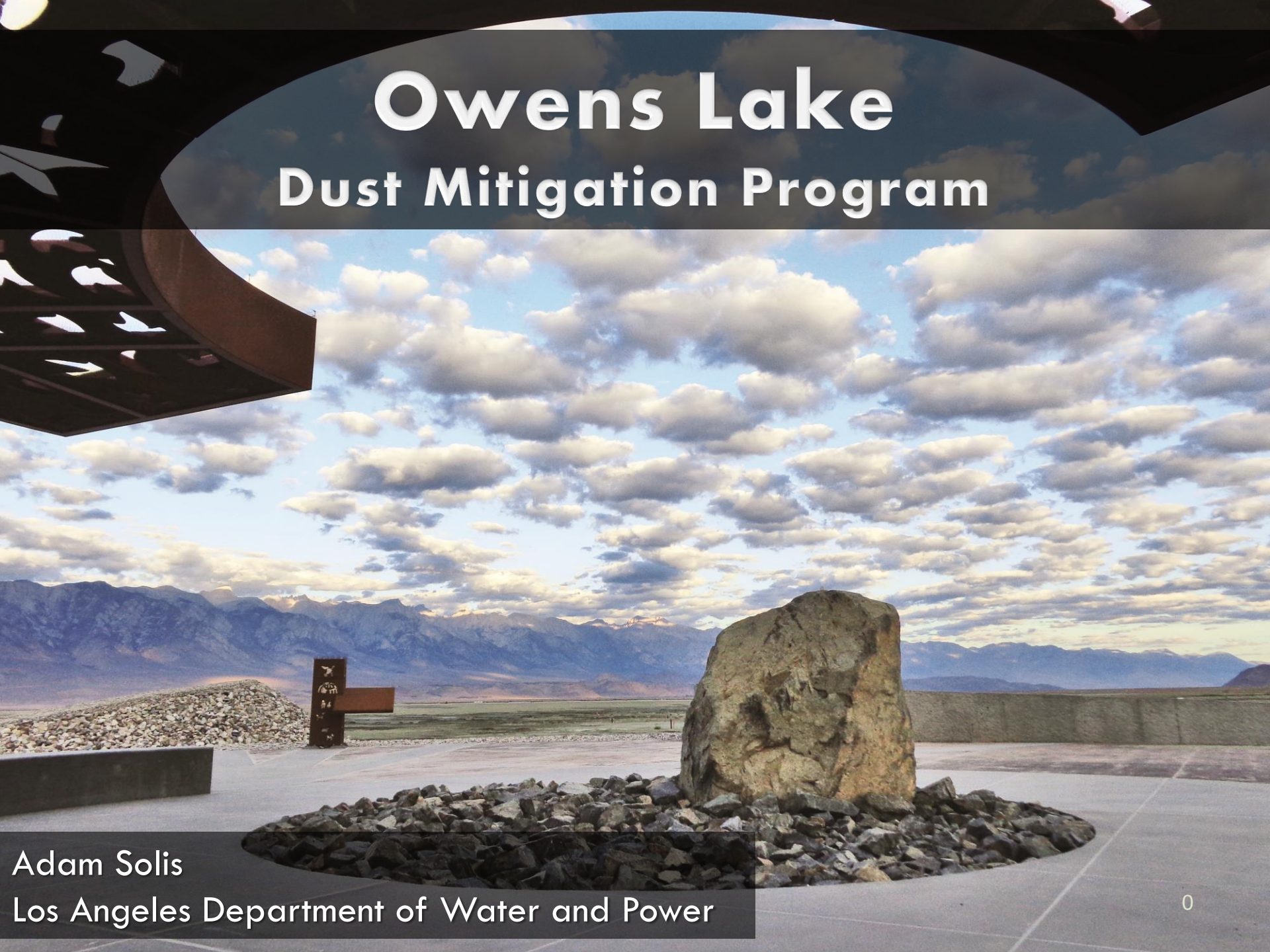

Owens Lake
Dust Mitigation Program

Adam Solis
Los Angeles Department of Water and Power

LA DWP Los Angeles Department of Water & Power

Agenda

1. **Background**
   a. Where and Why?
   b. Regulatory History
   c. Dust Control Methods
   d. Compliance Monitoring
   e. Challenges
   f. Goals
2. **Accomplished to Date**
   a. Total Dust Control
   b. Cost
   c. Current Water Usage

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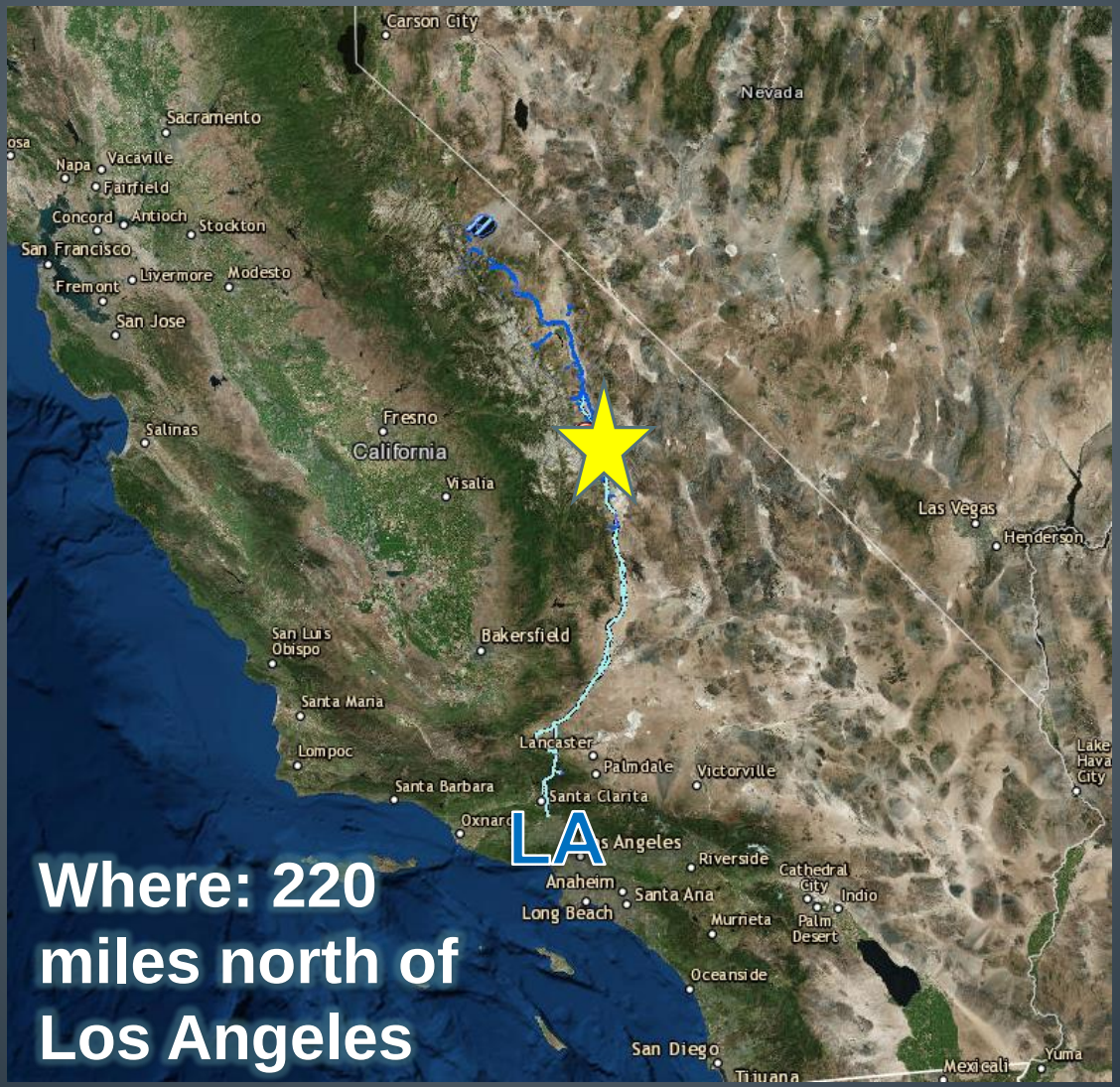
Where?



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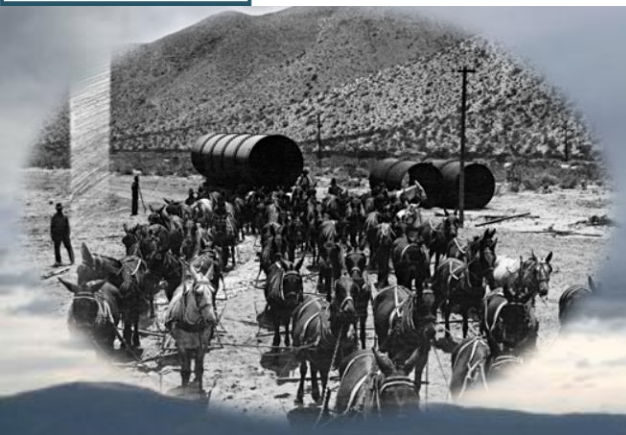
Why?



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Regulatory History

1913
- Owens natural end point for Owens River, LAA completed, Owens River diverted to Los Angeles. Owens Lake slowly dried out and became a source of dust.

1987
- EPA establishes NAAQS PM10 Standards (150μg/m^3), Owens Lake is classified as a serious area of non-attainment.

1998
- GBUAPCD adopts State Implementation Plan (SIP) for attainment of NAAQS. Enforceable under Health and Safety Code 42316.

2000
- LADWP Starts Dust Mitigation Projects on Owens Lake. Failure to comply would result in fines of up to $10,000/day

2011
- Dust mitigation orders continue, LADWP contests new orders

2013
- Settlement Agreement, limit set at 53.4 square miles of Dust Control

2018
- 48.6 square miles of dust mitigation completed to date

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Best Available Control Measures (BACM)

Shallow Flood Laterals & Ponds

Cost: $26M/mi²
Water: 48,003 AFY
Habitat: Yes
Maintenance: Low/Med

Shallow Flood Sprinkler

Cost: $32M/mi²
Water: 5,130 AFY
Habitat: No
Maintenance: High

DECREASING WATER DEMAND

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BACM

Managed Vegetation

Cost: $36M/mi²
Water: 6,951 AFY
Habitat: Yes
Maintenance: High

DECREASING WATER DEMAND

Brine

Cost: 24M/mi²
Water: 0.0 AFY
Habitat: No
Maintenance: Low

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BACM

DECREASING WATER DEMAND

Tillage

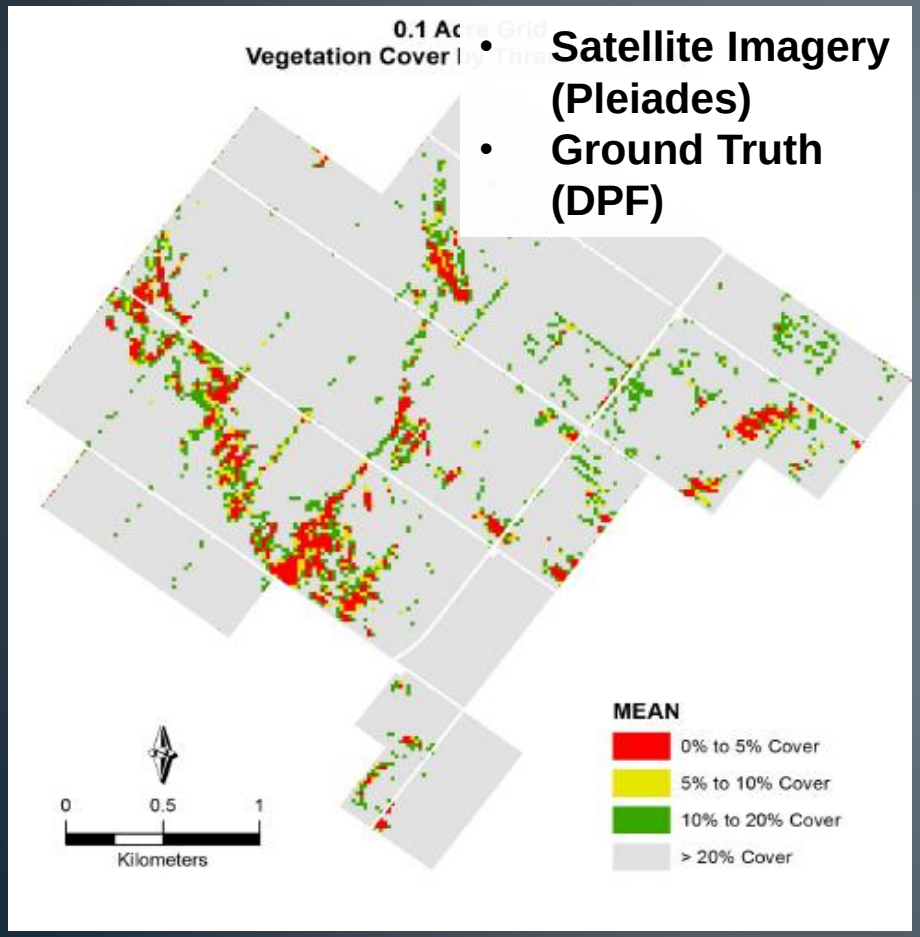
Cost: $500k/mi²
Water: 0.0 AFA/Y
Habitat: No
Maintenance: Low/Medium

Gravel

Cost: $37/mi²
Water: 0.0 AFY
Habitat: No
Maintenance: Low

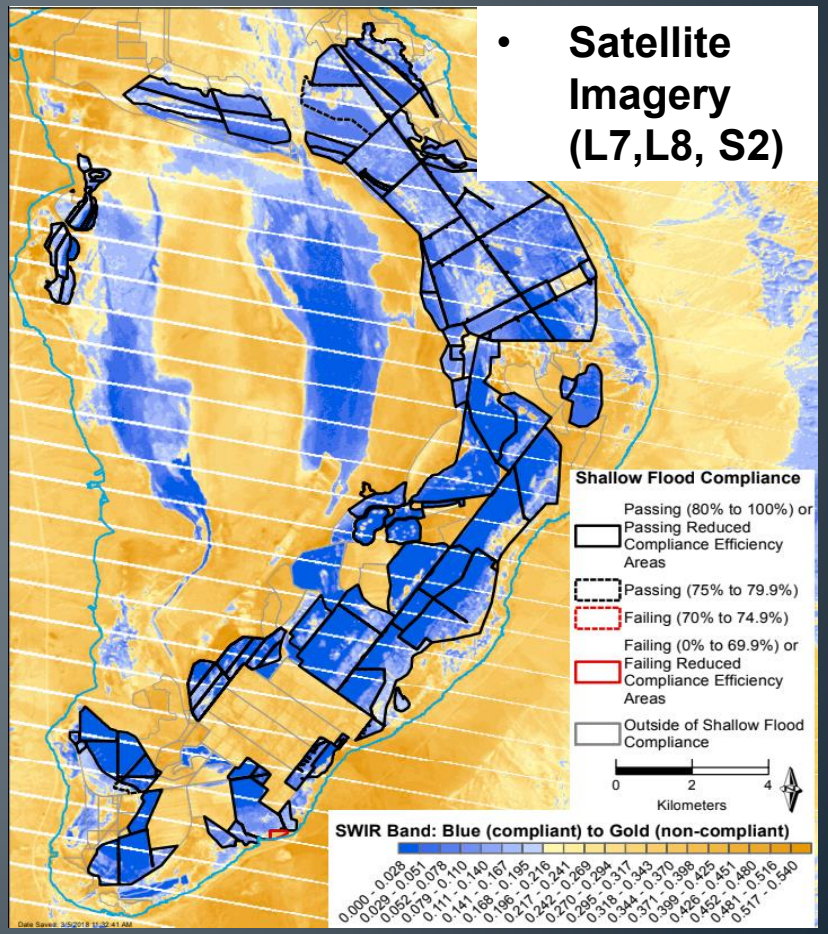
Compliance Monitoring

Managed Vegetation



- Satellite Imagery (Pleiades)
- Ground Truth (DPF)

Shallow Flood



- Satellite Imagery (L7,L8, S2)

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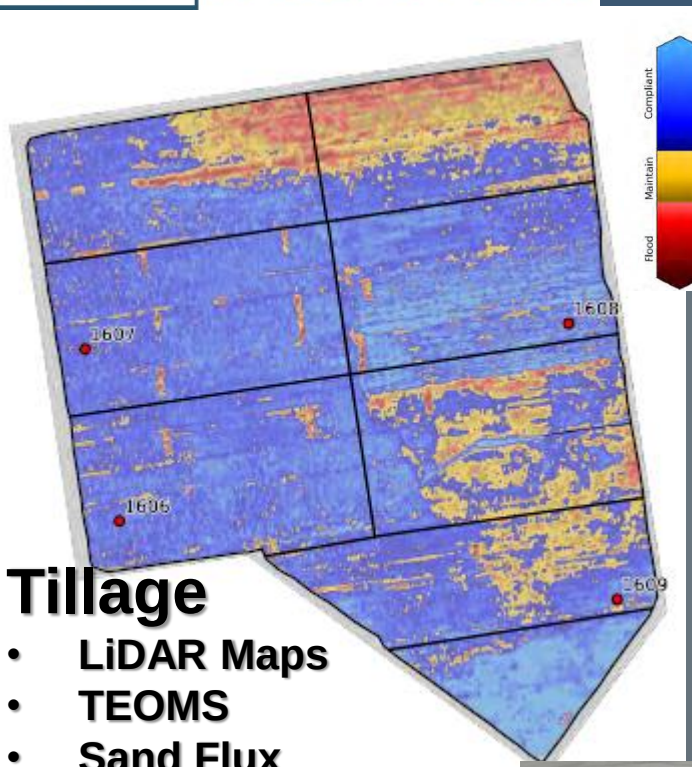
Compliance Monitoring



Tillage

- LiDAR Maps
- TEOMS
- Sand Flux

Gravel

- Aerial Photos
- Site Inspections

Brine

- Satellite Imagery
- Site Inspections
- Sand Flux

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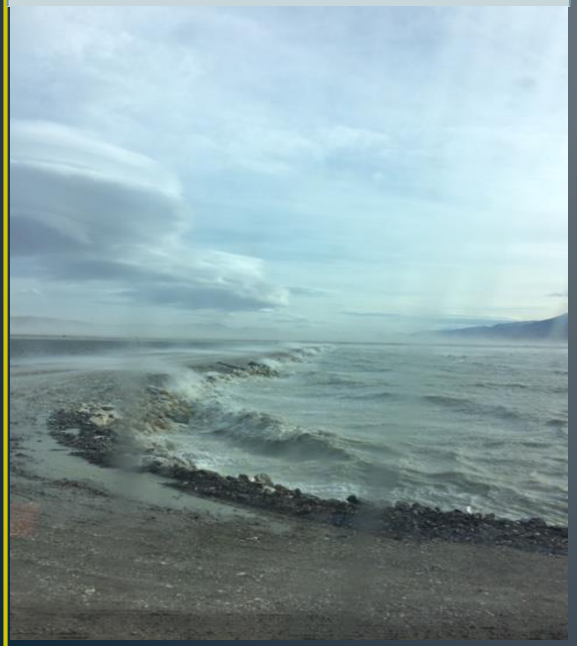
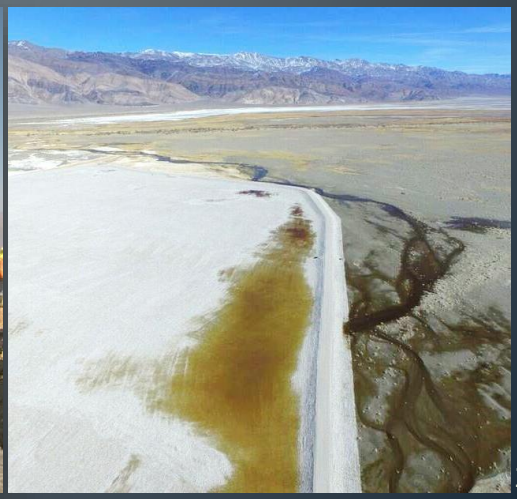
Challenges

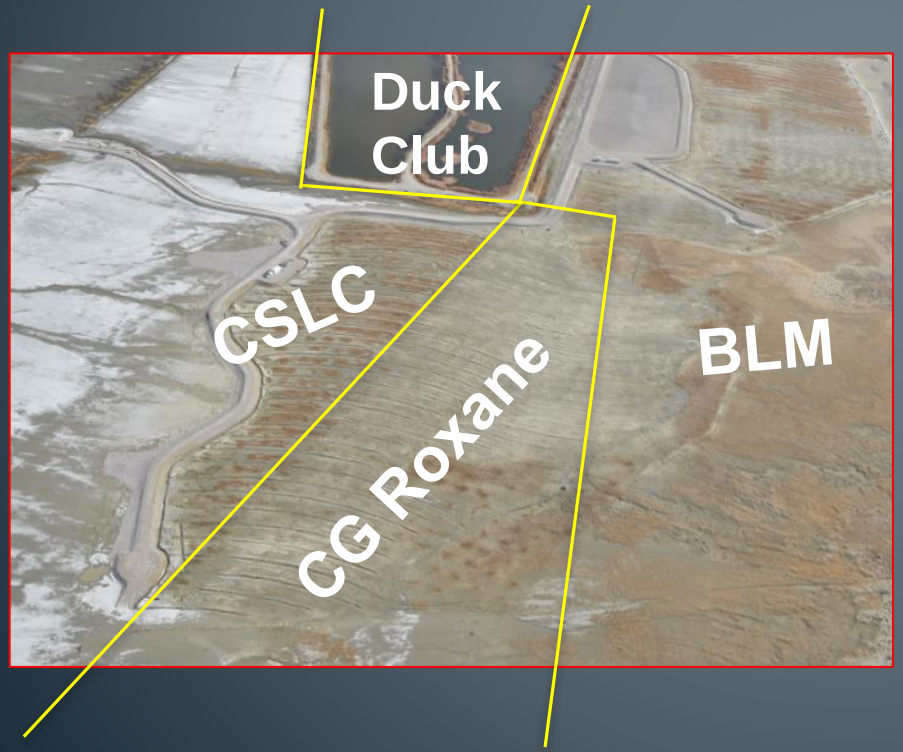
- **Climate Change - Extreme Seasons**
- **Soft Saturated Soils**
- **Corrosive Soils**
- **75 to 100 mph Gusts**

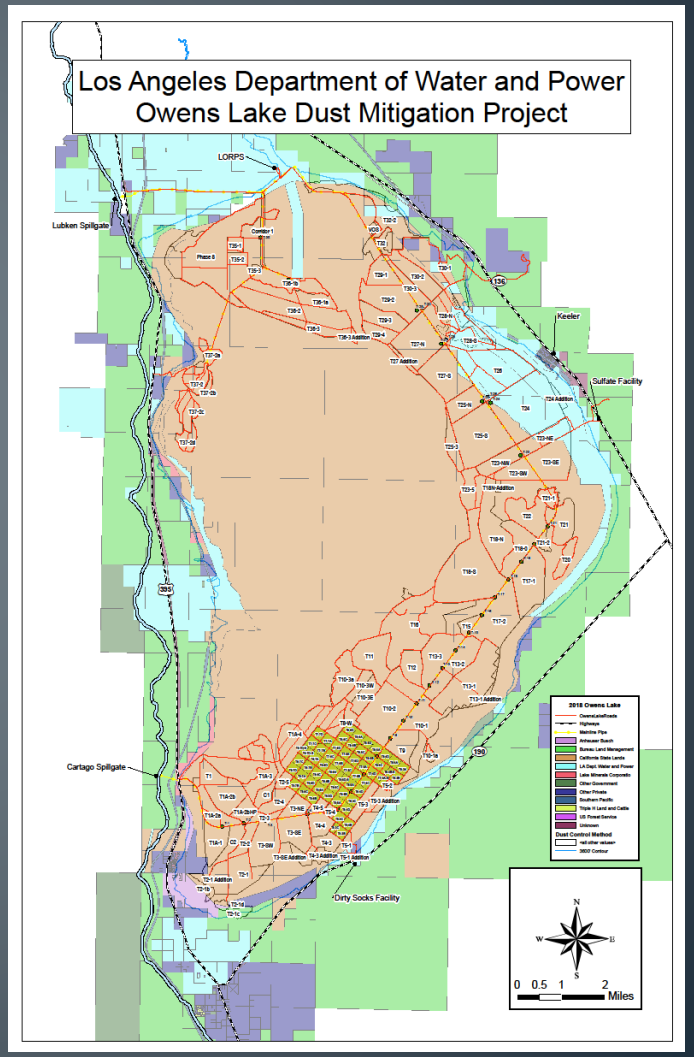




Property Ownership

California State Lands Commission (CSLC)
Bureau of Land Management (BLM)
Los Angeles Department of Water and Power (LADWP)
California Department of Fish and Wildlife (CDFW)
Private Property





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Balancing our Goals

- Habitat Value
- Public Trust Value
- Tribal Value
- Dust Control Standards
- Water Conservation

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Achieved to Date

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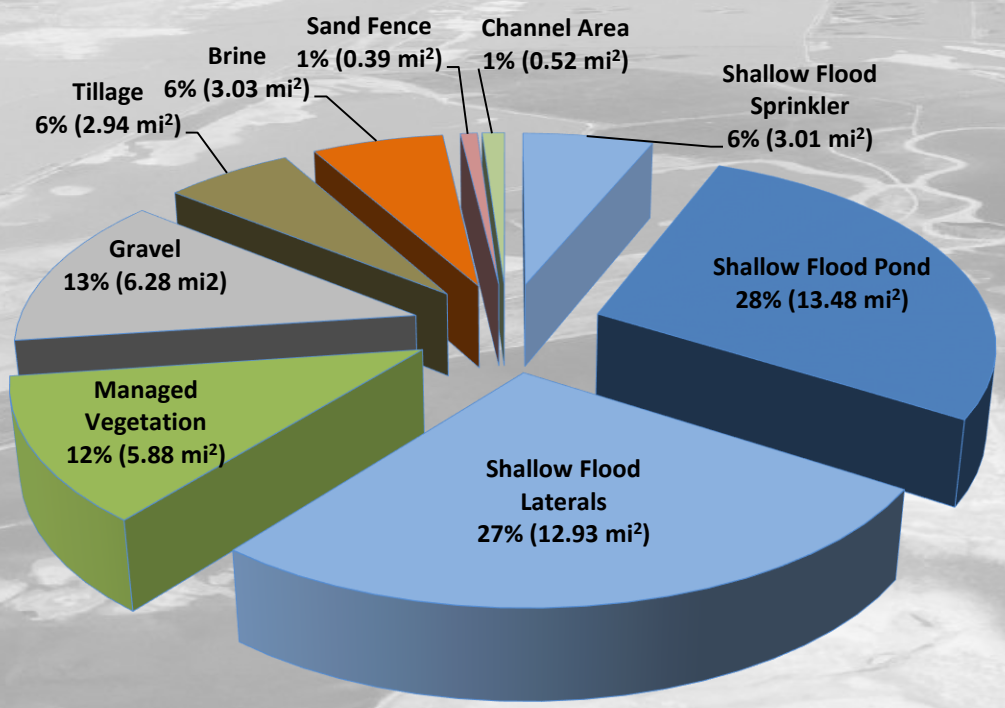
Achieved to Date

- 10 Capital Projects Completed Since 2000
  - 48.6 sq-mi completed
  - 4.8 sq-mi contingency
- 99% Dust Emissions Reduction
  - 52,539 Tons/Yr of PM10 in 1999
  - 355 Tons/Yr of PM10 in 2019

Total Cost:

$2.4 Billion

- Capital (55%)
- O&M (18%)
- Water (21%)
- Regulatory Fees (6%)



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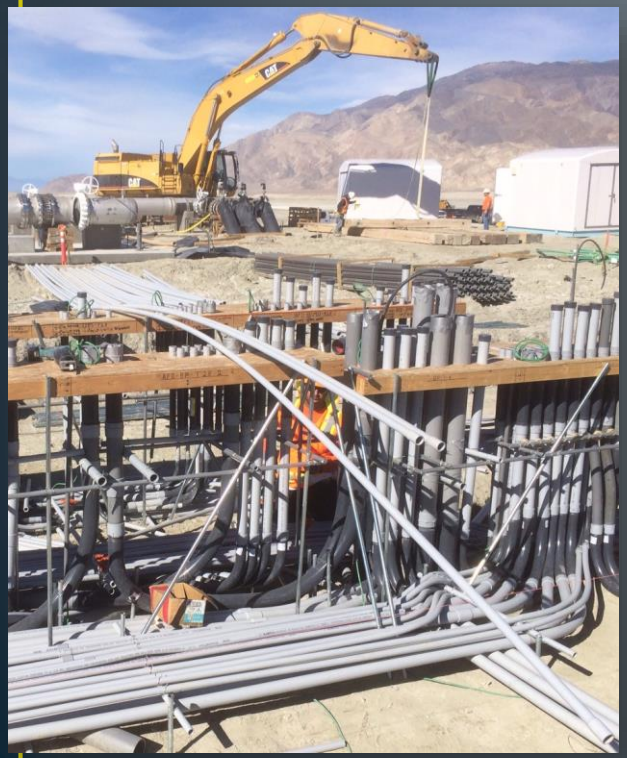
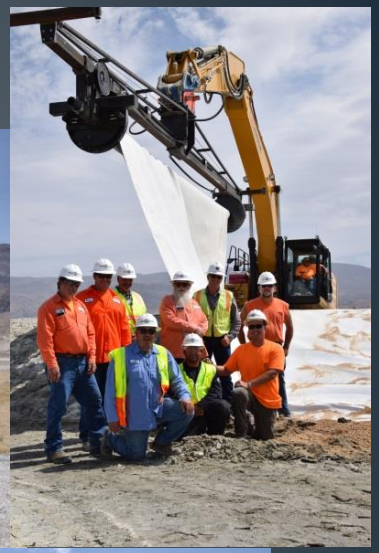
Owens Lake: Infrastructure

- 221 miles of roads and berms
- 31.8 miles of mainline (54” -72”)
- 146.6 miles perforated drain pipe
- 3,600 miles of drip irrigation
- 394.6 miles of Irrigation pipeline (2”- 4”)
- 35 Pump Stations



Owens Lake O&M Team & Supporting Groups

- Owens Lake Construction Yard Staff:
  - Engineering
  - Construction Crews
  - Hydrographers
  - Biologists
  - Tradesmen
- From Los Angeles to Bishop:
  - Design Engineering
  - Equipment Purchasing
  - Surveying
  - Construction Crews
  - Material Purchasing
  - Permitting
  - Legal
  - Real Estate



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Questions?