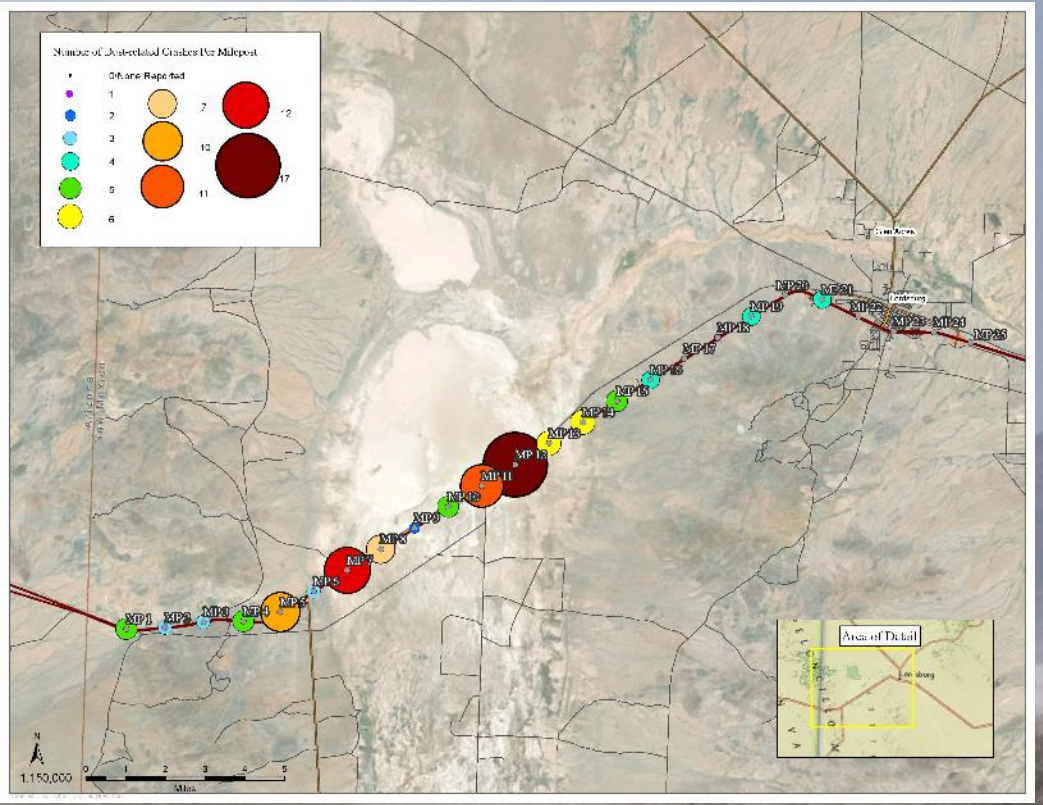
2021 Lordsburg Playa Dust Storm Mitigation Update

Trent Botkin & Bill Hutchinson

Lordsburg Playa Dust Storms

1965– Present: Over 40 Dust -related Highway Deaths

2012– Present: 21 Deaths
39 Closures of I-10
120 Dust Events



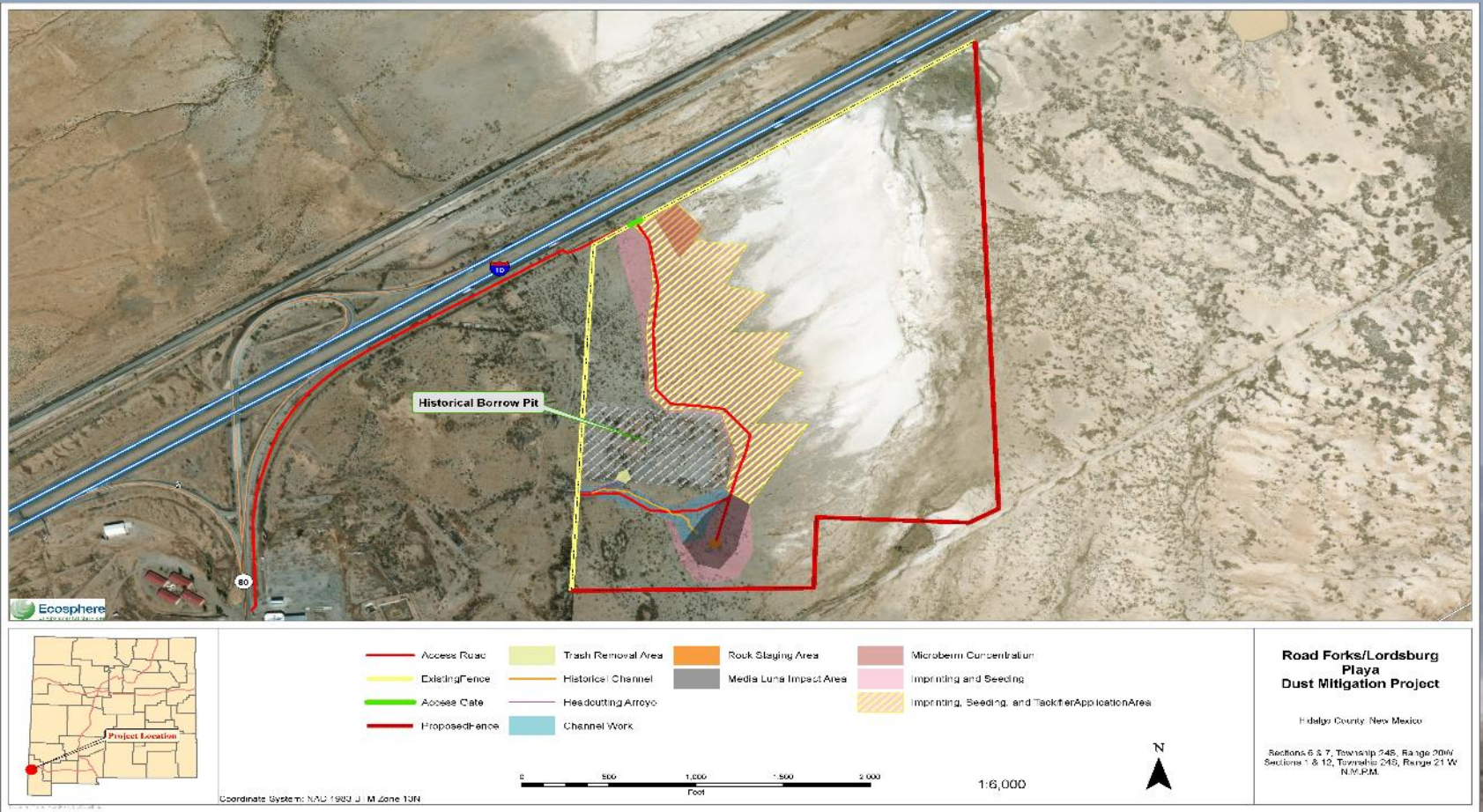
NMDOT Environmental Bureau Dust Mitigation Projects

$2.5 Million FHWA Highway Safety Improvement Program: Dust Mitigation Actions

$185K FHWA/NMDOT Research Bureau: NMSU Dust Monitoring

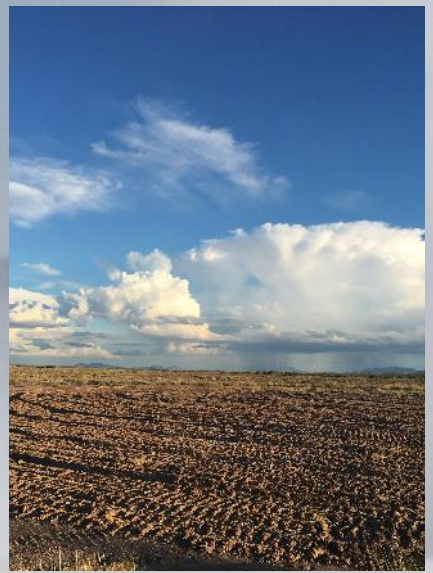
$248,000 FHWA/NMDOT Funding: Seed Development for Restoration

Phase 2: Road Forks Dust Mitigation Area



Road Forks Dust Mitigation Area

Sept. 2018: Keyline plowing, Imprinting, Tackifier , Fencing



Road Forks Dust Mitigation Area
September 2018

Revegetation Area

Channel Erosion Area

Road Forks Dust Mitigation Area

February 2021

Revegetation Area

Channel Erosion Area

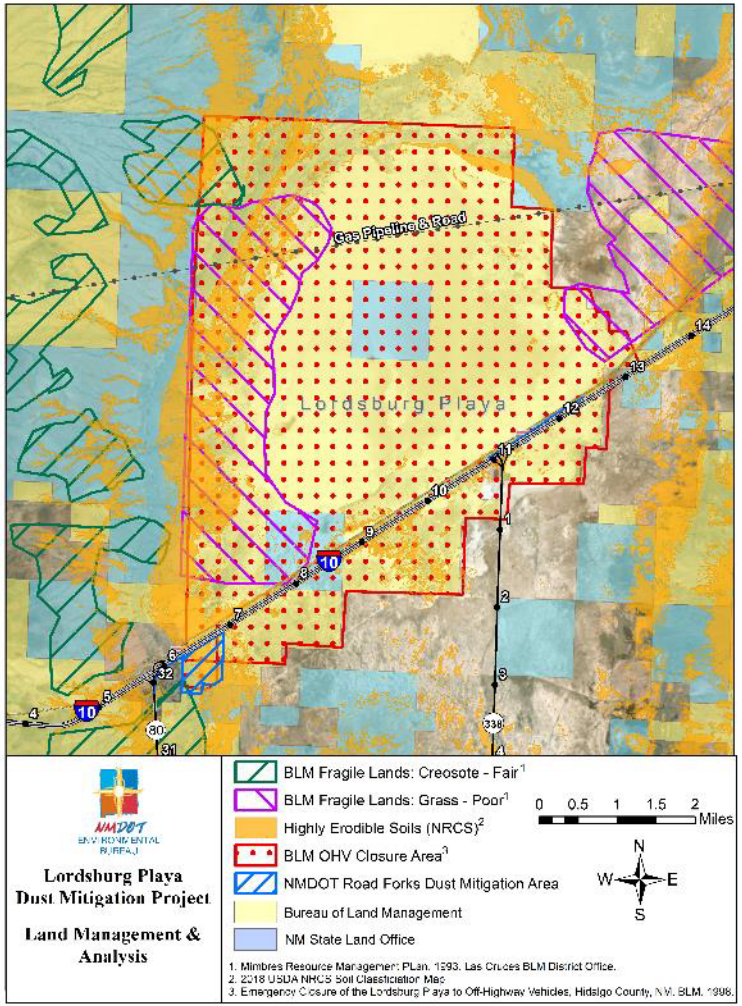
Phase 3: Lordsburg Playa
Land Management Assessment

- 1993: BLM Resource Management Plan identifies playa shoreline as fragile soils with poor grass and all grazing allotments in unsatisfactory conditions that require improvement

- 1998: Temporary Vehicle Closure Area (still in effect) due to recreational vehicle use on playa causing dust responsible for 4 fatalities on I-10

- 2018 NRCS Soil Survey

- 2020 NMDOT Surface Disturbance Analysis



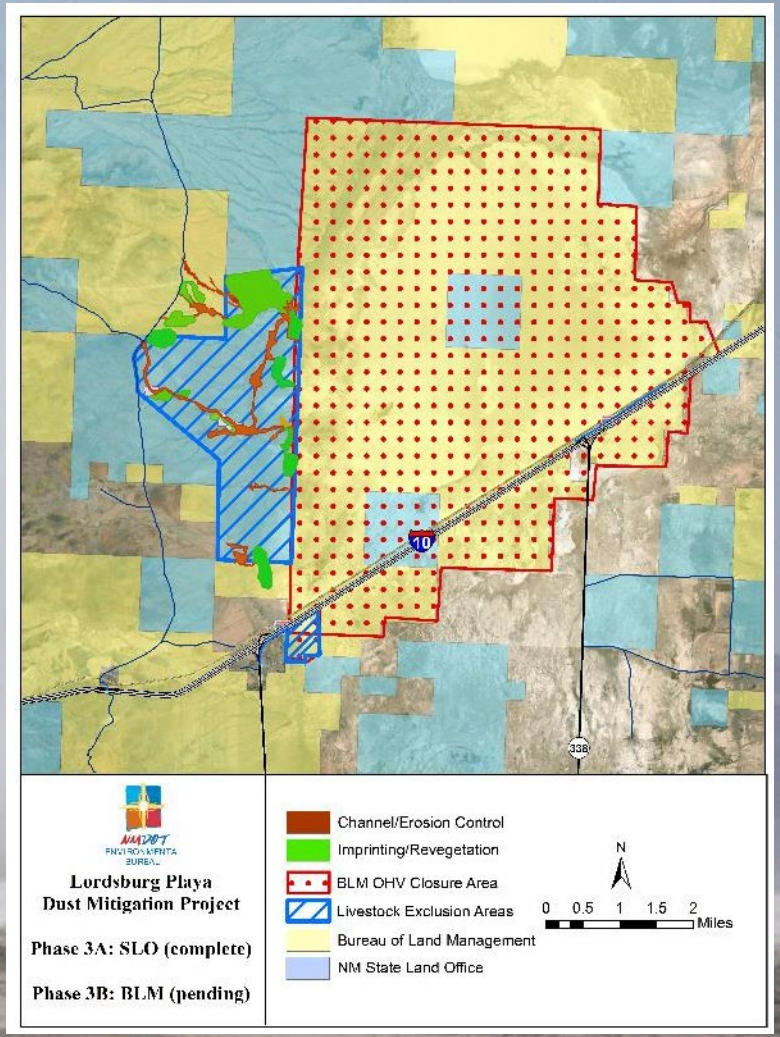
Phase 3: Lordsburg Playa

Primary Methods of Dust Mitigation

1. Revegetation: Keyline plowing, imprinting, native seeding

2. Erosion Control: Stabilization of channels, banks, & degraded ranch infrastructure

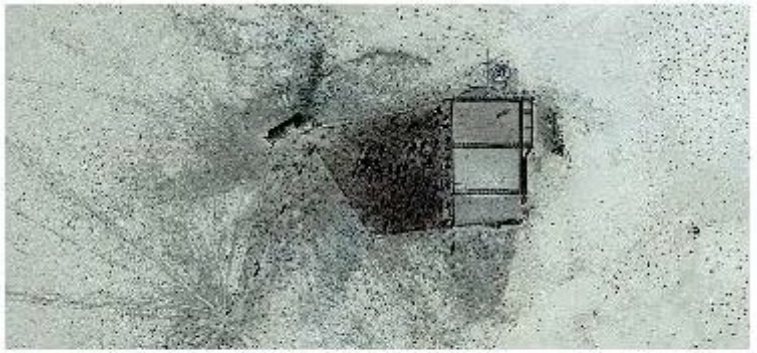
3. Land use management adaptation

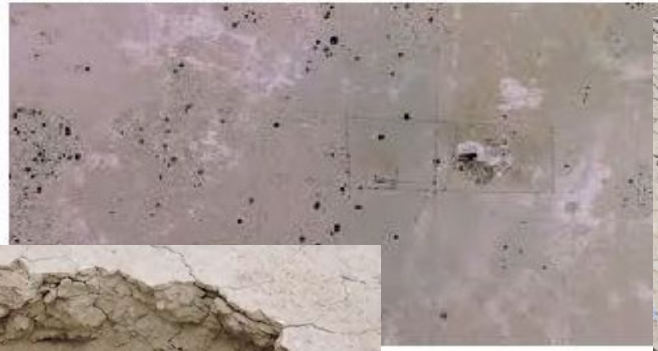


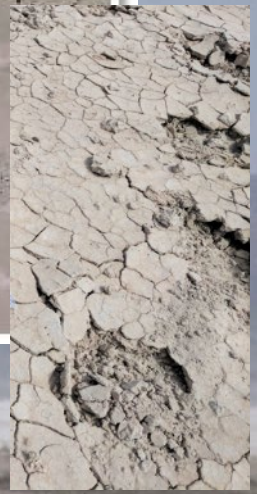
From Left: Tractor, Keyline Plow, Seeder, Imprinting Roller

Erosion Control

Playa & Playa Steppe Surface Disturbance







Land Use Management Adaptation

Phase 1 (US 180, SLO & Private): 5 Year grazing hiatus and reevaluation

Phase 2 (Road Forks, BLM): Ranching permittee and BLM agree To 25-year cessation of cattle grazing for 200 acres

Phase 3A & 3B (Playa Watershed, SLO & BLM): NMDOT adding additional fencing to temporarily cease cattle grazing in mitigation areas (duration pending)

Central Lordsburg Playa (BLM): Nomination (pending) for designation as an Area of Critical Environmental Concern (ACEC)* under the relevance criteria of "Natural Hazard" and importance criteria of "safety and public welfare"

* ACEC designation allows for special management conditions

RESULTS

Phase 1, US 180 north of Deming: 0 Crashes Attributed to Low - Visibility Dust Events since 2017 Mitigation Actions

Phase 2, I-10 @ Road Forks: 0 Crashes Attributed to Low -Visibility Dust Events Since 2018 Mitigation Actions

- Revegetation is primarily non -native species from relic seed bank
- Recovery hindered by multi -year drought

MONITORING

- Dust Emissions, visibility and weather data collected by Dr. David Dubois, NMSU
- BLM AIM Vegetation Transect Monitoring
- Ground and drone photo point monitoring

ENVIRONMENTAL BUREAU

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Project Collaboration

BLM: Stakeholder and contributor

NM DPS: First -hand experience and crash data

Landowners/Lessees: Long-term knowledge of range conditions

Consultants: Stream Dynamics, Tooley's Trees, Ecosphere Site Southwest

NMDOT: District 1 (Deming), Research Bureau, & Management Support

State Land Office: Stakeholder and contributor

NRCS: Soil Survey

NMSU: State Climatologist Dr. Dubois conducting intensive dust storm analysis using NMDOT Research Bureau funding

USDA & UTEP: Playa research and establishment of a monitoring station as part of the National Wind Erosion Research Network