



DRONE 55

Commercial UAV

Overview 2016



SOUTH BAY CITIES
COUNCIL OF GOVERNMENTS

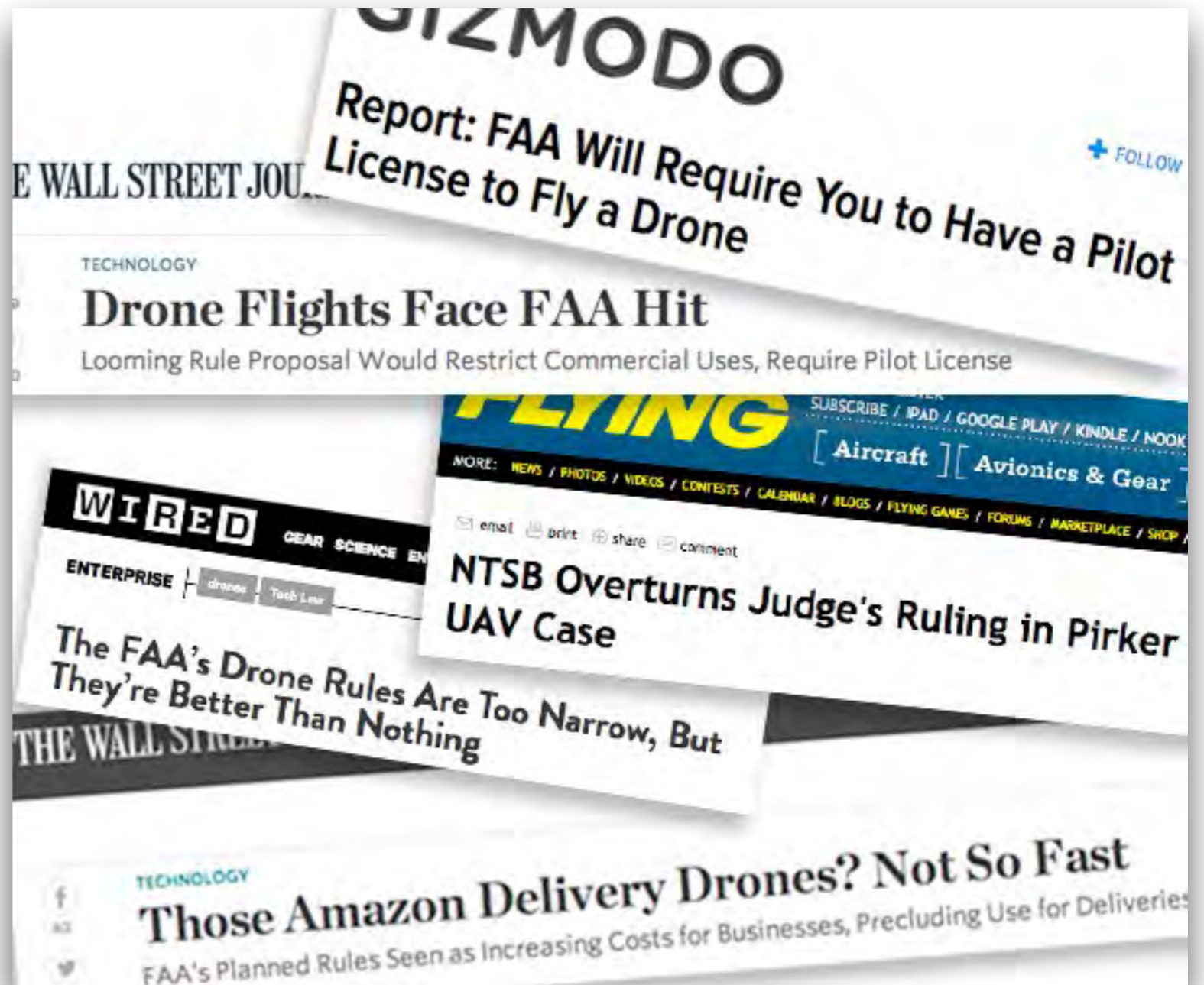
Joshua Kornoff

- CTO - Drone 55
- responsible for system design, payload integration, and software



Drones in the News

- UAV
unmanned aerial vehicle
- RPAS
remotely piloted aerial system
- UAS
unmanned aerial system
- sUAS
small unmanned aerial system
- “Drones”



Two Main Types

Three Main Categories



Multicopter
Fixed Wing



Hobby
\$1000-\$4000

Commercial
\$10,000-\$40,000

Gov't / LE
\$40,000-\$120,000+

How did they become popular?

Combination of military and RC hobby technology



With the introduction of inexpensive “Autopilots” the capabilities of the vehicles increased while the personal piloting skills of the operator were reduced.

Hobby vs. Commercial



What are they good for?

Autonomous = Final Puzzle Piece

Smaller and lighter payloads and sensors

Agriculture

Media

Construction

Utilities

Mining

Civil Government

Commercial Inspections

Safety and Law Enforcement

Edit Plan

Advanced

Sync

200 ft

Altitude

260 ac

Area

53 min

Duration

←0

Wind (kph)

140m

100m

60m

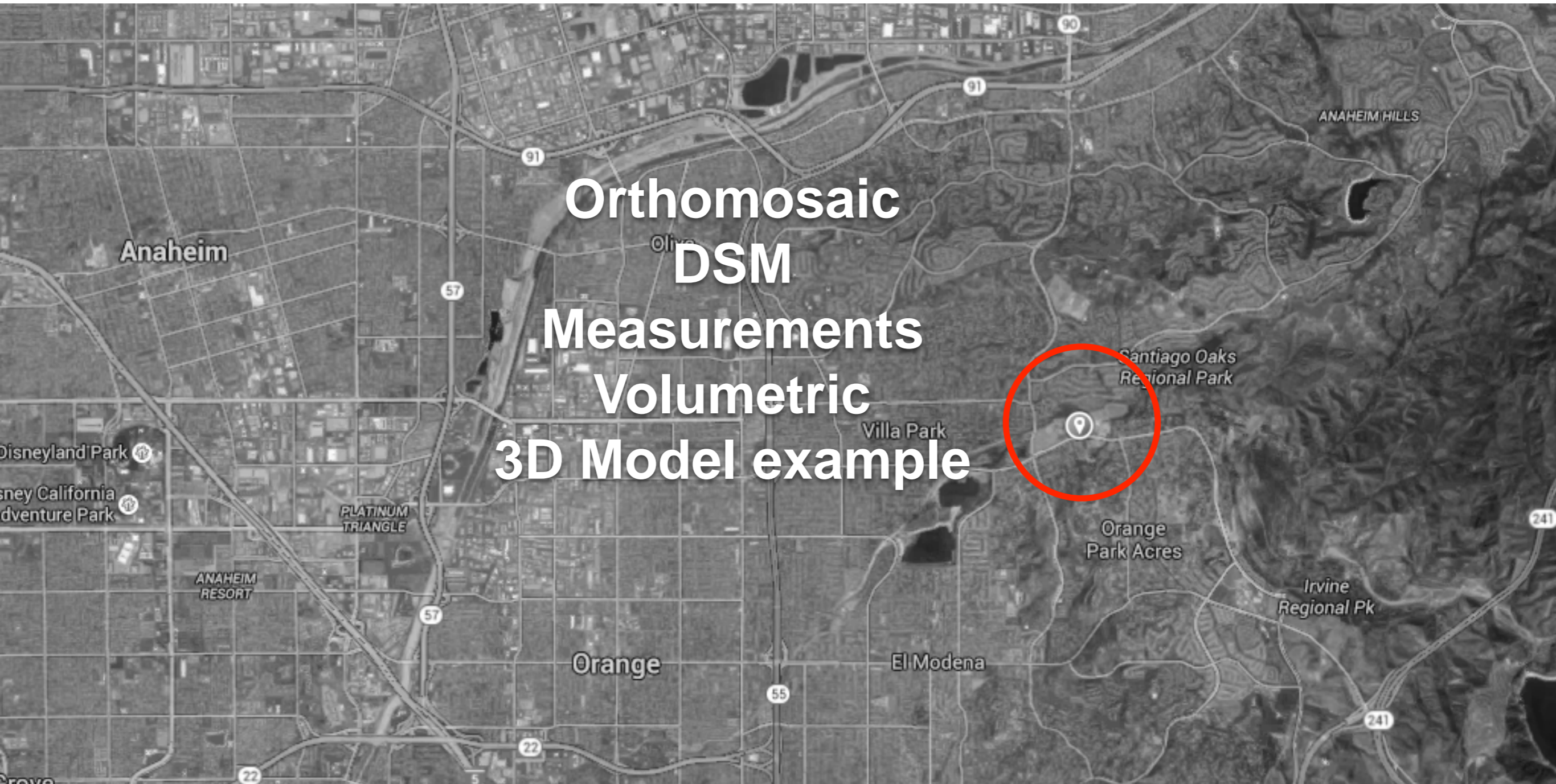
Terrain Elevation

6 11 17 22 28 33 39 44 50 56 61 67 72 78 83 89 94 100

percent of mission (%)



Quarry Example



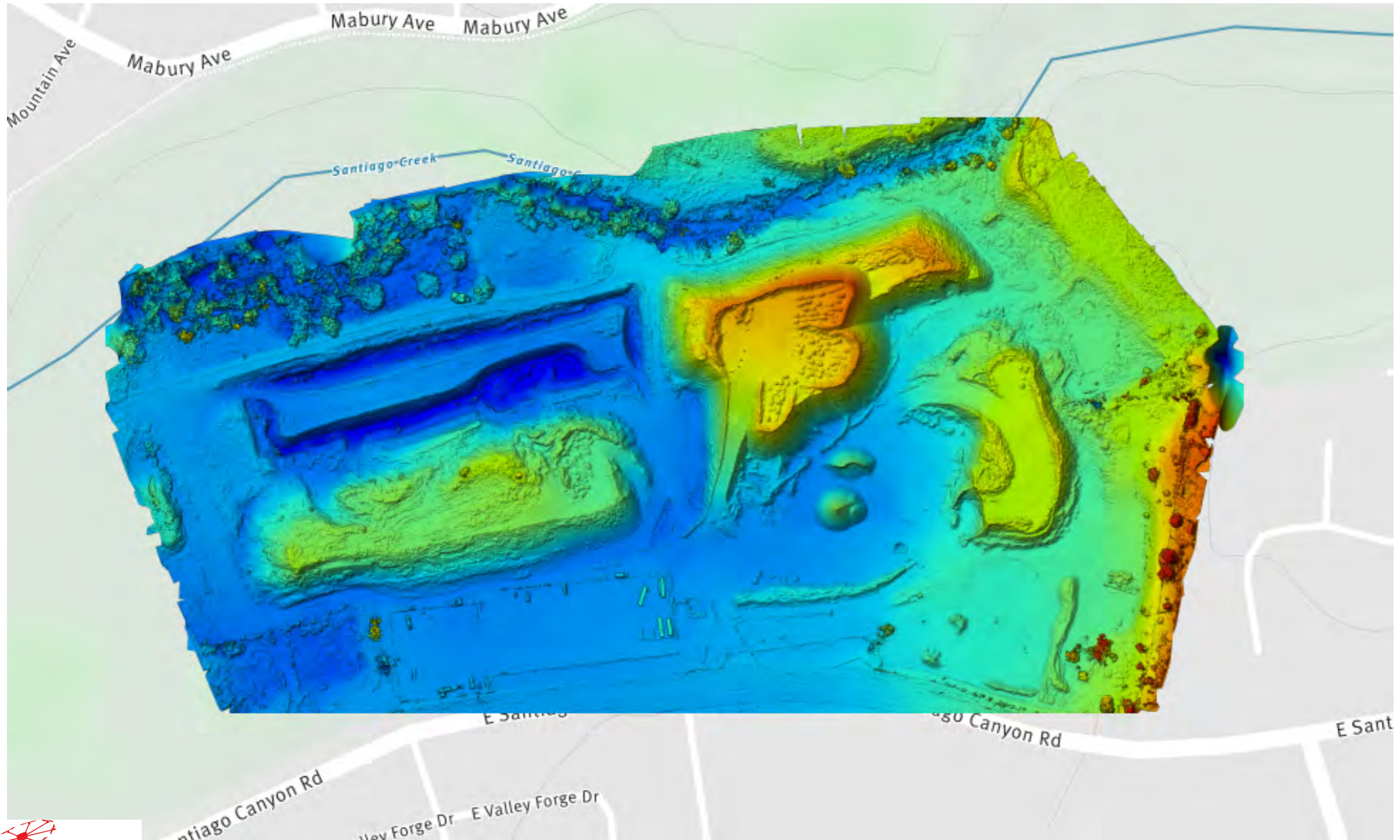
Orthomosaic
DSM
Measurements
Volumetric
3D Model example



Orthomosaic



Digital Surface Model (DSM)

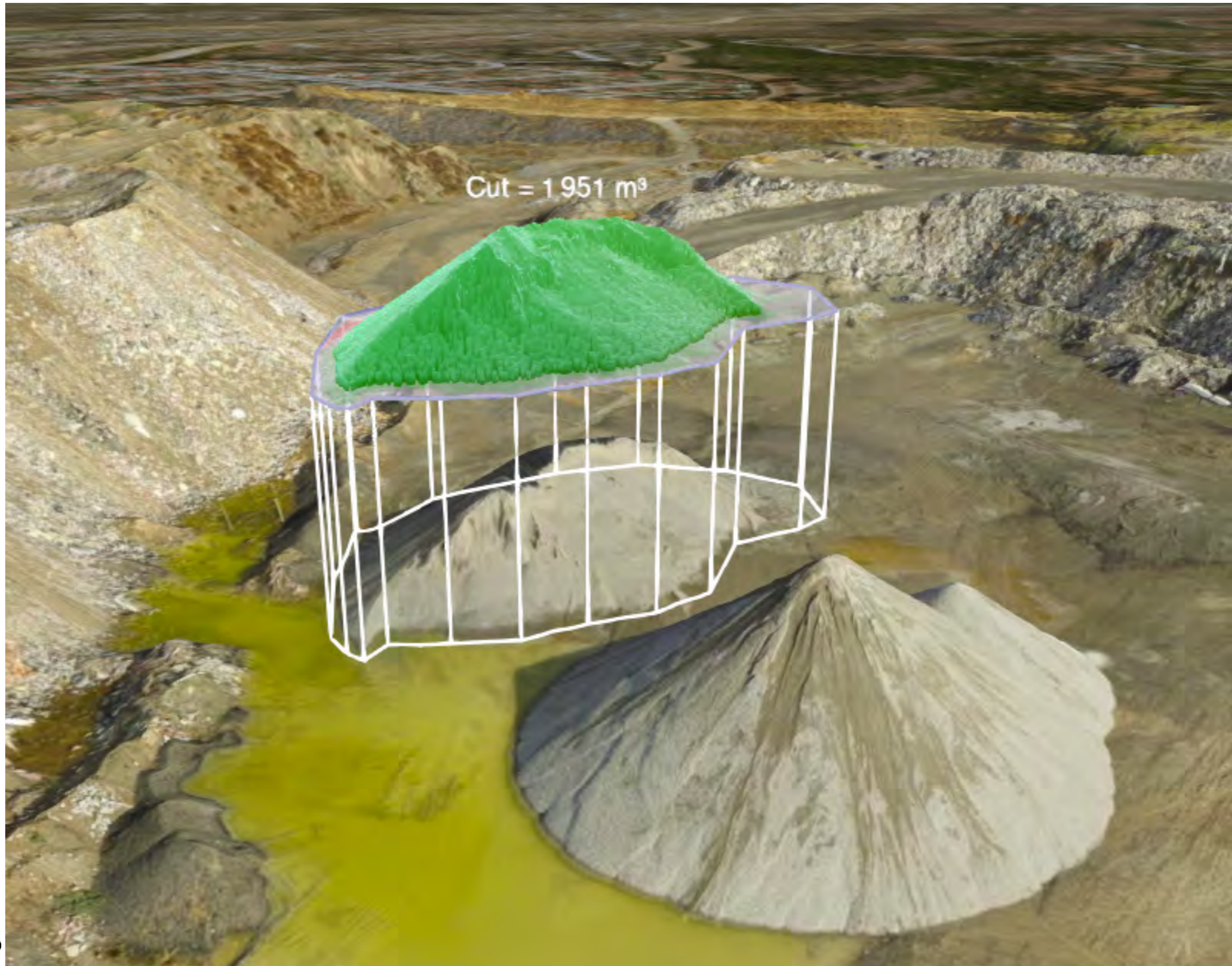


Measurements



2.83 acres
Click or tap starting point to finish drawing.

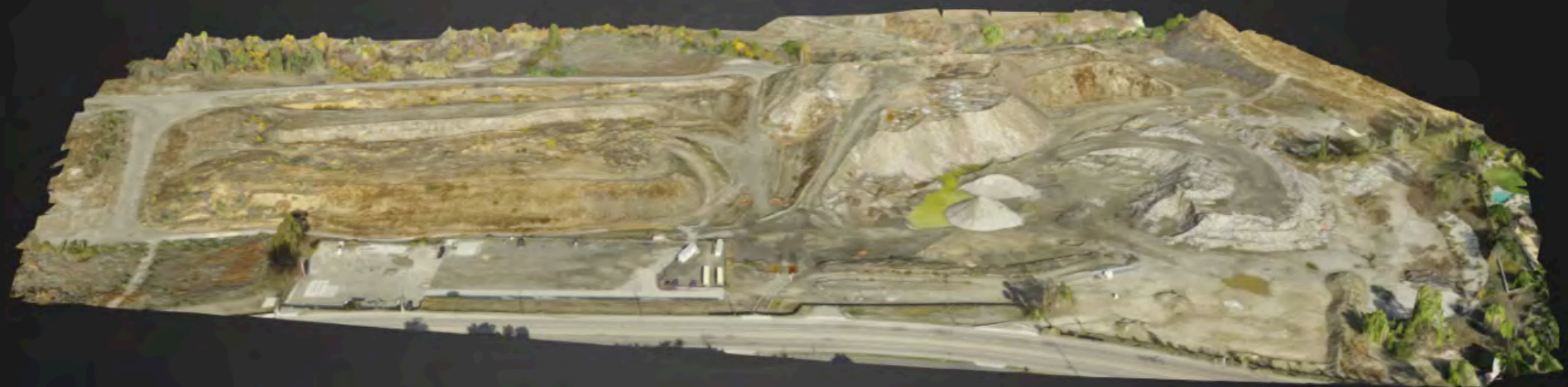
Volumetrics



3D Model

1452365021_INFOINSPIRE More info

★ ↶ ✕



Futuristic Technology?

No.

It's happening *today*.



UAV Regulations

Commercial vs Recreational in the United States



As of 2016, practically all RC models for recreational purposes need to be registered with the FAA. \$5 fee.
Name, contact info, serial number.

Commercial UAV Operations

Commercial UAV operations are **prohibited** under FAA regs

Exemption under Section 333

Written Application, approved with a Certificate of Authorization (COA)

400ft

Daytime

Pilot Certificate

Medical Certificate

<55lbs.

>5mi Airports

Visual Observer

>500ft. from non-participants

Line of Sight

Commercial UAV Services Companies



Section 333 Exemption
Certified Pilots
Trained Visual Observer
Registered N-# Vehicles
Aircraft Liability Insurance
Approved Operations Manuals
Maintenance and Training Records
NOTAM and COA filings w/ FAA

The Market

Unmanned Aerial Vehicles (UAV) Market worth **\$14.9 Billion**
USD by 2020

VTOL UAV market worth **\$5.50 Billion**

Multicopter UAV Market worth **\$2.28 Billion**

Small UAV Market worth **\$1.9 Billion**



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