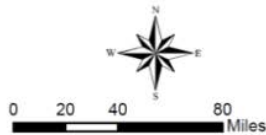
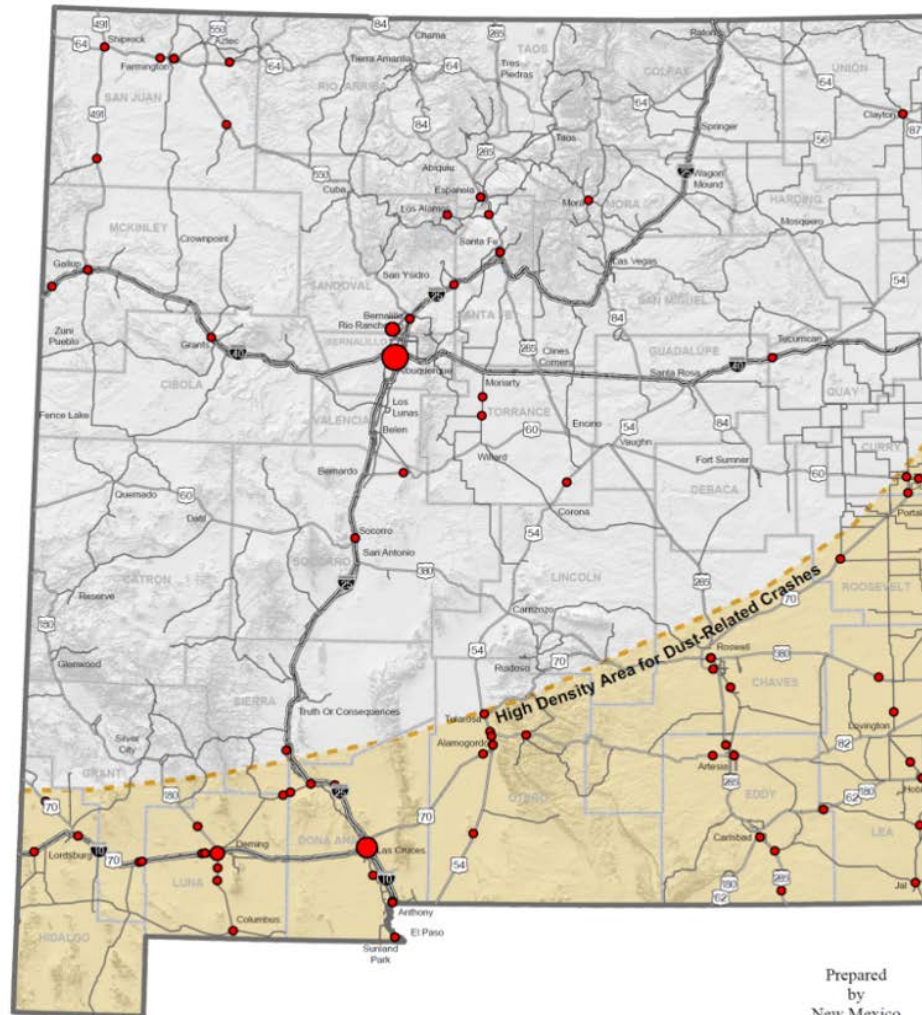


Dust Storm Mitigation

**New Mexico Department of Transportation
William Hutchinson & Trent Botkin, Environmental Bureau**



Location of Dust-Related Crashes, 2008-2012



LEGEND	
•	City
—	State Roads
—	Interstate
—	US Routes
●	Number of Crashes
● (smallest)	1-7
● (medium-small)	8-14
● (medium-large)	15-23
● (largest)	24-47

Prepared by
New Mexico
Department of Transportation



NMDOT DUST MITIGATION PROJECTS

MANAGED BY THE NMDOT ENVIRONMENTAL BUREAU

- **\$1.5 Million FHWA Highway Safety Improvement Program** funding to implement on-the-ground dust mitigation actions
 - Goal: Decrease the amount of available dust during high wind events through landscape restoration and land use management
 - 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, lidar
- **\$248,000 FHWA/NMDOT Funding** to develop approved seed varieties that are regionally appropriate for the restoration of arid lands.
- FHWA funds enable the NMDOT (representing the FHWA) to act as the lead federal agency for NEPA compliance and the BLM acts as a cooperating agency (2013 MOU between the FHWA, NMDOT, and BLM New Mexico State Office to clarify Federal Regulation Title 23).

HSIP-FUNDED DUST MITIGATION THROUGH LANDSCAPE RESTORATION

Phase 1: US 180 North of Deming (2016 & 2017)

- Keyline (chisel-plow) and reseeded
- Voluntary 4-year grazing deferment on private and SLO land
- Immediate success in halting dust visibility issues

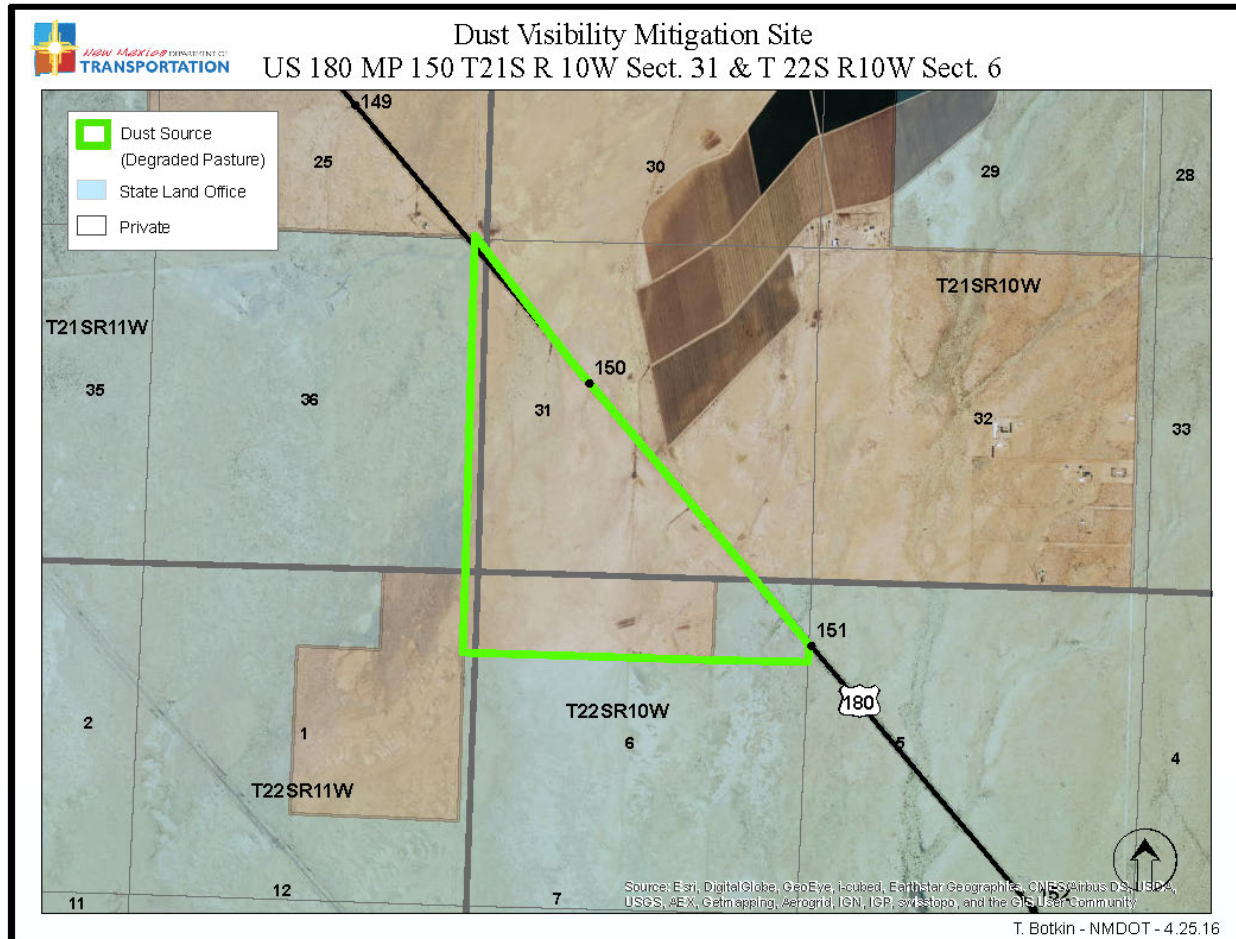
Phase 2: Road Forks Playa (summer 2018)

- Erosion and drainage repair, imprinting and reseeded
- Voluntary grazing closure of 200 acres
- Pending BLM EA

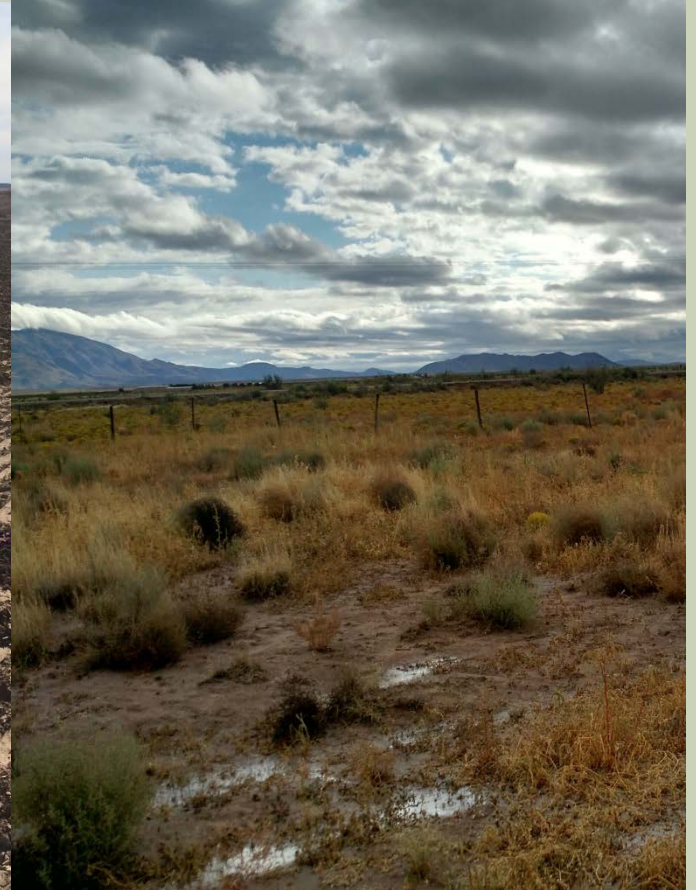
Phase 3: Lordsburg Playa (spring 2019)

- Assessment dust sources, playa surface disturbance, and dust mitigation measures

PHASE 1: US 180



PHASE 1: US 180 BEFORE, KEYLINED, AFTER



LORDSBURG PLAYA DUST STORMS

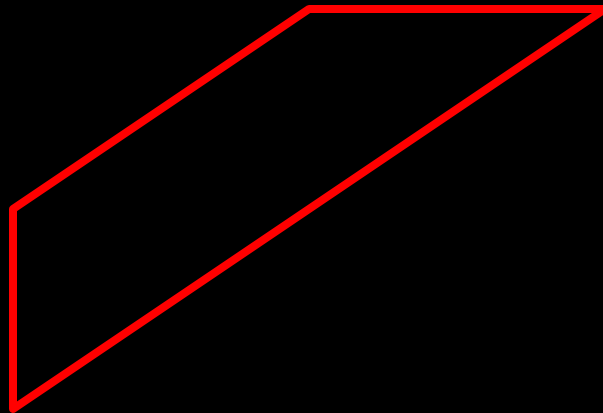
I-10 MP 6-13

1965-2017: 40+ Fatalities

2017: 11 Fatalities

2014: 7 Fatalities

2014-Present: 23 Closures



PLAYA CRUST FORMATION



- Inundation by seasonal rains
- Evaporation forms a hard crust
- Saline, sodic, and biological crusts

SURFACE DISTURBANCE ON PLAYA SOIL CRUST LORDSBURG PLAYA

OHV Tracks

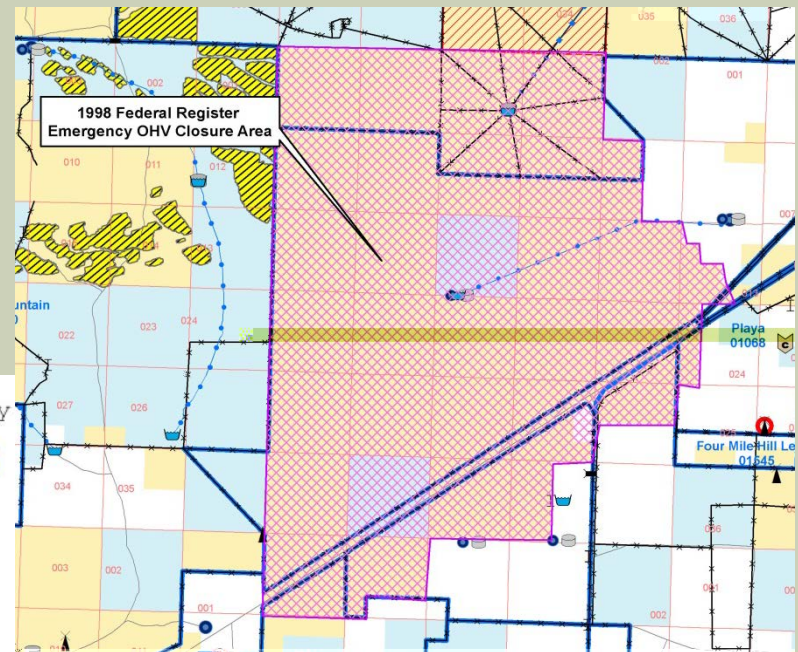
Cattle Trails



- Repetitive disturbance 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 (Baddock et al. 2003)

1998 BLM CLOSURE OF LORDSBURG PLAYA TO OHVS



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.

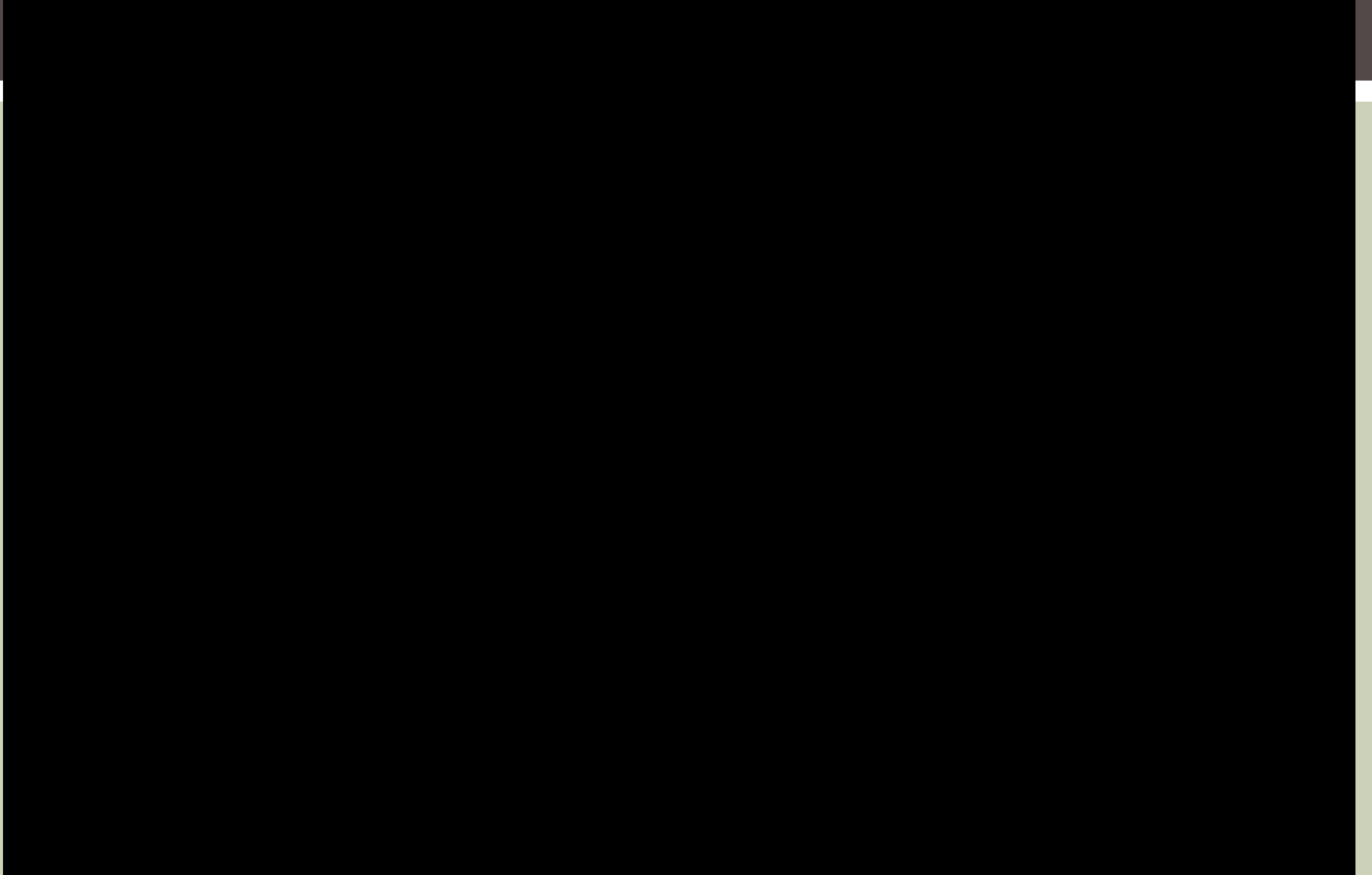
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PHASE 2: ROAD FORKS & PHASE 3: LORDSBURG PLAYA



PHASE 2: ROAD FORKS



IMPRINTING & SEEDING

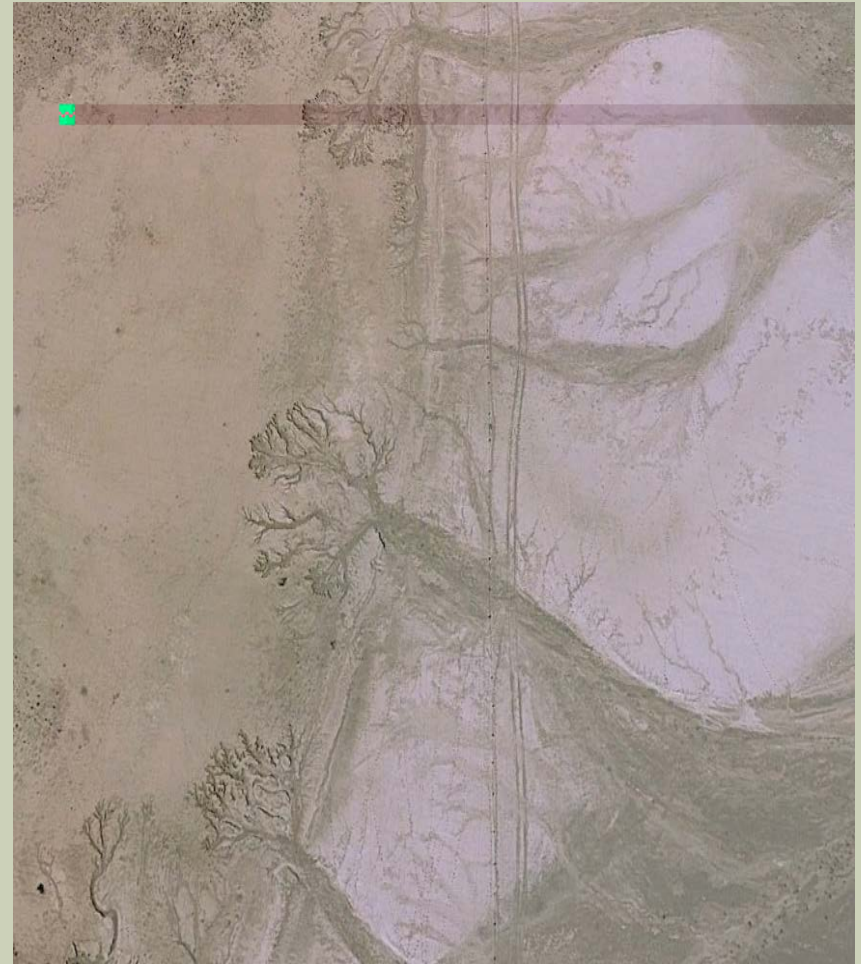
COMPLETED ON UPLANDS AND NOT PLAYA SURFACE

PHASE 3: LORDSBURG PLAYA

Livestock Trailing



Land Use-Related Erosion



NEXT STEPS

- Continue coordination with BLM to complete environmental permitting process for Phase 2: Road Forks
- Contractor will implement on-the-ground dust mitigation actions in Phase 2: Road Forks
- Complete analysis of Phase 3: Lordsburg Playa and submit final proposal to BLM
- Support the NMDOT nomination to designate the Lordsburg Playa as a BLM ACEC (Area of Critical Environmental Concern) which will enable special management conditions

QUESTIONS?

