

Northeast Stockpile Photogrammetry



Description and Benefit

The Northeast District implemented drone-based photogrammetry to improve the accuracy, safety, and efficiency of stockpile inventory estimates. Previously, manual measurements required four people and about an hour per facility, involving climbing large piles—a process that was labor-intensive, inconsistent, and posed slip, trip, and fall hazards. By using a DJI Mavic 3 Enterprise drone equipped with an RTK module and processing data through PIX4D software, the district can now complete inventory in about 20 minutes with only two people. The drone automates flight routes, captures high-resolution images, and generates precise 3D models for accurate volume calculations, eliminating the need for manual climbing and reducing injury risks. This innovation saves approximately 40 minutes per facility, improves measurement consistency, and simplifies documentation by producing detailed PDF reports. Overall, drone photogrammetry enhances safety, reduces labor and time costs, and modernizes inventory processes, aligning with MoDOT's commitment to efficiency and employee well-being.

For More Information Contact

Northeast District / Maintenance

Matthew Jones at Matthew.Jones@modot.mo.gov or 573-691-0685.

Northeast District / Maintenance

John Ali at John.Ali@modot.mo.gov or 573-541-9616.