Cityworks®

- **A Better Way to Manage Assets and Infrastructure**

InfoGraph

esri Official Distributor

Cityworks® Official Distributor

Mutasem Jokhdar
InfoGraph

InfoGraph (Founded in 1991)

InfoGraph

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- **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.

www.infograph.com.jo

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	[illegible]
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	[illegible]
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

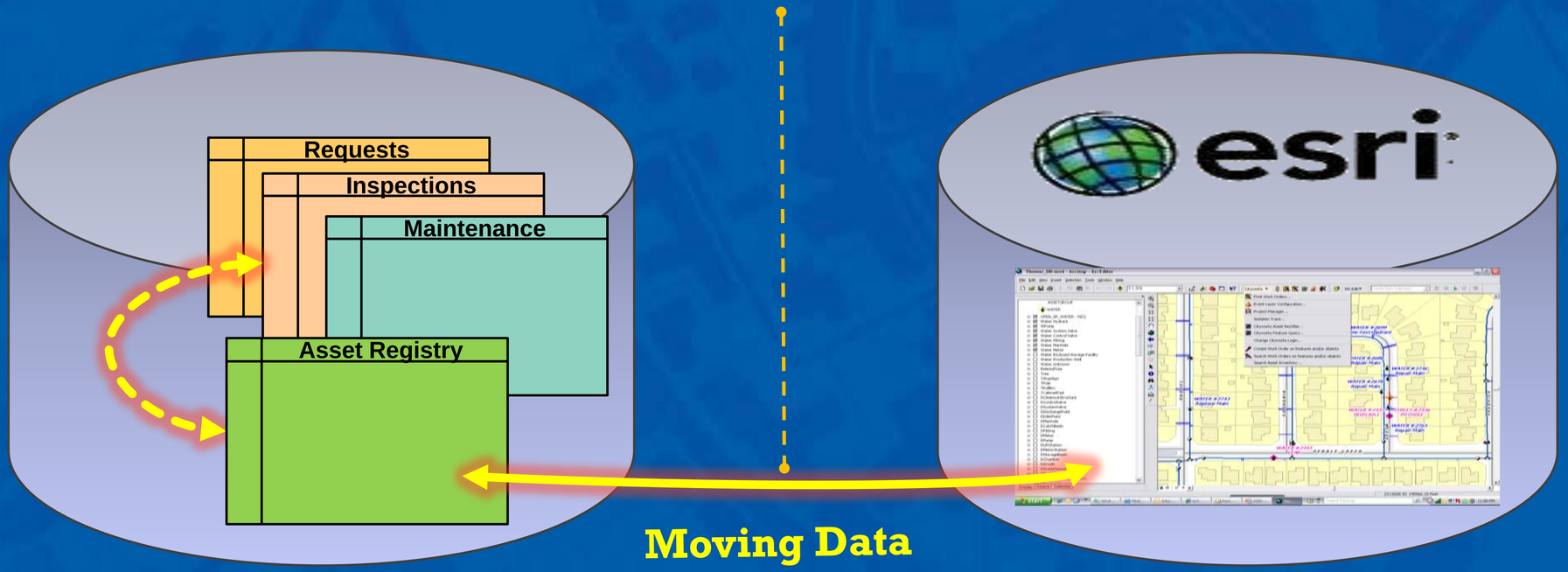
6. Add-on functionality such as Storeroom, CW Analytics, eURL

- 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

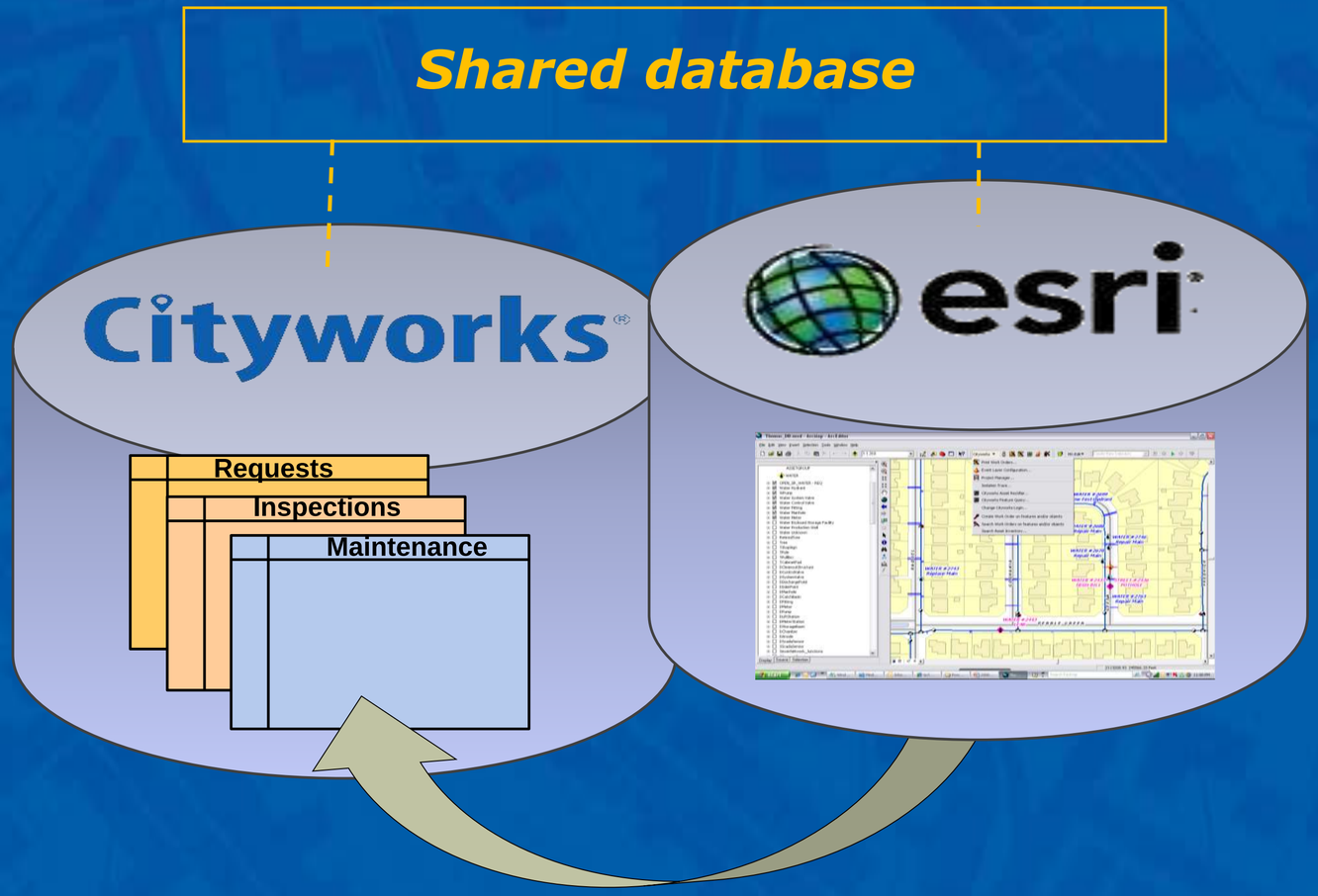
GIS is an after thought / optional

- Geodatabase
- Asset data
- Address data

The GIS-Centric approach to Asset Management

(Cityworks)

Cityworks database
Work activity data



Open Geodatabase
Asset data
Address data

GIS is required

Geodatabase is "shared"

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

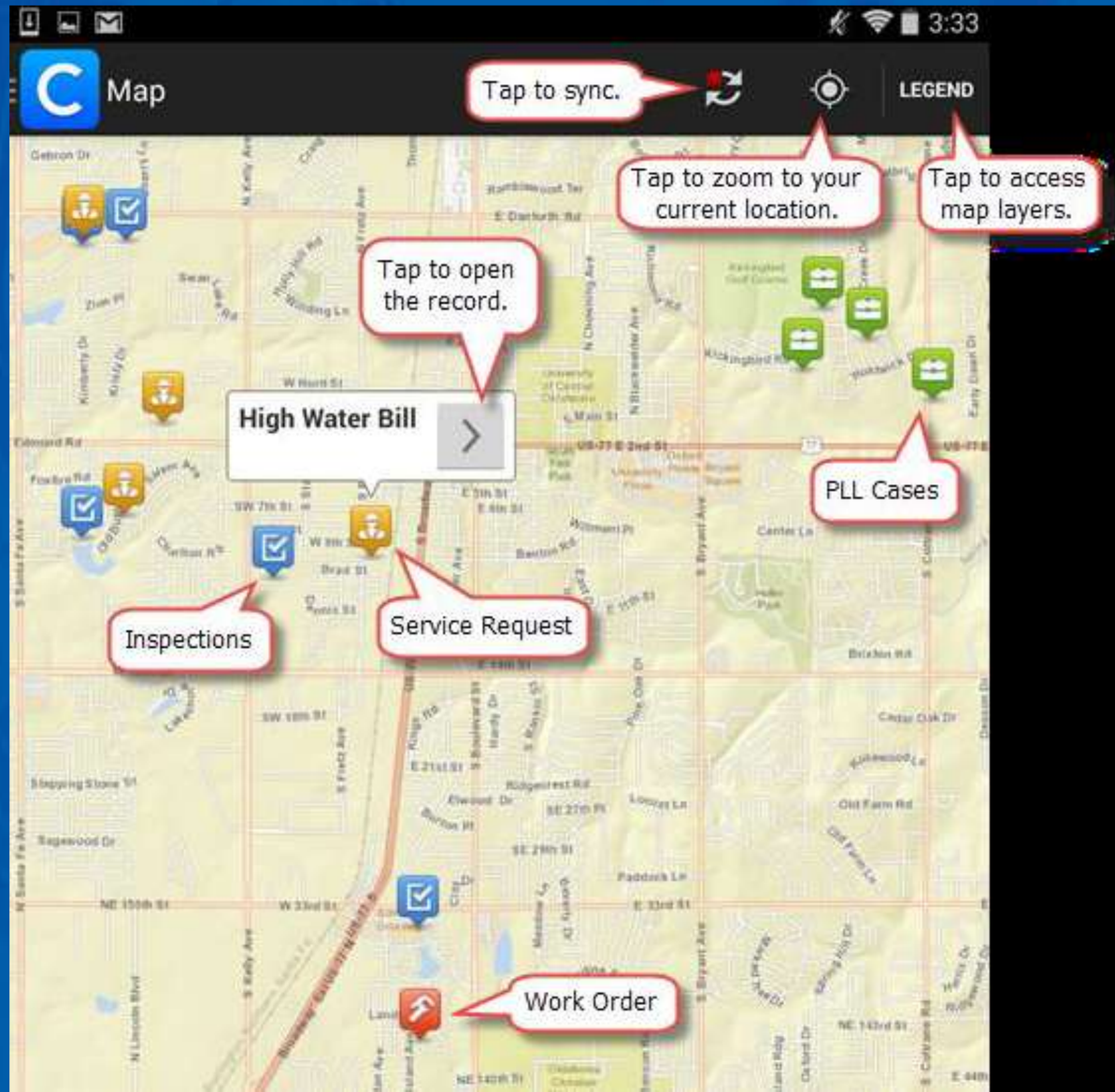
The Cityworks GIS-centric approach has broadened to become the GIS-centric Platform for public asset management. From the very beginning, the Cityworks GIS-centric approach made way for this with it's union of two software systems: Esri ArcGIS and Cityworks.

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.

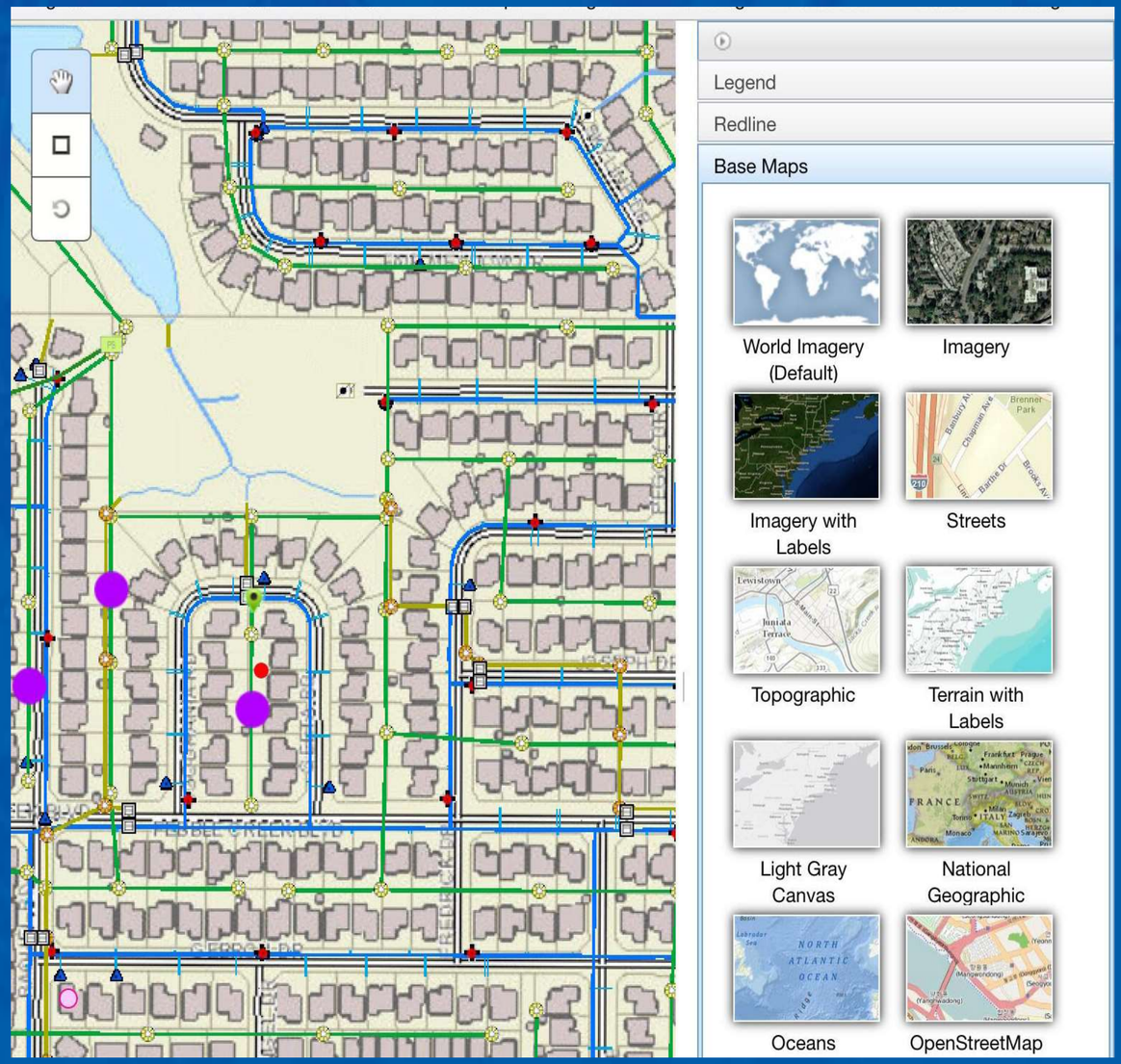
Cityworks Capabilities…

Easy Access to GIS Data in the Field

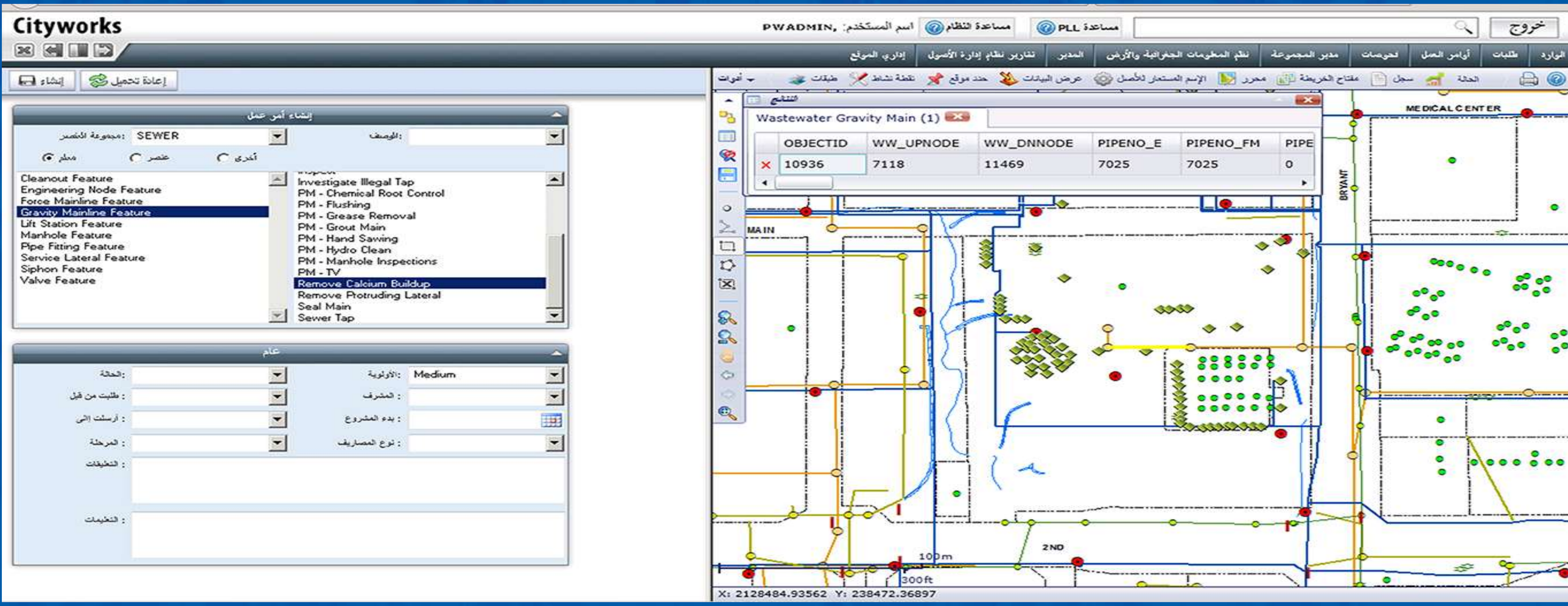
- Inspectors can access and review inspected projects and site details, permits, drawings, photos and previous recorded status.
- Linked with all GIS layers and database.



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

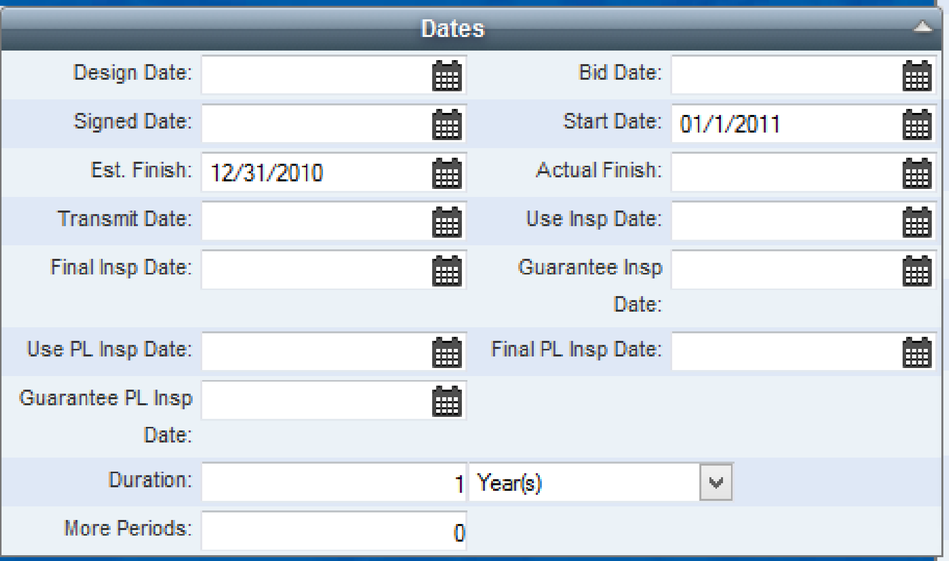


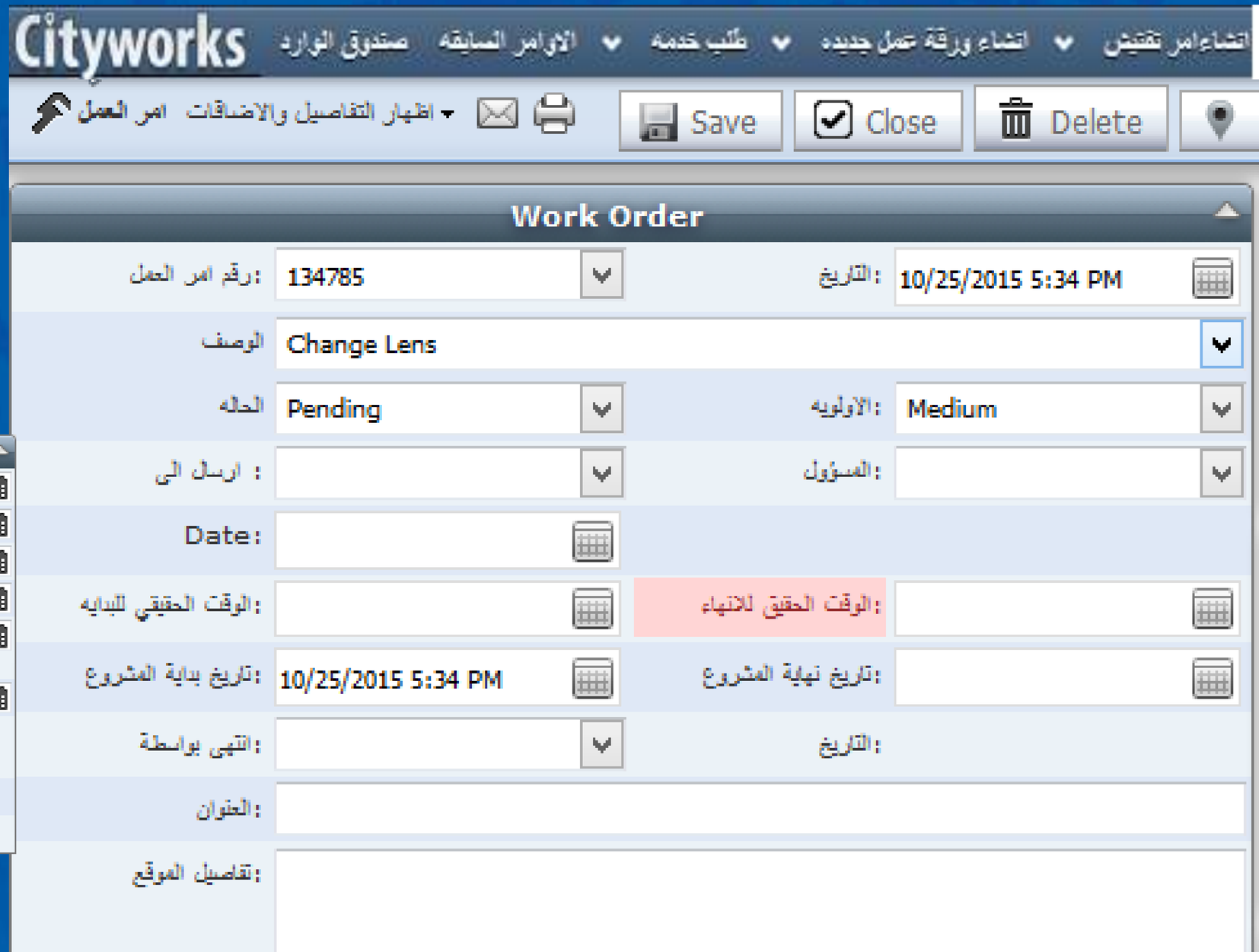
SERVICE REQUEST



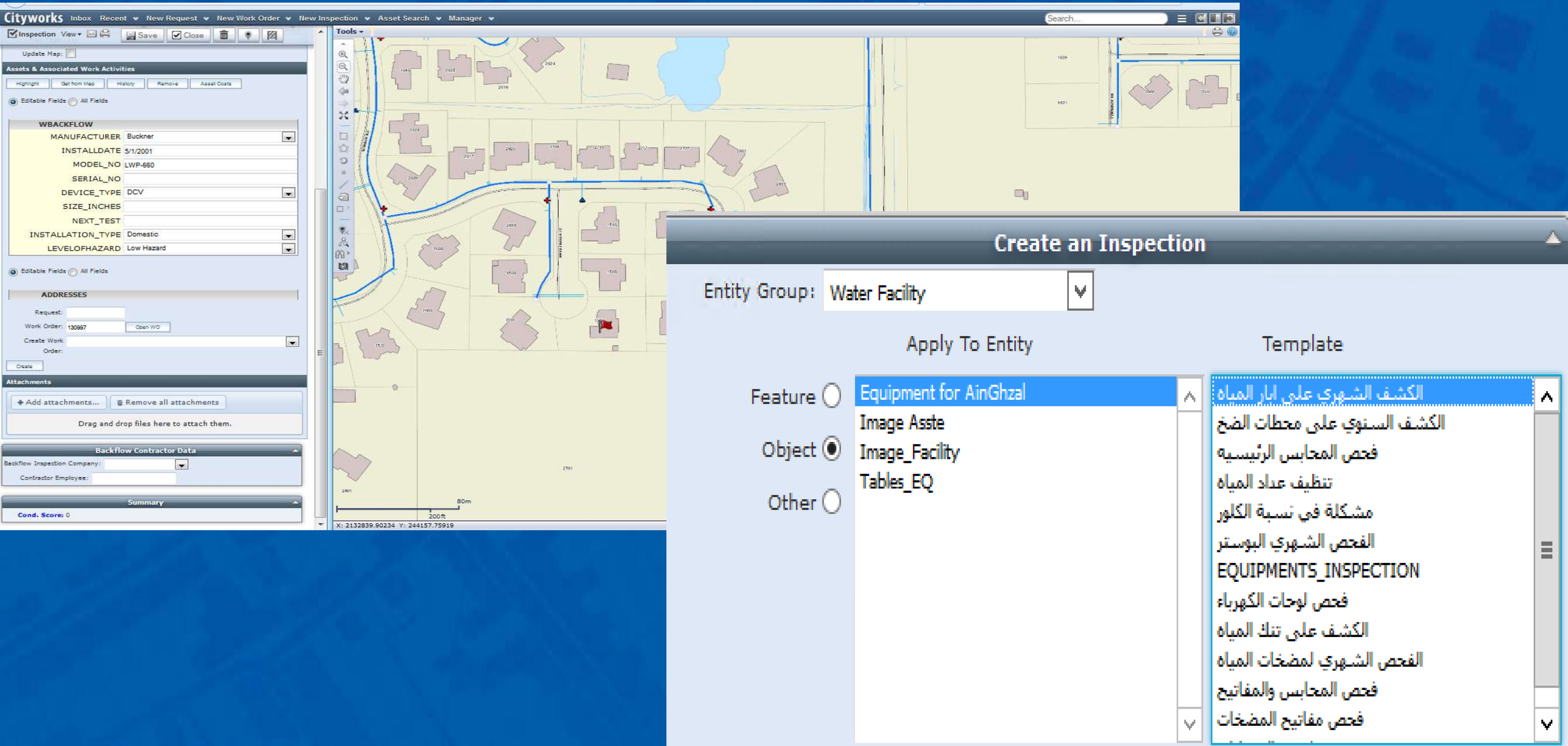
Work Orders

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





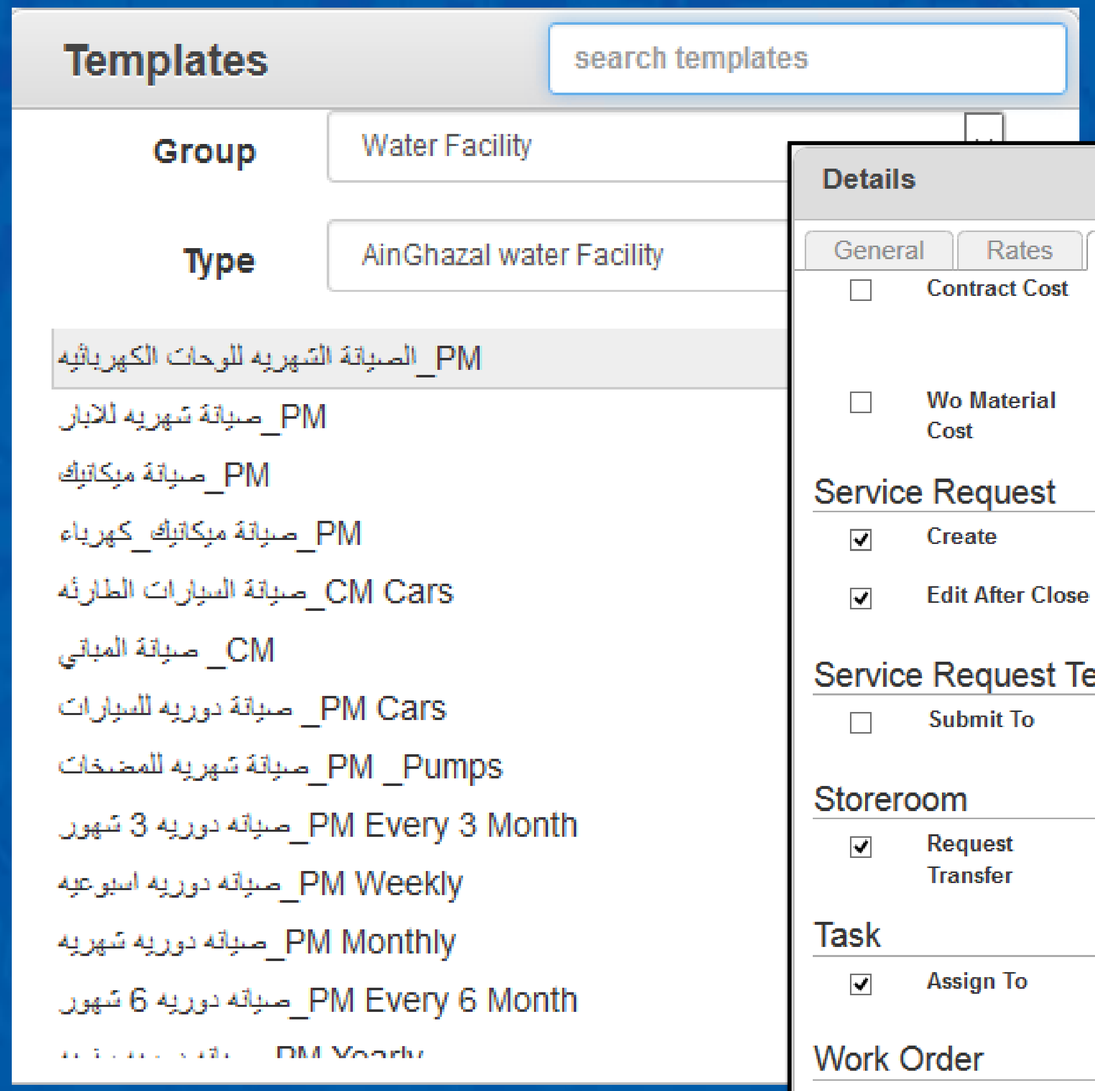
INSPECTIONS

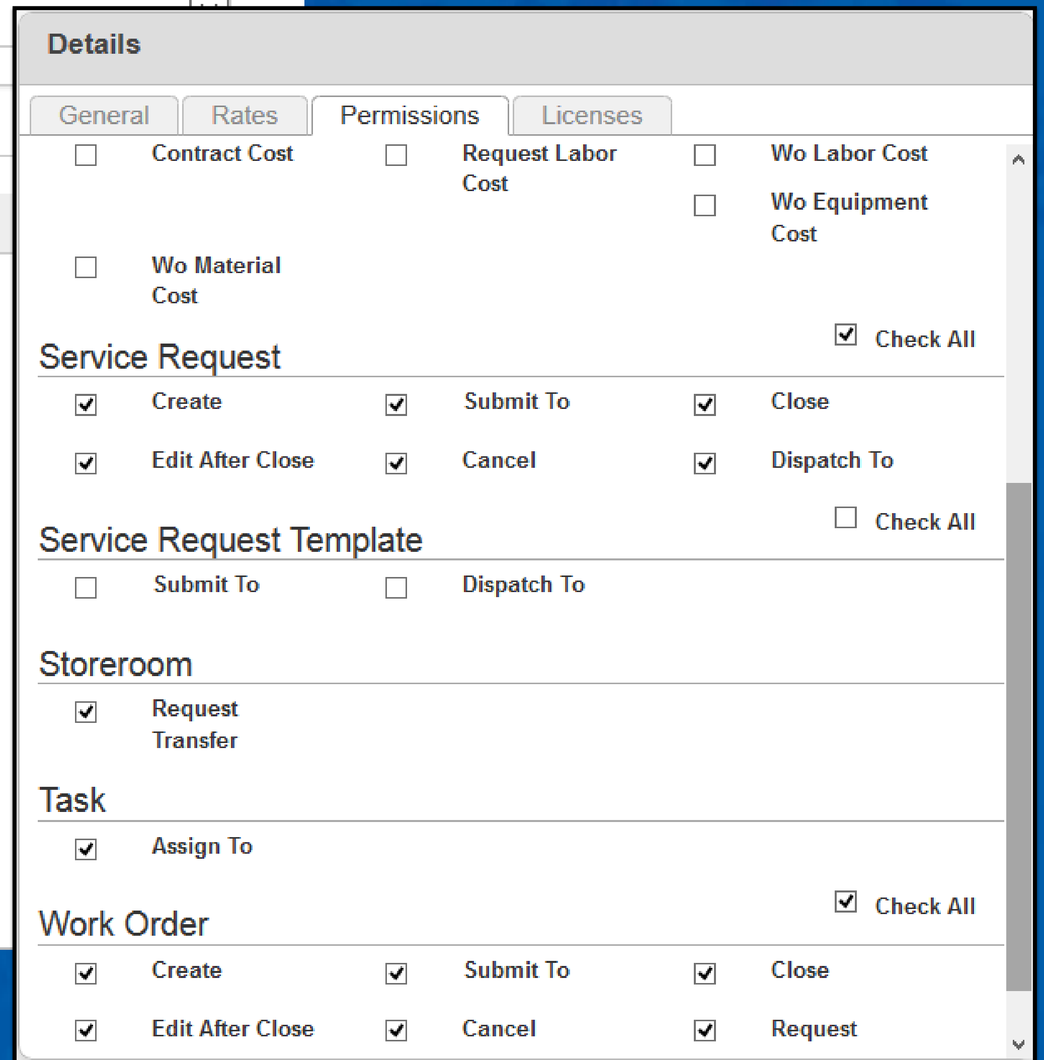


TEMPLATES

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

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

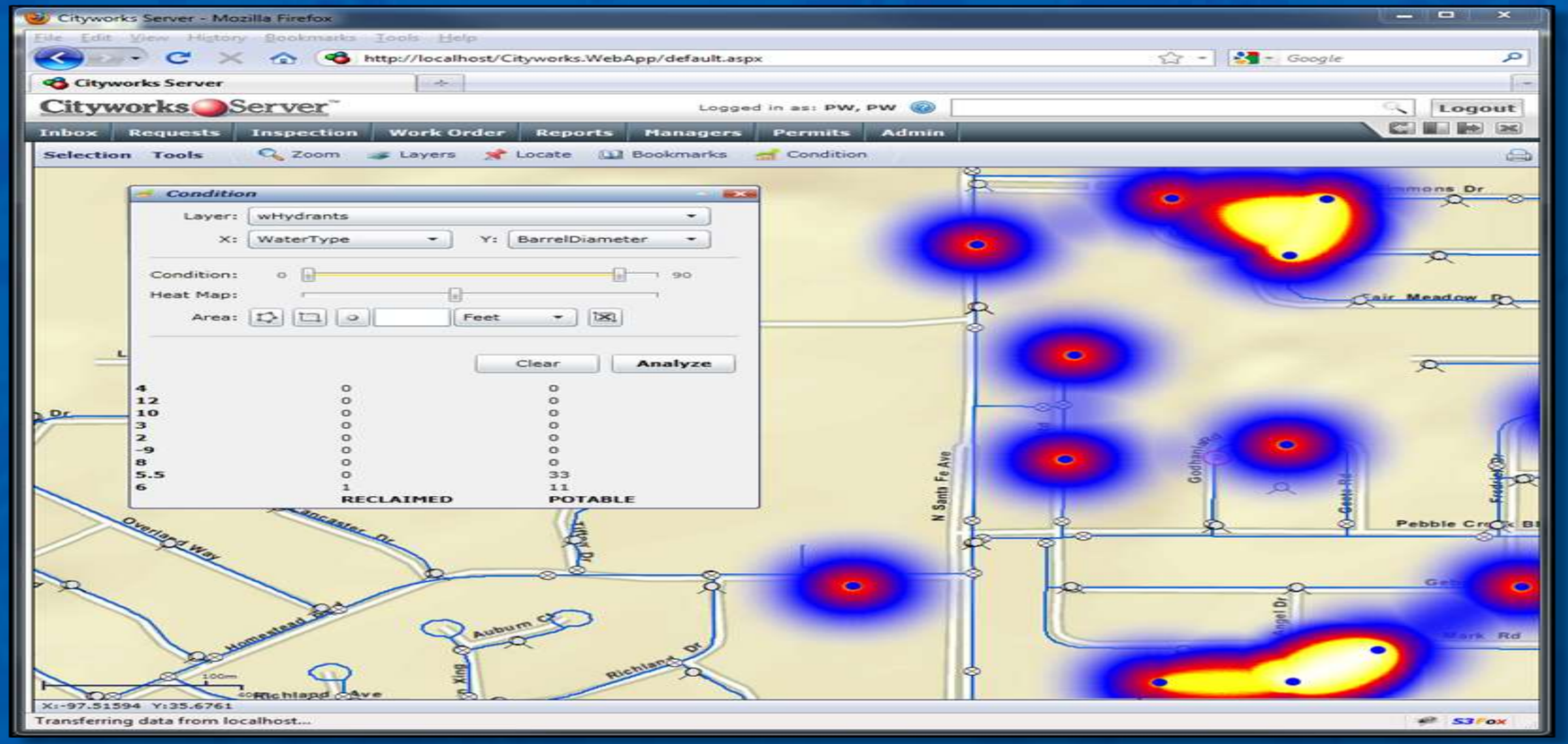




On – The – Spot Decision Making Tool

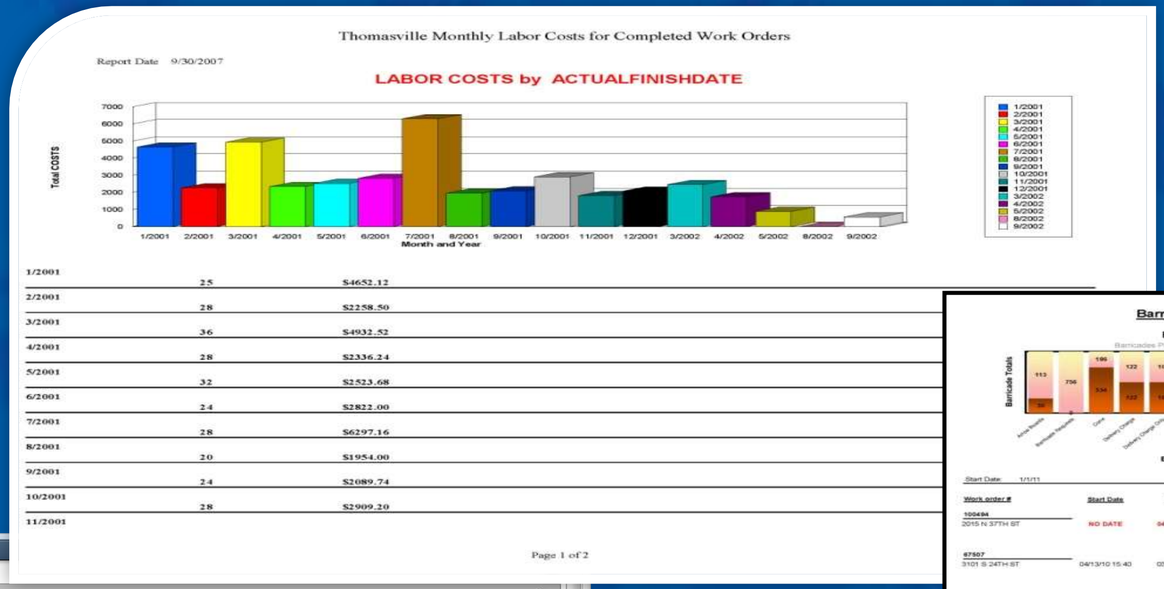
GIS Analysis of Maintenance Activities on Assets

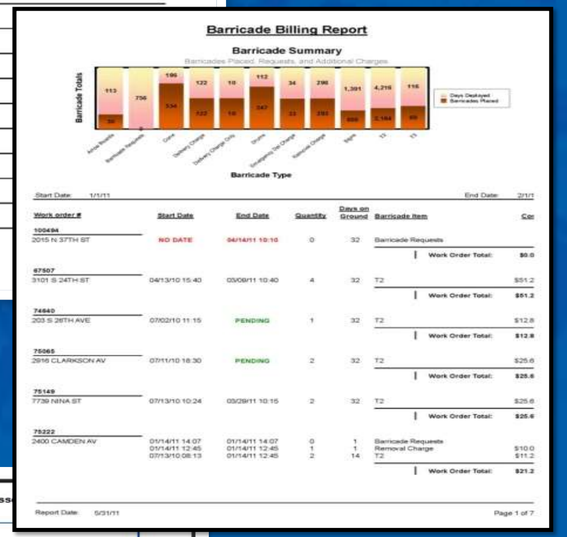
Maintenance scoring by work activity
Condition assessment by inspection activity using Standard Inspection Templates
Update attributes in GIS as you work in the asset management system

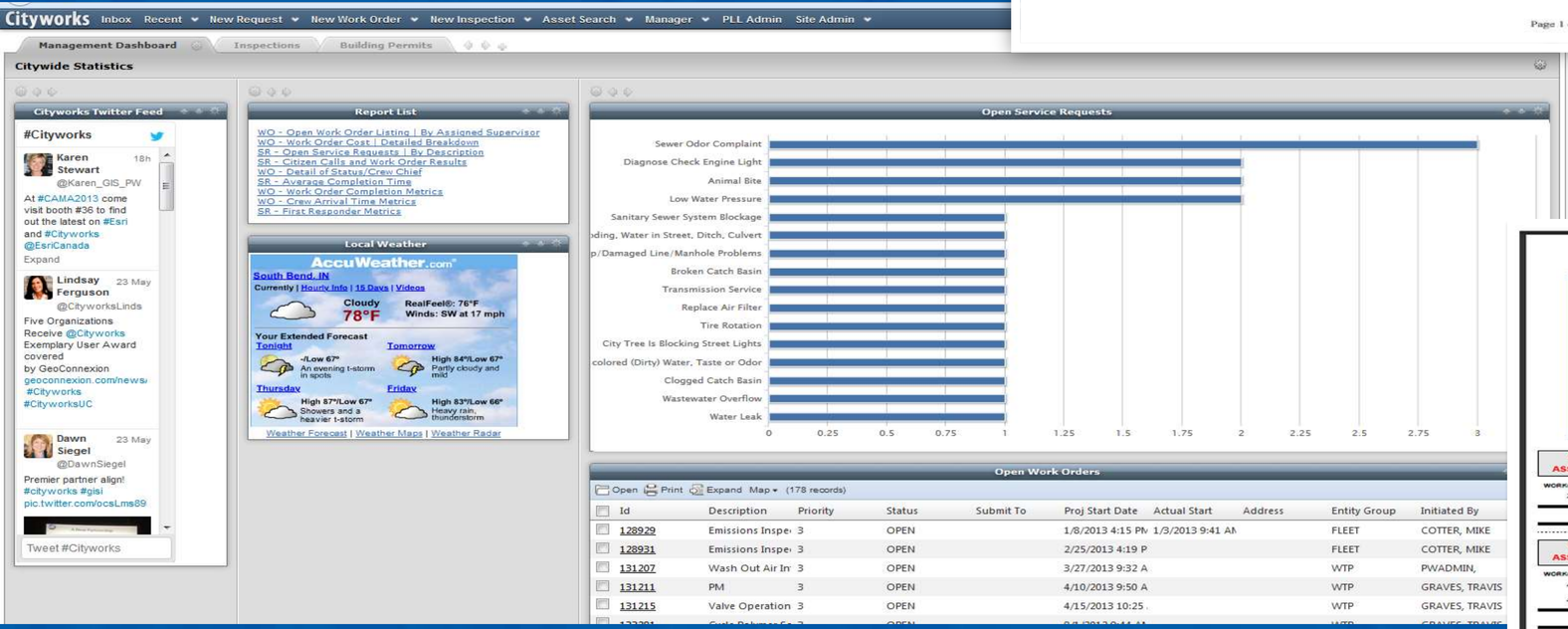


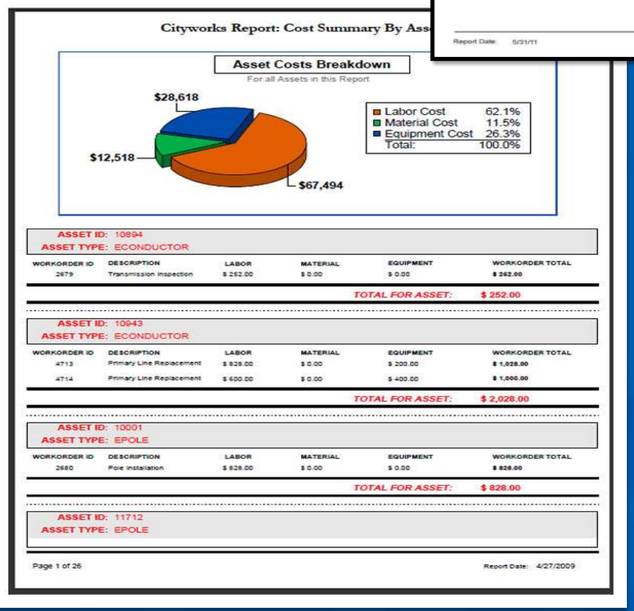
Clustering, frequency, and costs of unplanned maintenance

DASHBOARD & REPORTING









Thank you