ADOT Engineering Survey Section

UAS 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

Orthoimage

Point cloud
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
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

Parcel L-C-091
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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THANK YOU!