



ADOT Engineering Survey Section

UAV Support

Mission and Goals:

- Provide support to Engineering Survey Section by supplementing topographic mapping projects using UAV's
- Support ADOT Project Managers and Consultants with orthorectified imagery and videos

Engineering Survey Section (ESS)

- Two ESS associates became licensed FAA Part-107 UAS Pilots in April 2017
- As of January 2021, completed 640 total drone missions operating four different Unmanned Aerial Systems (UAS) platforms

Services Provided

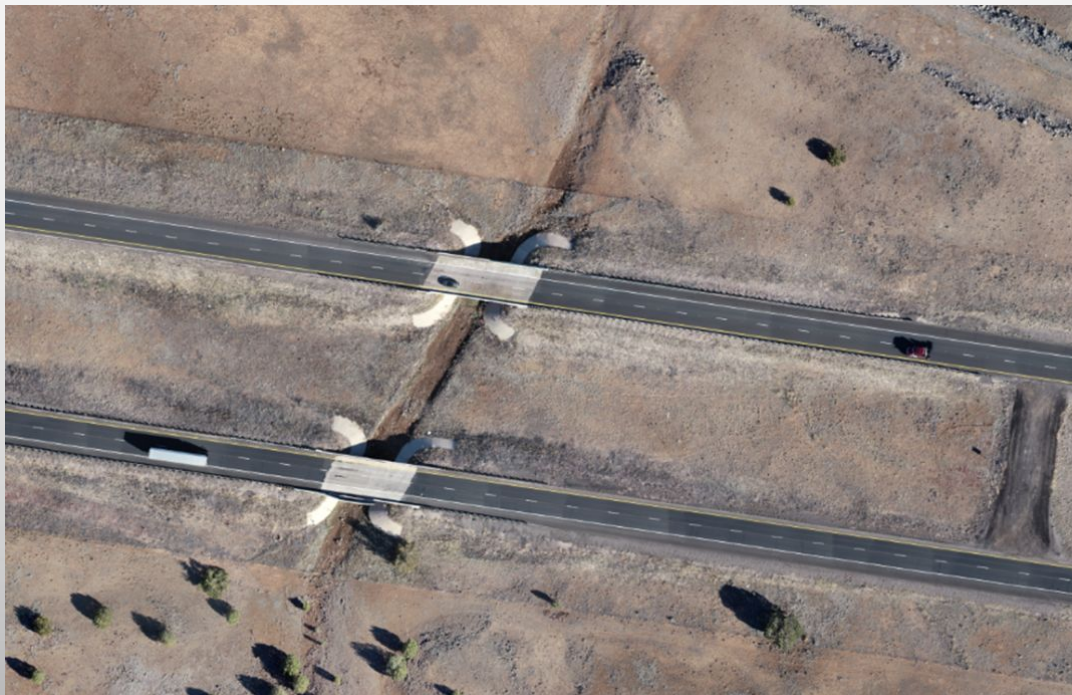
- Digital Terrain Models (DTM)
- Pre and Post Construction Survey
- Construction Progress Monitoring
- Material/Piles Volume Calculations
- Environmental Impact Assessment

Services Provided (cont.)

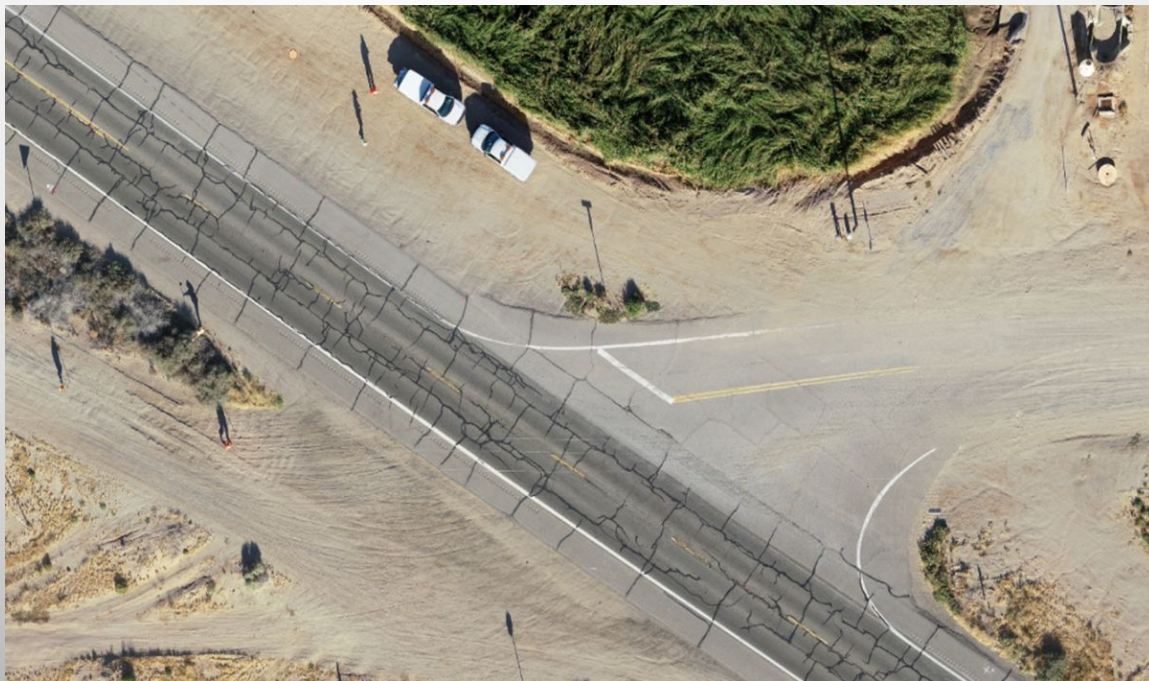
- Inventory Management
- Asset Inspections
- Traffic Monitoring/Traffic Studies
- Right of Way (Parcel Imagery)

Project Examples

I-40 Pineveta Wash DTM



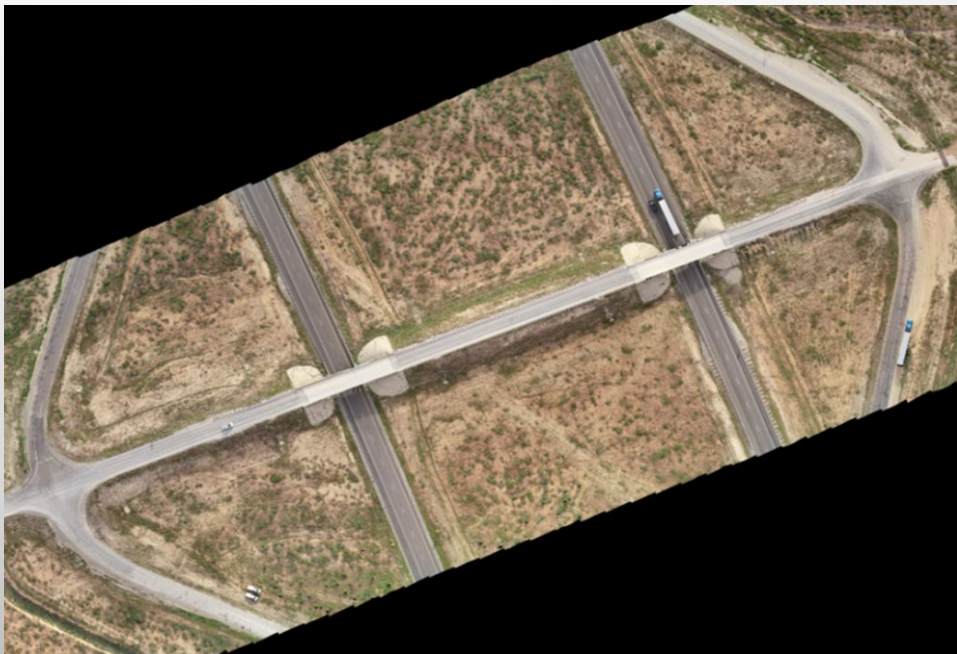
US-95 at Ave 12E Supplemental Survey



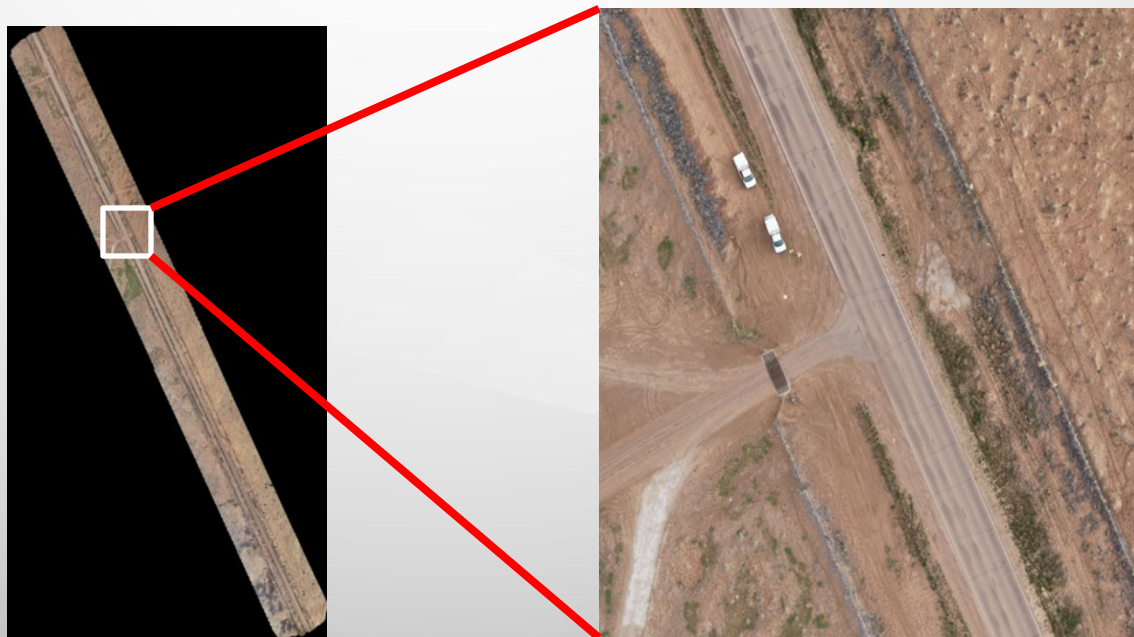
SB I-17 MP 296 DTM Point Cloud



I-15 Black Rock TI Orthoimage



SR-191 MP 448 to 460 Roadway Improvement



SR-89A Sedona Construction Progress





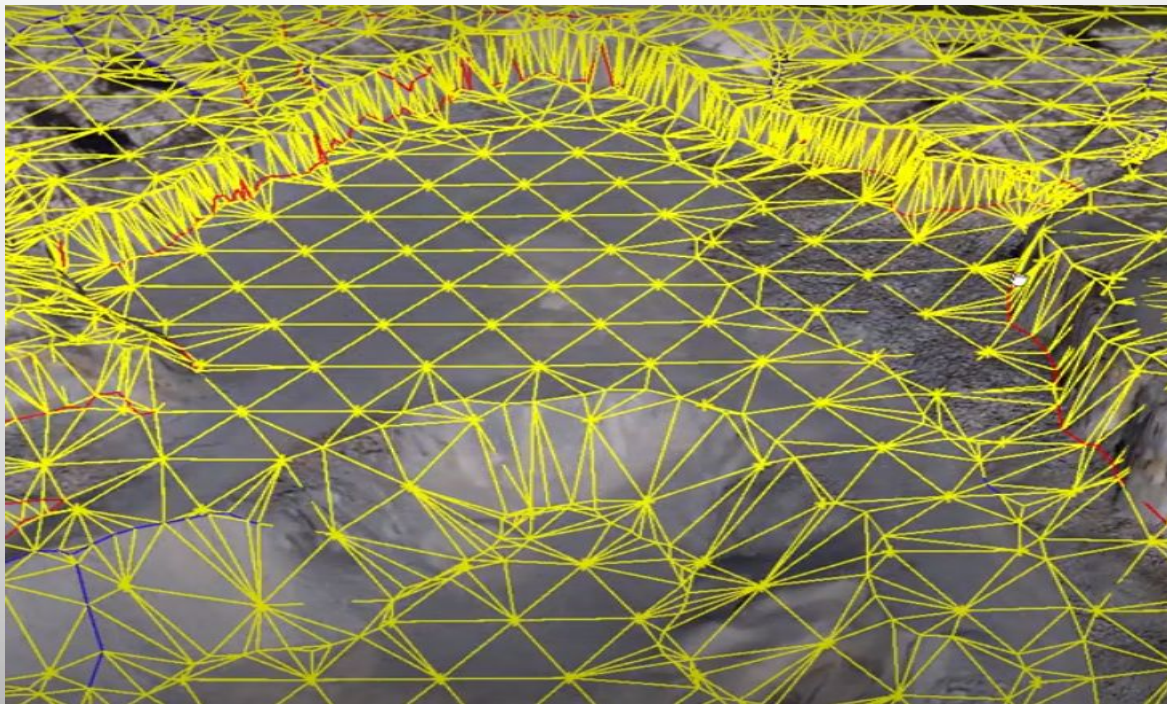
Volume Calculations Hazmat Glass Pile



Volume Calculations Vulcan Mine Piles



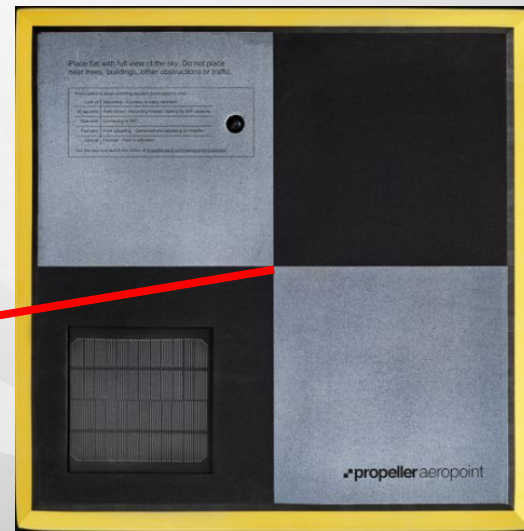
Triangulated Irregular Network from DTM



SR-88 MP 205 Road Washout



SR-88 Rock Slide MP 242



SR-87 near Slate Creek



ADOT Yard Casa Grande Asset Management



High Resolution vs Low Resolution



ADOT UAV



Google Earth

SR-260 Roundabout Traffic Monitoring



ADOT Right of Way Parcels



UAV Benefits

- No costly aircraft maintenance or fuel
- Flights are easier to schedule
- Imagery is high resolution and is up to date
- Quicker project delivery
- Accessibility where 'Right of Entry' is an issue
- Increased safety for ADOT personnel working near busy highways and/or rugged terrain
- All post-processing is performed in-house

UAV Project Deliverables

- Point clouds for extracting DTM and planimetric data
- Orthorectified imagery
- Aerial photography
- Video

Contact Information

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