BROKEN ARROW

Where opportunity lives

Broken Arrow Fire Department

Hydrant Inspection Project

MESHEK & ASSOCIATES, LLC

1437 S. Boulder Ave. Suite 1550 | Tulsa, Oklahoma 74119 | 918.392.5621 | MESHEKENGR.COM

Annual Hydrant Testing and Inspections

Broken Arrow Fire Department

- Serve 110K citizens in Tulsa and Wagoner counties
  - Provide fire protection and advanced life support EMS
- 173 Sworn FF
- 7 stations, 3 shifts
- ~6,000 Fire Hydrants

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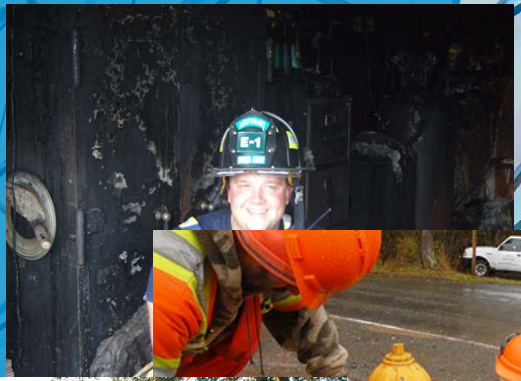
Who are the stakeholders?

- ➜Firefighters
- ➜Water Department
- ➜CITIZENS!



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Project Goals

➜Make the firefighter's job easier

➜Capture high quality data

Old Paper-Based Process

- ➜ Flush, flow, and static pressures
- ➜ Inspection
- ➜ Email Work Order
- ➜ File Results

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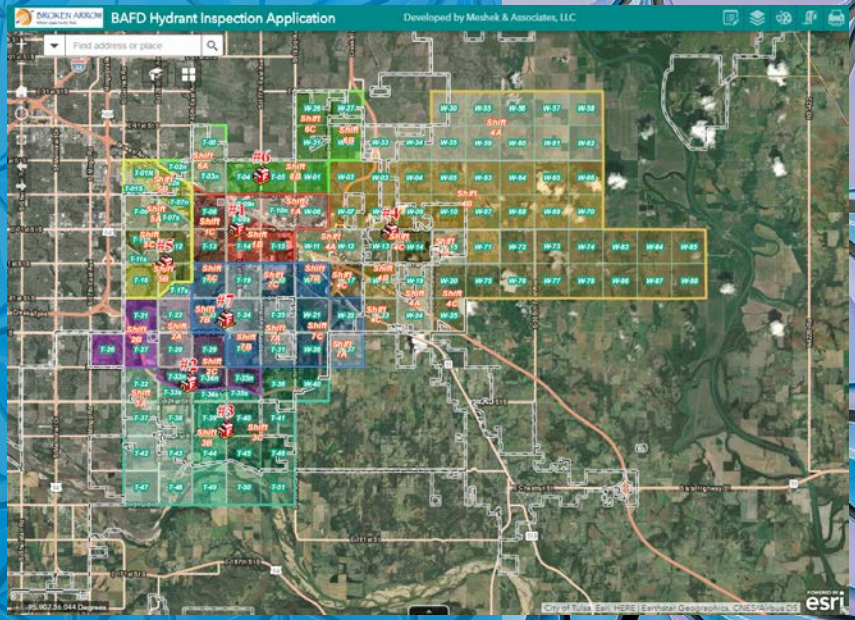
Finding a Solution

- ➜ Water Department Data
- ➜ Meshek Connection
  - Access to Water Dept GIS layer
  - iPad and desktop access
  - Log inspection
  - Launch work orders



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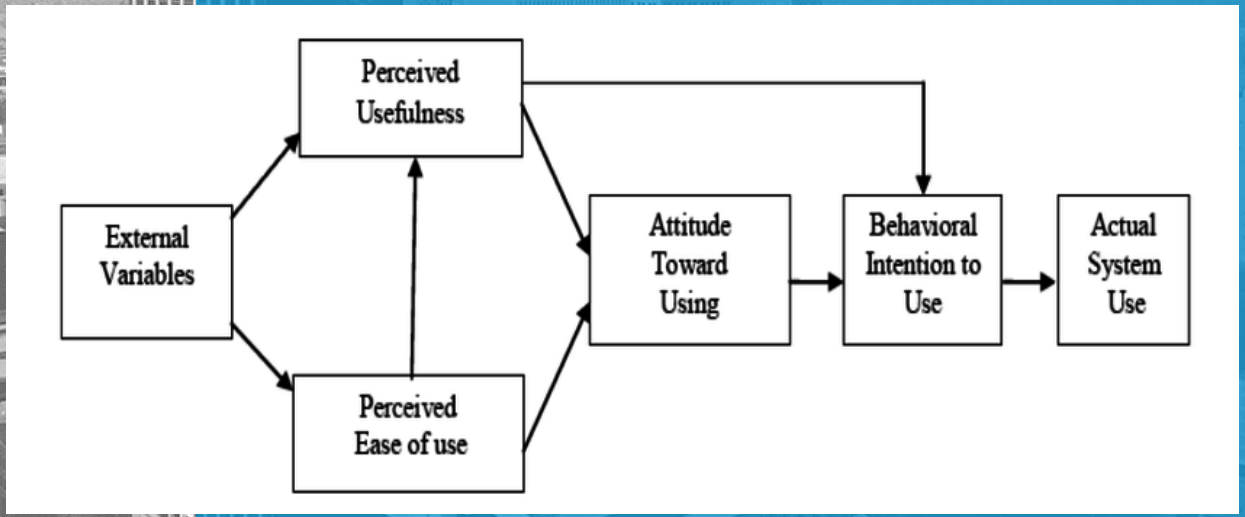
Keys to Success & Guiding Principles

- Davis Technology Acceptance Model
  - Perceived ease of use
  - Perceived usefulness



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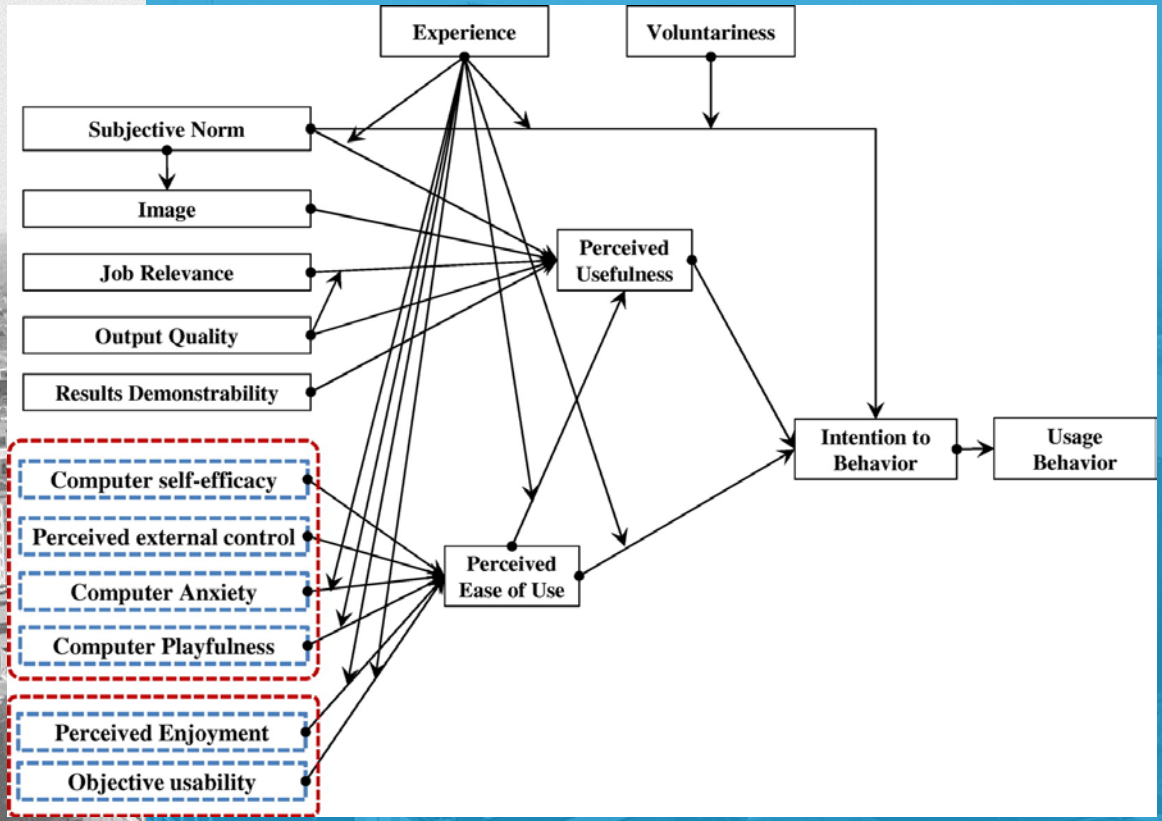
Keys to Success & Guiding Principles



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Keys to Success & Guiding Principles

- Lean startup principles (Eric Ries, 2008)
  - Minimum viable product MVP
  - Iterative approach
    - Stay agile
    - Prototypes
      - Beta tests with novice users
    - Pivot
    - Fail forward

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Our company was founded in 1988 by Janet Meshek, PE, CFM, SR/WA, to provide superior consulting engineering services and GIS solutions to public and private clients.

"I've always had a passion for helping people. Our company mission brings both together every time we deliver solutions that improve our way of life."

Janet Meshek, PE, CFM, SR/WA
Company Founder

MESHEK
& ASSOCIATES, LLC

BAFD Hydrant Inspections - Goals

- ➜ Utilize Existing GIS Data & Hardware
  - Newly updated water network
  - iPads issued to Engines
- ➜ Increase Inspection Efficiency
  - Easier
  - Better Data Quality
- ➜ Utilize Existing Staff
  - Simple, Intuitive design
  - Training & Support
- ➜ Support Maintenance Requests
  - Operational Efficiency

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Replace Paper-Based processes

Mile Section TO 2017 Hydrant Test

Test Date	Shift	Address	Stamped	Make	Static	Residual	Notes
4-19	C	Sandusky & [illegible]	[illegible]	Mueller	90	60	
		1903 N Rockport	[illegible]	Mueller	90	60	
		1909 W. Rockport St.	013	Mueller	90	60	
		2017 W Rockport St.	012	Mueller	90	60	
		4200 N. Spruce Ave	019	Mueller	90	60	
		1809 W. Vail St	047	Mueller	90	60	
		1921 W. Vail St.	[illegible]	[illegible]			
		4401 N. Spruce					
		4405 N. Spruce					
		1907 W. Woodbury					
		4605 N. Redbud Ave					
		4621 N. Redbud Ave					
		1913 W. Xenia					
		4609 N. Sycamore					
		4621 N. Sycamore					
		2017 W. Xenia					
		2029 W. Walnut					
		2013 W. Woodbury					
		2105 W. Vail					
		4321 N. Walnut					
		2117 W. Vail					

	A	B	C	D	E	F	G	H
1	Section #	Address	Hydr #	Problem Described	Date Repaired	Initials		NOTES
2	t0	4321 north walnut avenue	t0-052	landscaping planted close	12/14/2011	JH	fixed	
3	t0	4701 North Maple Avenue	T0-061	Missing Cap	12/14/2011	JH		replaced cap
4	t0	1512 West Ulysses Street	T0-064	Corner of Maple Ave and Ulysses Street-No Problems Described	12/14/2011	JH	Repair ASAP	no problem found
5	t0	4108 North Lions Place	T0-072	Dry Hydrant	12/14/2011	JH		no problem found
6	t0	1909 West Rockport	T0-013	Steamer too tight to open	12/14/2011	JH	Repair	removed caps
7	t0	4401 North Poplar Avenue		Dry Hydrant	12/14/2011	JH		no problem found
8	t0	1409 West Omaha Place	T0-003	Couldn't flow, Stem is too tight, Nut on top is loose	12/14/2011	JH	FD Fix	
9	t0	3957 North Narcissus Avenue	T0-024	Flushed 3D Zone				
10	t0	4100 North Maple Avenue	T0-030	Inside the Turnabout Median - Hard to turn on	12/14/2011	JH		cleaned & greased
11	t0	4619 North Redbud Avenue	T0-041	Located on Empty Lot;Overgrown, Unable to Access	12/14/2011	JH		lot has been mowed
12								
13	t2	3060 North Hemlock Circle	T2-008	Hard to Turn Stem	12/14/2011	JH		cleaned & gerased
14	t2	2512 North Hemlock Circle	T2-012	Could Not Remove Cap Facing North to Check Residual	12/14/2011	JH		removed caps
15	t2	2601 North Hemlock Court	T2-014	Dead Hydrant	12/14/2011	JH		no problem found
16	t2	2400 North Aspen	T2-016	Could Not Remove Cap Facing East to Check Residual	12/14/2011	JH		removed caps
17	t2	2300 West Albany Street	T2	Steamer Won't Open	12/14/2011	JH		removed caps
18								
19	t3	3005 N. Battlecreek Drive	T3-015	hard to turn. Leaking from base of hydrant.	12/15/2011	TK		replaced gasket
20	t3	3401 N. Battlecreek Drive	T3-017	unable to turn stem	12/22/2011	RG		cleaned & greased
21	t3	3601 N. Battlecreek Drive	T3-018	hard to turn.	12/22/2011	RG		cleaned & greased
22	t3	1700 W. Granger Street	T3-034	very stiff	12/22/2011	RG		cleaned & greased
23	t3	3707 N. Elm Place	T3-037	very stiff	12/22/2011	RG		cleaned & greased
24	t3	1300 W. Omaha Street		cant find hydrant	12/22/2011	RG		300' North of water tank
25	t3	3427 N. Ironwood Ave	T3-042	Major Leak at bottom flange - OUT OF SERVICE				
26	t3	3300 N. Elm Place	T3-044	Major Leak at bottom flange - OUT OF SERVICE	12/22/2011	RG		replaced gasket
27	t3	3706 N. Ironwood Place	T3-047	Bushes close - they need to be removed.				
28	t3	1900 W. Concord Circle	T3-067	Tight - WILL NOT OPEN	12/22/2011	RG		cleaned & greased
29	T3	2144 W. Albany Street	T3-070	WILL NOT OPEN - STEAMER STUCK ALSO	12/22/2011	RG		cleaned & greased
30								
31	t4	Centennial Middle School	T4-032	2 1/2 Threads on North Side Crossthread	12/22/2011	RG		No problem found
32	t4		T4-025	Needs to be Raised				No problem found
33	t4		T4-026	Dead Hydrant				No problem found

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ESRI Solutions
www.Solutions.ArcGIS.com

https://solutions.arcgis.com/local-government/help/fire-hydrant

ArcGIS Solutions for Local Government | GALLERY | COMMUNITY | DOCUMENTATION | SEARCH | esri

Fire Hydrant Inspection

Home | Get Started

Overview

Fire Hydrant Inspection is a configuration of Collector for ArcGIS that can be used by fire personnel to inspect fire hydrants and ensure that every hydrant in a district performs properly and reliably when an emergency occurs. It also enables fire fighters to maintain and improve their knowledge of first due areas so they can easily locate hydrants and access or open them when needed.

Fire Hydrant Inspection offers a map-based view of an inspection program that allows fire operations staff to load hydrant information provided by their utility, assign inspections to a station or shift crew, and publish fire hydrant inspection maps that can be used to conduct field inspections. If you don't currently have hydrant information in your GIS or you discover missing hydrants while in the field, you can collect missing hydrants with your location-aware smartphone.

REQUIREMENTS | WHAT YOU GET | WHAT'S NEW | VIEW APPLICATION

New automated deployment option

This ArcGIS Solution can now be quickly deployed in your organization with the ArcGIS Solutions Deployment Tool.

- ArcGIS Solutions Deployment Tool

You may be interested in

ArcGIS for Local Government includes several related maps and apps that also can be configured in your organization:

- Fire Service Maps
- Water Utility Network Editing and Analysis

ESRI Solutions
www.Solutions.ArcGIS.com

https://solutions.arcgis.com/utilities/water/help/hydrant-maintenance-inspection

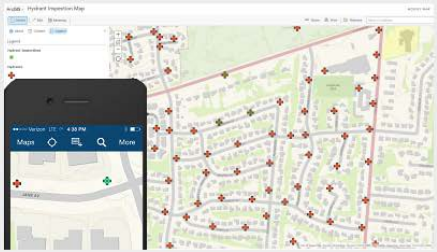
ArcGIS Solutions for Water ▾ GALLERY COMMUNITY DOCUMENTATION SEARCH esri

Hydrant Maintenance Inspection

Home | Get Started

Overview

The Hydrant Maintenance Inspection solution modernizes the paper report for Hydrant Maintenance Inspections by using a smartphone or tablet device. By using a map view of hydrants, field crews are able to record scheduled or ad hoc Hydrant Maintenance Inspections on any mobile device using the Hydrant Maintenance Inspection schema.



Hydrant Maintenance Inspection is a configuration of ArcGIS. Once configured, the Hydrant Maintenance Inspection map can be accessed by field crews using the Collector for ArcGIS application to view hydrants and record inspections.

REQUIREMENTS | WHAT YOU GET | WHAT'S NEW | DOWNLOAD

You may be interested in

- Water Distribution Network
- Water Leak Investigator

ESRI Solutions
www.Solutions.ArcGIS.com

- ➜ Custom Solution
  - Inspections
    - Needs to match previous paper Efforts
    - Maintain Historic Records
    - Update Missing Information
      - Address
      - Manufacturer
  - Maintenance Requests
    - Log all Maintenance Issues
    - Get All Hydrants Fixed
    - Automate Maintenance Requests
      - Simplify Work Order Entry
      - Track Maintenance

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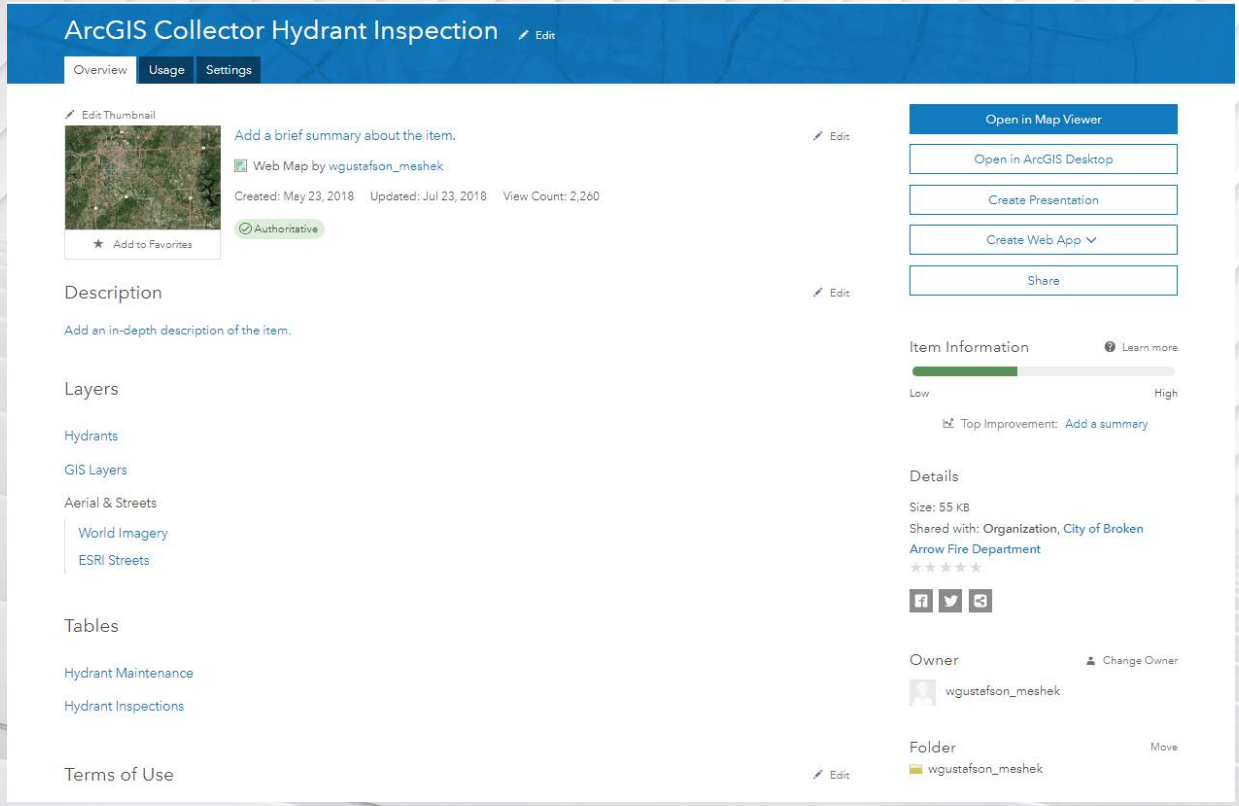
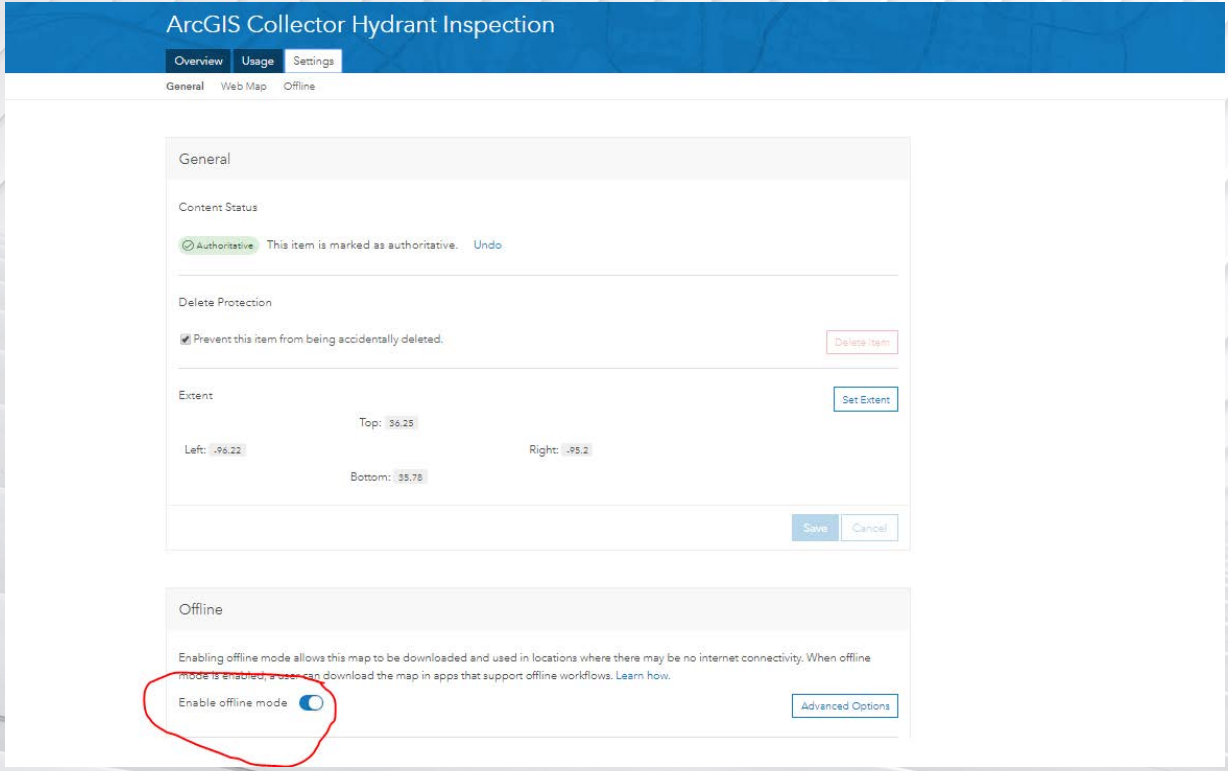
Configure Enterprise Geodatabase

- Water Utilities Data Model
  - wHydrants FC
    - =Attachments
  - Create Relationship Classes
    - H_Inspections
      - Attachments
    - H_Maintenance
      - Attachments
  - Customize .gdb Schema
    - Domains = Collector Dropdowns

Configure Web Map in ArcGIS Online



Ensure Offline Mode Enabled



Demonstrations
—
ArcGIS Collector
—
Operations Dashboard

Thanks!

Any questions? Contact us!

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& ASSOCIATES, LLC

Meshek Process

ASSESS	**Examine existing practices and workflows to determine necessary tasks.**
RESEARCH	Research current best practices and applicable standards to ensure necessary tasks are completed.
CONFIGURE	
TRAIN	We consistently strive to increase resiliency and sustainability in all we do. Together we build a better tomorrow.
MANAGE	We consistently strive to increase resiliency and sustainability in all we do. Together we build a better tomorrow.