UAV-Based Infrastructure Monitoring
Inspection and Change Detection

3D Reconstruction
- 3D Point Cloud
- Textured 3D Mesh

Joe’s Valley Reservoir

Change Detection
- Grey Suburban
- Blue Truck & Trailer
- White Truck
- Flight One
- Flight Two

Huntington Creek Canal

Conclusions
Our preliminary work has shown that UAV systems have the potential to be an efficient, cost-effective solution for monitoring dams, levees, canals, and other infrastructure systems. In our initial tests, we were able to successfully construct baseline models that will be used as references for future change detection testing.

Future Work
- Alternative platforms (hexacopter, quadcopter, etc.)
- Additional sensors (IR, thermal)
- Flight Optimization
- Real-time detection of infrastructure anomalies

Software
- Flight Planning: Matlab / Virtual Cockpit
- Flight Optimization: Matlab
- 3D Reconstruction: Visual SfM, CPMV5

Scan For Video

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