

Dust Storm Mitigation & Safety

New Mexico Department of Transportation

William Hutchinson & Trent Botkin, Environmental Bureau



LORDSBURG PLAYA DUST STORMS

I-10 MP 6-13

2017: 10 Fatalities

1965-2017: 40+ Fatalities

2014: 7 Fatalities

2014-Present: 23 Closures



MULTI-AGENCY EFFORT

- BLM/Jornada Experimental Range establishing National Wind Erosion Research Site on Lordsburg Playa
- NRCS concluding intensive soil study and report on the greater Lordsburg Playa area
- NM and AZ NMDOT & DPS are coordinating on road closures

NMDOT TRAFFIC SAFETY BUREAU DRIVER EDUCATION CAMPAIGN



Billboard Locations

Market	Location	Mile Marker
Deming	I-10 westbound heading into Deming	MM 93
Deming	I-10 eastbound heading into Deming	MM 77.6
Deming	HWY 80 southbound into Deming	MM 163
Las Cruces	I-10 & 292 in Las Cruces	
Lordsburg	I-10 eastbound just west of Lordsburg	MM 22
Lordsburg	I-10 eastbound east of Lordsburg	MM 29
Lordsburg	I-10 westbound in Lordsburg	MM23
Lordsburg	I-10 westbound from Lordsburg	MM 22
Silver City	US 180 westbound into Silver City	MM 117
Silver City	US 180 eastbound east of Silver City	MM 117.66
Carlsbad	US 180 southbound south of Carlsbad	MM 25.5
Carlsbad	US 62/180 eastbound on the road to Hobbs	MM 41.4
Farmington	US 64 westbound from Farmington to Shiprock	MM 43
Farmington	US 64 eastbound from Shiprock to Farmington	MM 39
Hobbs	HWY 62/180 eastbound from Hobbs to border	MM 109
Hobbs	HWY 180 eastbound into Hobbs	MM 101
Lovington	HWY 82 eastbound into Lovington	MM 170.4

- Radio ads
- Coordination with NM Trucking Association to create and distribute dust training module
- Coordination with UNM to identify and track driver awareness
- Coordination with MVD to incorporate dust storm safety into NM driver education

ENHANCED SIGNAGE

- **Additional Dynamic Message Signs**

- Enact variable speed limits during dust events
- Direct drivers to pull off road



- **Additional Static Signs**

- Five sequential signs directing drivers with instructions on what to do in a dust storm



ROADWAY IMPROVEMENTS

- I-10 Shoulder Expansion
 - Expand shoulder width to 18 feet wide to provide motorists with a safe space to pull off the roadway

- Pavement Marking
 - Raised pavement markers and other high visibility components

NMDOT DUST MITIGATION PROJECT

NMDOT ENVIRONMENTAL BUREAU

- **\$1.5 Million FHWA HSIP Funding** to implement on-the-ground dust mitigation actions
 - Goal: Decrease the amount of available dust during high wind events through landscape restoration and change of land use
 - Develop long-term solution to decrease severity of dust storms
 - Technical Panel includes NRCS, BLM, DPS, State Land Office, NMSU & UTEP climatologists

- **\$185K FHWA/NMDOT Research Bureau funding** to study the current visibility conditions and the effectiveness of the dust mitigation actions
 - Conducted by NMSU State Climatologist Dr. Dave Dubois
 - Weather stations, time-lapse cameras, digital and analog dust collection and measuring devices, soil moisture probes

- **\$248,000 FHWA/NMDOT Funding** to develop approved seed varieties for restoration of arid lands.

HSIP-FUNDED DUST MITIGATION THROUGH LANDSCAPE RESTORATION

US 180 North of Deming

Implemented fall 2016 & summer 2017

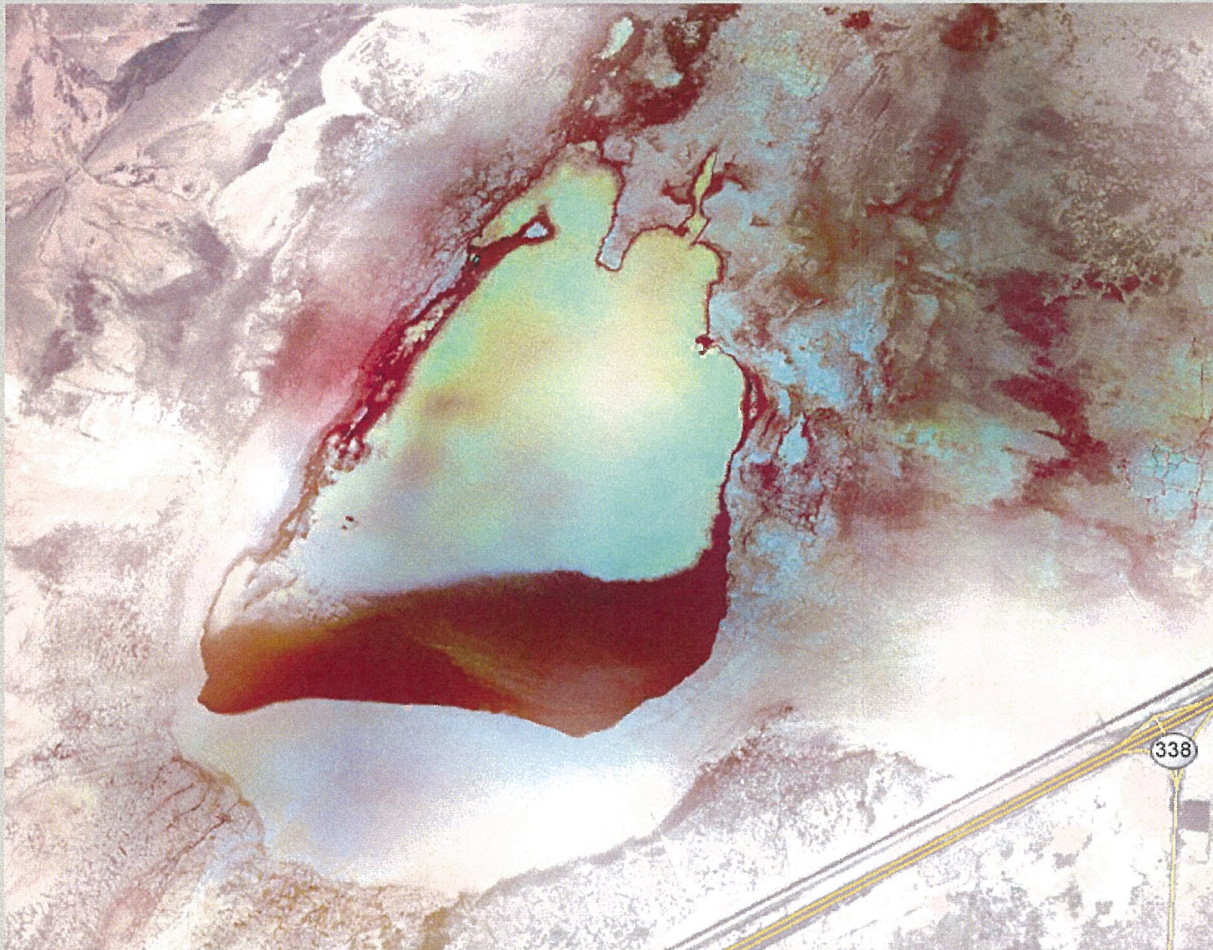
- Keyline (chisel-plow) re-vegetation and reseeding
- Voluntary 4-year grazing deferment on private and SLO land
- Immediate success is halting dust visibility issues

Lordsburg Playa

Proposal Pending Environmental Permitting Process with BLM

- Re-vegetation of upland (not playa) areas to reduce erosion and run-off
- Repair of malfunctioning ranch infrastructure (tanks, levees, roads, etc.) that are delivering concentrations of sediment onto the playa
- Grazing cessation

PLAYA CRUST FORMATION



- Inundation by seasonal rains
- As water evaporates, a hard crust is formed
- Saline, sodic, and biological crusts

1998 BLM CLOSURE OF LORDSBURG PLAYA TO OHVS

DEPARTMENT OF THE INTERIOR

Bureau of Land Management
[NM-030-1220-00]

Emergency Closure of the Lordsburg Playa to Off-Highway Vehicles
(OHV), Hidalgo County, NM

AGENCY: Bureau of Land Management (BLM), Interior.

ACTION: Emergency closure.

SUMMARY: Notice is hereby given that effective immediately, the Las Cruces Field Office is implementing emergency closure of an existing OHV area known as the Lordsburg Playa. The area is closed to all vehicle use except for administrative purposes. This closure extends to both motorized and non-motorized vehicles, including landsail craft. This action is taken to aid in reducing the blowing dust from the

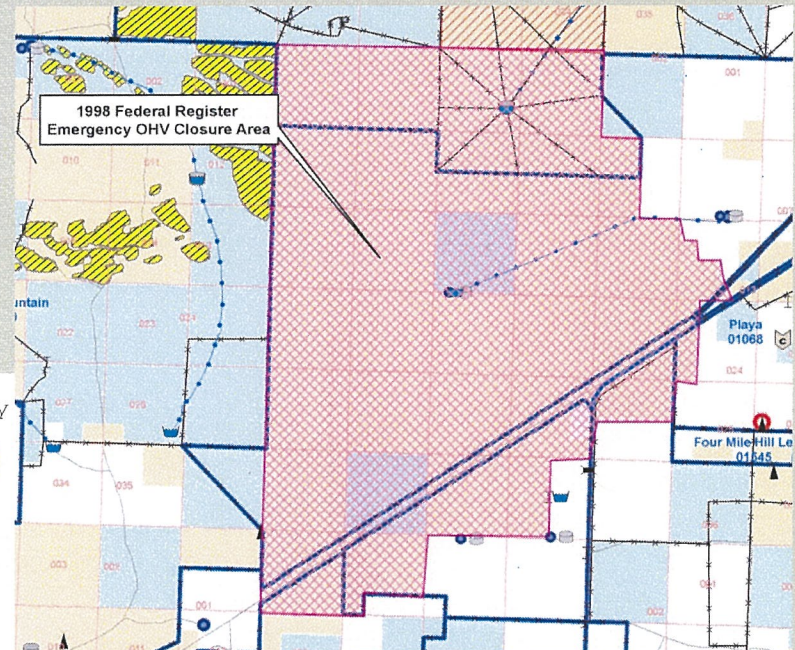
Supplementary Information: Violations of this closure are punishable by fines not to exceed \$1,000 and/or imprisonment not to exceed one year.

The purpose of this action is to reduce impacts to the soil on the Lordsburg Playa. Once the soil surface is disturbed, it is highly susceptible to wind erosion. Windy conditions this year have produced heavy dust storms in the area resulting in low visibility on nearby Interstate Highway 10. These conditions have caused 4 fatal accidents on the highway and required that the highway be closed for up to 9 hours per day for 5 consecutive days since June 13.

Copies of this closure order and maps showing the location of the area are available from the Las Cruces Field Office, 1800 Marquess, Las Cruces, New Mexico, 88005 during normal business hours, Monday through Friday, 7:45 a.m. to 4:30 p.m.

Dated: June 19, 1998.

Josie Banegas,
Acting Field Manager, Las Cruces.
[FR Doc. 98-16899 Filed 6-24-98; 8:45 am]
BILLING CODE 4310-VC-P



GRAZING IMPACT ON PLAYA SOIL CRUST

WATER TANK & CORRAL, CENTER OF LORDSBURG PLAYA
WITHIN OHV CLOSURE AREA



- Frequent cattle use breaks soil crust and pulverizes soil
 - 50+% increase in available sediment*
- Blowing sand abrades broken playa surface
 - 30% additional increase in available sediment*

*Jornada Experimental Range study near Las Cruces

BLM & NMDOT COORDINATION

- BLM already identifies the playa as a “fragile soil” area
- BLM has management action items in place to adjust number of livestock, add fencing, develop management plans, and have high intensity supervision and monitoring
- NMDOT nomination of the Lordsburg playa area as an “Area of Critical Environmental Concern”, which requires a BLM internal review of land use and management
- NMDOT Environmental Assessment will examine potential impacts of excluding or intensively managing grazing within OHV closure area

NEXT STEPS

- Continue coordination with BLM to complete environmental permitting process
- Implement on-the-ground dust mitigation reclamation actions
- Enhance driver education and awareness