Doin’ it With Drones...

Fort Bend County Texas Levee Improvement District # 2
Glen Gill and André McDonald

2016 Texas Floodplain Management Association
Today’s Speakers

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One Company. Unlimited Potential.™

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Technology. Innovation. Experience
Using Unmanned Aircraft System (UAS)

- Construction
- Inspect Damage
- High Water / Low Water
- Data Analytics
Construction

- Help Obtain Permits
- Establish Pre-Construction Conditions
- Monitor Construction Progress
- Identify Problems Early
- Document any Contractor Damage
- Improve Communication
Corp of Engineers sees...
Our Actual Project...

Ditch B-1
9am
**Damage / Inspection**

By Using a UAS, we are able to:

- See Places That are Inaccessible to Operators
- Properly Identify and Document Issues or Problems
- Identify Insect Infestation Issues, Burrowing Animals, Natural Damage, or Vandalism
- Monitor Vegetation Conditions
High Water / Low Water

Document Flood Levels for Future Flood Issues
Provide Details for FEMA and Insurance Claims
Use in Flood Fighting Patrol to Detect Sand Boils
View the Changing Elevation of Flood Waters to Provide Real Time Updates
More Than Video

Data Analytics

Vegetation Lines

How fast is the vegetation encroaching?

How big is this area?

Normalized Difference Vegetation Index (NDVI)**

Where and to what level is my vegetation stressed?

Volumetric Analysis

** Requires Infrared Camera

2016 Texas Floodplain Management Association
More Than Video
Data Analytics – 3D
FAA Regulations

FAA taking incremental approach to safe UAS (Unmanned Aircraft Systems) Integration into the National Air Space.

- Section 333 Waiver for Civil Operations
  - 3,853 Petitions Granted, 399 Petitions Closed
- COA for Public Operations
  - 75 Public COA’s granted
- Respect Restricted Air Space
- Aircraft Registration – ALL aircraft, hobby & commercial
  - 300,000 aircraft registrations in first 30 days
Helpful Links

- FAA: www.faa.gov/uas/
- AUVSI: www.auvsi.org
- KNOW BEFORE YOU FLY: www.knowbeforeyoufly.org
- B4UFLY Smart Phone App: www.faa.gov/uas/b4ufly
- Bob Hodge: Bob.Hodge@Tech3.com
Yes, You Need a Pilot’s License

Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.
Our Aircraft

DJI Inspire 1
- Quadcopter (6.5lbs)
- Dual Controllers (Pilot and Camera)
- 4K (4000x3000; 12.76MP) Camera
- Zenmuse X3 Gimbal
- Intelligent Flight Battery (15 min flight)
- Base Price: $3,400

Accessories
- Hard Cases, Spare Parts
- Extra Batteries and Chargers
- Nvidia Shield Tablets (2)
- Laptop, Pix4DMapper
- Sky is limit – our setup $12,500
“Without Flood Control Nothing Else Matters”
Association of Levee Boards of Louisiana

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