How Evolving GIS Technology Addresses the Leonel Rondon Pipeline Safety Act

A Digital Utility® Solution

NGA Spring Operations Conference

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JULY 31, 2019

SENATOR MARKEY SECURES PASSAGE OF "LEONEL RONDON PIPELINE SAFETY ACT" IN SENATE PIPELINE SAFETY REAUTHORIZATION BILL

Introduced April 9, 2019, and passed on Dec 22, 2020

- **Includes 7 key points for pipeline operators regarding regulatory compliance**
- **What is your organization doing to prepare?**
- **What technology can you leverage to better address?**

1. DIMP, Cast Iron, MAOP

Each distribution integrity plan (DIMP) developed by an operator of a gas distribution pipeline to include the risks from the presence of cast iron pipes and mains and risks that may result from the operation of a pipeline above the ***maximum allowable operating pressure (MAOP)***

UDC Gas Compliance Manager® (CMGR) / DIMP

- Cast Iron Leak Survey CMGR

Synergi / DNVGL and/or Apps within your GIS
to calculate values based on MAOP

- Build out Calculator using GIS values and MAOP
- Implement Calculator defaults if GIS is missing data

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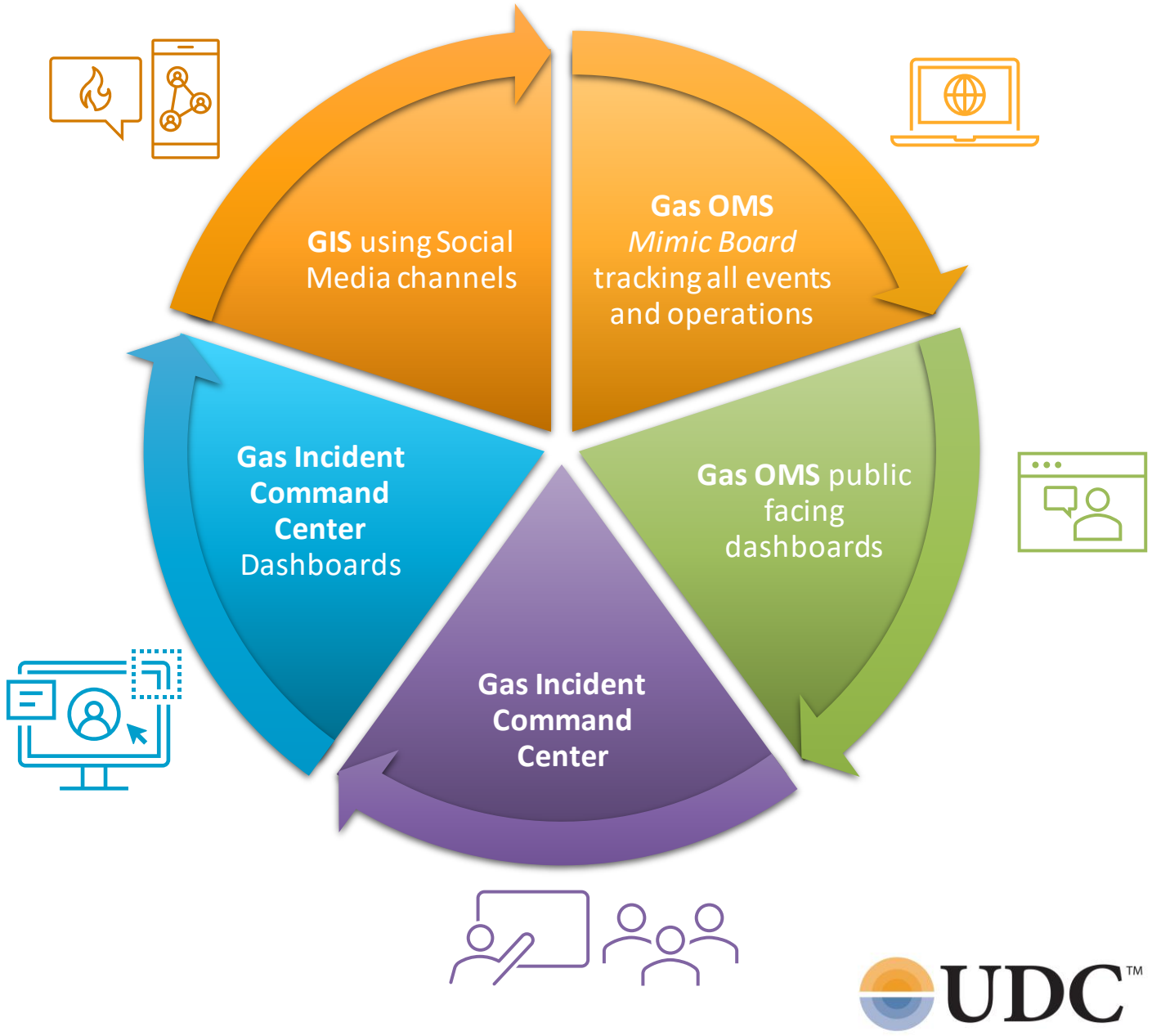
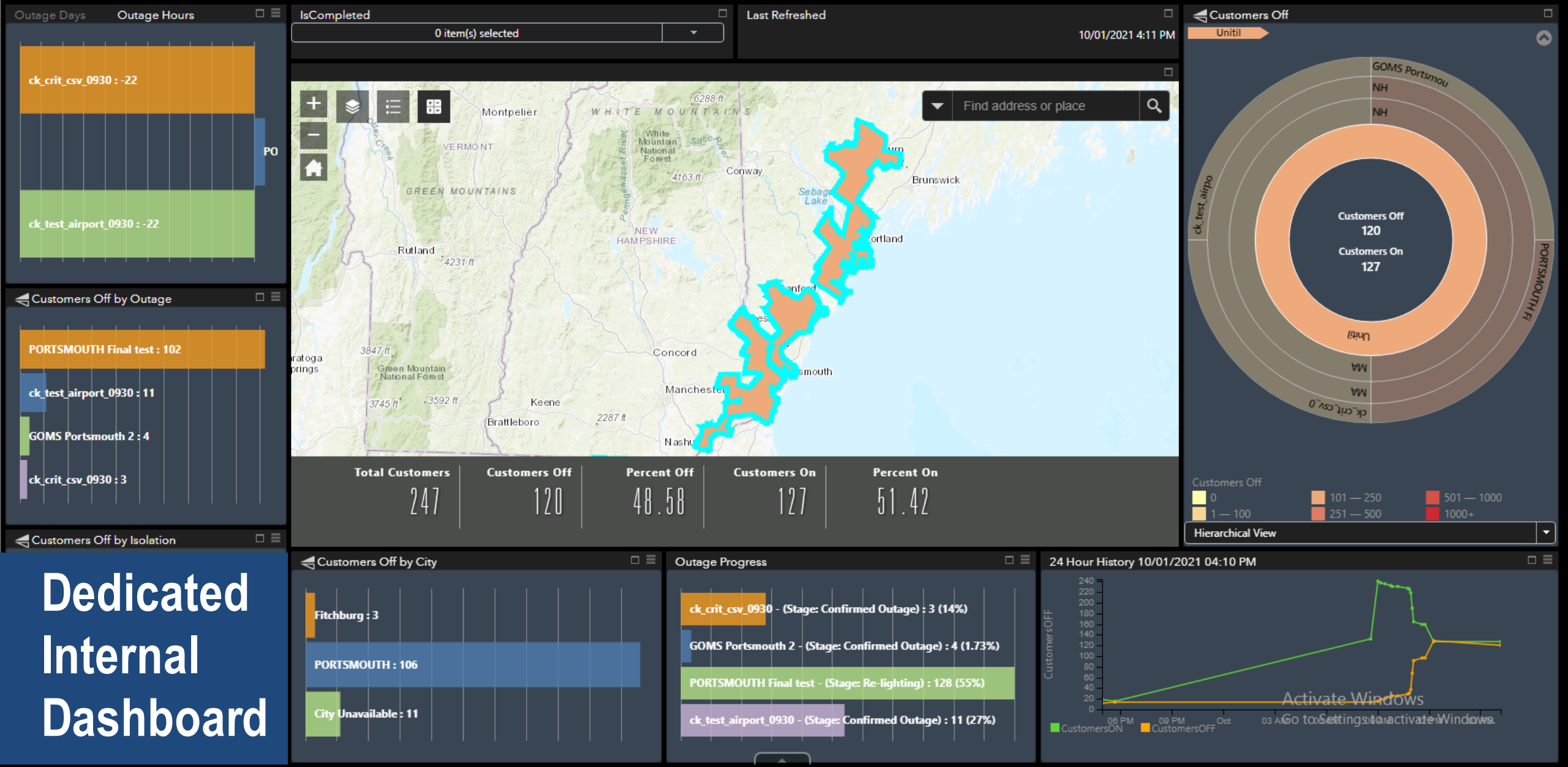
2. Emergency Communication Protocols

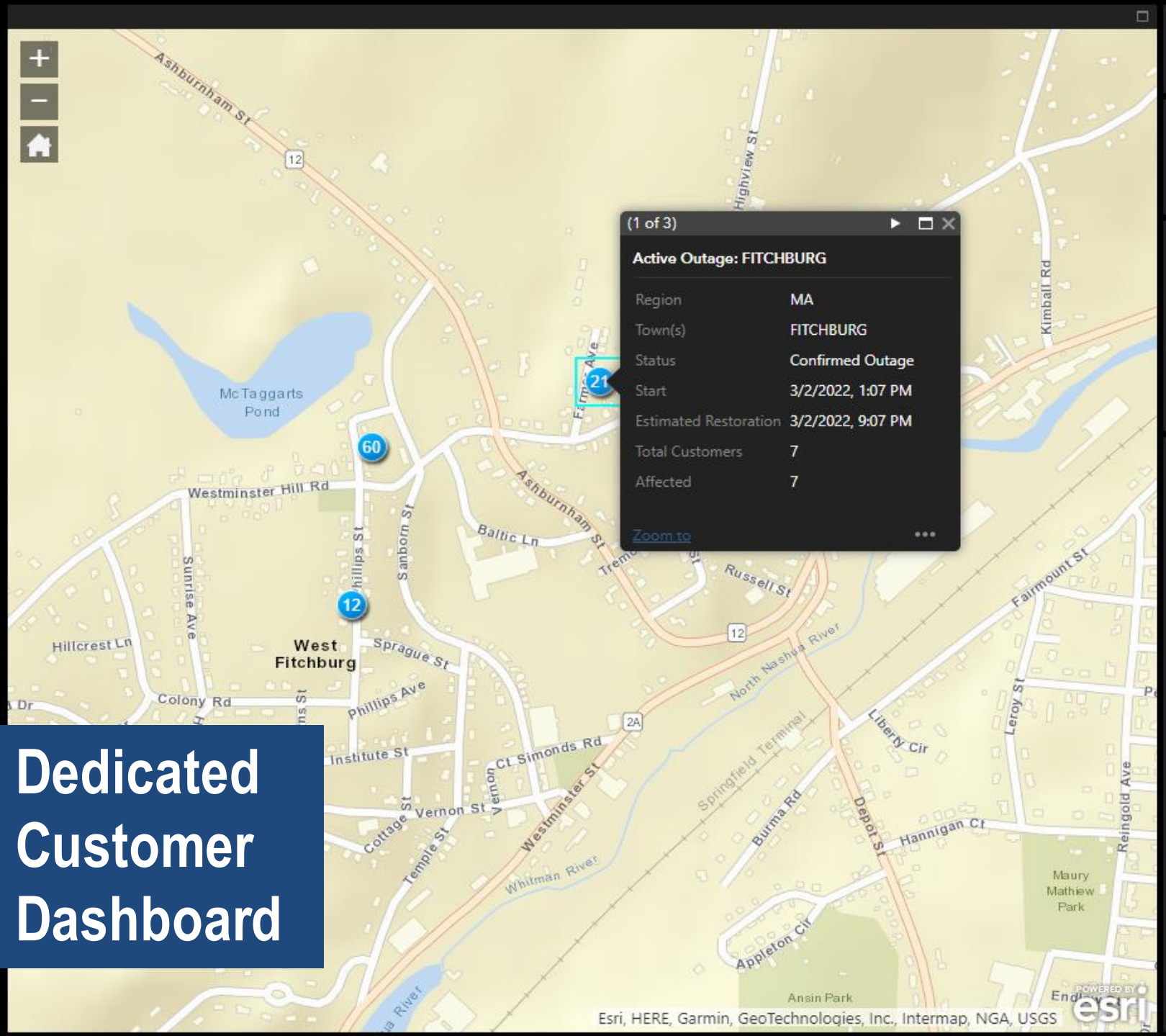
Operators to establish protocols for communicating with fire, police and other relevant public officials after a disaster that includes fires, explosions or one or more fatalities





Dedicated Internal Dashboard

Dedicated Customer Dashboard



Data Refreshed

03/14/2022 12:47 PM

108 Affected	11 Outages

Affected by Region

Region	Affected	Served
MA	31	16,474
ME	7	34,759
NH	8	35,250

Showing 1 to 3 of 3 entries

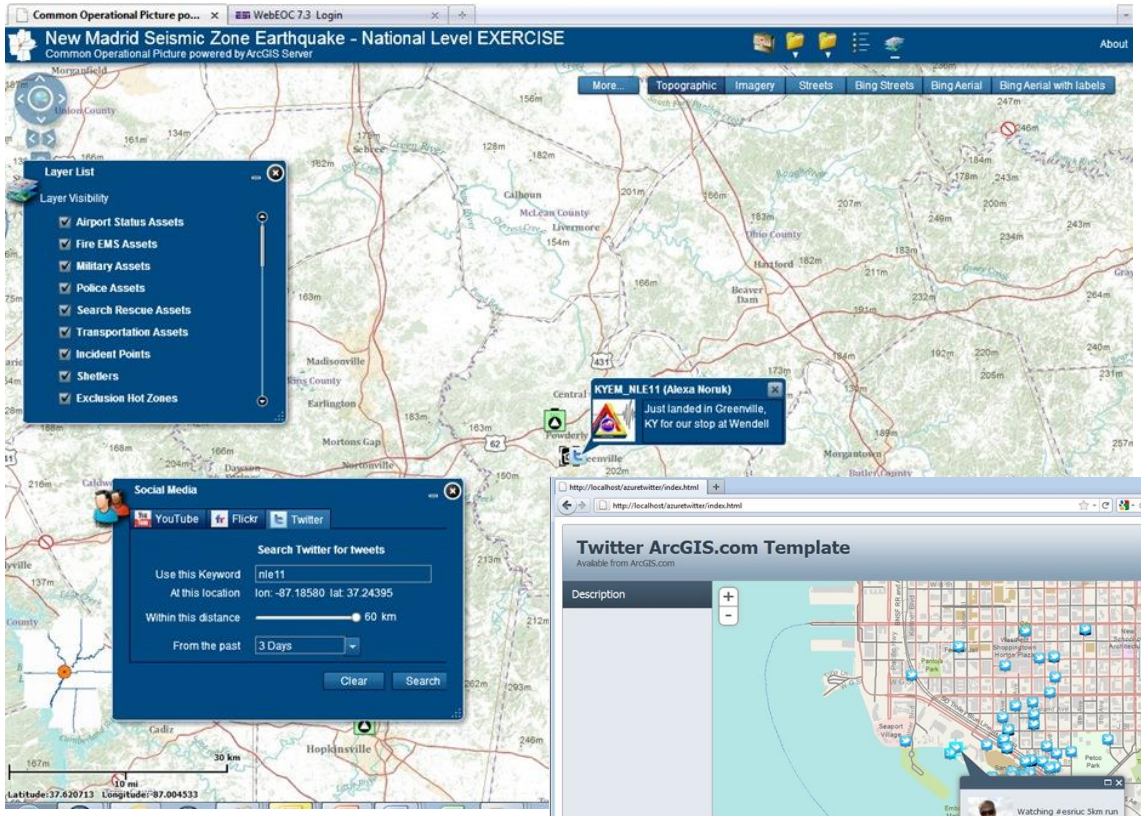
Affected by Street

Street	Estimated Restoration	Affected
ASHBURNHAM ST, FITCHBURG	03/02/22 08:52 PM	2
PHILLIPS ST, FITCHBURG	03/02/22 08:52 PM	4
SANBORN ST, FITCHBURG	03/02/22 08:52 PM	1
SIMONDS RD, FITCHBURG	03/02/22 09:09 PM	4
SPRAGUE ST, FITCHBURG	03/02/22 09:07 PM	7
SUNRISE AVE, FITCHBURG	02/25/22 10:02 PM	8
TEMPLE ST, FITCHBURG	02/25/22 10:02 PM	7
WESTMINSTER HILL RD, FITCHBURG	03/02/22 08:52 PM	13

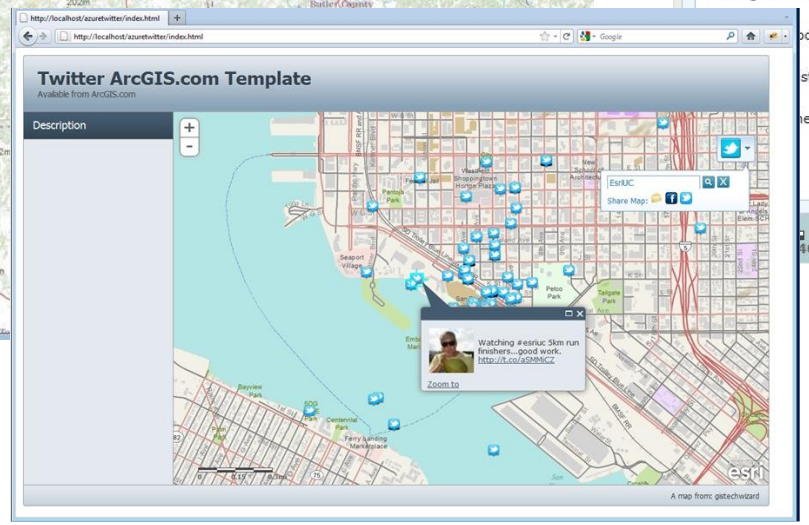
Showing 1 to 8 of 8 entries

Incorporating Social Media

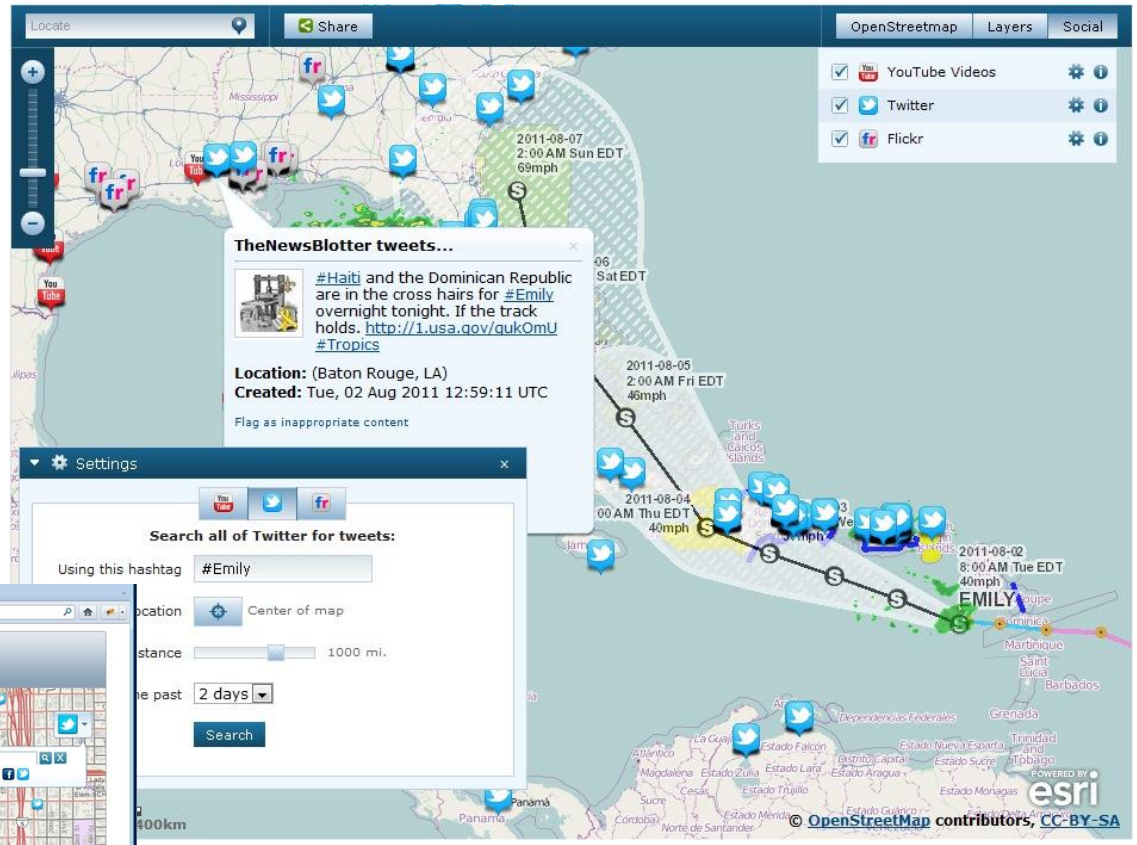
Sample Social Media Tools from Esri



Social Media Widget



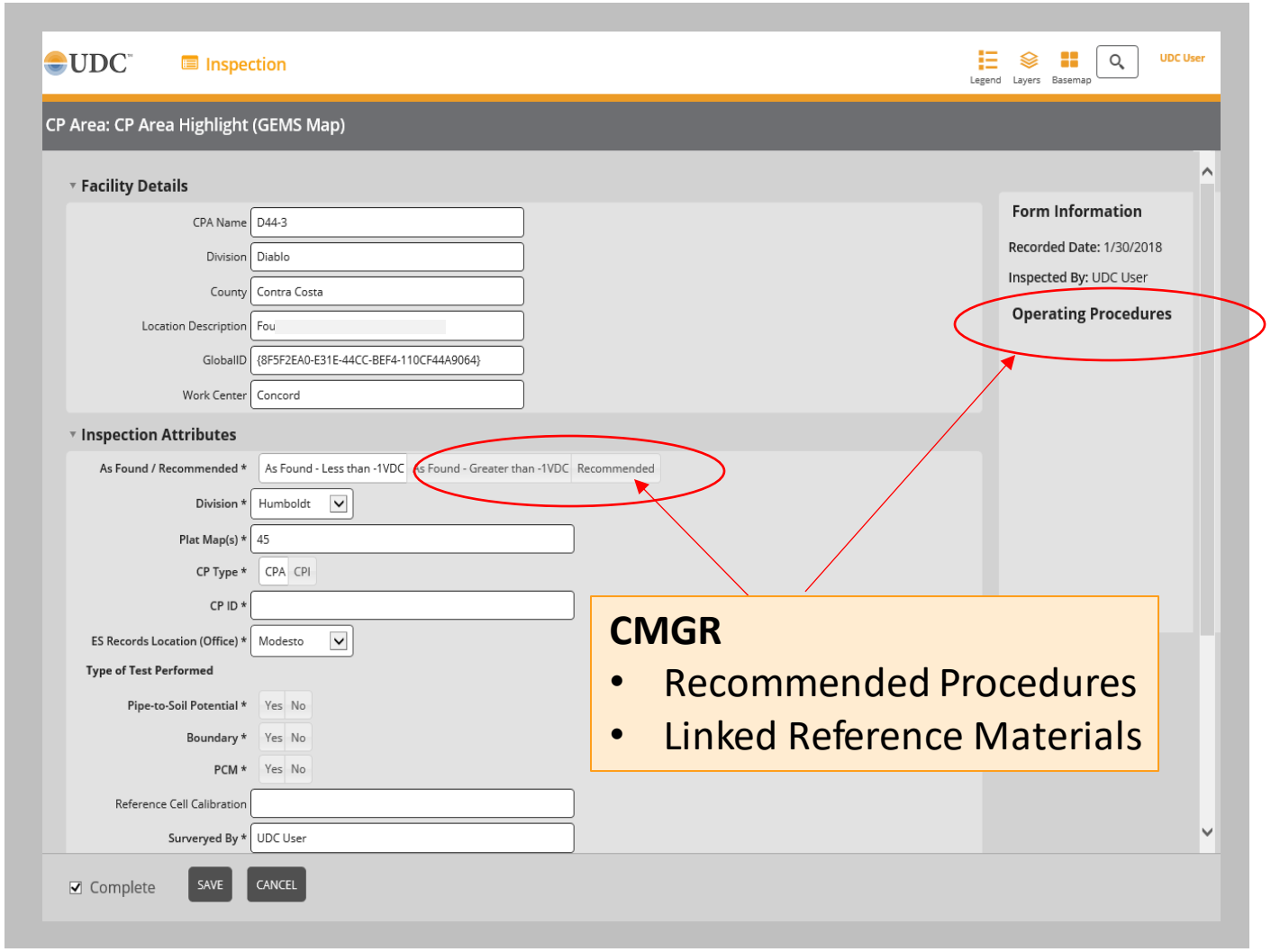
Twitter Template



Public Information Map

3. Emergency Procedural Manuals

Procedural manuals for operations, maintenance, and emergencies to include certain written procedures



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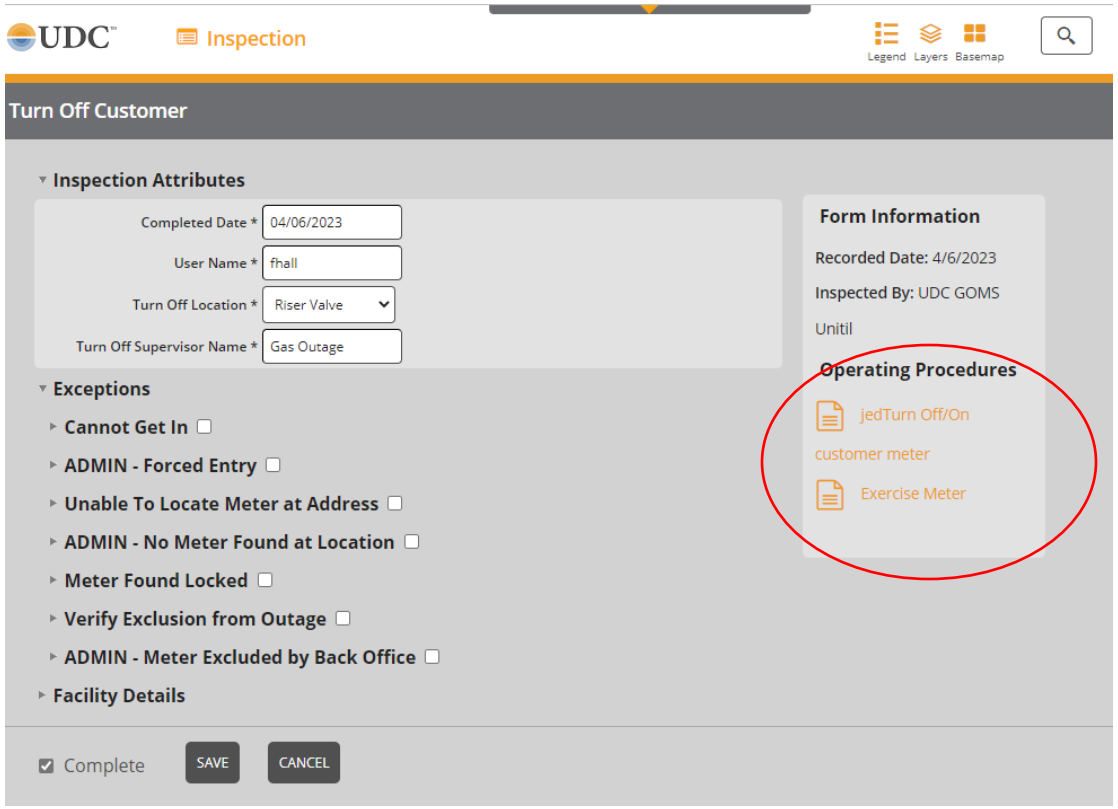
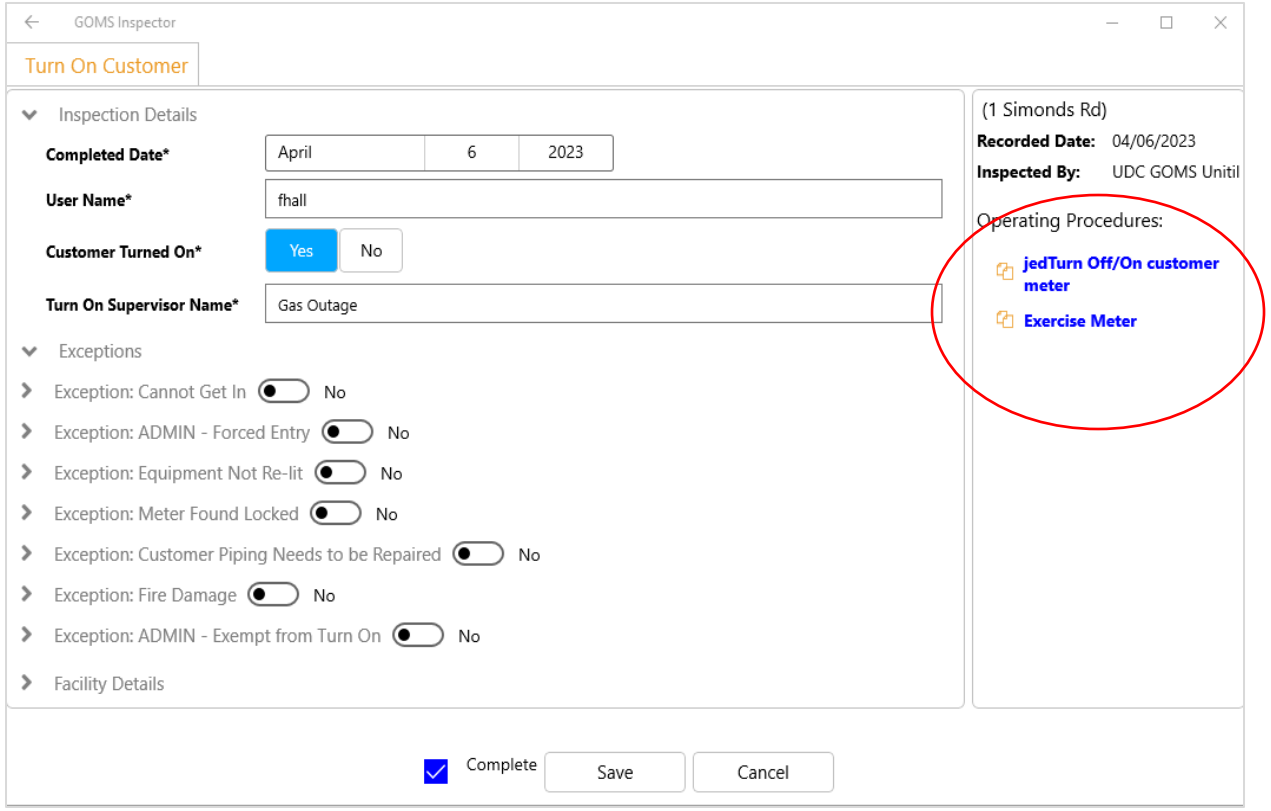
Procedural Manuals – Gas OMS





Web

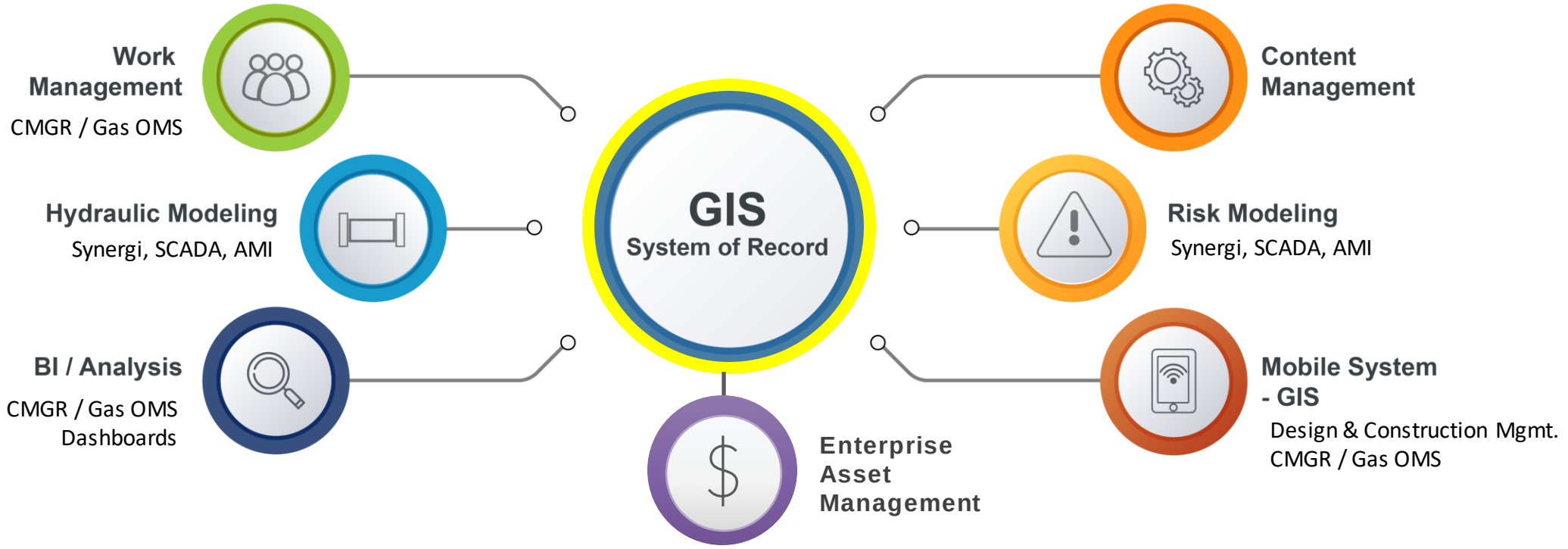
Selection complexity driven by content management system

Mobile

4. Pipeline Safety Mgmt Framework

Operators to develop and implement a pipeline safety management systems framework

Based on our experience with gas utilities/operators and their systems, we suggest that the automation to support safety management will come from a mix of the following systems being integrated with GIS as it is central to data governance and visualization.



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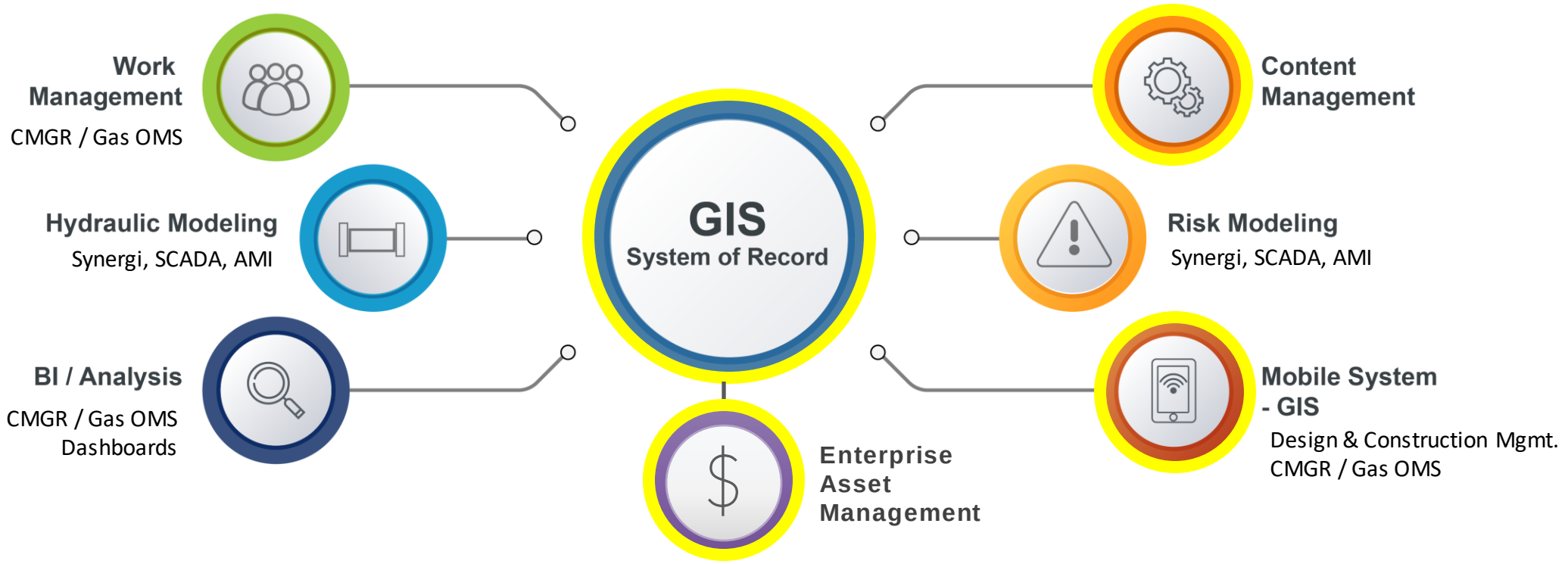
Operators to develop and implement a pipeline safety management systems framework

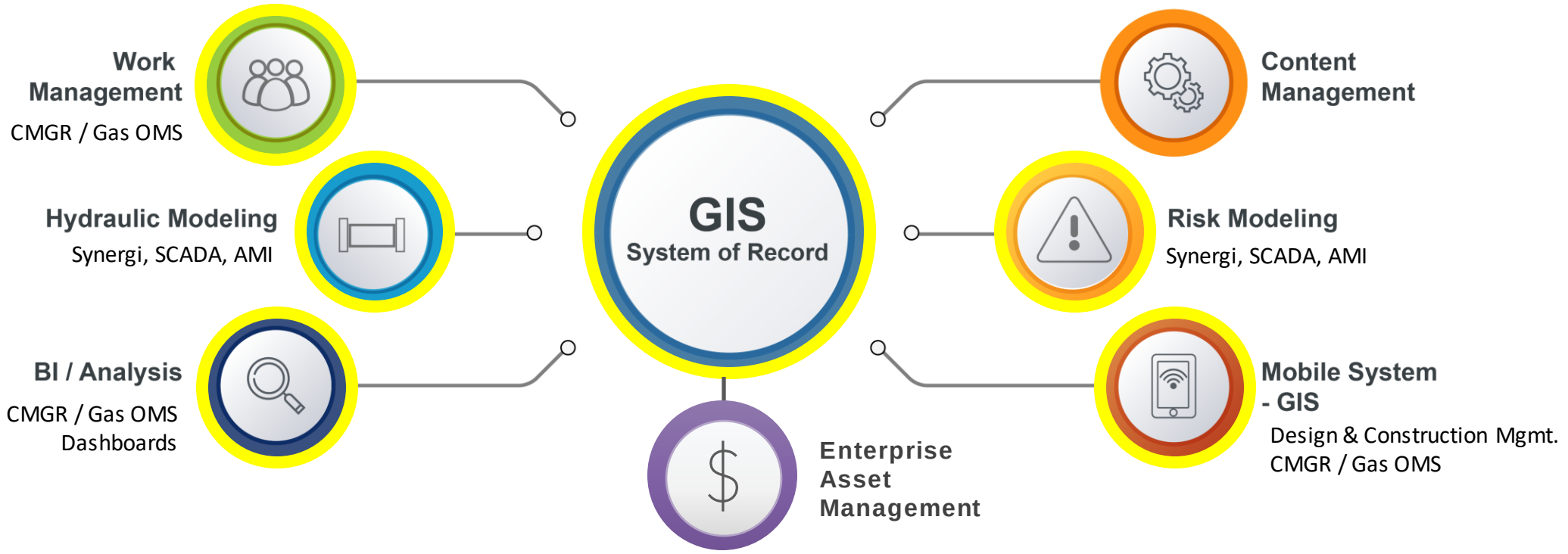
Standard digital as-built process - posting data to GIS, Enterprise Asset Management (if implemented), and Content Management from a Design & Construction Maintenance mobile tool



4. Pipeline Safety Mgmt Framework

Operators to develop and implement a pipeline safety management systems framework

- GOMS uses the maps and records for operations integrated with engineering (Synergi), SCADA, AMI, WMS
- GOMS shows all SCADA and AMI over-pressure alarms and Synergi generated over-pressure calculations

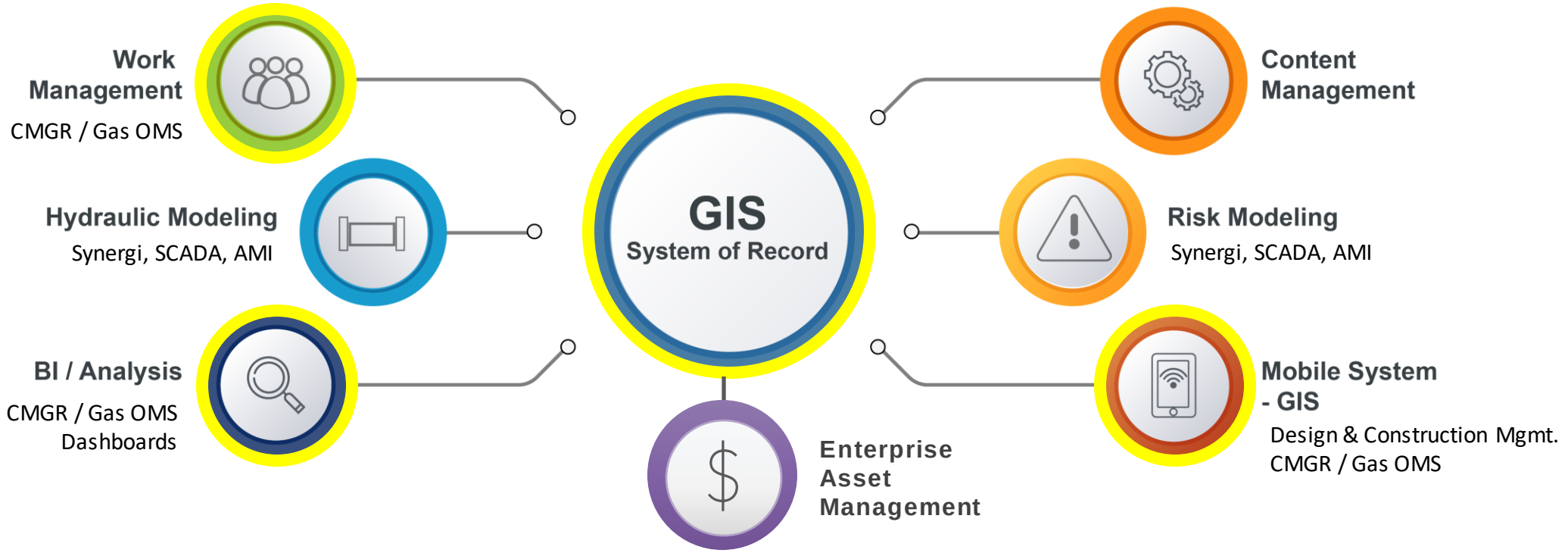


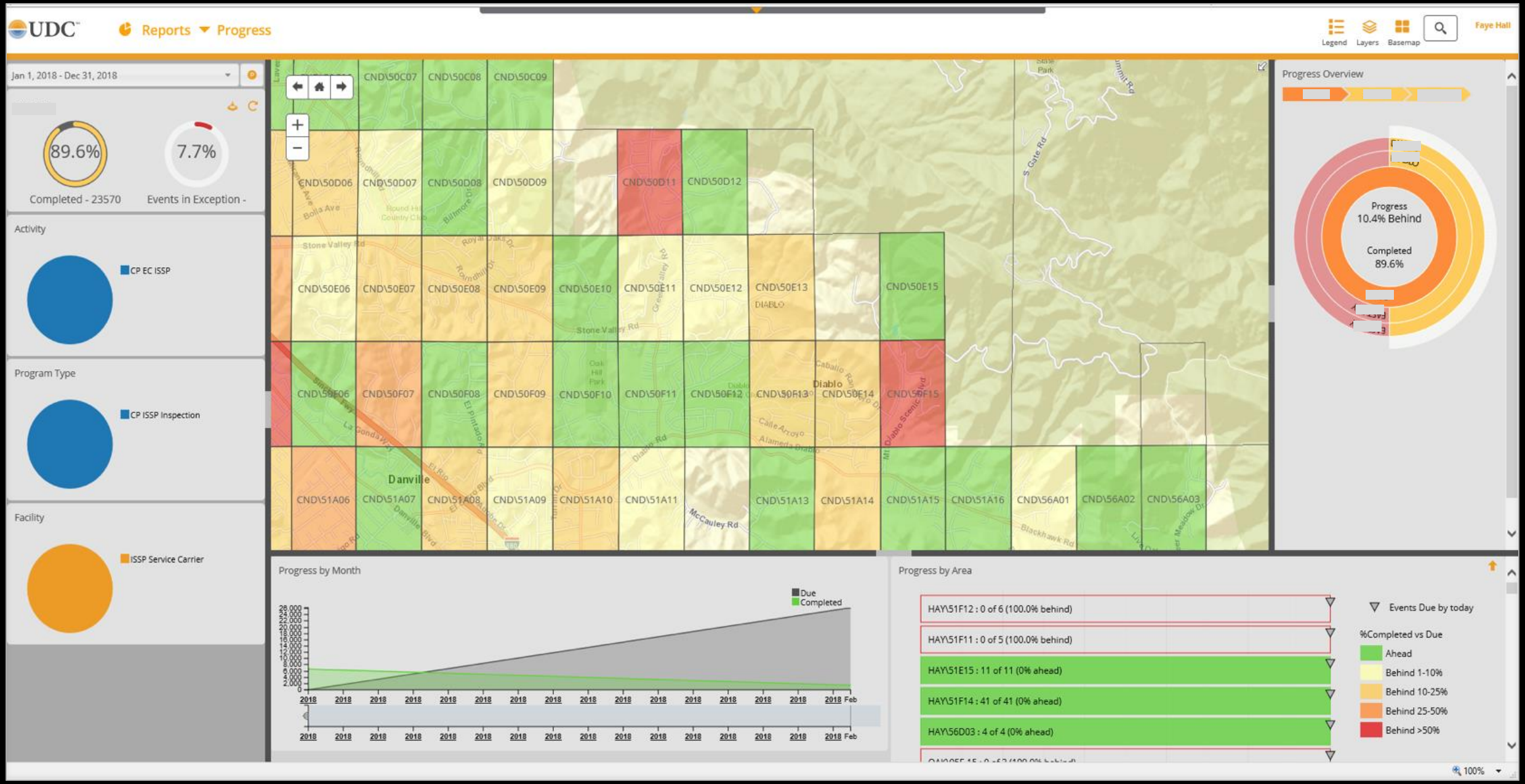
4. Pipeline Safety Mgmt Framework

Operators to develop and implement a pipeline safety management systems framework

CMGR Dashboards:

- All programs, program to date, year-to-date
- CP Circuits highlighting those unprotected and for how long
- Provide full transparency to PUCs with daily updates from field on all programs




UDC
Reports
Progress
Legend
Layers
Basemap
Faye Hall
Jan 1, 2018 - Dec 31, 2018
89.6%
Completed - 23570
7.7%
Events in Exception -
Activity
CP EC ISSP
Program Type
CP ISSP Inspection
Facility
ISSP Service Carrier
CND\50C07
CND\50C08
CND\50C09
CND\50D06
CND\50D07
CND\50D08
CND\50D09
CND\50D11
CND\50D12
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CND\51A14
CND\51A15
CND\51A16
CND\56A01
CND\56A02
CND\56A03
Danville
Diablo
Progress Overview
Progress
10.4% Behind
Completed
89.6%
Progress by Month
Due
Completed
Progress by Area
HAY\51F12 : 0 of 6 (100.0% behind)
HAY\51F11 : 0 of 5 (100.0% behind)
HAY\51E15 : 11 of 11 (0% ahead)
HAY\51F14 : 41 of 41 (0% ahead)
HAY\56D03 : 4 of 4 (0% ahead)
Events Due by today
%Completed vs Due
Ahead
Behind 1-10%
Behind 10-25%
Behind 25-50%
Behind >50%
100%

5. Current TVC Record Keeping For Distribution

Operators to develop and maintain traceable, verifiable, complete, and up-to-date records of the gas distribution system in each region of operation

Digital Construction
As-built Process

- GIS to Work Order Traceability
- GIS go Content Management Traceability

Compliance Manager

- Status Program To Date
- Status Year To Date Of All Programs
- Same Dashboard Reporting for all Compliance Programs
- Detailed Traceability of all AOCs raised in the Field

Gas OMS Utilizing TVC Records – Proves company has TVC when all Gas OMS functions work properly

Isolation Trace, Customers Affected, Gas Pressure Recordings, Gas Engineering Values Generated, Key Valve List Generation

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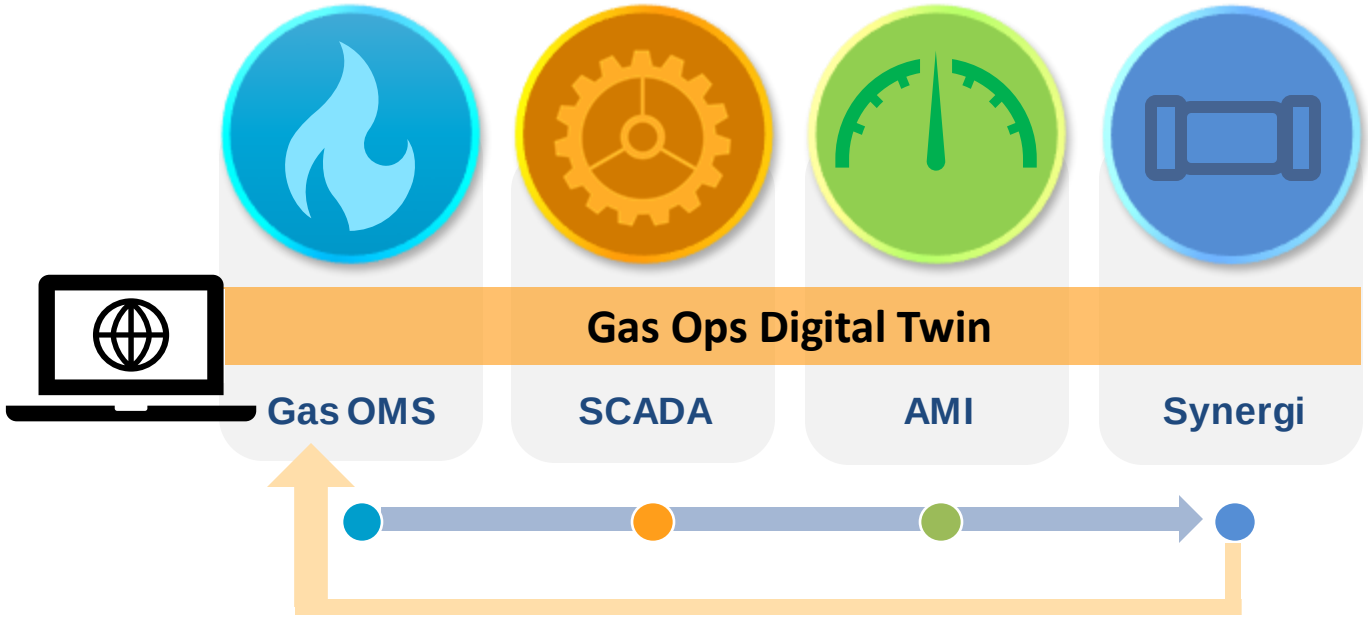
6. Proper Support for Monitoring / Regulating Gas Pressure Systems

The development of standards that promote sufficient staffing for monitoring and regulating gas pressure levels by each operator



- Every operation, including all changes in regulating set points, is entered in Gas OMS and is sent to Synergi *(along with current SCADA pressure and temperatures)*
- Engineering results are generated and displayed in Gas OMS along pipeline and at regulators

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7. Penalties increased to: $20M and $200M

SEC. 7. CIVIL PENALTIES.

Section 60122(a)(1) of title 49, United States Code, is amended—

(1) in the first sentence, by striking "$200,000" and inserting "$20,000,000";

(2) in the third sentence, by striking "$2,000,000" and inserting "$200,000,000"; and

(3) by adding at the end the following: "The Secretary shall annually adjust the penalties under this paragraph for inflation.".

Emergency Response & Mutual Assistance

Outage Drill at UNITIL

Supporting Mutual Assistance

Assign work spatially and enable assistance workers to record work digitally, monitor progress

Options for supporting…

- Mobile authentication policy of utility is followed
- Mutual Assistance crew members can complete work through website
  - Requires online connection

MA USER CONSIDERATIONS

Access

- Provide Access: Office Authentication/Active Directory
  - MFA, Generic External User IDs

Devices

- Bring your own
  - Non-Android currently

Onboarding Process

- How to manage users and get online
- Preparing for the future

Drills – Planning/Execution

- Unitil conducted a mock drill on December 8th, 2021
- The 2021 gas emergency exercise simulated an impact to a heating system at a Gate Station in the Portland / Westbrook area; Heat exchanger leaking glycol out of the station into the nearby area
  - Personnel safety (injury) and environmental impact
  - System impacts from low gas temperatures including leaks
  - Resulting in an interruption to service in the area

Simulated Gas Outage

- 8 Participants from Service Department who had never seen GOMS
- Mix of techs who had used an iPad and those who had never used a tablet
- 1 Hour Onboarding included overview of UDC Admin and UDC Field GOMS
  - Every tech was assigned 50 customers to navigate to customer location and simulate Turn Off and record the Activity on the iPad (including Exceptions)
- Solicited Feedback after drill

Drills – Lessons Learned

- All 8 techs felt that the UDC application was intuitive and easy to use.
- 1 hour training was more than sufficient to train new users
- Liked the ability to use the map to navigate to affected customers
- No Connectivity Issues/Product was Responsive
- Wish list was that Unitil would include house numbers on the parcel layer
- Overall, really preferred using the GOMS application to managing sheets of paper and having to call in status updates

Questions?

Thank You

Keep the
conversation going…

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udcus.com