



DRAGONFLY
AEROSOLUTIONS



DRAGONFLY AEROSOLUTIONS - ENGINEERING & DRONE SERVICES

**MISSISSIPPI SWANA
DRONES & SOLID WASTE**

Presented By:
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PRESENTER



Edward Schmalfeld II, P.E.

Owner of Dragonfly AeroSolutions
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Bachelor of Science in Civil Engineering
From Florida State University

Florida Professional Engineer

4+ Years Land Development Engineering

13+ Years Environmental Consulting

13+ Years Landfill Engineering and
Management



OUTLINE

- PRESENTER
- OVERVIEW
- DRONES
- DRONE VALUE
- SURVEY & MAPPING
- INSPECTIONS
- SAFETY
- CONSTRUCTION
- GETTING STARTED
- SUMMARY

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**DRAGONFLY
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OVERVIEW

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- THE DRONE INDUSTRY TODAY
- THE VALUE DRONES CAN ADD
- SURVEYING & MAPPING TOOLS
- TAKING INSPECTIONS TO NEW HEIGHTS
- A NEW VIEW ON SAFETY
- MANAGING CONSTRUCTION
- GETTING STARTED










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The Drone Market Environment 2018



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DRONE VALUE PROPOSITION

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- REDUCED COSTS
- TIME SAVINGS & REDUCTION
- REAL TIME INFORMATION
- INCREASED DATA SETS
- MORE INFORMED DECISION MAKING FROM ANYWHERE

- REDUCED ENVIRONMENTAL IMPACTS & DISTURBANCE
- IMPROVED DOCUMENTATION
- REDUCED HAZARD EXPOSURE
- SAFER OPERATIONS
- SET YOURSELF APART



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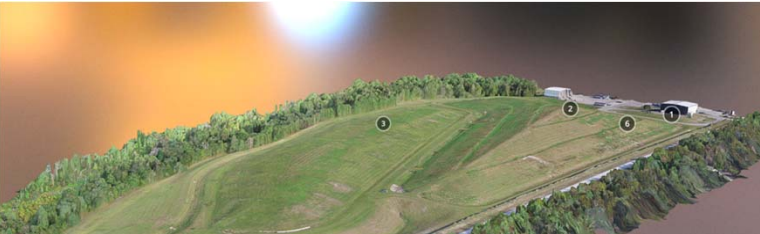
SURVEY & MAPPING

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- PHOTOGRAMMETRY
- +/- 2 CM OF ACCURACY
- USE OF RTK NETWORKS
- GCP INTEGRATION
- MOBILE GCP CAPABILITIES
- SURVEY ~ 400 ACRES/HR
- **MILLIONS** OF DATA POINTS VS. HUNDREDS WHEN COMPARED TO TRADITIONAL SURVEYING

- SURVEYING RESULTS COUPLED WITH UPDATED AERIAL IMAGING
- RESULTS IN DAY VS. WEEKS
- REDUCED COSTS
- REDUCED IMPACT TO OPERATIONS AND PROJECT
- INCREASED SAFETY
- ROBUST DELIVERABLES INCLUDING HIGHLY DETAILED CAD FILES, CONTOURS, POINT CLOUDS, PRINTED AERIALS & MORE



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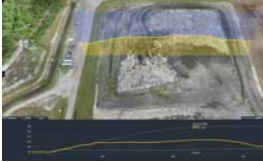
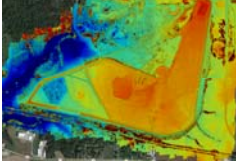

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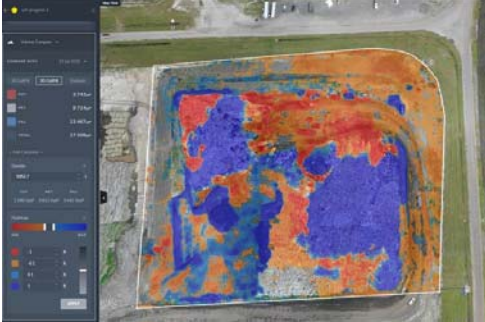
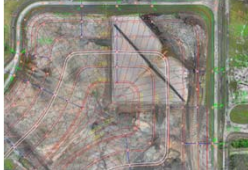

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SURVEY & MAPPING: EXAMPLES



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INSPECTIONS

- STAY COMPLIANT
- GET A NEW PERSPECTIVE
- PROACTIVE VS. REACTIVE, FIND ISSUES BEFORE THEY FIND YOU
- SAFELY INSPECT POTENTIALLY HAZARDOUS AREAS & CONDITIONS
- COVER **1,000'S** OF ACRES IN A DAY
- STORM & DISASTER ASSESSMENTS
- 4K DEFINITION VIDEOS & IMAGES
- MINIMIZE OPERATIONAL DISRUPTIONS
- REAL-TIME, COMPREHENSIVE SNAPSHOT
- MAXIMIZE OPERATIONS
- DOCUMENT CORRECTIVE ACTIONS & SUCCESSES





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INSPECTIONS: EXAMPLES











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SAFETY

- BIRD'S EYE VIEW OF OPERATIONS IN REAL-TIME
- USE VIDEOS & PICTURES TO ENHANCE TRAINING PROGRAMS
- SAFELY ACCESS SAFETY SENSITIVE AREAS FROM 1,000'S OF FEET AWAY
- DOCUMENT SAFETY PROGRAM COMPLIANCE
- TAKE CONTROL OF YOUR TIPPING FLOOR LIKE NEVER BEFORE
- PERFORM SITE ASSESSMENTS IN A 3-D SPACE OR VIA GOGGLES THAT CONTROL THE DRONE'S CAMERA
- GET A COMPREHENSIVE VIEW OF TRAFFIC PATTERNS, SPACING & OPERATIONS
- PUSH THE ENVELOPE ON MAKING **SAFETY THE #1 PRIORITY**



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- GATHER PRE-EXISTING SITE CONDITIONS VIA SURVEYS, VIDEOS & PHOTOGRAPHS
- PRODUCE MORE ACCURATE TIME & MATERIAL ESTIMATES
- USE DRONES TO VALUE ENGINEER PROJECTS
- CREATE BETTER QA/QC PROGRAMS
- PROTECT YOURSELF FROM LEGAL ISSUES IN THE FUTURE
- SITE HISTORY DOES NOT LEAVE WITH FORMER EMPLOYEES
- EVALUATE PAY APPLICATIONS MORE THOROUGHLY
- SET YOURSELF APART FROM THE COMPETITION



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CONSTRUCTION: EXAMPLE





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GETTING STARTED

- DETERMINE WHAT PROBLEM YOU ARE TRYING TO SOLVE
- WHO IS BEHIND THE DRONE & WHAT IS THEIR EXPERIENCE
- IN-HOUSE VS. 3rd PARTY
- PRICE VS. EXPECTATIONS
- FAA REGULATIONS & RECORD KEEPING
- WHO IS THE END USER
- INSURANCE & LIABILITY EXPOSURE
- DATA SECURITY & CONFIDENTIALITY
- WHERE ARE RESOURCES BEST SPENT
- PROMISES VS. REALITY





**SUMMARY:
THANK YOU!**

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