

CHEMICAL SECURITY SEMINARS

July 18, 2024

Drone Policy and Use Impacts to Global Critical Infrastructure

Jeff Hirsch

Federal Bureau of Investigation



#ChemicalSecurity

About the Speaker:

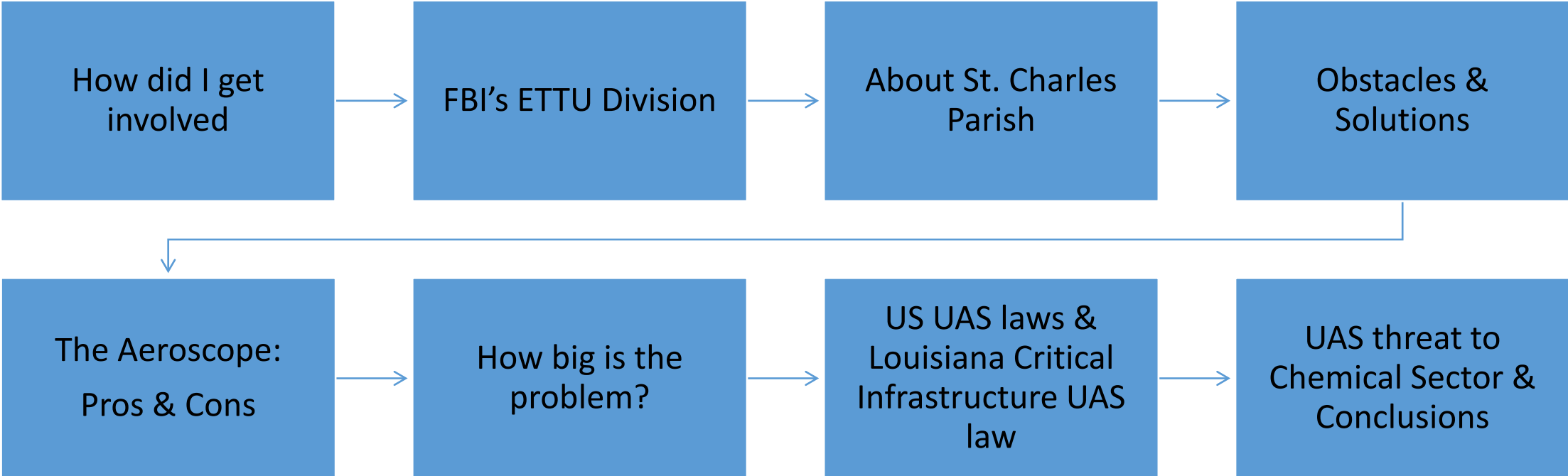
Started my law enforcement career in 1987.

Have been in the New Orleans JTTF for 10 years.

Handled the first two drone cases for the New Orleans FBI in 2017.

Considered a subject matter expert on drones and detections.

Talking Points





What got me involved with drones?

- November 2017 I was assigned two separate drone cases.
- Flights were occurring simultaneously in Jefferson and St. Charles Parish.
- Flights lasted 2 weeks, then abruptly ended.
- Despite taskforces being deployed, no pilots were ever located in the St. Charles case.
- Anonymous tips helped me discover suspects in the Jefferson Parish Case.
- Neither resulted in charges at the State or Federal level.



EMERGING THREATS AND TECHNOLOGIES UNIT

Mission

- To deter, detect and disrupt the use of emerging technologies that may enhance a chemical, biological, radiological, nuclear, or explosive (CBRNE) event through engagement with internal and external partners and stakeholders.

Functions

- To develop, deliver and maintain CBRNE Delivery Systems outreach programs for Field Offices, interagency partners and selective foreign partners.
- Align internal and external partnerships to generate intelligence, increase technical knowledge and awareness.
- Identify tripwires to boost FBI Field offices, law enforcement, intelligence community and CONUS military Installations' countermeasure capabilities, against this emerging threat.

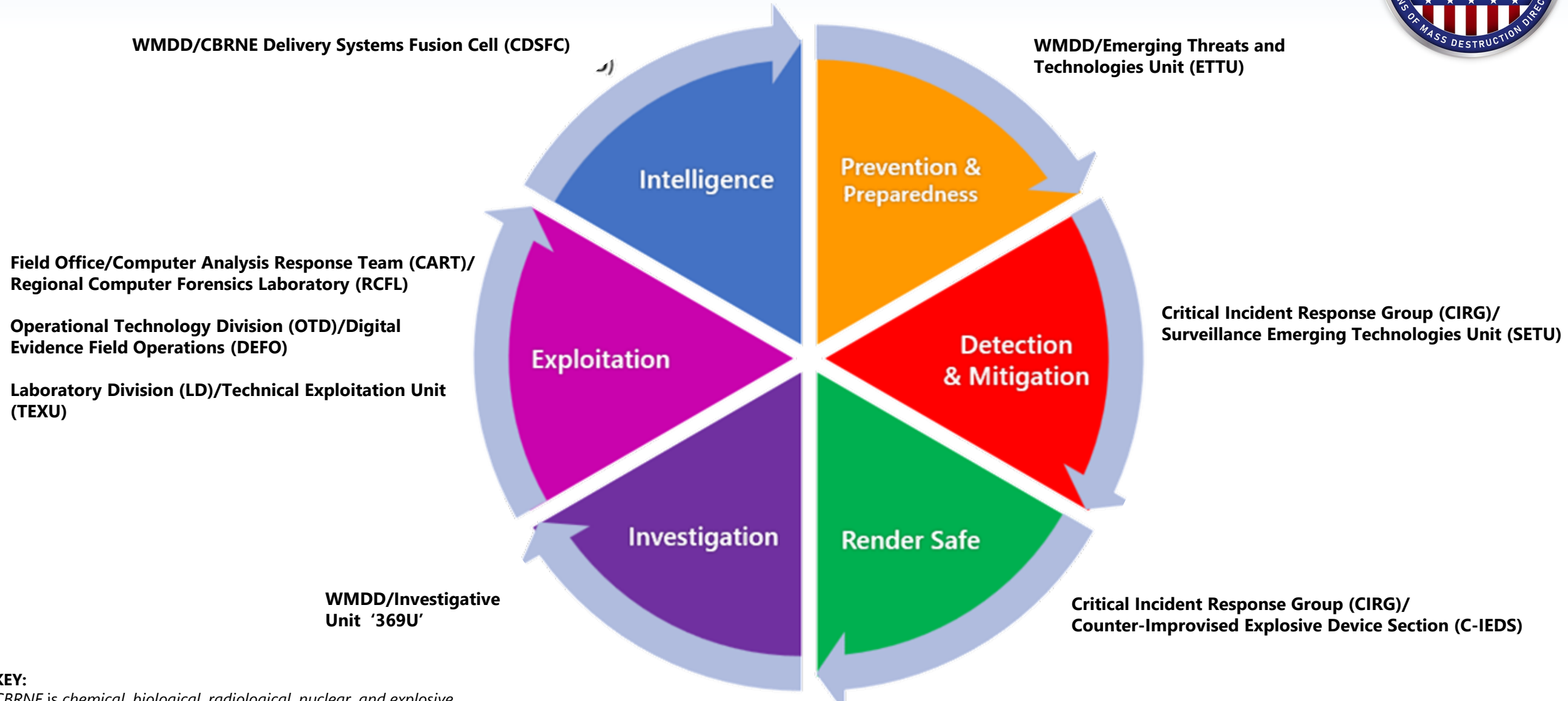
Left-Of-Launch = A Shaping Operation

ETTU focuses to understand the CBRNE Delivery Systems operational environment, through “Left-of-Launch” outreach and collaboration with internal and external partners (e.g., FBI FO and LE partners), proactively synchronizing individual efforts and identifying tripwires to increase FBI field offices and partners’ capabilities, to counter and/or mitigate this emerging threat.

WHY L-O-L?

- Build, Increase and Sustain Workforce sUAS Awareness
- Basic LE Knowledge = Insufficient information to identify actors/ attribution results in incomplete intelligence assessment
- Insufficient Law Enforcement and DoD Cooperation
- More focus on Non-Material Solutions (LE processes); less focus on Material Solutions (equipment)

FBIHQ Counter-sUAS Operational Components



KEY:

CBRNE is chemical, biological, radiological, nuclear, and explosive.

FBIHQ is FBI headquarters.

WMDD is Weapons of Mass Destruction Directorate.

Our Mitigation Partners

- Department of Justice
 - Federal Bureau of Investigation
 - Drug Enforcement Administration
 - U.S. Marshals Service
 - Bureau of Prisons
- Department of Homeland Security
 - Customs and Border Protection
 - Transportation Security Administration
 - Cybersecurity and Infrastructure Security Agency
 - Federal Protective Service
 - Secret Service
 - U.S. Coast Guard
- Federal Aviation Administration
- Department of Defense
- Department of Energy
- Department of State
- State and Local Law Enforcement
- Congress

The Number One Issues are:



Drone=Aircraft



...find the operator

The Future of the UAS/sUAS/Drone Threat

“The future UAS threat includes **autonomous**,
massing **swarming** capability, **AI** (Artificial
Intelligence), and potentially leveraging **5G cell
phone technology.**”

*Major General Sean Gainey, Director of the Pentagon's Joint
Counter-UAS Office (JCO), September 2021*



About St. Charles Parish

- 32 miles West of New Orleans
- Approximately 52,000 residents
- 26 different forms of critical infrastructure
- 3 Major fuel refineries
- 1 Nuclear power plant
- 3 Major grain elevators
- Port of South Louisiana

Port of South Louisiana

- According to the U.S. Department of Transportation's Bureau of Transportation Statistics, the port is the **second-largest U.S. water port** when summarized by tonnage.
- The port handled over **248,130,992** short tons of cargo in 2023, brought to its terminals either by ships or barges.
- While more than **3,600 oceangoing vessels** call at the port annually, much of its cargo is hauled by barges
- More than **56,000 barges** call at the port each year. In total, the Port of South Louisiana is the third-largest port in the U.S. for export and import tonnage.



What obstacles did we have to overcome?

- We knew we couldn't do it alone.
- Identify who our partners needed to be.
 - Critical infrastructure – FSOs CSOs
 - Who were our Federal partners?
 - Law Enforcement – Patrol
Deputies/Detectives
 - Courts – District Attorney/Assistant
District Attorneys
 - Parish Emergency Operations Center
- Aeroscope: Who was going to pay for it?
- Where were we going to set it up?
- Who was going to monitor it?

Aeroscope: Pros & Cons

PRO:

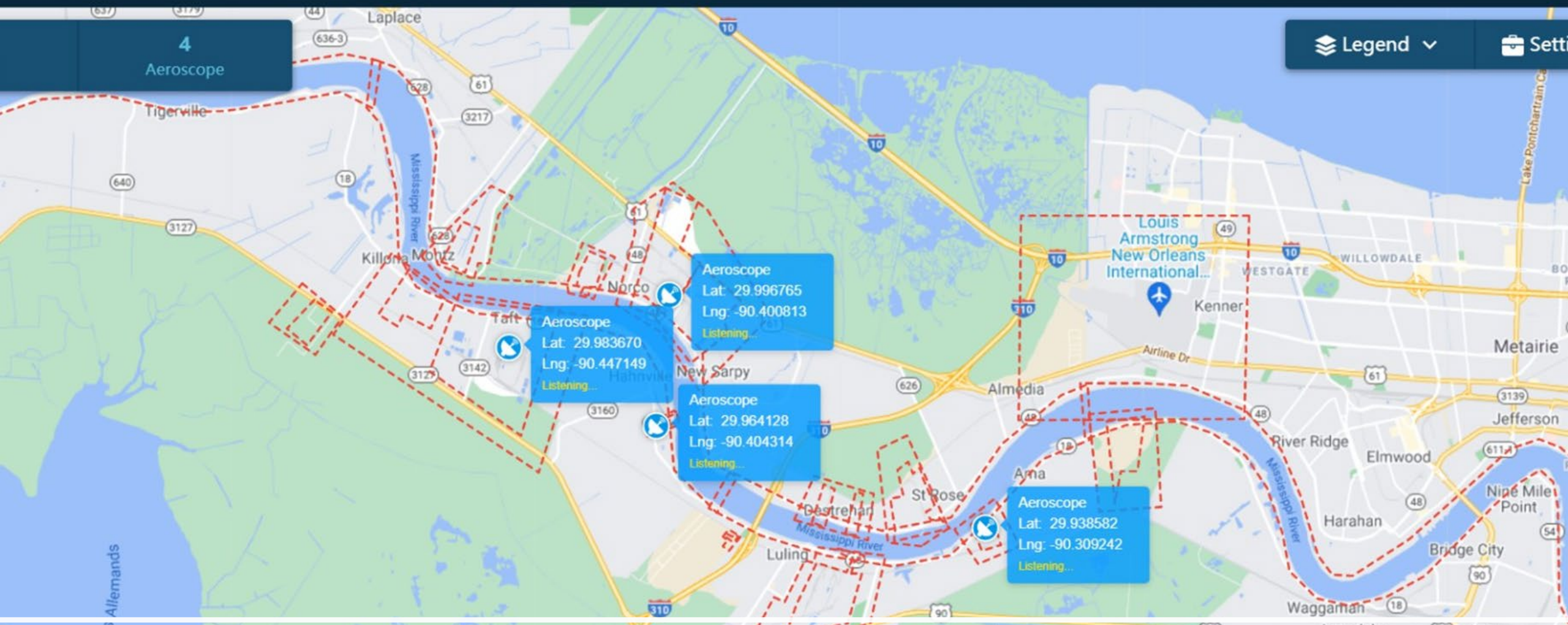
- Alert to an active DJI drone.
- Give locations of not only the drone but where the operator is located.
- Allows for the Geo-fencing of all critical infrastructure in our Parish.
- Alert a pre-selected group, via text message and emails, when a DJI drone flies into a geo-fenced area.

CON:

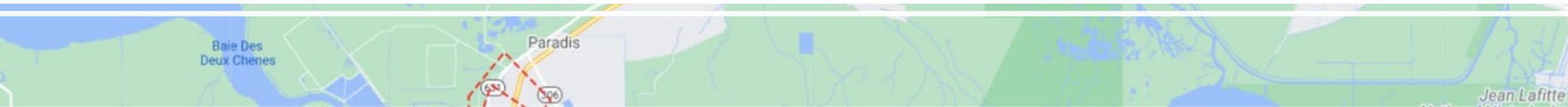
- The Aeroscope only detects DJI drones (Phantom, Mavic, Mavic Mini, etc.)
- The Aeroscope is made by the same company that manufactures DJI drones.
- The parent company is located in China.
- The Aeroscope is no longer being manufactured.
- Can it be trusted?



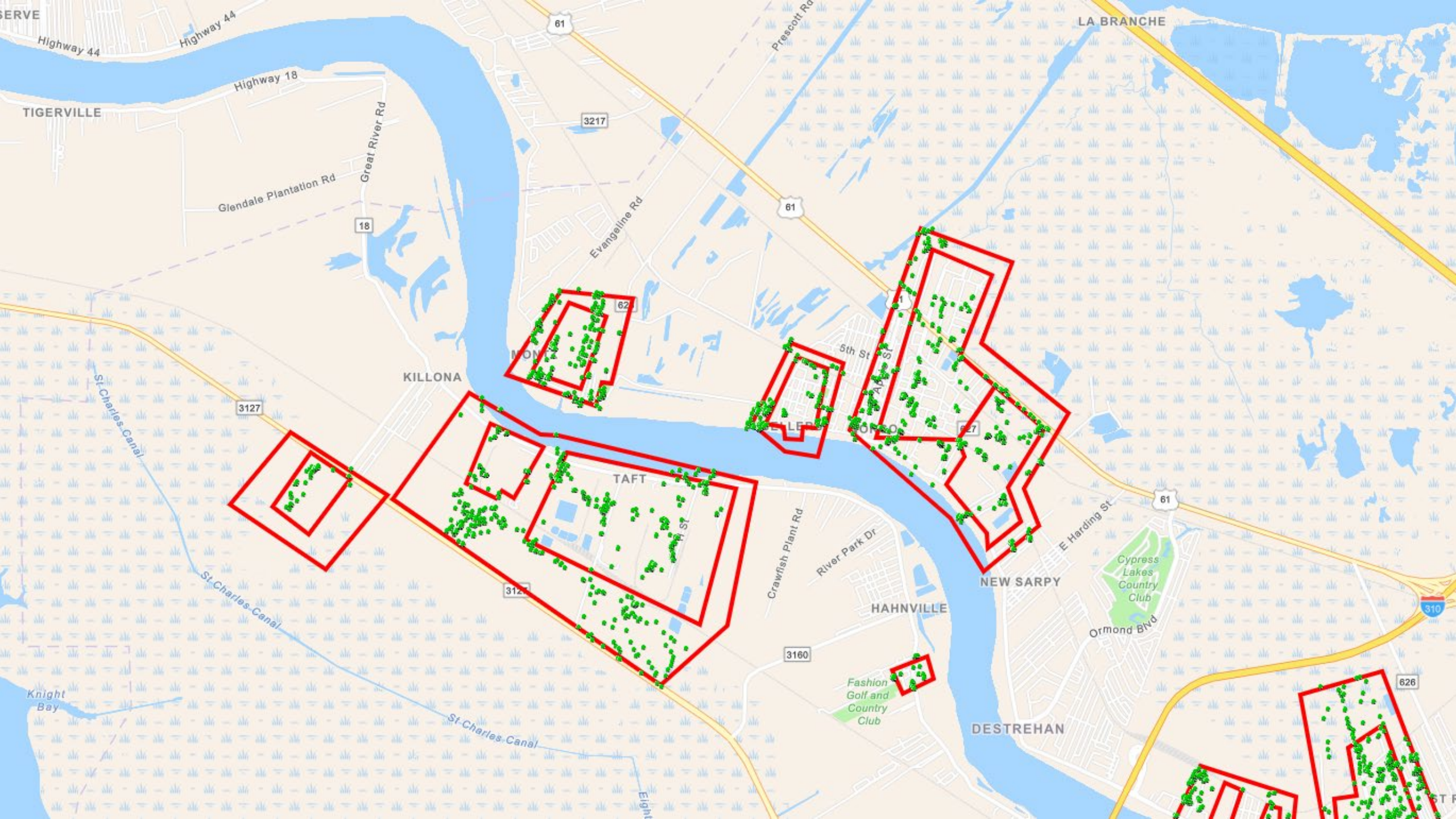
Examples of DJI Drones

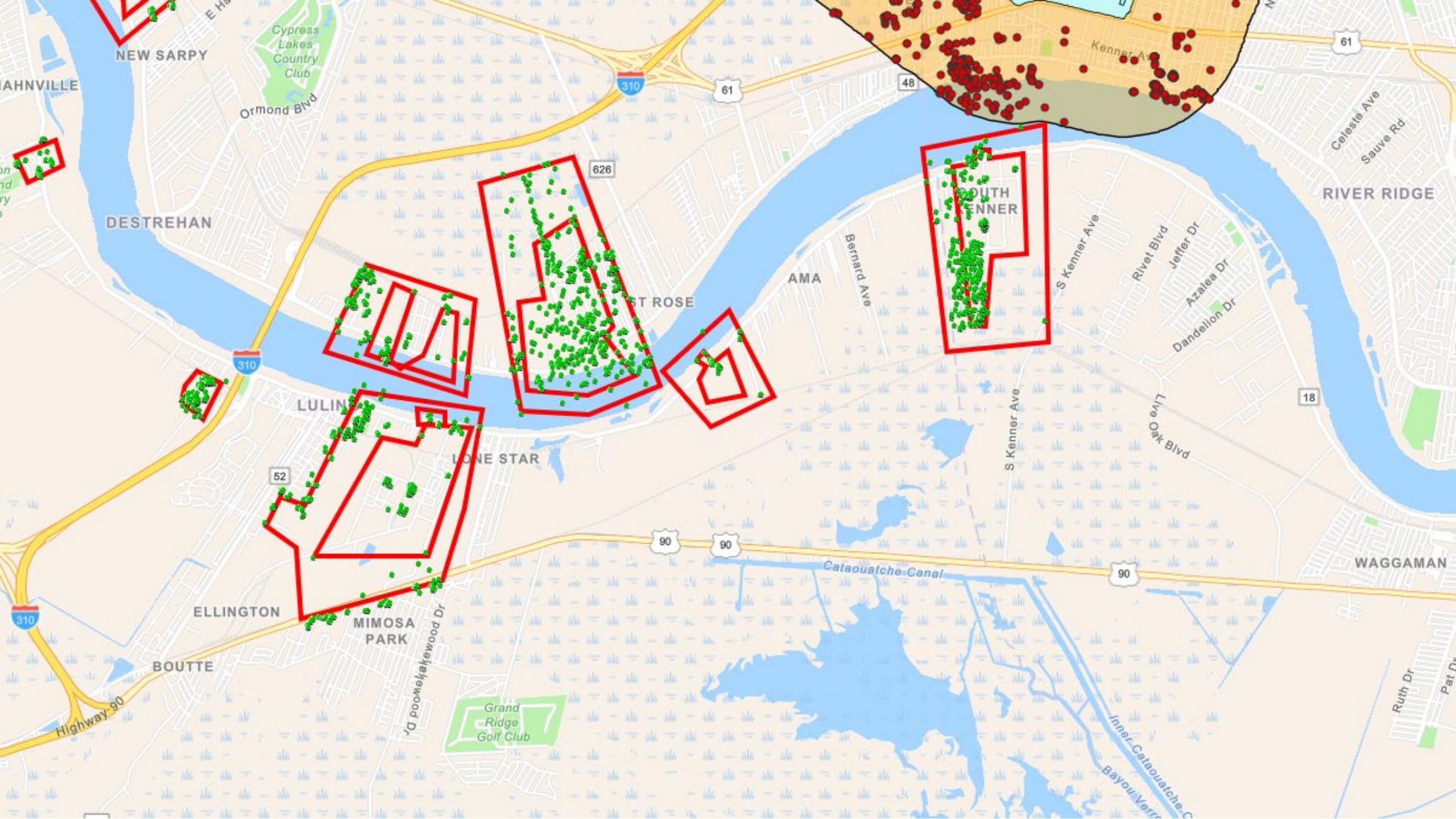


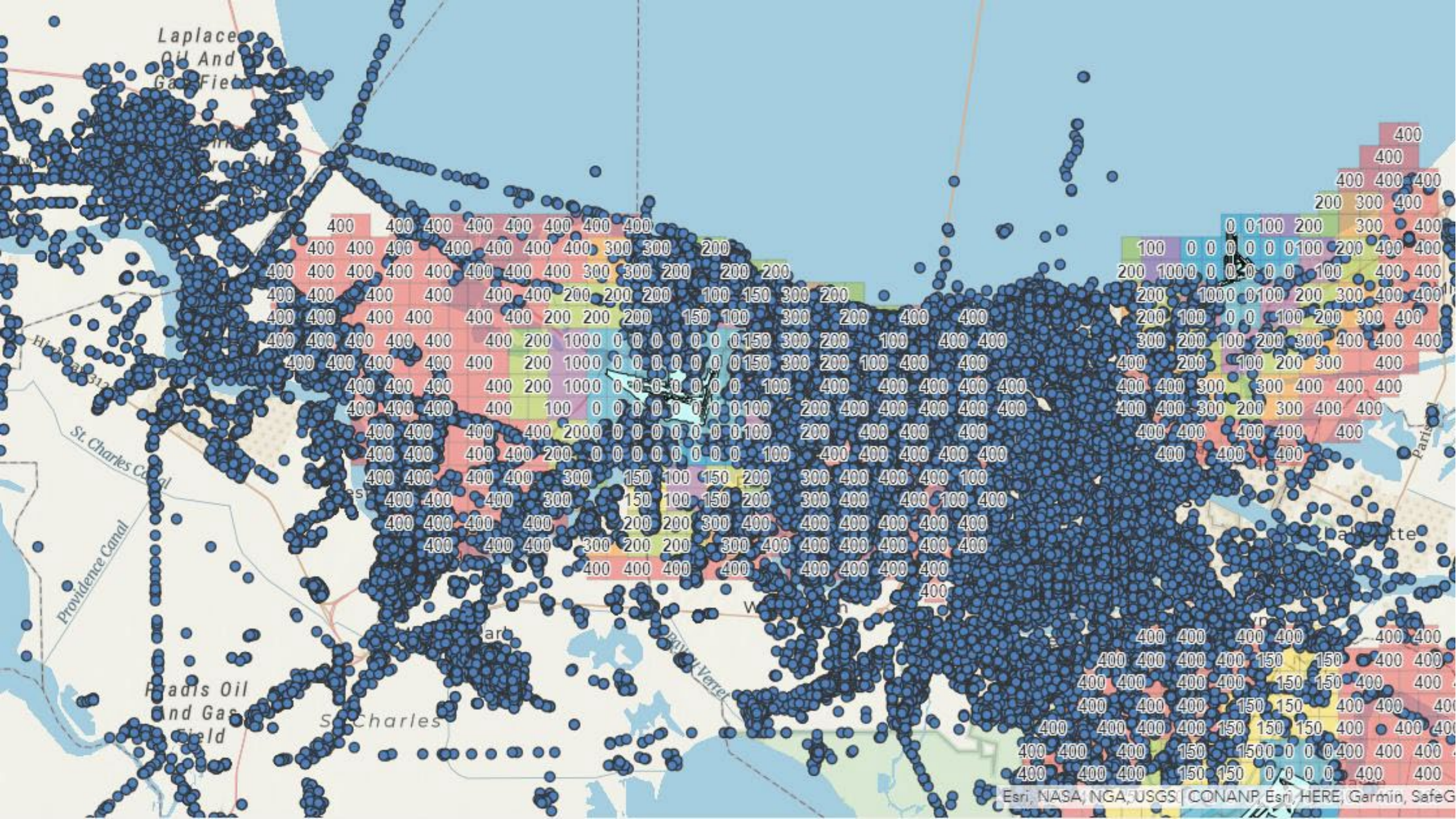
Using the “Geo-Fence” capability:











Laplace Oil And Gas Field

St. Charles Oil And Gas Field

St. Charles

400

400

400 400 400

200 300 400

0 0 100 200 300 400

100 0 0 0 0 0 100 200 400 400

200 1000 0 0 0 0 100 400 400

200 100 0 0 100 200 300 400 400

300 200 100 200 300 400 400

400 200 100 200 300 400

400 400 300 300 400 400

400 400 300 200 300 400 400

400 400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

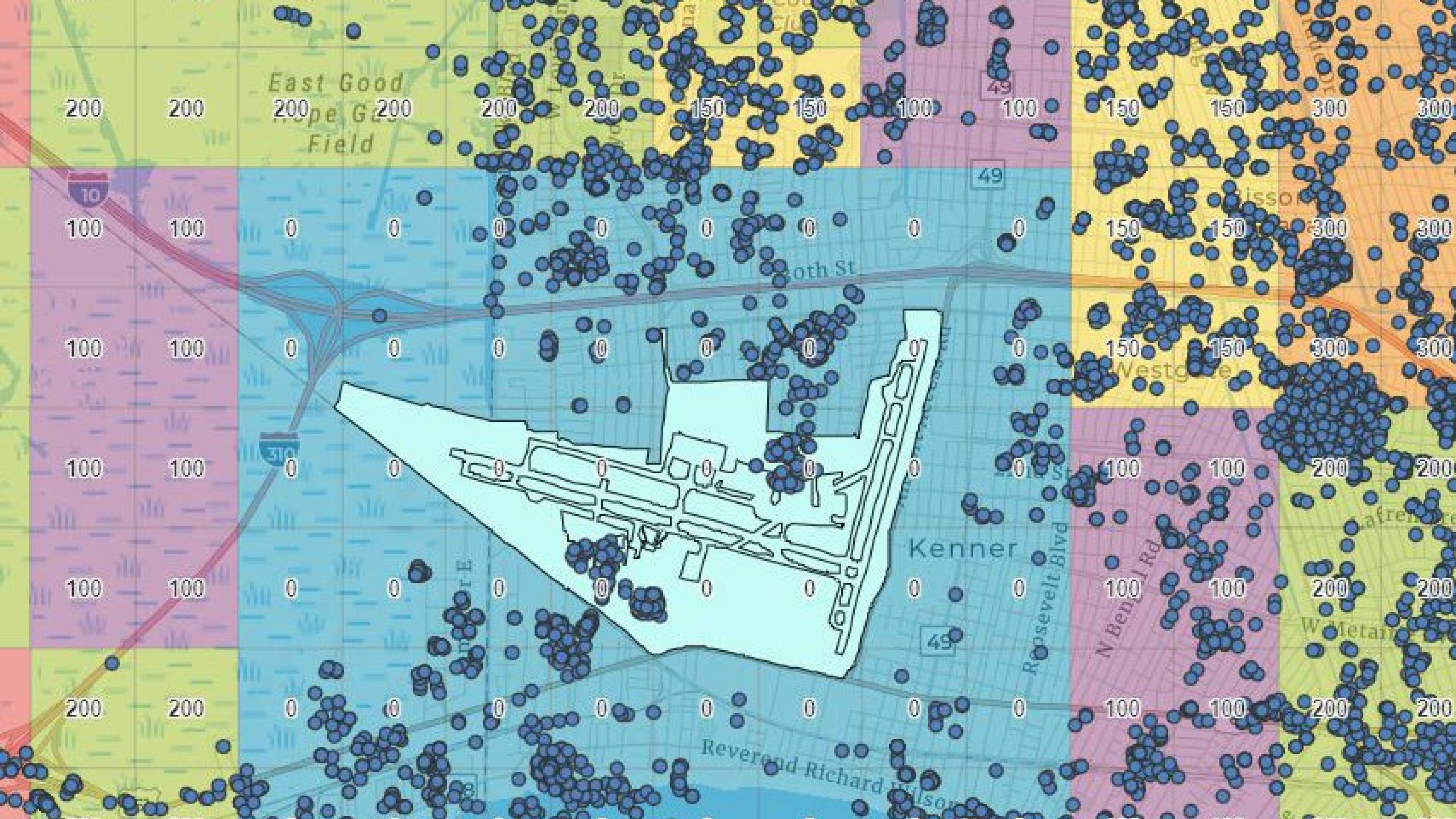
400 400 400 400

400 400 400 400

400 400 400 400

400 400 400 400

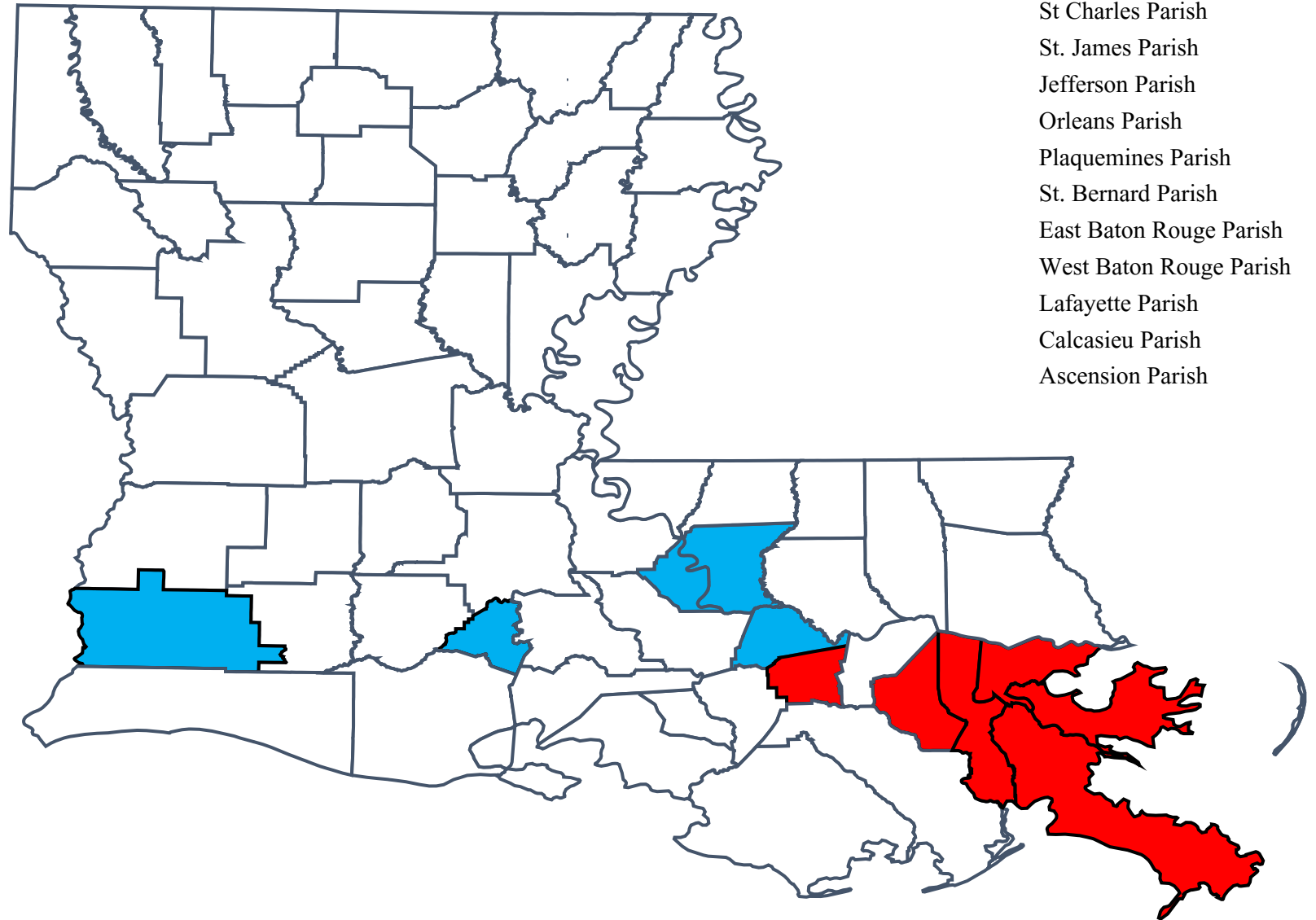
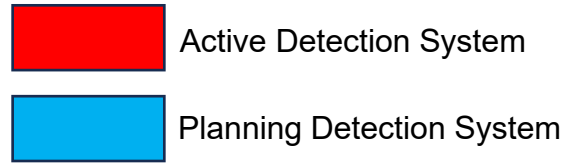
400 400 400 400



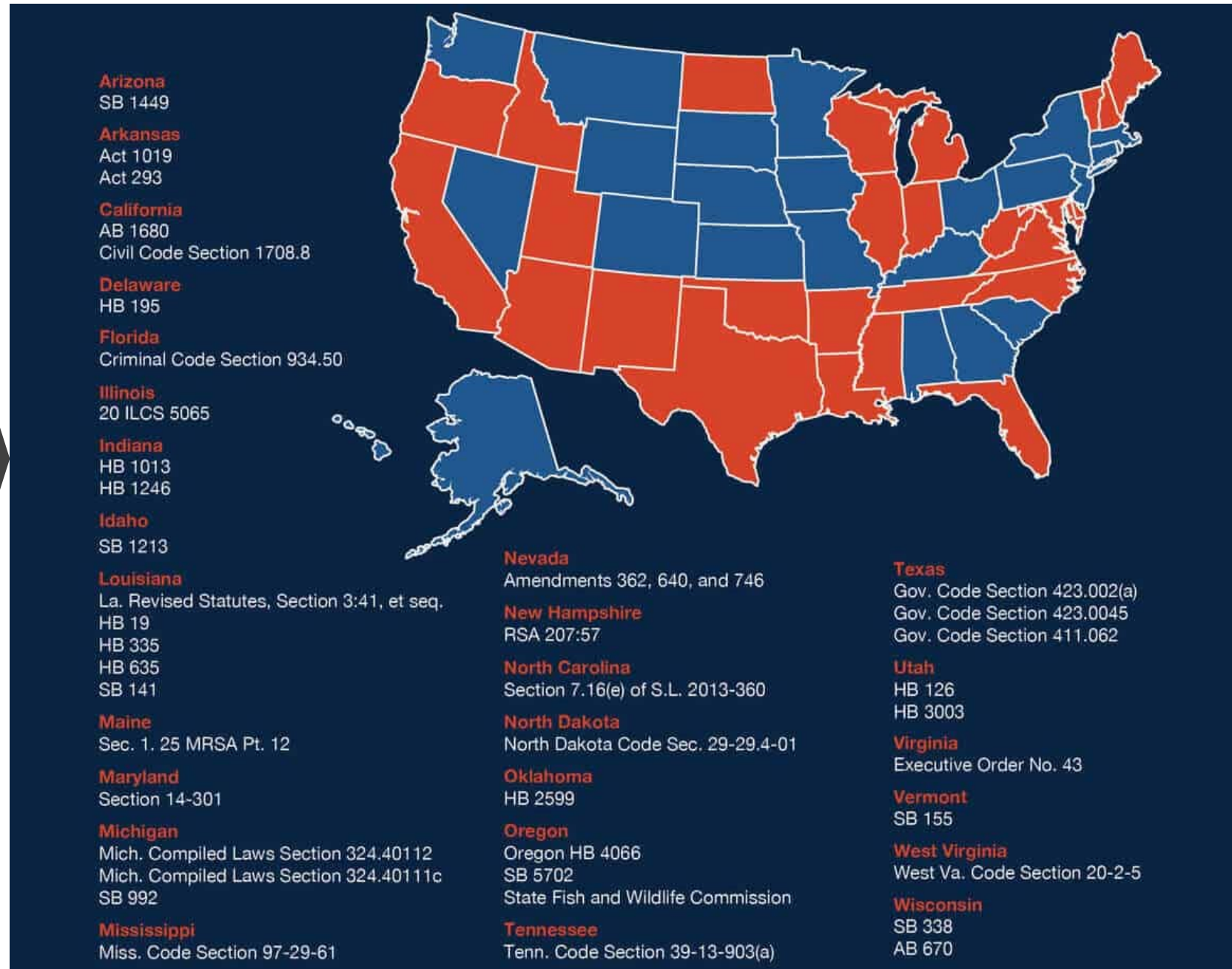
Drone incident trends Federally:

- 01/2023 – 12/2023 FAA reports 1,687 suspicious drone sightings.
- The top five reporting categories were from:
 1. Airports and aircraft sightings
 2. Government buildings
 3. Energy Sector
 4. Suspicious activity
 5. Private or civilian buildings or sightings
 6. Federal Prisons

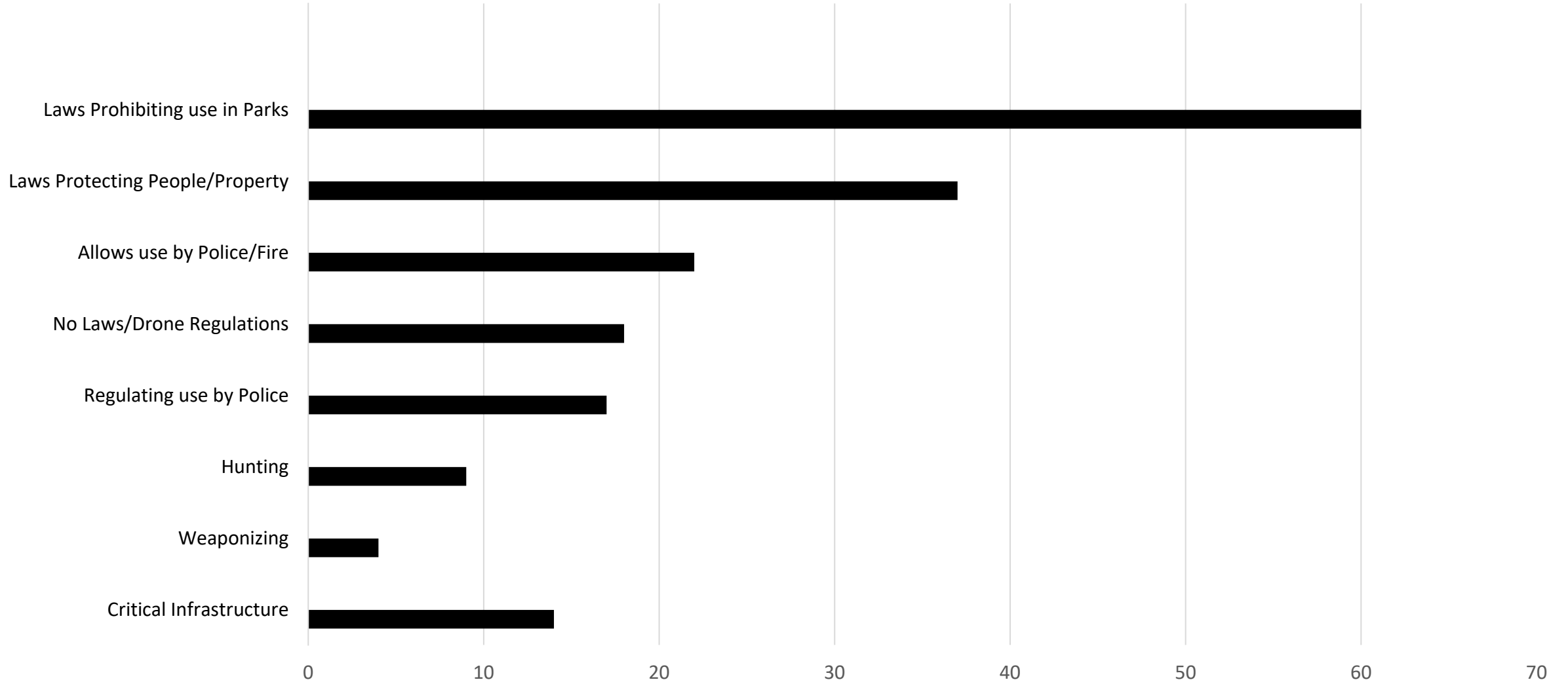
*Note- Many drone sightings go unreported due to inability to locate the pilot or drone at the time of the incident.



26 States have
adopted UAS
laws or UAS
regulations



Break down of Laws Nationally



LRS 14:337. Unlawful use of an unmanned aircraft system

- (1) The ***intentional*** use of an unmanned aircraft system to conduct surveillance of, gather evidence or collect information about, or photographically or electronically record a ***targeted facility*** without the prior written consent of the owner of the targeted facility.
- (2) The intentional use of an unmanned aircraft system over the grounds of a state or local jail, prison, or other correctional facility that incarcerates or detains juveniles or adults accused of, convicted of, sentenced for, or adjudicated delinquent for violations of criminal law without the express written consent of the person in charge of that state or local jail, prison, or other correctional facility.

LRS 14:337 Continued...

B. As used in this Section, the following definitions shall apply:

- (1) "Federal government" means the United States of America and any department, agency, or instrumentality thereof.
- (2) "State government" means the state of Louisiana and any department, agency, or instrumentality thereof.
- (3) **"Targeted facility" means the following systems:**
 - (a) **Petroleum and alumina refineries.**
 - (b) **Chemical and rubber manufacturing facilities.**
 - (c) **Nuclear power electric generation facilities.**
 - (d) **School and school premises as defined by R.S. 14:40.6(B).**
 - (e) **Critical infrastructure as defined by R.S. 14:61(B)**.**
 - (f) **Grain elevators and grain storage facilities.**

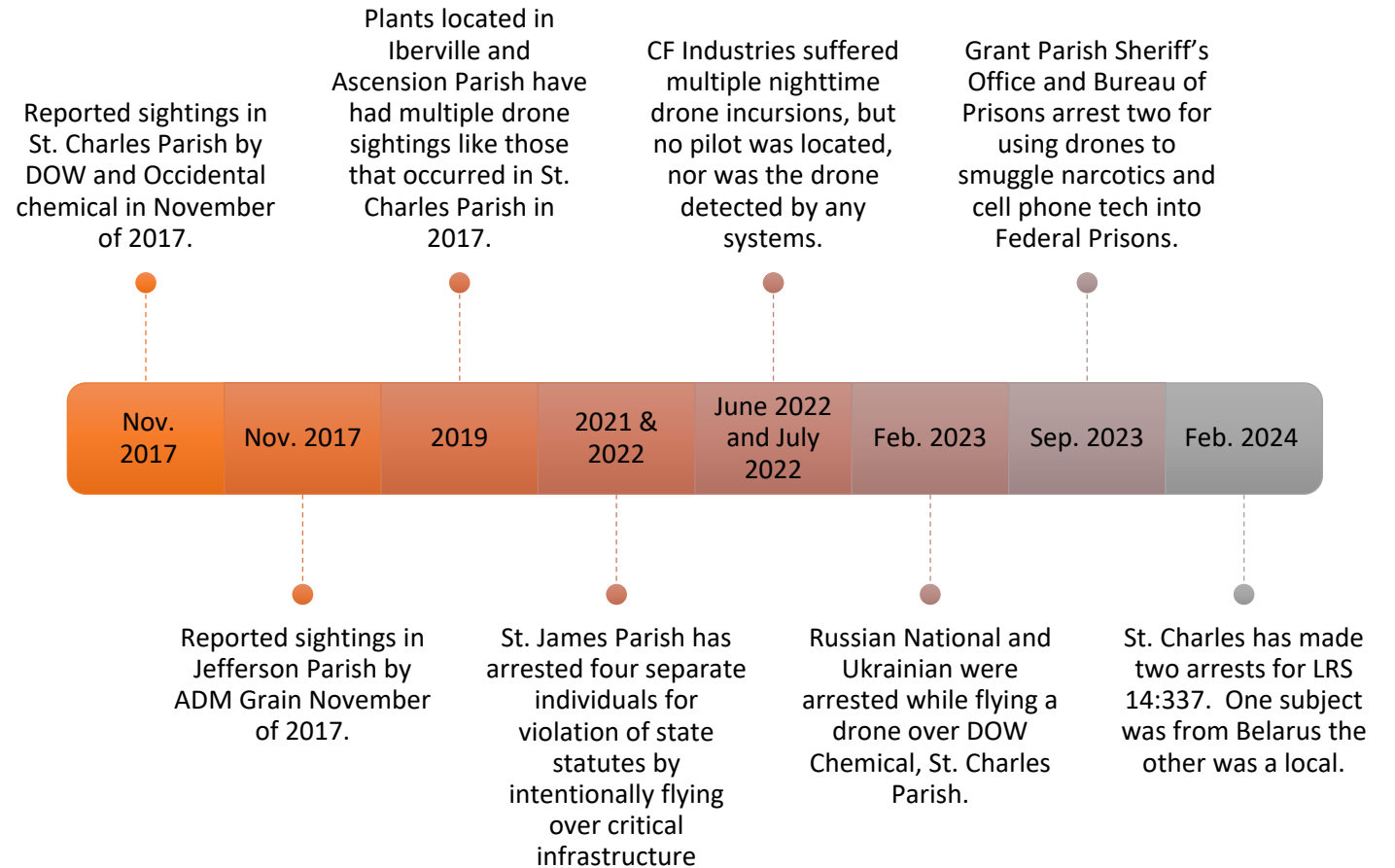
**** (1) "Critical infrastructure" means any and all structures, equipment, or other immovable or movable property located within or upon chemical manufacturing facilities, refineries, electrical power generating facilities, electrical transmission substations and distribution substations, water intake structures and water treatment facilities, natural gas transmission compressor stations, liquefied natural gas (LNG) terminals and storage facilities, natural gas and hydrocarbon storage facilities, transportation facilities, such as ports, railroad switching yards, pipelines, and trucking terminals, or any site where the construction or improvement of any facility or structure referenced in this Section is occurring.**

LRS 14:337 Continued...

D. The provisions of this Section **shall not apply** to any of the following:

- (1) Any person operating an unmanned aircraft vehicle or unmanned aircraft system in **compliance with federal law or Federal Aviation Administration authorization** or regulations or to any person engaged in agricultural commercial operations as defined in R.S. 3:41.
- (2) The operation of an unmanned aircraft by institutions of higher education conducting research, extension, and teaching programs in association with university sanctioned initiatives.

Drone Incidents in Louisiana



DOW Chemical St. Charles Parish Louisiana

On February 21, 2023, drone detection equipment alerted to a drone flying over DOW Chemical.

Deputies located two subjects, seated inside of a rental vehicle.

Subject 1: Volodymyr Dorogobid was piloting the drone.

Subject 2: Tigran Avetisyan was watching fight through FPV goggles.

Convicted January 2024 on 1 count each of LRS 14:337 - Unlaw use of Unmanned Aircraft System.

Tigran Avetisyan

Volodymyr Dorogobid





This is an overview of the flight that originated from Site 2, over several chemical plants in Hahnville, LA. Flight is



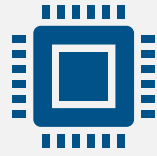
Image 50: recovered DJI Mavic 3 picture dated 21 February 2023 showing the Dow Chemical plant in Hahnville, LA. Image taken during [FLY0120](#). UAV violates FAA AGL regulations.



Image 51: still from recovered DJI Mavic 3 video dated 21 February 2023 showing the Dow Chemical plant in Hahnville, LA. Video taken during [FLY0120](#).

The red and white stacks feature in three recovered videos.

Conclusion and Summary



Emerging technologies, pros and cons.



What we learned the hard way.



Where do we go from here and how do we help protect Critical Infrastructure?

Questions?

TFO Lieutenant Jeffrey Hirsch

Email: JLHIRSCH@FBI.GOV

CELL: 504-329-9815

DESK: 504-816-3091