

Using an Asset Management System to Optimize Operation and Maintenance Practices

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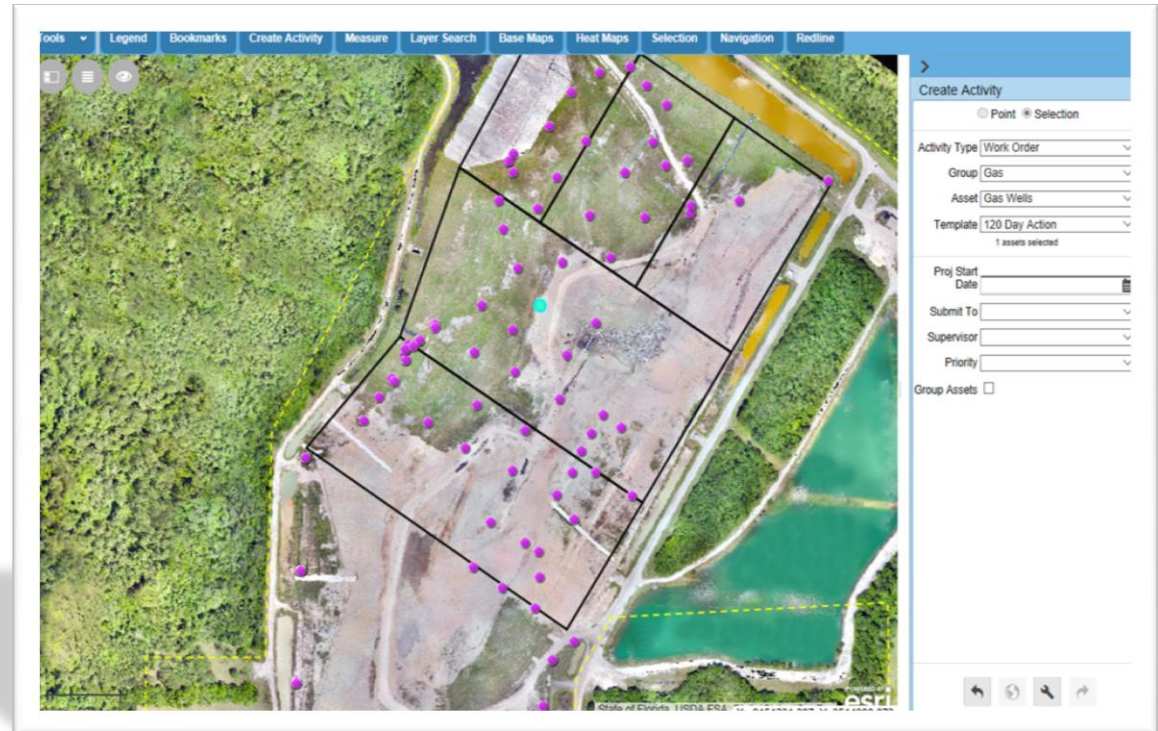
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2019 SWANA Summer Conference | July 30, 2019





- Introductions
- Background
- Implementation
- Vision
- Questions



Introductions



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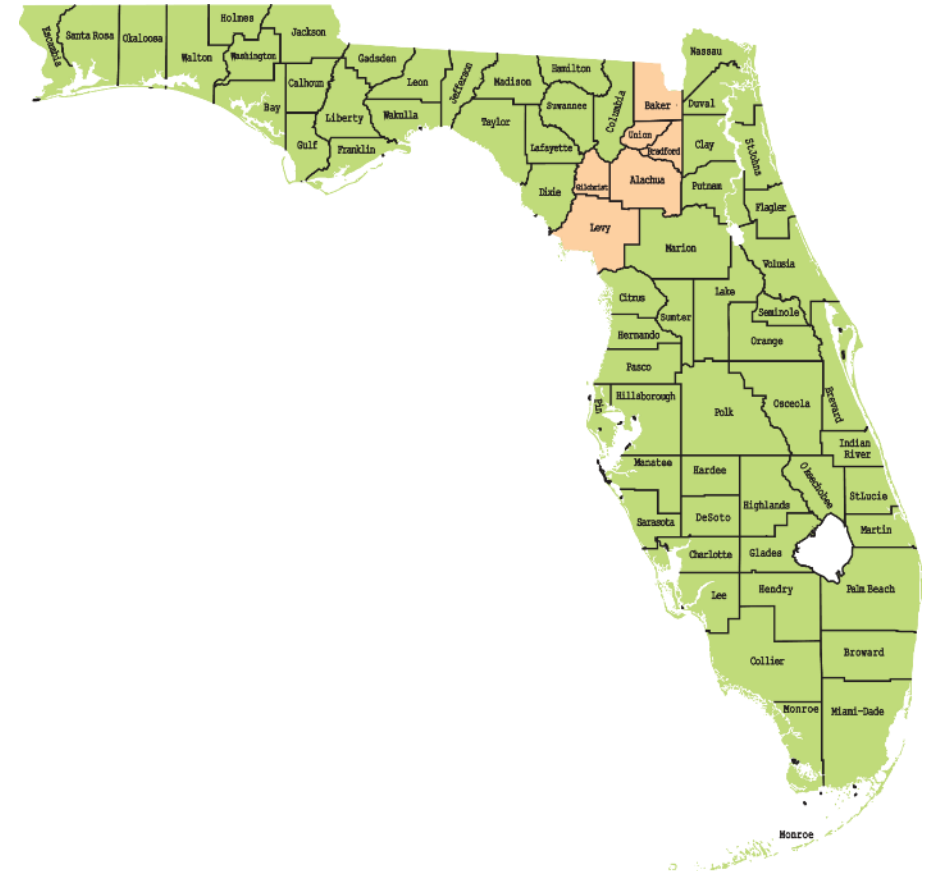
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Mark Nelson, PE
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New River Solid Waste Association

- Florida's first multi-county regional facility created in 1988
- Member Counties:
 - Baker, Bradford, and Union
- Customer Counties:
 - Alachua, Levy, Gilchrist
- Located in Union County
- Class I and III disposal facility opened its gates in 1992.
- 82-acres permitted
- 1000 TPD Class I Facility





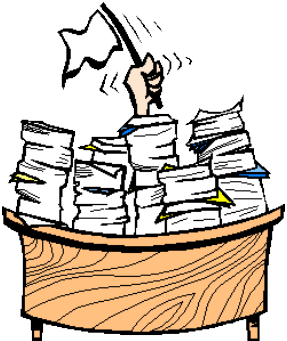
Site Operations

- 82-acres permitted Class I (Cells 1-6)
- Future 18-acre Cell 7
- Eight leachate pump stations
- Active gas collection system with 92 wells and 3000 sfcfm flare
- LFGTE project in progress



NRSWA staff operates and maintains the site THEREFORE...
the TO DO list, Regulatory Requirements and REPORTING paperwork is

- Varied
- Never ending
- Numerous
- Not efficient



THERE HAS TO BE A BETTER WAY

NRSWA looking for tool to help with:

- Managing assets
- Improving maintenance scheduling and response
- Improving efficiency
- Improving recordkeeping
- Improving accountability
- Go paperless

Why now ? ➡ LFGTE project

Why Cityworks?



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- Robust Platform with proven successes
- Easily configured for Solid Waste
- GIS-Centric
 - GIS stores the assets
 - Cityworks stores work events
 - Uses unique asset ID
- Value
 - Scalable deployment
 - Cloud-based (or on premise) – no IT
 - Simple licensing (fixed seats or ELA)
 - Any device, anywhere
 - Local implementation partner familiar w/ NRSWA
 - Easily configured by NRSWA



Cityworks®
Empowering GIS®

Download on the
App Store

ANDROID APP ON
Google play

Cityworks®

Empowering GIS®

Established
1986

Founded
GIS-Centric
1995

Employees
129

Partners
50+

2017 Growth
15%

Client
Retention Rate
99%



Organizations
700+

- Pinellas Co (FL)
- Manatee Co PW (FL)
- St. Johns County
- Venice (FL)
- Pasco Co PW (FL)
- Sumter Co (FL)
- Collier Co (FL)
- Tampa Airport (TPA)
- Tallahassee (FL)
- Panama City (FL)
- St Cloud (FL)
- Kissimmee (FL)
- Palm Bay (FL)
- Gainesville /GRU (FL)
- FCAA

Cityworks implementations

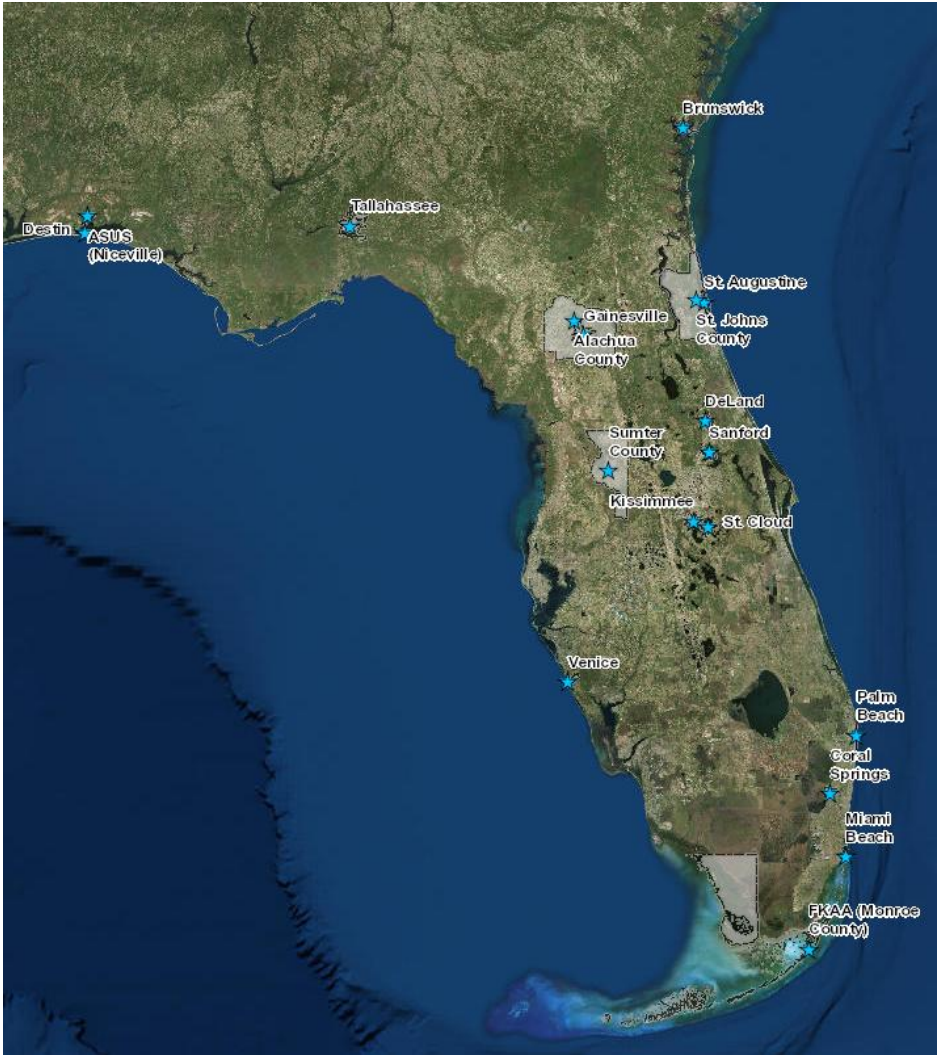


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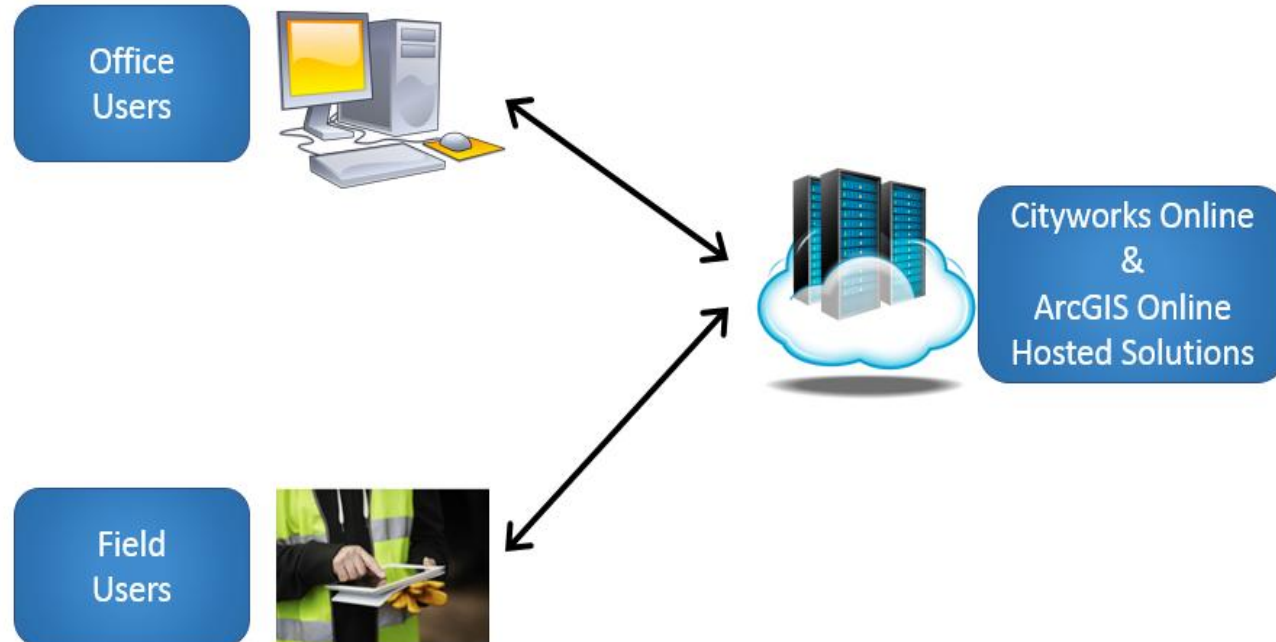
Jones Edmunds Cityworks Clients

Alachua County, FL	City of Sanford, FL
Brunswick/Glynn Co., GA	City of Tallahassee, FL
City of Alachua, FL	City of Treasure Island
City of St. Augustine, FL	City of Venice
City of Coral Springs, FL	City of Weston
City of Deland, FL	Destin Water Users
City of Gainesville, FL	Eglin AFB/ ASUS - Florida
City of Kissimmee, FL	Ft. Riley/ ASUS - Kansas
City of Lauderhill, FL	Florida Keys Aqueduct Authority
City of Miami Beach, FL	Gainesville Regional Util.
City of North Miami Beach, FL	St. Johns County, FL
City of St. Cloud, FL	Sumter County, FL
	And many more...



- Cloud-based
 - Cost-effective
 - No server hardware or IT staff to support
 - Upgrades to latest version included

Hosted GIS and Cityworks AMS solutions

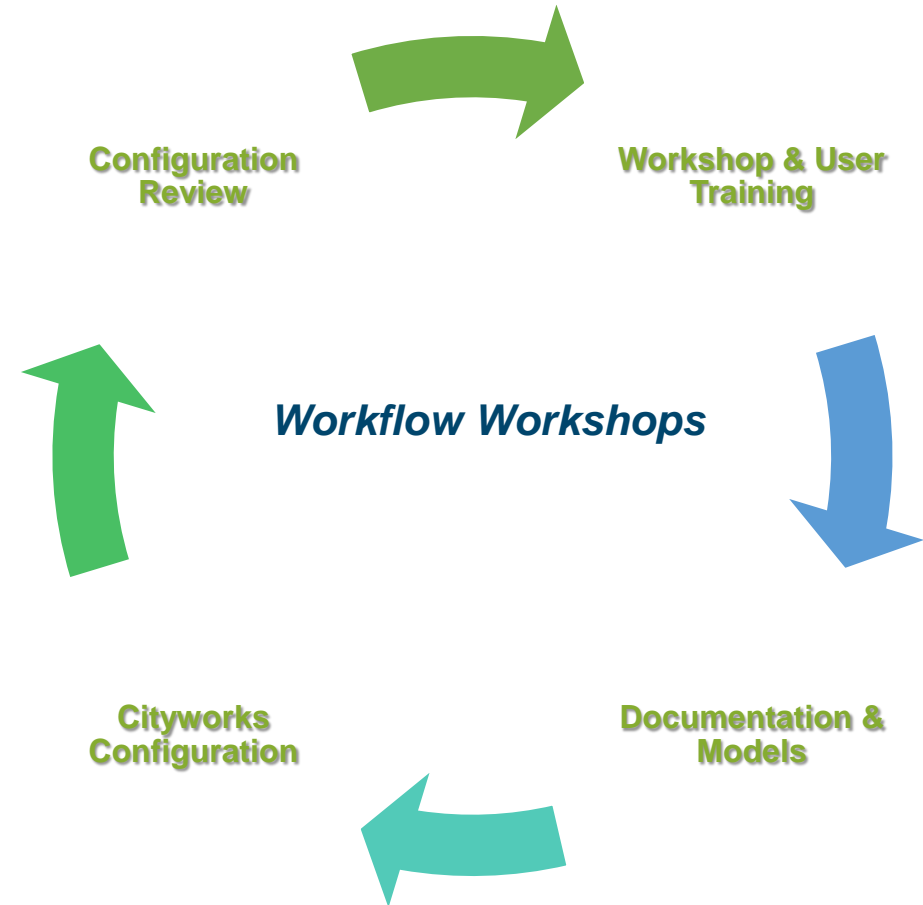


- Initial brainstorming on potential use of Cityworks
- NRSWA initial focus:
 - Gas collection and control system
 - Flare
- Cityworks:
 - Inspections
 - Work Orders



Overall Goal: Improved efficiency and tracking

- Evaluate existing workflows and inspection forms
- Identify priority workflows
 - Well Field Monitoring
 - Landfill Cover Integrity
 - Daily Flare Log
 - Preventative Maintenance
- Assets
 - Gas Wells
 - Landfill Cells
 - Flare



Asset Management

– Work Orders

Initial Configuration:

- Work Order templates
 - Gas Flares
 - Gas Wells
 - Landfill Cells

Select Template

Entity Group: Gas Category:
Feature Object Other

Gas Flare	Daily Flare Log
Gas Wells	Monthly Flare Station PM
Landfill Cells	Quarterly Flare Blower PM
	Weekly Flare Blower PM

Select Template

Entity Group: Gas Category:
Feature Object Other

Gas Flare	Landfill Cover Integrity Monitoring
Gas Wells	Site Repair
Landfill Cells	

Tools Legend Bookmarks Create Activity Measure Layer Search Base Maps Heat Maps Selection Navigation Redline

Selection

Navigation

Create Activity

Activity Type: Work Order

Group: Gas

Asset: Gas Wells

Template: 120 Day Action

Proj Start Date

Submit To

Supervisor

Priority

Group Assets

Results

Selected - GCCS Wells (1) x Selected - Flare x

FACILITYID	X	Y	Status	Location	Warranty Date	Legacy ID	Condition	Condition
EW-109	2693345.13	404599.24	Active					

Cityworks

Inbox Recent Requests New Work Order New Inspection Crew Manager Calendar Reports Projects

Create Reload Entities Clear

Select Template

Entity Group: Gas Category:
Feature Object Other

Gas Flare	120 Day Action
Gas Wells	Landfill Cover Integrity Monitoring
Landfill Cells	5 Day Action
	Monthly Gas Well Monitoring
	Well Repair

General

Address

Status: Open

Priority

Requested By: Supervisor: Kent, Perry

Submit To: McKinney, David

Projected Start

Stage: Actual

Expense Type: Maintenance

Shop: Map Page

Title Number: District

Location

Comments

Instructions: Re-monitor using GEM 5000 (if it fails create 120 day action work order)

X: Y:

Associate Activity: Service Request Search...

Asset Management

– Work Orders



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- Scheduling Preventative Maintenance
- Track gas well monitoring
- Track Repairs
- Improve Response
- Track Costs (Future)
 - Labor
 - Equipment
 - Materials

Assets

Total Entities: 1

<input type="checkbox"/>	Asset	Asset Id	Asset Uid	Location	Warranty Date	Work Completed
<input type="checkbox"/>	GCCS WELLS	9	EW-109			<input type="checkbox"/>

- Pink rows indicate inventory still under warranty.

Update Work Order XY when adding/removing assets? ☒

Map Layer Fields

Reset

Work Cycle

Repeat: **Every**

Interval: **2 Months**

From: **Projected Start Date**

Date Printed: Next Print Date: 7/29/2019

Custom Fields

Category: **Reasons for Repair**

Possible Gas Venting	Yes
Wellhead Damaged	No
Well Casing Damaged(Bent/Lean)	No
Flex Hose Damaged	No
Missing Monitoring Port Caps	No
Well Surging	No
Poor Ground Surface Condition	No
Repair Solution	fixed

Work Order

Description: **Monthly Flare Station PM**

Number: **70**

Entity Type: **FLARE** Change

Category:

Initiated By: **Woolsey, Joel** Date: **06/26/2019 9:59 AM**

Status: **Open** Priority:

Requested By: **Woolsey, Joel** Supervisor: **Kent, Perry**

Submit To: **McKinney, David** Date: **06/26/2019 9:59 AM**

Projected Start: **07/9/2019 10:00 AM** Projected Finish: **07/9/2019 4:00 PM**

Opened By: **McKinney, David** Date: **7/16/2019 9:18:57 AM**

Closed By: Date:

Completed By:

Actual Start: Actual Finish: **07/10/2019 12:00 PM**

Stage: **Actual** Expense Type: **Maintenance**

Comments: Add Comment Sort ▲

no comments

Instructions: **Thermocouple inspection and calibration check (See Joel for further details)**

Resolution: Reactive? ☐

Details

Project: Account:

Project Tree

Contract: Contractor:

Legal Billable: ☐ Contractor Billable: ☐

Update Map: ☒ Cancel Work Order: ☐

Cancelled By: Date:

Cancel Reason:

Units Accom.: **0** Description:

Lock Units Desc.: ☐

Labor Cost: **\$0.00** Material Cost: **\$0.00**

Equipment Cost: **\$0.00** Permit Cost: **\$0.00**

Total WO Cost: **\$0.00**

Asset Management - Inspections



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- Inspections produce better data
- Customizable Forms
- Scored Results
- Manage and Schedule
- Easily Share Results
- Examples:
 - Monthly Gas Well Monitoring
 - Landfill Cover Integrity
 - Flare Logs

The screenshot displays a software interface for asset management inspections. On the right, an aerial map shows a landfill area with numerous purple circular markers indicating inspection points. A yellow dashed line outlines a specific section of the landfill. Overlaid on the left side of the map is a detailed inspection form. The form has a top navigation bar with buttons for 'Inspection', 'Email', 'Print', 'Save', 'Close', and a trash icon. Below this, the 'Inspection' tab is active, showing fields for 'Id: 449', 'Location', 'Status: Open', 'Resolution', 'Insp. Date', and 'Inspected By'. The 'Observations' section includes a 'Well Comments' area with checkboxes for 'Possible Gas Venting', 'Wellhead Damaged', 'Flex Hose Damaged', 'Missing Monitoring Port Caps', 'Bent / Leaning Well', and 'Well Surging'. Below this is a 'GEM Status' dropdown menu. The 'Comments' section has three text input fields labeled 'Observation:', 'Repairs:', and 'Recommendation:'. At the bottom of the form, it shows 'Cond. Score: 0'. The background map shows a landfill with various structures and vegetation.



- Onsite end user training and training materials

Cityworks 15.4.1 Screenshot

Menu: Inbox, Recent, Requests, New Work Order, New Inspection, Crew Manager, Calendar, Reports, Projects, Asset Search, Designer, Resource Proxy Config

User: jwooley

Section: All Open Work Orders

Wo	Description	Priority	Status	Submit To	Proj Start Date	Proj Finish Date	Actual Start	Actual Finish
70	Monthly Flare Station PM		OPEN	McKinney, David	07/9/2019 10:00 AM	07/9/2019 4:00 PM		
74	Quarterly Flare Blower PM		OPEN	McKinney, David	10/28/2019 7:15 AM	10/28/2019 7:15 AM		
84	Monthly Flare Station PM	3	OPEN	Woolsey, Joel	07/9/2019 12:00 PM	07/9/2019 12:00 PM		
88	Landfill Cover Integrity Monitoring	1	COMPLETE	Crews, Richard	07/10/2019 8:00 AM	07/10/2019 8:00 AM	07/9/2019 3:30 PM	07/9/2019 4:05 PM
87	Landfill Cover Integrity Monitoring	3	COMPLETE	Crews, Richard	07/9/2019 2:18 PM	07/9/2019 2:18 PM	07/9/2019 2:30 PM	07/9/2019 4:12 PM

Rows: 10 | 1 - 5 of 5

Section: All Open Inspections

Insp	Inspection Type	Date Inspected	Inspected By	Status	Submit To	Prj Start Date	Finish Date	Work Order Id	Request Id	District	Entity Type	Entity Uid	Entity Sid	Feature Type	Feature Uid	Feature Id	Shop	Resolution	Insp Template
427	Daily Flare Log	07/8/2019 7:12 AM	Andrews, Mitch	COMPLETE	McKinney, David	07/8/2019 7:15 AM	07/8/2019 7:42 AM				FLARE	0		FLARE					49
428	Daily Flare Log	07/9/2019 7:45 AM	Andrews, Mitch	COMPLETE	McKinney, David	07/9/2019 7:15 AM	07/9/2019 8:13 AM				FLARE	0		FLARE					49
429	Landfill Cover Integrity		Crews, Richard	OPEN	Crews, Richard	07/10/2019 8:00 AM		88											
430	Landfill Cover Integrity		Crews, Richard	OPEN	Crews, Richard	07/9/2019 2:18 PM		87											

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Cityworks Server End User Training 15.4.1

June 2019

Presented by:

JonesEdmunds



Benefits of Asset Management Systems



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Why?

- Prolonging asset life by improving decisions about asset rehabilitation, repair, and replacement
- Budgeting focused on critical activities
- Reducing costs for operations and capital expenditures
- Meeting regulatory requirements
- Reduce reliance on institutional knowledge
- Transparency

The image displays three overlapping screenshots of a software interface. The top-left screenshot shows a 'Templates' window with a search bar and dropdown menus for 'Group' (Gas) and 'Type' (Gas Flare), listing maintenance tasks like 'Daily Flare Log' and 'Monthly Flare Station PM'. The top-right screenshot shows another 'Templates' window with 'Group' (Gas) and 'Type' (Gas Wells), listing tasks like '120 Day Action' and 'Monthly Gas Well Monitoring'. The bottom screenshot shows an 'Equipment Hierarchy' window with a tree view listing assets under 'NRSWA', such as 'GEM 5000 Generator' and 'Well/Pipe Pressure Cleaner', with action buttons like 'Add', 'Clone', and 'Delete'.

- Real-time Access Throughout the Organization
- Improved Transparency
- Improved reporting and ad hoc queries – easily exported to excel and pdf
- Prompt completion of work orders in the field
- Field GIS verification and redlines
- Ability to use Cityworks Map to reduce hard copy maps
- Easy to create new Work Order and Inspection templates after Administrator Training



Analysis Tools for better decisions:

- Contract management
- Budgeting processes (task based budgets)
- Resource management
- Inventory Management
- Compliance and other reporting
- Asset Analytics
- KPIs and Dashboards
- Integrated lifecycle modeling options



- Great potential for future use
 - Leachate pumps/collection stations
 - Engines
 - Equipment
 - Tracking Costs




Cityworks x Map x +
https://app02.cityworksonline.com/CLIENT_NewRiverFL/FieldMap

Tools Create Activity Legend Locate Measure Navigation Selection Layer Search Data View

Selection x Navigation x

QUESTIONS?



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