



2019 InSPIRE – Galveston, TX

Emerging Technology Highlights – An Operator's Perspective

13 November 2019



Colonial Pipeline Company

Objectives

- Demonstrate the use of GIS technology for readiness
- Demonstrate the use of GIS technology & UAS for response
- Discuss Legal challenges for sharing GIS data
- Discuss options for awareness & outreach



Technology for READINESS



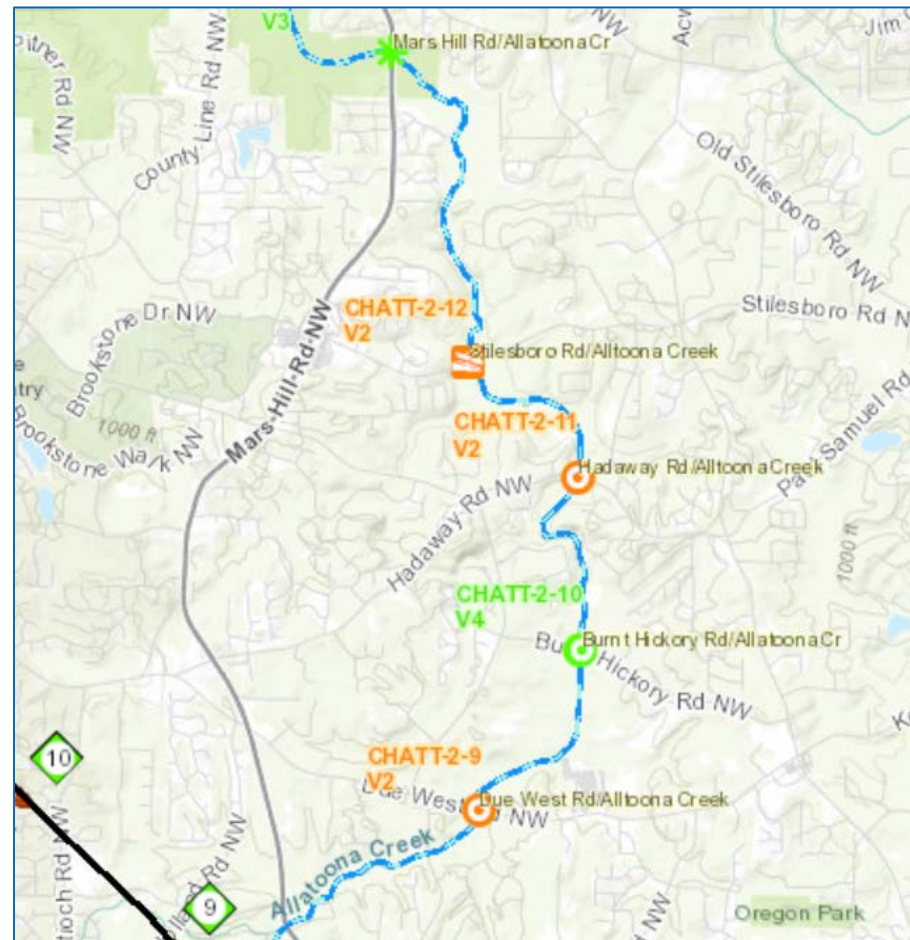
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Colonial Operational Footprint



Site Classification System

- GREEN
- ORANGE (Next Slide)
- CLASSIFICATION (V or F)
- PRIMARY
- CRITICAL
- BOAT RAMP
- LIMITATIONS (Index)
- INTAKES (DW and IND)



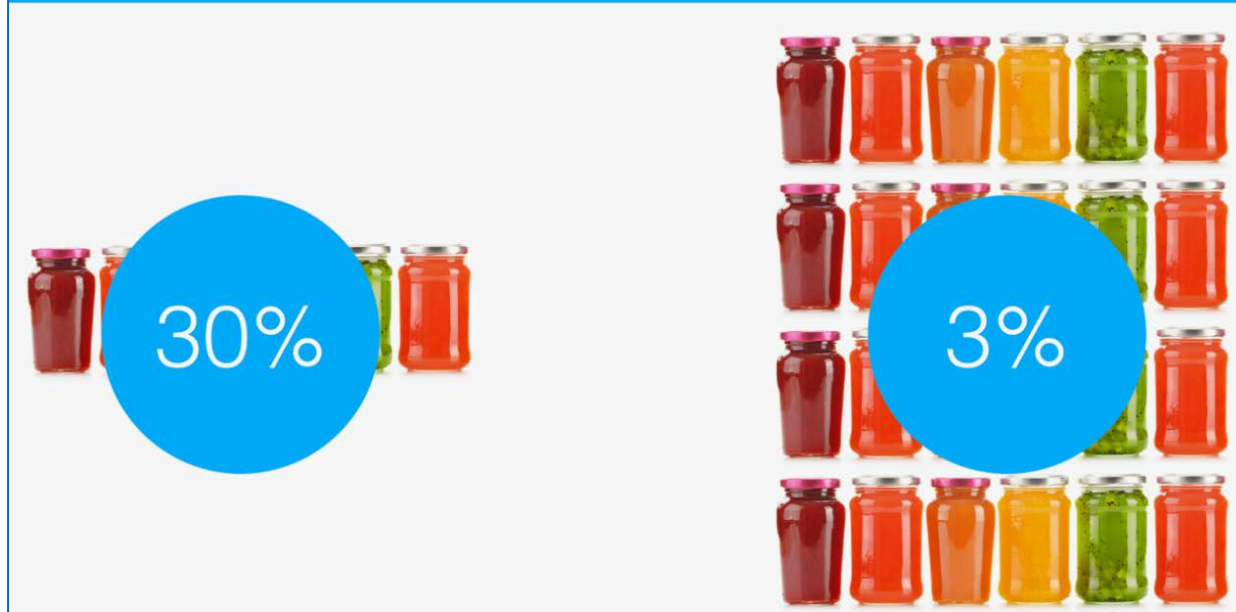
Site Limitations & Development (ORANGE SITE)

LIMITATIONS AND NEEDS DEFINITIONS	
Notes: Site Limitations	
1.1	Difficult bank working conditions
1.2	Skimmer to vac/frac tank >150' distance
1.3	Limited tanker truck access to vac or frac tank area
1.4	Sensitive environmental or cultural feature that could be impacted by site operations
1.5	On site Residential/Active Commercial site sensitivities
1.6	Skimmer to vac/frac tank > 20' height
1.7	Must work from road - road closure/partial road closure necessary
Notes: Surrounding Area Limitations	
2.1	Dense residential
2.2	Weight, size restrictions on road leading to site
2.3	Commercial/industrial operation impacts
2.4	School, hospital, other that could be impacted by site ops
Notes: Site Development Needs (to meet base level classification)	
3.1	Grading
3.2	Road entrance improvement
3.3	Gravel
3.4	Product transfer line to remote truck load area
3.5	Access road
3.6	Matting
3.7	Tree clearing

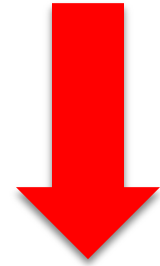


Less is MORE....What difference can a minute make ?

Percentage of people bought a jar of jam



5,000 Recovery Points



**1 Minute =
83.33 HOURS !**

<https://www.keepitusable.com/blog/the-psychology-of-choice-why-less-is-more/>



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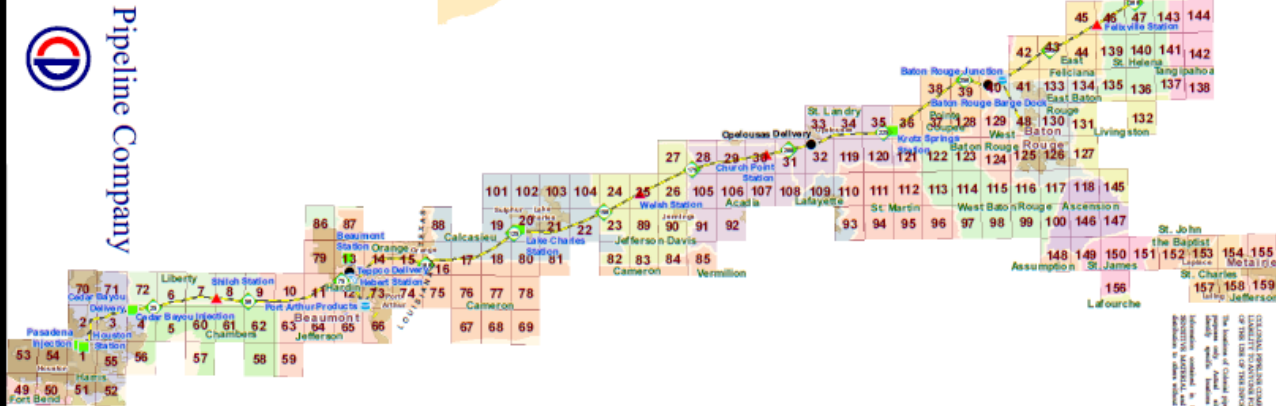
Gulf Coast District Map Book Texas and Louisiana



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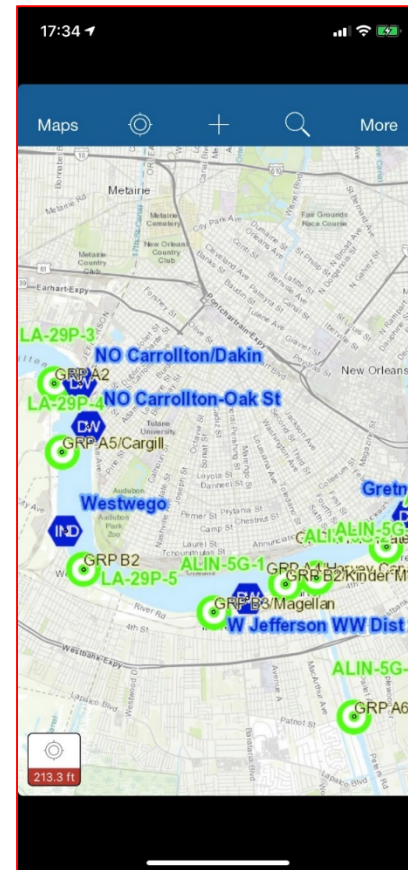
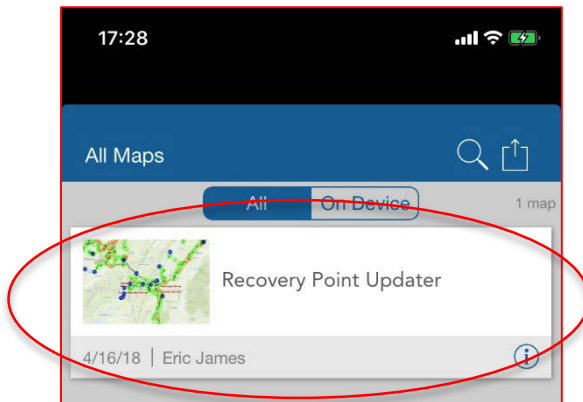
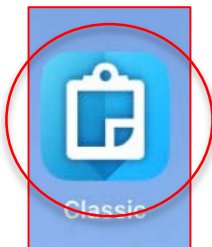
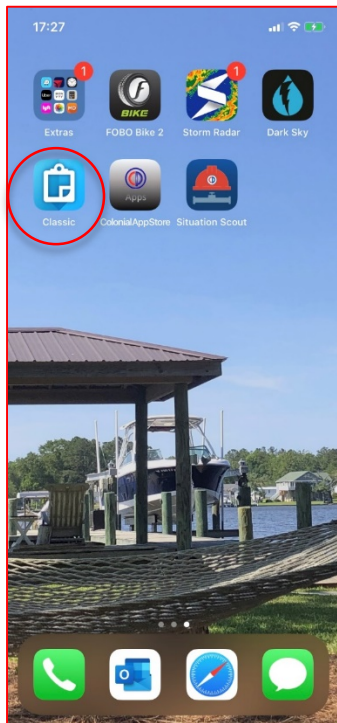
April, 2019

Developed by the Colonial Pipeline Asset Data Management Team



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ESRI Data Collector Demo



Technology for RESPONSE



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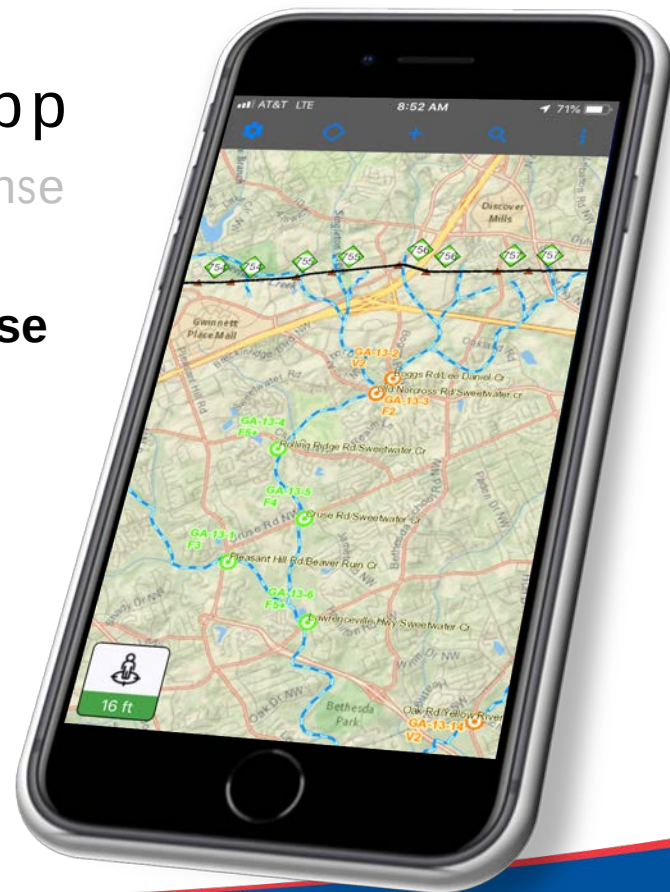


Situation Scout Mobile App

for emergency response

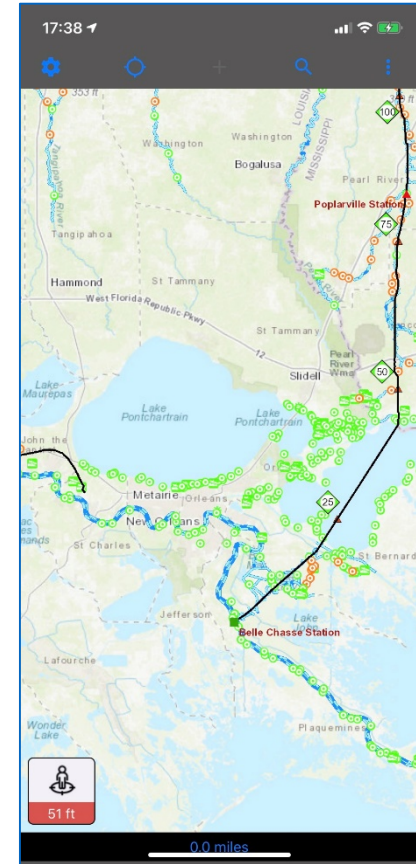
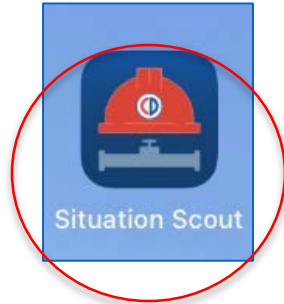
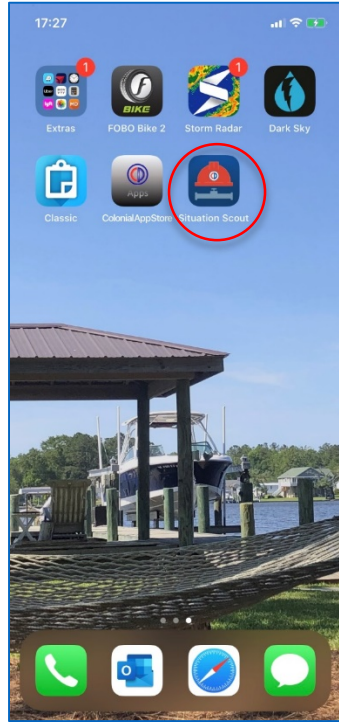
**For use with all Colonial emergency response
Tiers**

*Eric James GIS Application Administrator
GIS Specialist for Emergency Response*

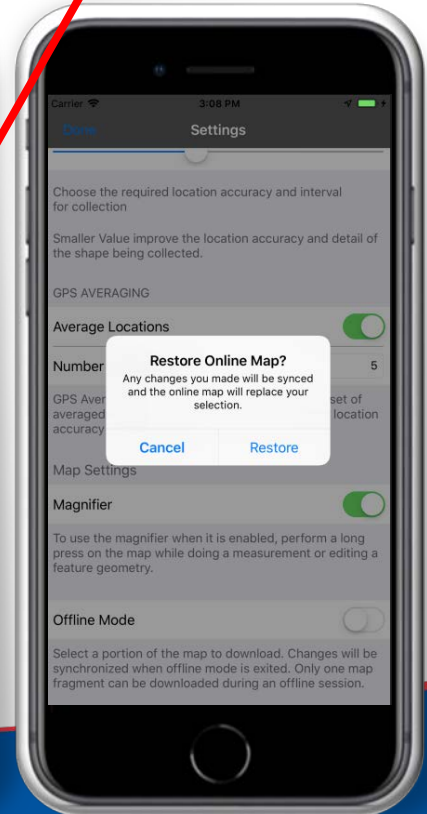
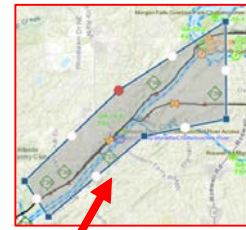
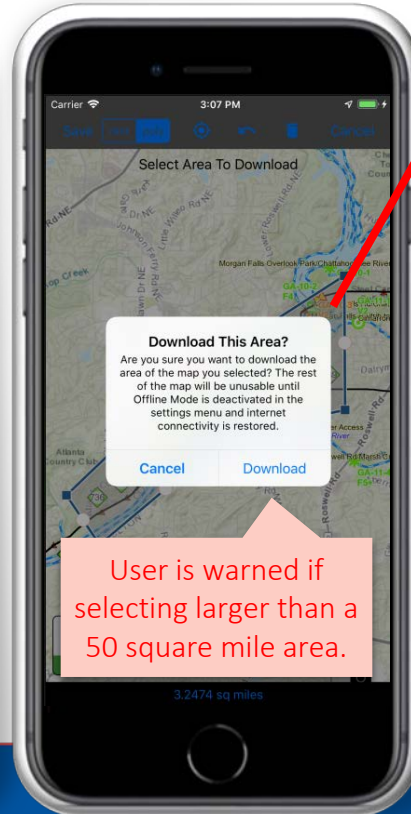
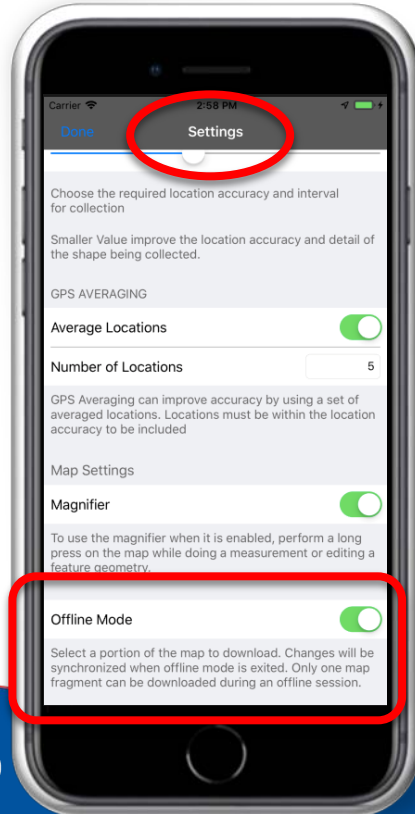


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Situation Scout (Phone/TabletApp)



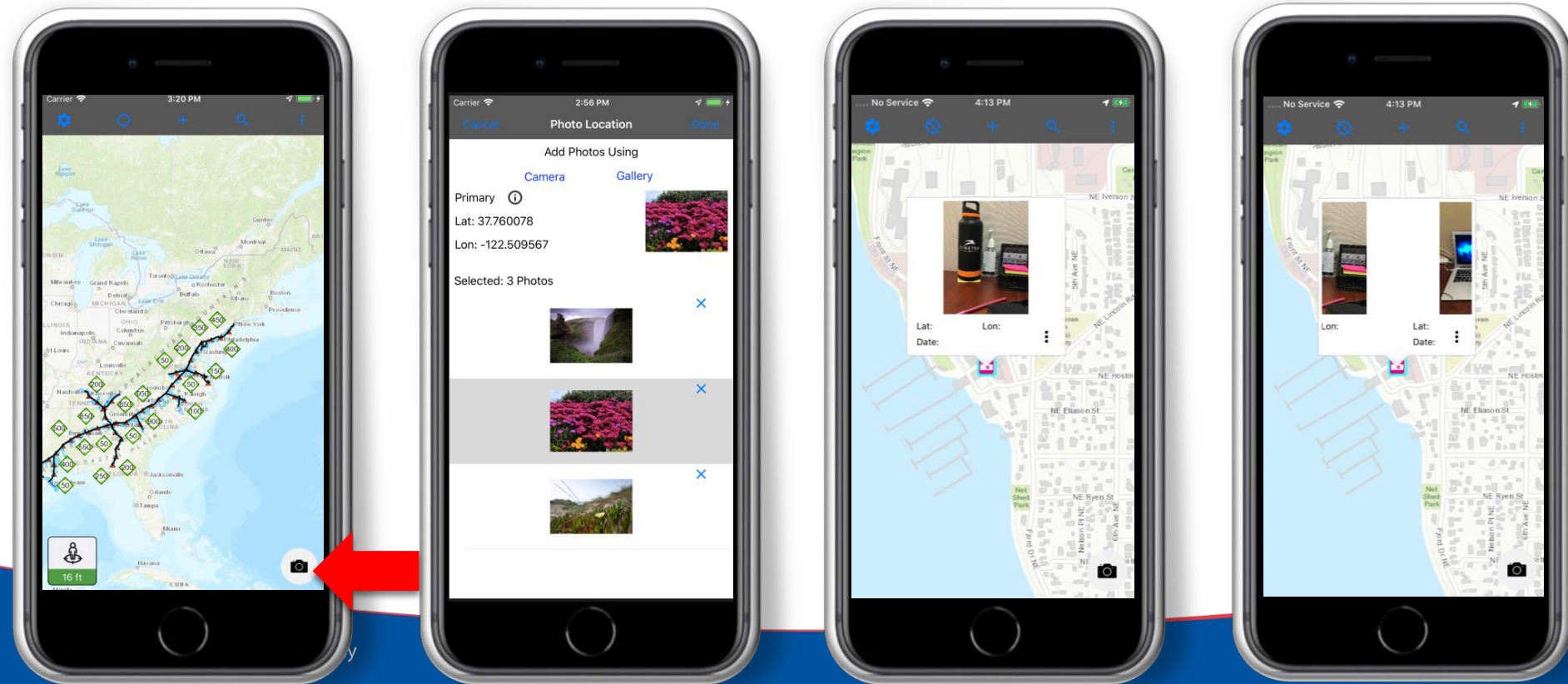
Offline editing capabilities and syncing back to the database



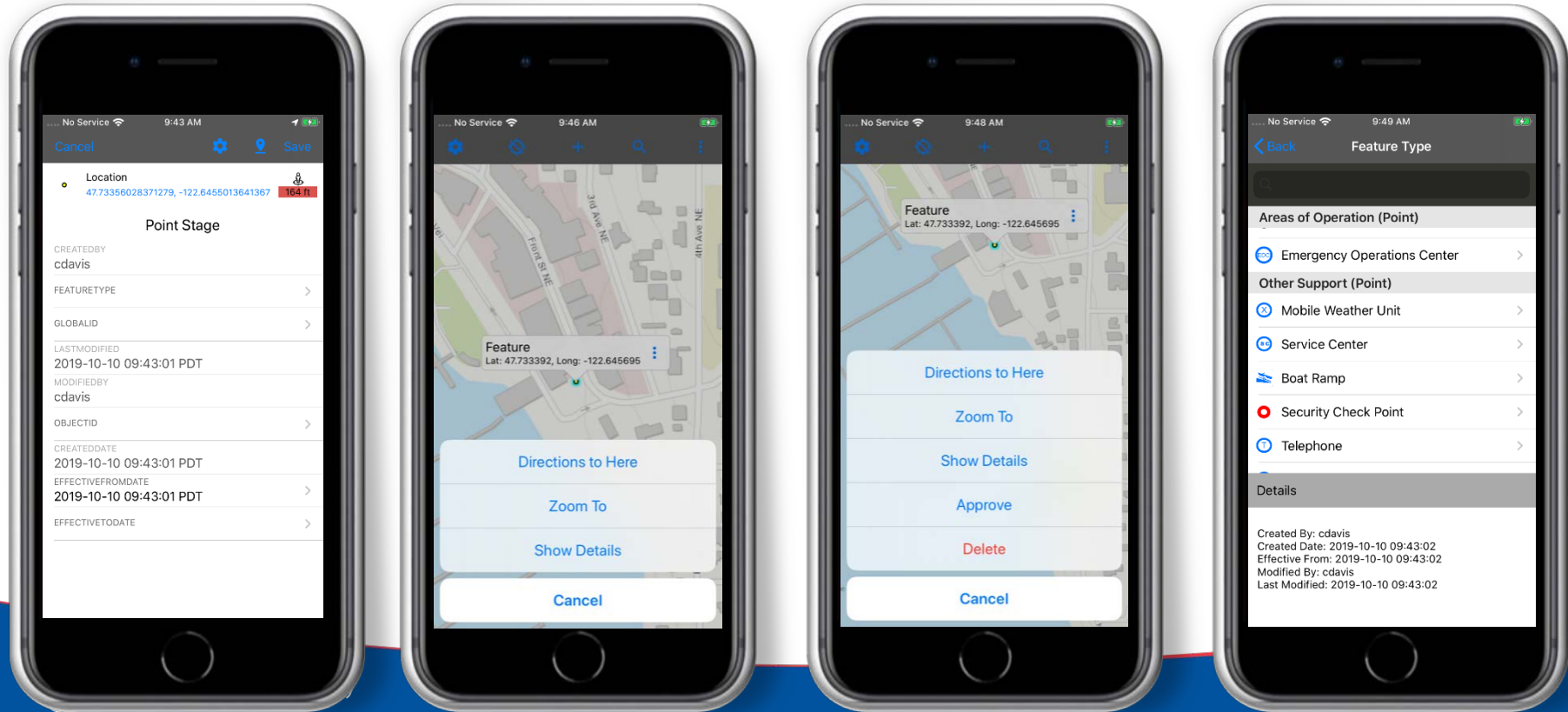
User is warned if selecting larger than a 50 square mile area.



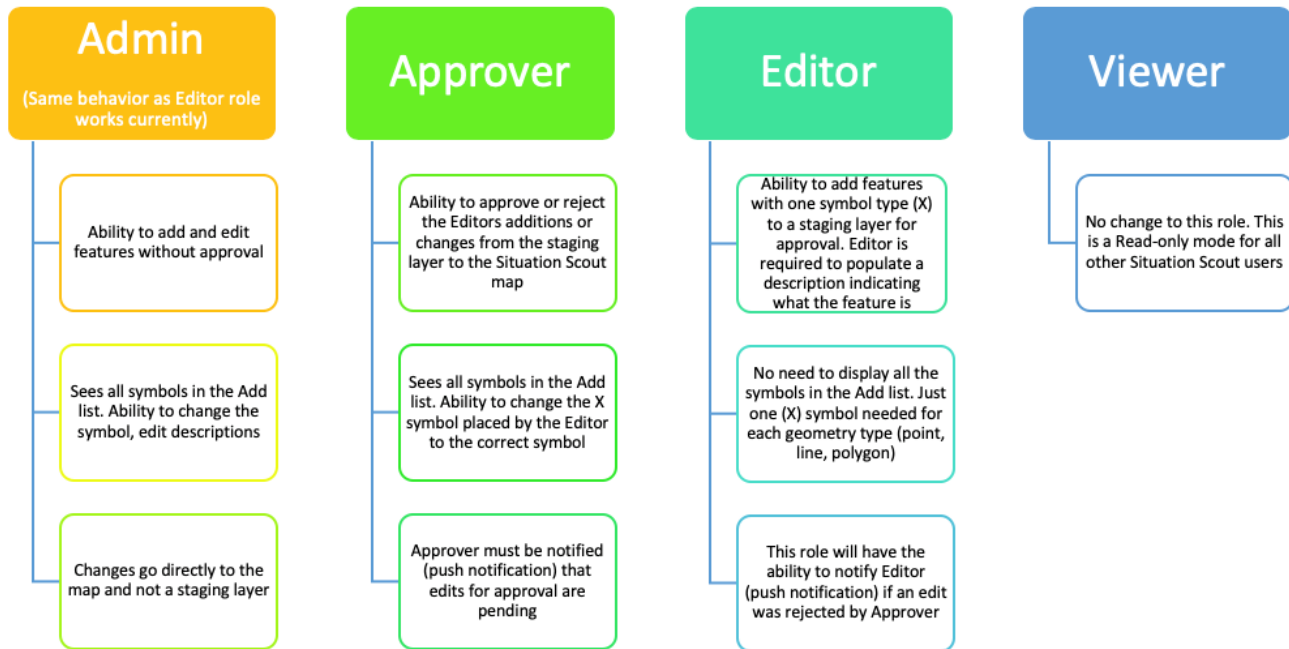
GeoTagged Photo Layer Functionality (Video Soon)



Add New or Edit existing Feature/Point and submit for approval



Field > Situation Unit > Validation > Approve > Publish



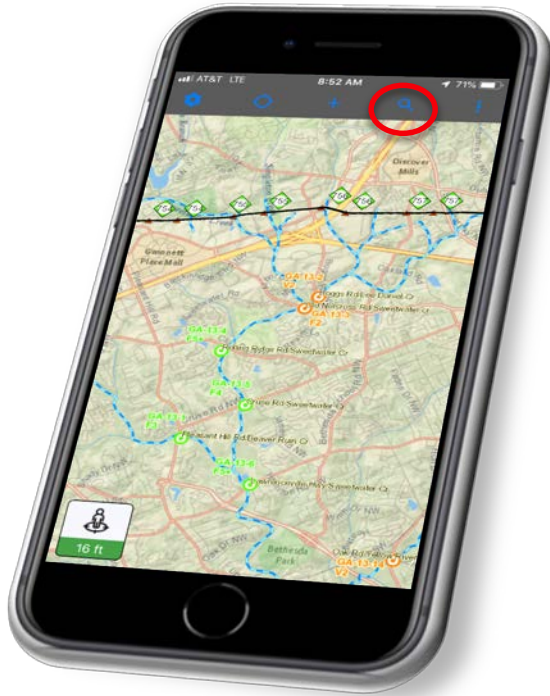
Active Full Site Index

Recovery Site

Recovery Site Name	Violet Canal
Recovery Point ID	ALIN-5F-7
Site Access Address	6200 St. Bernard Hwy. Violet, LA
Critical Site	Boat Ramp
Primary Site	A
Latitude	29.898694
Longitude	-89.901000
Site Classification	F5+
Site Readiness	Good to go
Site Potential	
Response Activity	Ramp/Recovery
Site Ownership	Private
Cell Reception	VER 4
Waterbody Width (Ft.)	175
Booming Conditions	Excellent
Suitable Watercraft	Work Boat/Jon Boat
Limitation and Needs	
Site Notes	Boat launch is across the canal behind Fabrication and Machine Shop. Site also includes Gated box culverts (see NO ACP site C3)
Contact Name or Entity	
Contact Number	
OSRO Name Last Visited	AMPOL
OSRO Contact Number	1-800-482-6765



Advanced Pipeline MileMarker Search



Line No.	1
Mile Marker	275

Drop-Down (All Lines)
Manual Entry



Drawing markups/sketches with the ability to save and share with selected users

- ❑ The markups can be shared with users selected from an Active Directory list and edited amongst selected users but the information is not stored directly in the Situation Scout database for everyone to see on the map.
- ❑ Consider using this feature to “build out” a potential site (Contingency Planning) and share as needed.



UAS for Emergency Response



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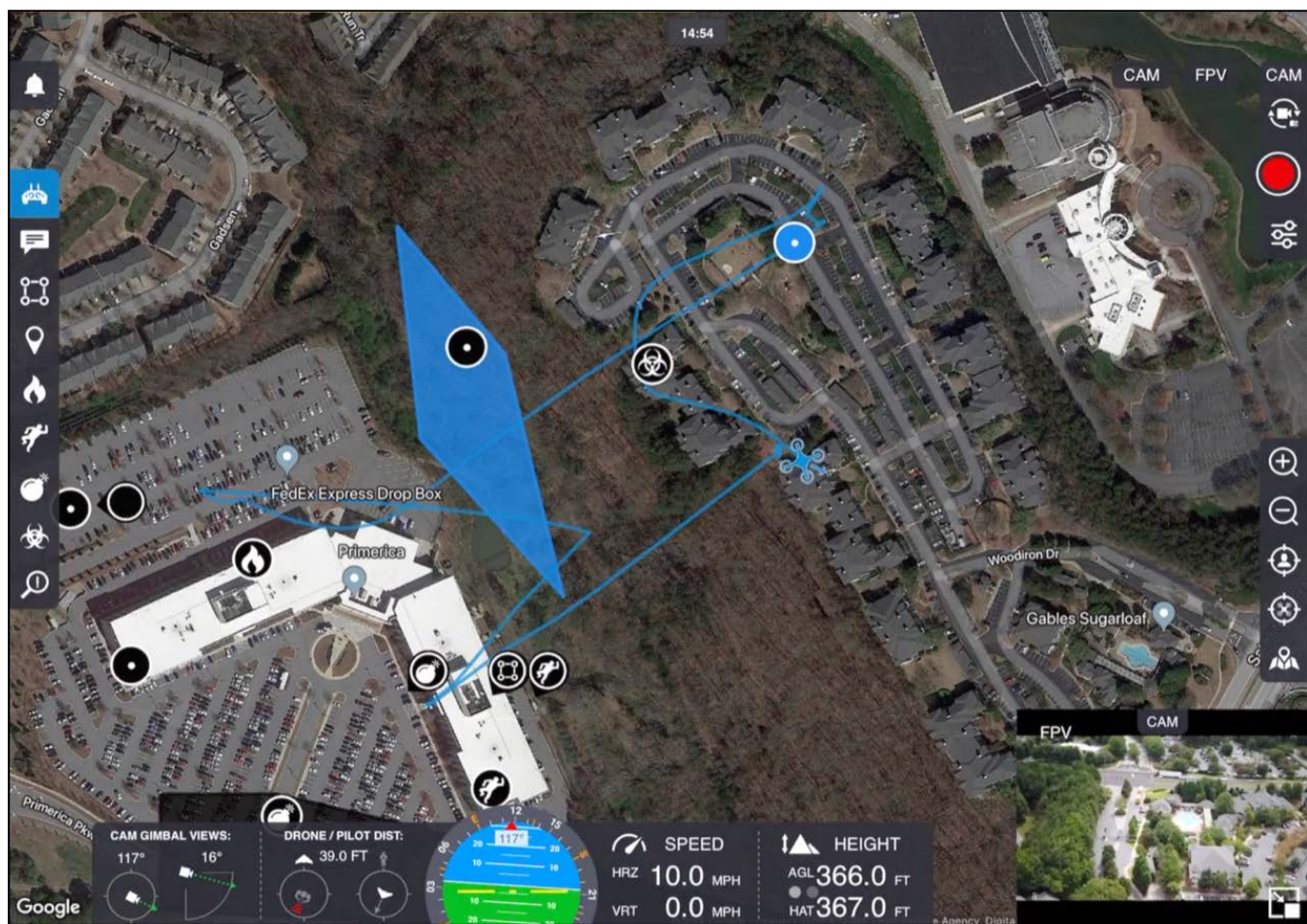
Live Video > Real-Time Response



Secure live-streaming & pilot interaction

- Incident Command Post
- Emergency Operations Center
- Functional Support Center
- Corporate Office Support
- Cell Phone / Tablet
- Living Room





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DroneSense OpsCenter x +

← → ↺ https://ops.dronesense.com

OPS CENTER FLIGHT PLANNING

Dan Parker Z30 XT ✓
Matrice 210 (Manual Operation)
D. Parker 0.0 M/S 59.9 M 46%

Matt Sloane XT2 Z30 ✓
Matrice 210 (Manual Operation)

Pilot	Horizontal Speed
M. Sloane	0.0 M/S
AGL	Vertical Speed
0.0 M	0.0 M/S
MSL	Battery
337.6 M	83%
GPS	Drone to Pilot
	332.5 M
Latitude	Longitude
33.757765	-84.394086

Subscribe All

DAN PARKER - Z30

DAN PARKER - XT

MATT SLOANE - Z30

MATT SLOANE - XT2

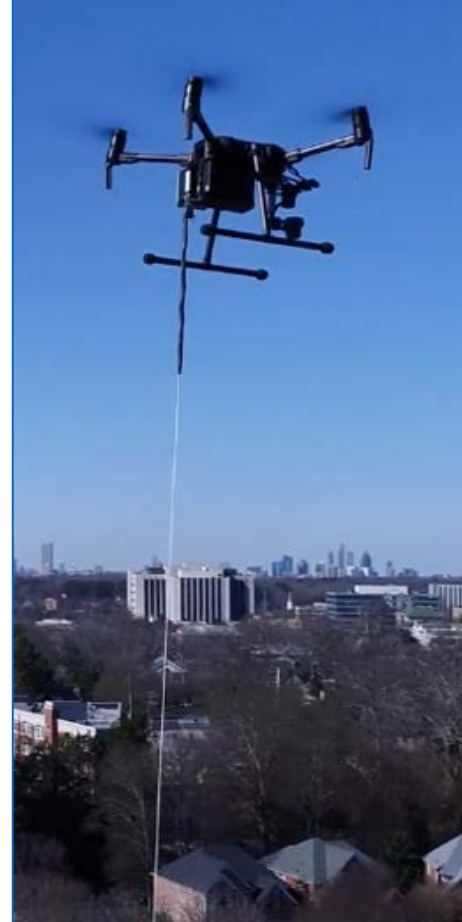
John Portman Blvd NW



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Is that a Tether ???

- Unlimited flight time
- 200 ft maximum altitude
- Single drone operator
- Stream multiple sensor data to IC or other receivers
- Drone can be decoupled and flown freely in less than 2 minutes

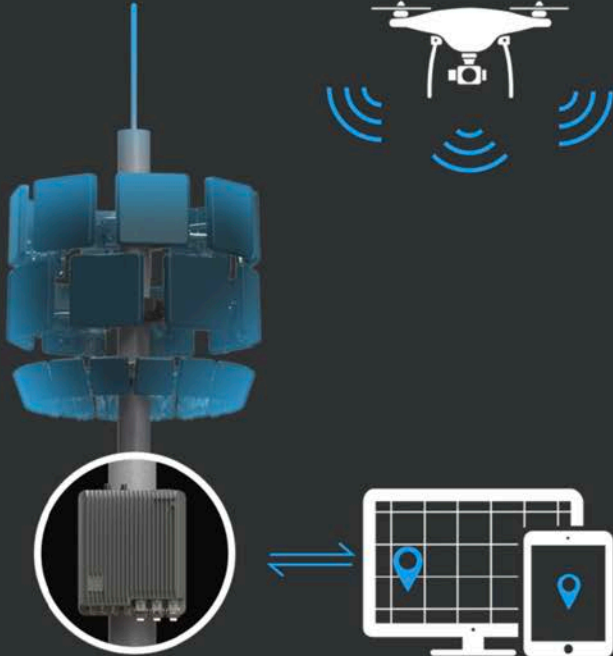


Air Monitoring

- Up to 5 Separate Sensors Onboard
- Live Streaming Data to Ground Station or over Cellular
- GPS Data Logging for GIS and/or Plume Modeling



Site Security



Overview

E Radar is a comprehensive drone detection platform that rapidly identifies UAV communication links, gathering information such as flight status, paths, and other information in real-time. This monitoring data stream helps users make an informed response as soon as possible.



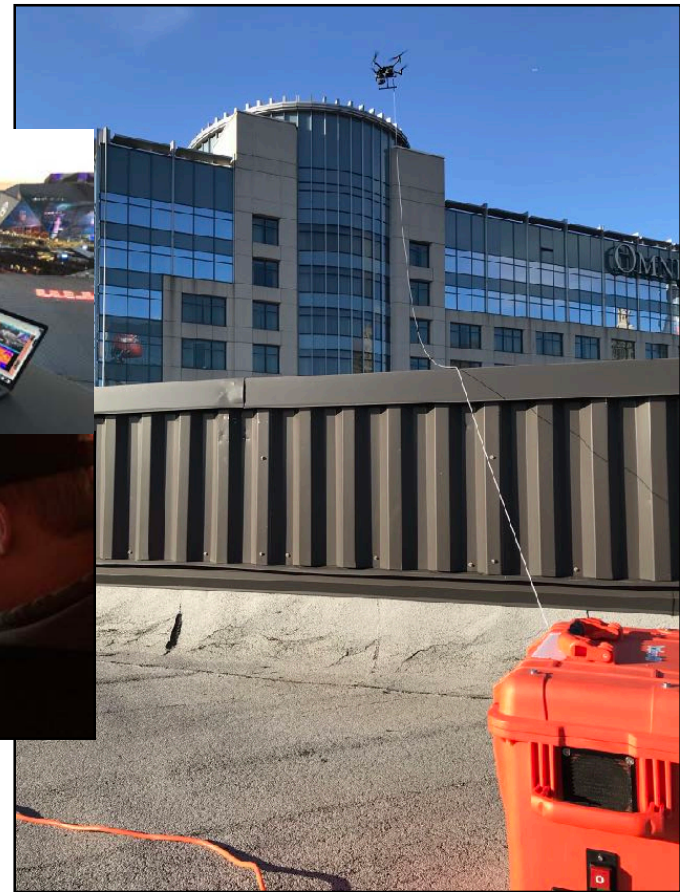
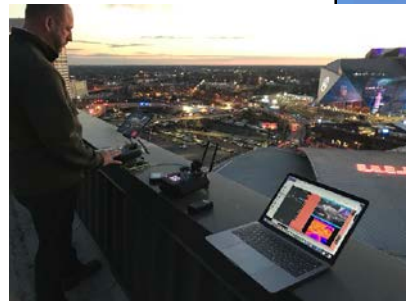
Scene Preservation

- Orthomosaic (240 Photos)
- Hi Resolution Image (Geo-referenced and highly accurate)
- 3 Dimensional Data for export to AutoCad



Integration with Traditional Aircraft

**Drones coordinating with
manned aircraft**



Legal Issues with GIS Data Sharing



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Resources



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Resources....TAKE A PIC !

<http://www.cvent.com/events/emergency-response-forum-public-private-partnerships/event-summary-9f308612a3764a71b2bf862c5fd4241f.aspx>

<https://www.npms.phmsa.dot.gov/>



<https://nasfm-training.org/>



<https://primis.phmsa.dot.gov/comm/PublicAwareness/PARPI1162.htm>

 **U.S. Department of Transportation** | Pipeline & Hazardous Materials Safety Administration

Pipeline Safety Stakeholder Communications
Pipeline Safety Connects Us All

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Public Awareness Programs: API RP 1162

- Public Awareness
- API Recommended Practice

Federal pipeline safety regulations (49 CFR 192.616 and 49 CFR 195.440) require pipeline operators to develop and implement public awareness programs that



THANK YOU !!



Colonial Pipeline Company

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