Owens Lake Environmental Protection and Dust Mitigation Program

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**Date:** October 24, 2018
Where: 220 miles north of Los Angeles
Owens Lake Dust

Why are we at Owens Lake?

Before Dust Mitigation
70 to 110 MPH Gusts of Wind

Turbulent flow

PM10 Dust

Sand
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 (150 µg/m³), Owens Lake is classified as a serious area of non-attainment.

1998
- GBUAPCD adopts first 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 with no end in sight, 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, 98.5 Control Efficiency
Managed Vegetation

DECREASING WATER DEMAND

Brine
Tillage

Gravel

DECREASING WATER DEMAND

BACMs
Managed Vegetation

- Sand Flux
- Satellite Imagery
- Ground Truth (DPF)

Shallow Flood

- LiDAR
**BACM Compliance**

**Tillage**
- Ridge Dimensions
- Sand Flux
- Clod Size
- Drone Test

**Gravel**
- Aerial Photos
- Site Inspections
BACM Compliance

Variable Water Cover Treatments

Water Cover / Control Efficiency Curve

Figure 5.8 - Shallow Flood control efficiency curve
Challenges

- (climate Change)
  Excess Snowmelt
- Soft Saturated Soils
- Corrosive Soils
- 75 to 100 mph Gusts
Resource Protection

- Habitat Value
- Public Trust Value
- Archaeological
- Paleontological
- Tribal/Cultural
## Balancing our Goals: Habitat

### 6 wildlife guilds

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<th>Diving Waterbirds</th>
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<th>Breeding Waterfowl</th>
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Balancing our Goals: Public Access & Cultural
Achieved to Date

Owens Lake

1998

Brine Pond

Playa

Pre-dust controls

(1998 Space Shuttle)

2018

48.6 Square-Miles
Achieved to Date

- 10 Capital Projects Completed Since 2000
- 48.6 sq–mi completed
  - 4.8 sq–mi contingency
- 98.5% Dust Emissions Reduction
- Dust Emissions Reduction of 75,000 Tons/Yr
Achieved to Date

- **Shallow Flood:** 32.2 sq-mi
- **Managed Vegetation:** 5.8 sq-mi
- **Gravel:** 5.4 sq-mi

- **Tillage:** 4.4 sq-mi
- **Sand Fence:** 0.3 sq-mi
- **Other:** 0.5 sq-mi
• Total Cost: $2.1 Billion: Capital (55%), O&M (18%), Water (21%), Regulatory Fees (6%)

• Balance water conservation, dust mitigation, habitat, cultural and public resources.
Achieved to Date Infrastructure

- 127.6 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”)
- 33 Pump Stations
Master Project

The Future of Owens Lake

- Convert existing water intense DCMs into water efficient DCMs
- Balance habitat value, water Conservation, dust control, and cultural resources
- 10 years, Up to $1 Billion
ANY QUESTIONS?