sUAS for Wetland Mitigation Area Monitoring

The Department is required to monitor the health and stability of its wetland mitigation areas for five years after construction. Current monitoring is performed through a combination of aerial imagery, surveying techniques, and physically walking the site.

Small unmanned aerial systems (sUAS) are an emergent technology that will require the Department to understand FAA rules, understand the strengths and limitations of the data that can be collected via sUAS, and understand how best to utilize the technology through in-house forces and consultants.

sUAS can assist in the monitoring of wetland mitigation areas by collecting aerial imagery, producing orthomosaic images, and digital elevation models. sUAS can do so faster than traditional means and at less cost compared to traditional aerial imagery and monitoring methods.

Researchers would (1) investigate the current regulatory requirements to operate sUAS in the Federal airspace; (2) obtain, if they don't already possess, an FAA Remote Pilot certificate; (3) investigate the required resolutions, sensors, accuracy, and precision needed; (4) purchase an sUAS and software that will meet the requirements identified above; (5) learn to plan missions and operate the sUAS safely; (6) coordinate with the Environmental Division to document one or more wetland mitigation areas; (7) if desired by Environmental personnel, bring in a consultant to fly additional sensors; (8) compare the sUAS-based documentation data against the traditional methods currently utilized for documentation; (9) make recommendations on how Environmental should proceed with its sUAS program.

Implementation can include: (1) summary of current sUAS-related regulations and recommendations on future training for Department personnel; (2) recommendations on how to determine the hardware/software requirements for future sUAS tasks; (3) providing the Department with other information needed to administer its future sUAS program.

Estimated Project Duration: 24 months

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