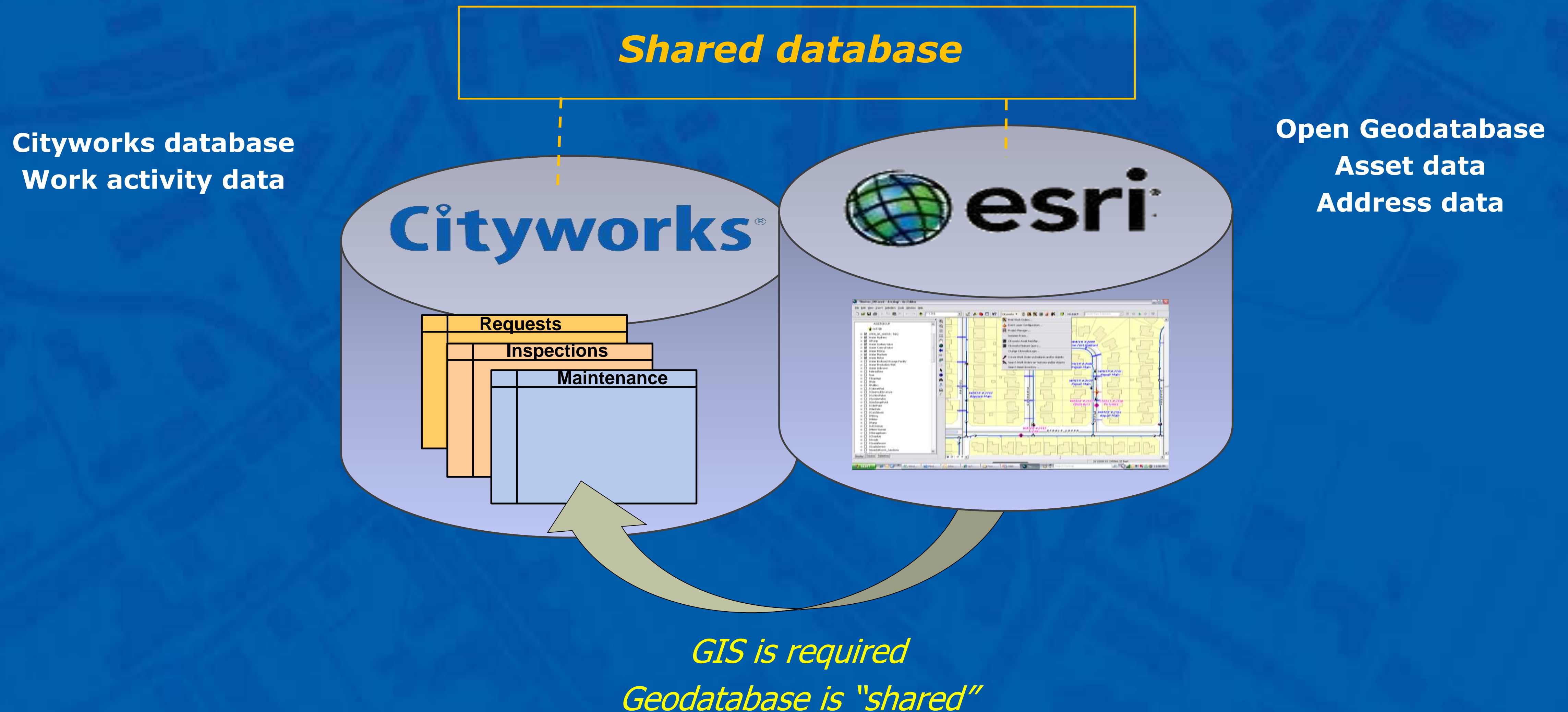


- CMMS database
- Work activity data
- Asset Data
- Address Data

GIS is an after thought / optional

- Geodatabase
- Asset data
- Address data

The GIS-Centric approach to Asset Management **(Cityworks)**



WEB GIS-CENTRIC

[DYNAMIC UPDATES]

Cityworks



ArcGIS



Work
Activities

- No Redundancy
- Configurable
- Non-Proprietary
- Updates & Access Through ArcGIS Methods
- The WebMap
- Single Sign-On



Asset
Inventory

CITYWORKS and the PLATFORM



At the core, Esri ArcGIS provides the tools necessary to maintain the asset inventory and for using geography as a management tool. Cityworks provides the tools for managing and tracking the work that regulates assets.

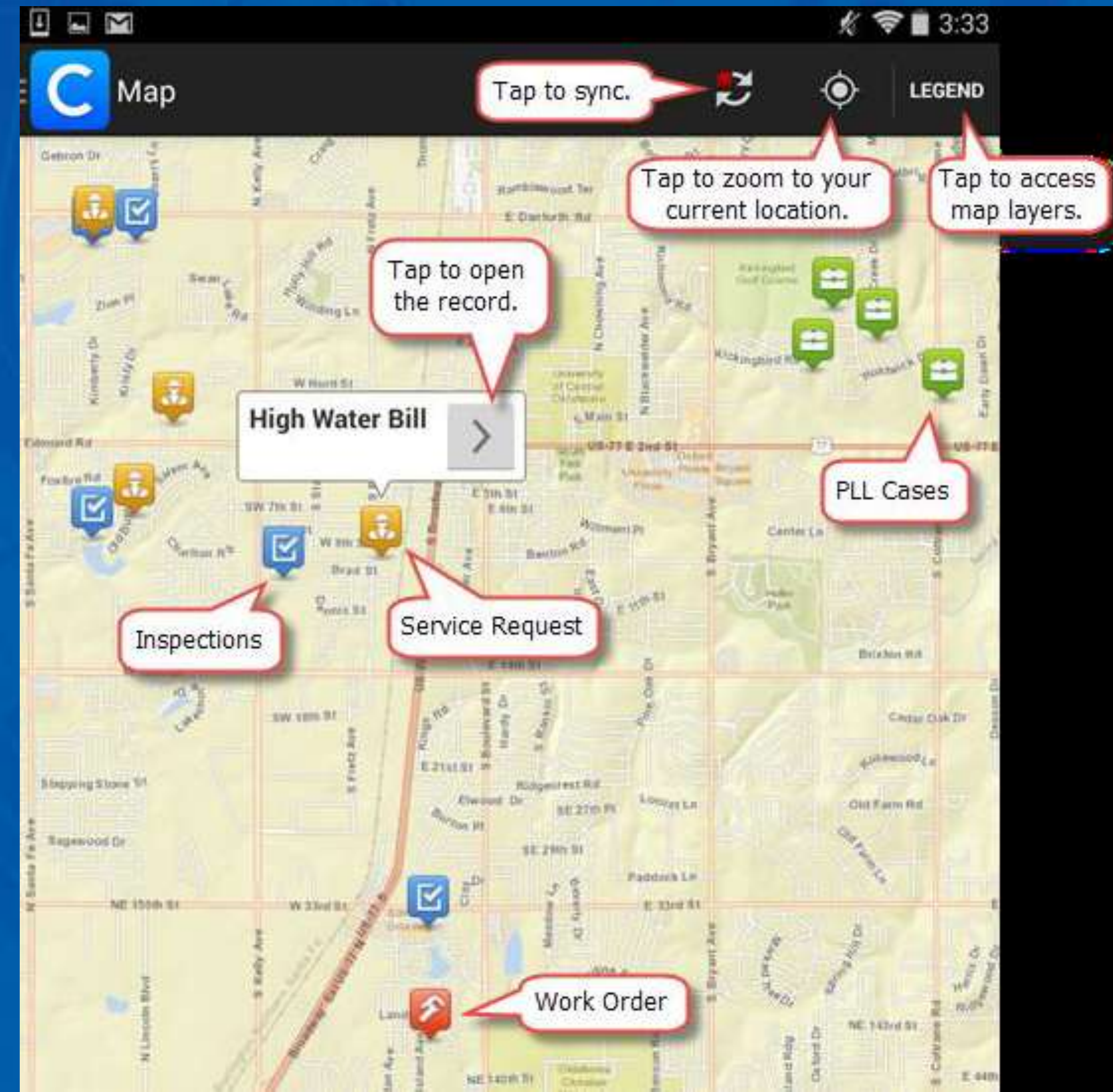
The Cityworks GIS-centric approach has broadened to become the GIS-centric Platform for public asset management. From the very beginning, the Cityworks GIS-centric approach made way for this with it's union of two software systems: Esri ArcGIS and Cityworks.



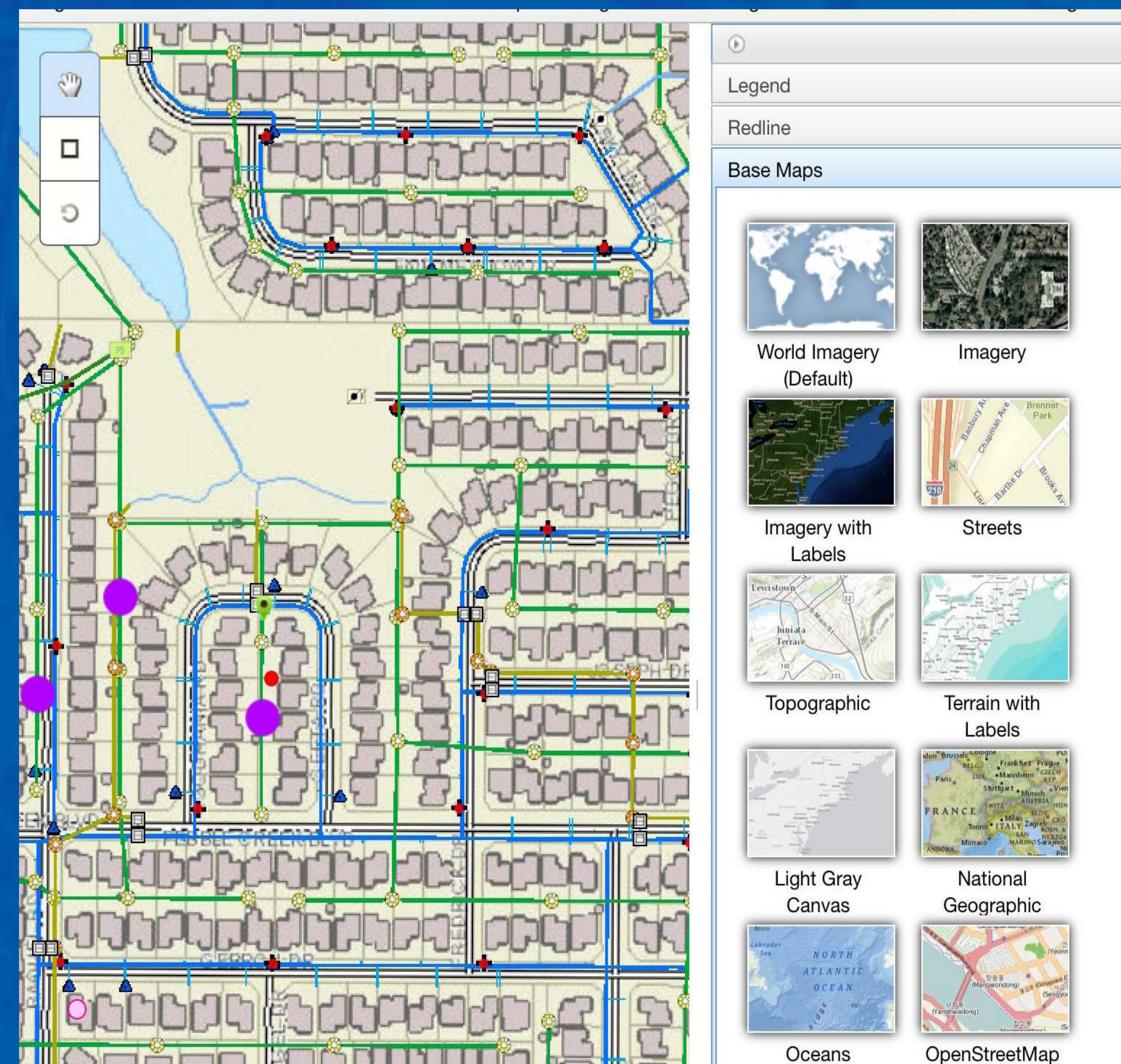
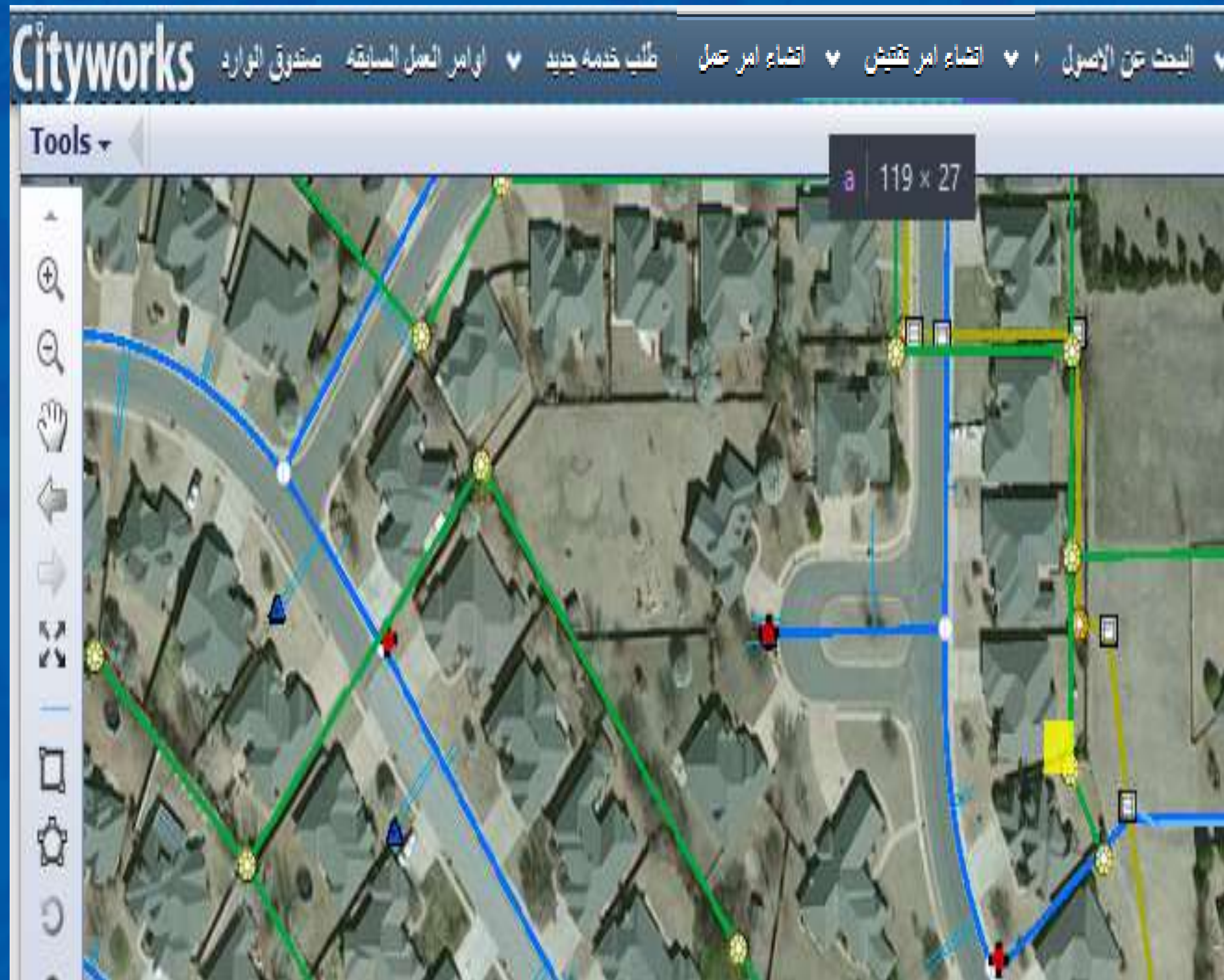
Cityworks Capabilities...

Easy Access to GIS Data in the Field

- Inspectors can access and review inspected projects and site details, permits, drawings, photos and previous recorded status.
- Linked with all GIS layers and database.



Integrated with GIS Database (GIS-Centric, on the top of Esri Platform)



SERVICE REQUEST

Cityworks

اسم المستخدم: PWADMIN

مساعد النظام | مساعد PLL

إداري الموقع | تقارير نظام إدارة الأصول | المدير | نظم المعلومات الجغرافية والأرض | مدير المجموعة | لخصات | أوامر العمل | طلبات | الوارد

إشياء | إعادة تحميل

إشياء أمر عمل

مجموعة المصدر: SEWER | الوصف:

ملء | عنصر | أخرى

Cleanout Feature
Engineering Node Feature
Force Mainline Feature
Gravity Mainline Feature
Lift Station Feature
Manhole Feature
Pipe Fitting Feature
Service Lateral Feature
Siphon Feature
Valve Feature

Investigate Illegal Tap
PM - Chemical Root Control
PM - Flushing
PM - Grease Removal
PM - Grout Main
PM - Hand Sawing
PM - Hydro Clean
PM - Manhole Inspections
PM - TV
Remove Calcium Buildup
Remove Potruding Lateral
Seal Main
Sewer Tap

عام

الحالة: | الأولوية: Medium

طلبات من قبل: | المشرف:

أرسلت إلى: | بدء المشروع:

المرحلة: | نوع المصاريف:

التعليقات:

التعليمات:

Wastewater Gravity Main (1)

OBJECTID	WW_UPNODE	WW_DNNODE	PIPENO_E	PIPENO_FM	PIPE
10936	7118	11469	7025	7025	0

MAIN

BRYANT

MEDICAL CENTER

100m

300ft

2ND

X: 2128484.93562 Y: 238472.36897

Work Orders

- Increase efficiency of field data collection
- Minimize data entry time
- Reduce mistakes
- Schedule inspections

Dates	
Design Date:	<input type="text"/>
Bid Date:	<input type="text"/>
Signed Date:	<input type="text"/>
Start Date:	01/1/2011
Est. Finish:	12/31/2010
Actual Finish:	<input type="text"/>
Transmit Date:	<input type="text"/>
Use Insp Date:	<input type="text"/>
Final Insp Date:	<input type="text"/>
Guarantee Insp Date:	<input type="text"/>
Use PL Insp Date:	<input type="text"/>
Final PL Insp Date:	<input type="text"/>
Guarantee PL Insp Date:	<input type="text"/>
Duration:	1 Year(s)
More Periods:	0

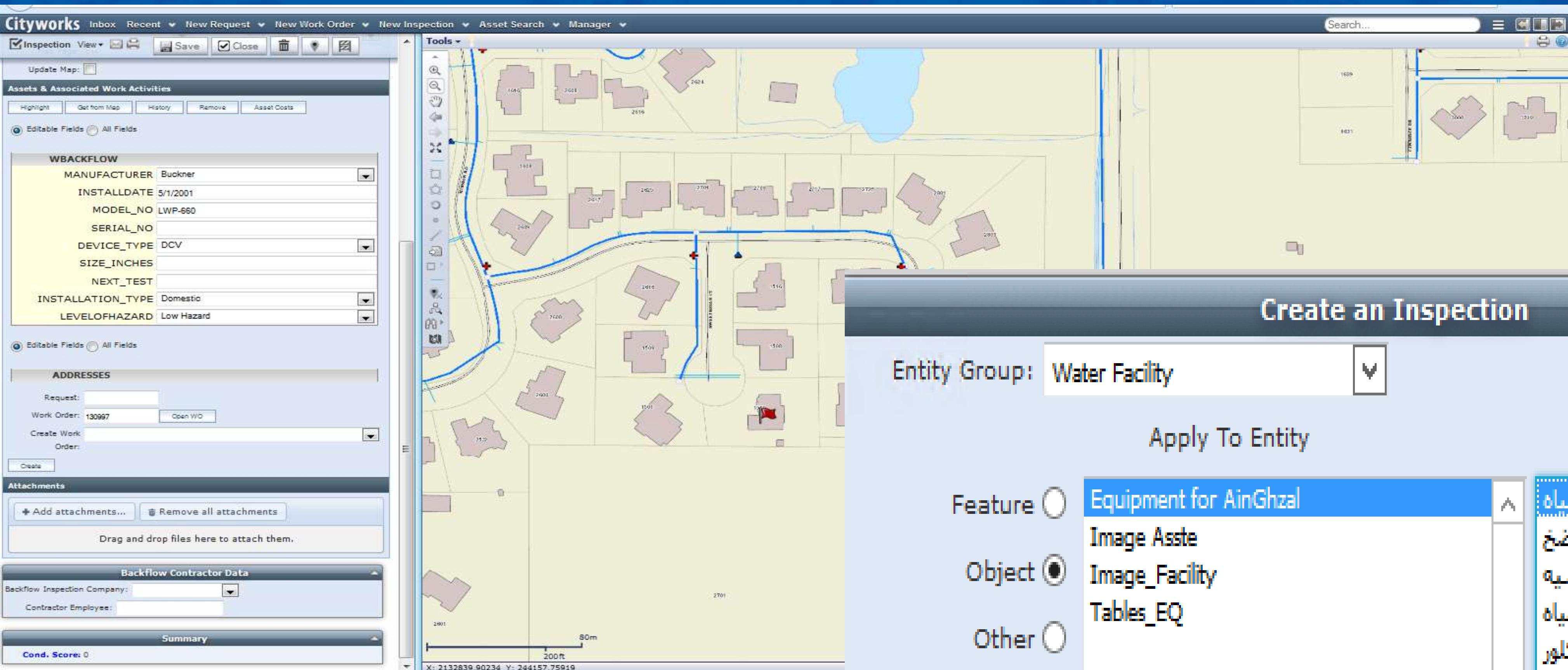
Cityworks
استشارة امر تفتيش
اتشاء ورقة عمل جديد
طلب خدمة
الامامر السابقة
صندوق الوارد

⌨ امر العمل
✉ اظهار التفاصيل والاضافات
🖨
💾 Save
✅ Close
🗑 Delete
📍

Work Order

رقم امر العمل:	134785	التاريخ:	10/25/2015 5:34 PM
الوصف:	Change Lens		
الحالة:	Pending	الاولوية:	Medium
ارسال الى:		المسؤول:	
Date:			
الوقت الحقيقي للبداية:		الوقت الحقيقي لالتهاء:	
تاريخ بداية المشروع:	10/25/2015 5:34 PM	تاريخ نهاية المشروع:	
انتهى بواسطة:		التاريخ:	
العنوان:			
تفاصيل الموقع:			

INSPECTIONS



Entity Group: Water Facility

Apply To Entity

Template

Feature ☐

Object ☒

Other ☐

Equipment for AinGhzal

Image Asste

Image_Facility

Tables_EQ

الكشف الشهري على ابار المياه

الكشف السنوي على محطات الضخ

فحص المحابس الرئيسية

تنظيف عداد المياه

مشكلة في نسبة الكلور

الفحص الشهري البوستر

EQUIPMENTS_INSPECTION

فحص لوحات الكهرباء

الكشف على تنك المياه

الفحص الشهري لمضخات المياه

فحص المحابس والمفاتيح

فحص مفاتيح المضخات

TEMPLATES

CityWorks provides the organizations with Local Government Templates (LGT) such as:

- Electric
- Water
- Sewer
- Stormwater
- Streets
- Traffic
- Facilities
- Forestry
- Animal Control

Templates

search templates

Group

Water Facility

Type

AinGhazal water Facility

الصيانة الشهرية للوحدات الكهربائية_PM

صيانة شهرية للابار_PM

صيانة ميكانيك_PM

صيانة ميكانيك كهرباء_PM

صيانة السيارات الطارئة_CM Cars

صيانة المباني_CM

صيانة دورية للسيارات_PM Cars

صيانة شهرية للمضخات_PM _Pumps

صيانة دورية 3 شهور_PM Every 3 Month

صيانة دورية اسبوعية_PM Weekly

صيانة دورية شهرية_PM Monthly

صيانة دورية 6 شهور_PM Every 6 Month

صيانة دورية سنوية_PM Yearly

Details

General

Rates

Permissions

Licenses

☐ Contract Cost

☐ Request Labor Cost

☐ Wo Labor Cost

☐ Wo Equipment Cost

☐ Wo Material Cost

☒ Check All

Service Request

☒ Create

☒ Submit To

☒ Close

☒ Edit After Close

☒ Cancel

☒ Dispatch To

☐ Check All

Service Request Template

☐ Submit To

☐ Dispatch To

Storeroom

☒ Request Transfer

Task

☒ Assign To

Work Order

☒ Create

☒ Submit To

☒ Close

☒ Edit After Close

☒ Cancel

☒ Request

☒ Check All

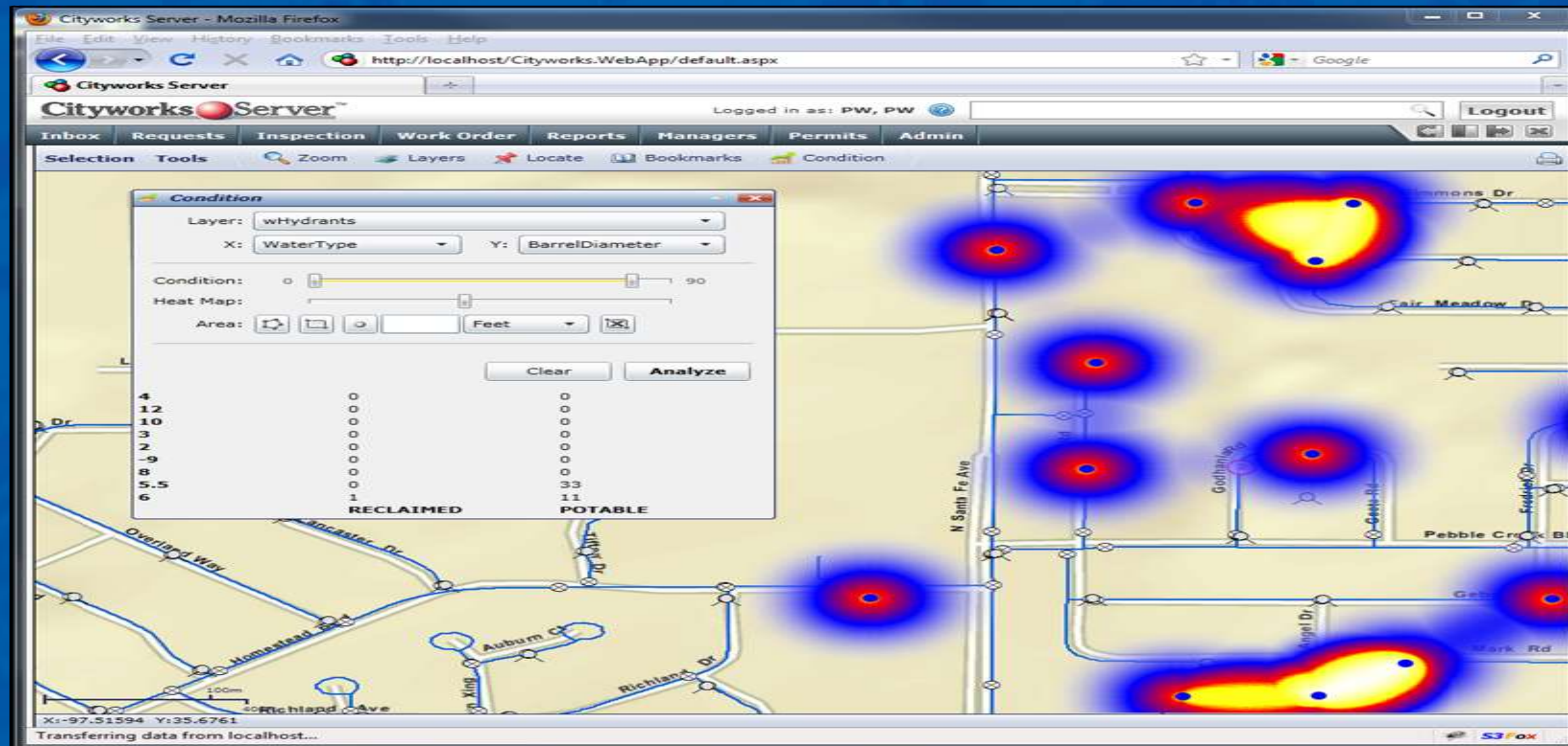
On – The – Spot Decision Making Tool

GIS Analysis of Maintenance Activities on Assets

Maintenance scoring by work activity

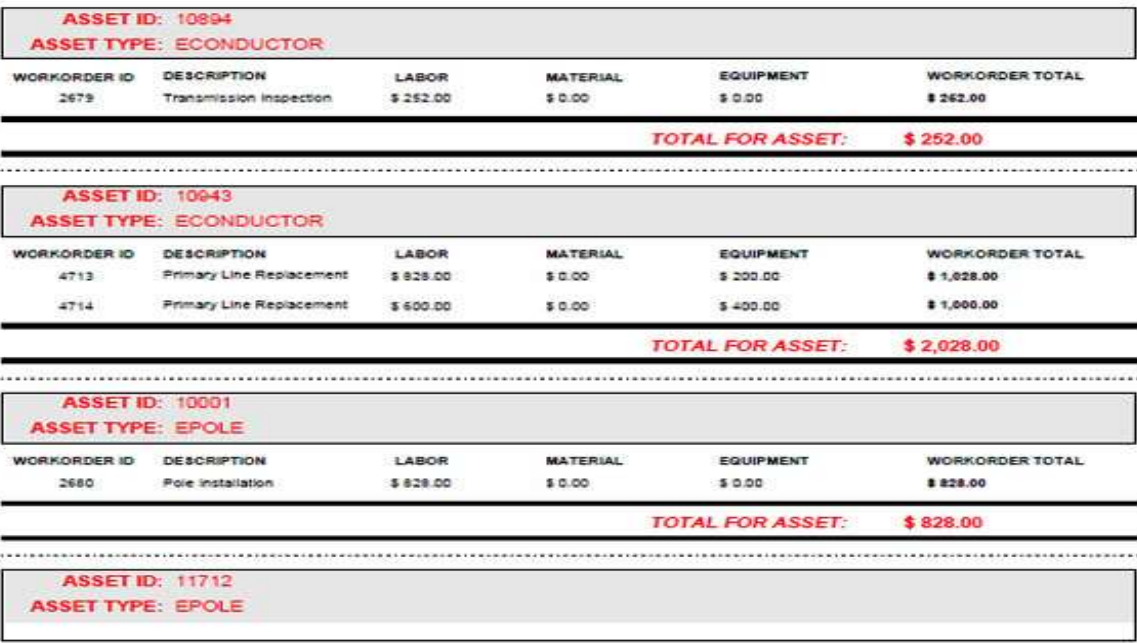
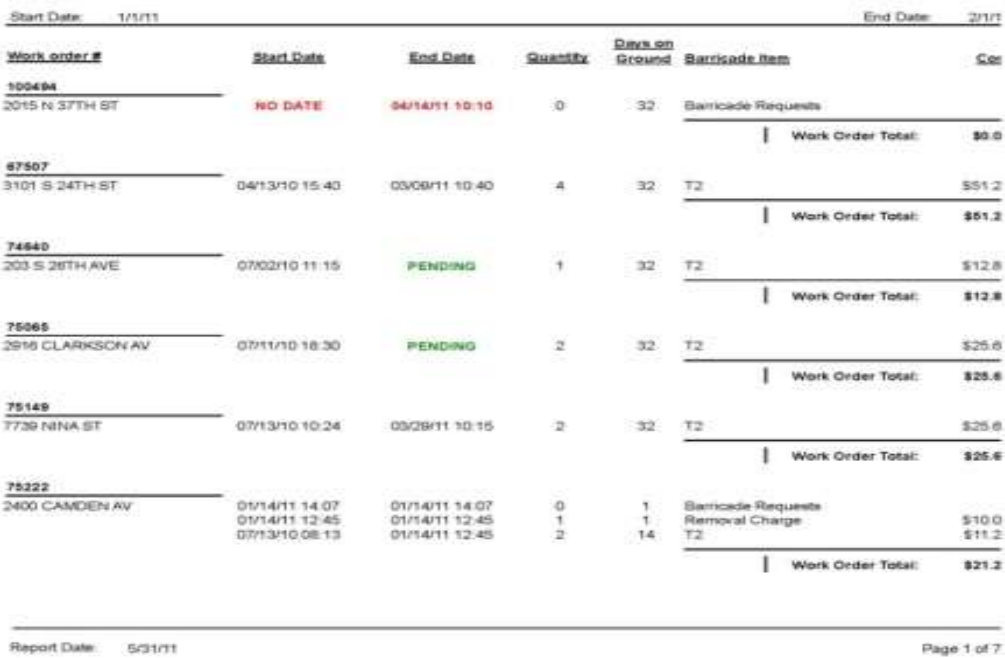
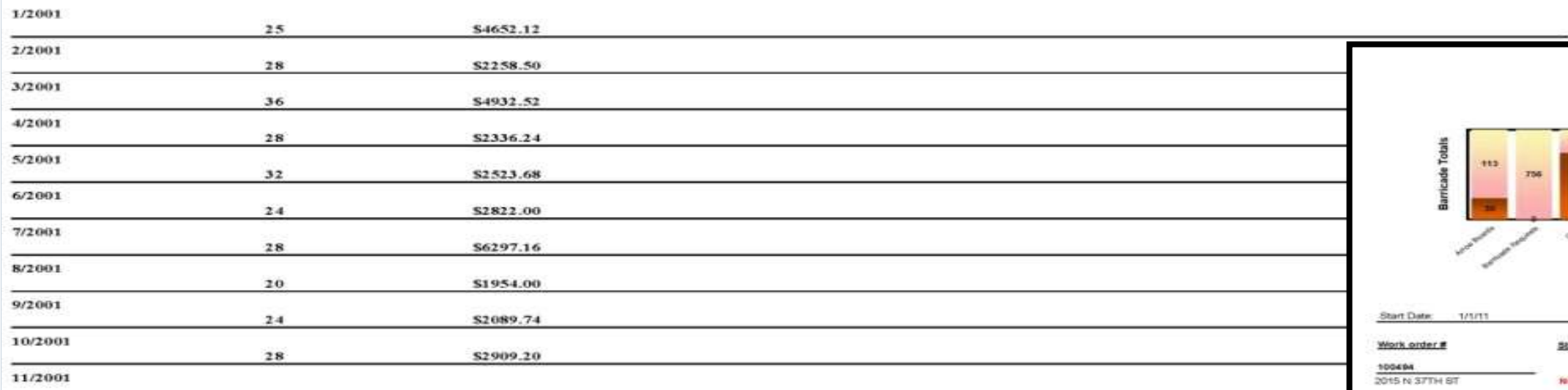
Condition assessment by inspection activity using Standard Inspection Templates

Update attributes in GIS as you work in the asset management system










Clustering, frequency, and costs of unplanned maintenance

Cityworks
Inbox
Recent
New Request
New Work Order
New Inspection
Asset Search
Manager
PLL Admin
Site Admin



Open Service Requests	
Sewer Odor Complaint	100
Diagnose Check Engine Light	85
Animal Bite	85
Low Water Pressure	85
Sanitary Sewer System Blockage	50
Pooling, Water in Street, Ditch, Culvert	50
Cracked/Damaged Line/Manhole Problems	50
Broken Catch Basin	50
Transmission Service	50
Replace Air Filter	50
Tire Rotation	50
City Tree Is Blocking Street Lights	50
Discolored (Dirty) Water, Taste or Odor	50
Clogged Catch Basin	50
Wastewater Overflow	50
Water Leak	50

Open Work Orders									
<div>Open Print Expand Map (178 records)</div>									
 Id	Description	Priority	Status	Submit To	Proj Start Date	Actual Start	Address	Entity Group	Initiated By
 128929	Emissions Inspe	3	OPEN		1/8/2013 4:15 PM	1/3/2013 9:41 AM		FLEET	COTTER, MIKE
 128931	Emissions Inspe	3	OPEN		2/25/2013 4:19 PM			FLEET	COTTER, MIKE
 131207	Wash Out Air In	3	OPEN		3/27/2013 9:32 AM			WTP	PWADMIN,
 131211	PM	3	OPEN		4/10/2013 9:50 AM			WTP	GRAVES, TRAVIS
 131215	Valve Operation	3	OPEN		4/15/2013 10:25 AM			WTP	GRAVES, TRAVIS
 133301	Cyclic Reduc	3	OPEN		8/1/2013 9:44 AM			WTP	GRAVES, TRAVIS

Thank you