



June 22, 2023

U.S. Customs and Border Protection
Border Patrol HQ
1300 Pennsylvania Ave NW 6.5E
Mail Stop 1039
Washington, DC 20229
Attn: Michelle Barnes

Comments re: San Diego, Yuma, El Paso Make Safe Activities--El Paso Sector Remediation Plan 2023

Dear Ms. Barnes and Colleagues at Customs and Border Protection :

Thank you for this opportunity to comment on the proposed activities that include remediation damage and unsafe conditions caused by construction of the pedestrian barriers along the New Mexico-El Paso/Mexico border on behalf of the local chapters of Great Old Broads for Wilderness and the Sierra Club.

Aldo's Silver City Broadband is a local chapter of Great Old Broads for Wilderness, a women-led national grassroots organization that engages and inspires activism to preserve and protect wilderness and wild lands. The Rio Grande Chapter of the Sierra Club is a volunteer-led organization with a mission to explore, enjoy and protect the planet, and we prioritize protecting our climate, air, water, wildlife and public lands in New Mexico and West Texas. We represent more than 35,000 members and supporters in New Mexico and West Texas.

We hope you will view these comments as useful, actionable recommendations, based on the authors' combined experience in the fields of biology, conservation, and stormwater management/regulation. These areas constitute the focus of our comments. We also hope you will give them weight because we are New Mexican stakeholders who live within a one to two-hour drive of the border and are familiar with the affected habitats and committed to protecting the well-being and value of our state's natural resources.

The online announcement states that "CBP is seeking input on *potential impacts to the environment, specifically regarding threatened or endangered plant or animal species . . . near the sites where make safe work is to take place.*" The CBP letter of May 23, 2023, further asks:

--"Are you aware of *threatened or endangered plant or animal species* within the area of construction, and if so, where?"

--Are you aware of any *studies, data, or other information* available that would aid in the analysis of potential environmental impacts in the project area?

--Do you have any *recommendations for practices* the construction contractor should follow to avoid or minimize impacts?"

In both the online announcement and the letter, *CBP lists 10 proposed remediation projects* for evaluation. Our comments address these by *regrouping related projects by category*, all in the context of environmental impacts and/or best management practices, in an attempt to provide answers to the aforementioned questions.

ELECTRICAL INFRASTRUCTURE, ESPECIALLY LIGHTING

Project: Completing and repairing electrical systems and fiber optic concrete boxes to ensure they are at grade or marked to prevent accidents

We ask that you minimize and remediate soil surface damage as much as possible when implementing these actions. Avoid any areas where there are nests or burrows.

Project: Installing and completing fiber optic cable, power, light poles infrastructure (to exclude operational lighting), electrical equipment enclosures and cameras.

First, minimize/remediate soil surface damage as much as possible when implementing these actions. Avoid any areas where there are nests or burrows.

Second, it is unclear what CBP means by *light pole infrastructure without operational lighting*. Do you intend to install just the concrete pads/bases for the poles and the wiring? Or do you intend to actually install the poles but not the bulbs? These all have different visible light profiles, lumens, durability, and energy consumption. What will be the final height of the light poles and how far apart will they be spaced? There is not enough information here.

Third, and what is far more important, is that *this is an environmentally harmful, economically wasteful, and outmoded proposal; it should not be done*. In a recent report, "**A Wall of Lights in the Wild**"

(https://www.biologicaldiversity.org/campaigns/border_wall/pdfs/border-lighting-wildlife-impacts-2023-05-06.pdf) the Center for Biological Diversity illustrates and describes the excessive, stadium-style lighting already placed along the Arizona border wall and analyzes its destructive impact on animals (including insects and nocturnal species). Such conclusions are based on numerous published studies that have been performed since the early 1990s (see National Park Service, "Synthesis of Studies on the Effects of Artificial Light at Night," <https://www.nps.gov/articles/effectsoflight.htm>)

The deleterious effects of artificial light at night (ALAN) are summarized below from Kevin J. Gaston and Alejandro Sánchez de Miguel, "Environmental Impacts of Artificial Light at Night," *Annual Review of Environment and Resources* 2022 47:1, pp. 373-398

(<https://www.annualreviews.org/doi/10.1146/annurev-environ-112420-014438>):

1. “Nighttime production of the hormone melatonin is acutely sensitive to ALAN. In animals this molecule plays roles in the regulation of sleep, modulation of circadian rhythms, reduction of oxidative stress, enhancement of immunity, and suppression of carcinogenesis.”
2. “Exposure to ALAN can alter the feeding, growth, reproduction, and survival of individual wild organisms, something that should come as no surprise given that artificial lighting is used to such ends in cultivation settings.”
3. “ALAN interferes with the orientation and movement of organisms, by either confusing their orientation mechanisms or acting as a more direct attractor or . . . reshaping of the large-scale migratory patterns of birds [most of which migrate at night], likely exacerbated by the *greater distance at which sources of artificial light emissions are visible from altitude*. Attraction to, or distraction by” ALAN causes exhaustion, collisions, and misdirects both individual animals and populations to areas “without adequate resources and with enhanced predation risk. . . These [effects] may be sufficient to create substantial population declines.”
4. “ALAN obscures changes in natural daylength and hence cues for timings of seasonal (phenological) events, such as bud burst, reproduction, and migration.” Species of plants and animals have evolved a timing for such processes to *match optimal conditions for success* in their environments. Responding out of sync with their environment is likely to undermine the survival of those species.
5. “ALAN interferes with interspecific relations [e.g., pollinator-plant, predator-prey, parasitoid-host]. It does so by influencing not only the timings and spatial occurrence of the activity of species but also their visual ecology, including the ability to find resources and to camouflage themselves from predators.” The direct harmful effects of this on can spread beyond species in the immediate habitat “through interaction networks *and may often thus impact species that may not themselves be experiencing, or are not directly responding to, ALAN itself.*”

The aforementioned report by Gaston and Sánchez de Miguel is quite comprehensive, informative, accessible, and useful; it not only covers the impacts of ALAN but it analyzes the costs and benefits of ALAN and discusses ways to address the problem. We strongly recommend that El Paso Sector Chief Anthony Good, other sector chiefs, and U.S. Border Patrol Chief Raul L. Ortiz read this report, for it also *clarifies the energy and resource costs as well as ways to modify impacts.*

Other resources of interest include but are not limited to:

- “Dim the Lights for Birds at Night! World Migratory Bird Day 2022,” Apr 28, 2022 (<https://www.fws.gov/story/2022-04/dim-lights-birds-night>) and “Artificial Lights have Devastating Effects on Many Bird Species” (<https://www.darksky.org/light-pollution/wildlife/>).
- Christian C. Voigt, et al. “The impact of light pollution on bats varies according to foraging guild and habitat context,” *BioScience*, September 2021, 71: 1103–1109 (https://www.researchgate.net/publication/354459716_The_impact_of_light_pollution_on_bats_varies_according_to_foraging_guild_and_habitat_context)

- Ellen Cieraad, et al., “Artificial light at night affects plant–herbivore interactions,” *Journal of Applied Ecology*, 2023; 60:400–410
(<https://besjournals.onlinelibrary.wiley.com/doi/epdf/10.1111/1365-2664.14336>)

In summary: *please do not waste taxpayers’ dollars and exacerbate existing environmental harm by installing infrastructure to support lighting along the border wall.* Eliminating or reducing lighting as much as possible is highly recommended. However, if lights must be utilized in an area, please follow best practices by incorporating red spectrum lighting instead of LED/white; red/lower temperature lighting has a slightly less negative impact on wildlife.

SOIL SURFACE REMEDIATION

Project: Remediating temporary use areas such as staging areas, haul roads, and project areas impacted by construction

Whether on sloping uplands or flatter valleys, arid lands are extremely fragile and slow to regenerate. They require a knowledgeable, experienced contractor so that remediation is effective and enduring and avoids creating even more damage. Topsoil disturbance during wall construction changed soil properties, removed existing desert plants, and scraped off the soil biofilm or “crust” that reduces soil loss from wind and precipitation. The biofilm also retains a small but important amount of moisture that becomes accessible to root zones of native vegetation. (Elazar Volk, Sascha C. Iden, Alex Furman, Wolfgang Durner, Ravid Rosenzweig, “Biofilm effect on soil hydraulic properties: Experimental investigation using soil-grown real biofilm,” *Water Resources Research*, June 29, 2016
(<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2016WR018866>). Finally, the biocrust fixes carbon from the atmosphere into the soil, making a small but valuable amount of that nutrient available to desert plants (see <https://www.frontiersin.org/articles/10.3389/fmicb.2023.1128631/full>).

Repeated movement of trucks and construction equipment, excavation, and the storage of debris, heavy barriers, and other construction materials have destroyed this fragile crust and compacted the soil. Without deliberate revegetation, this will lead to worsening erosion, favor colonization by non-native invasive plants, and make the environment increasingly unsuitable for the range of resident and seasonal species that have adapted over centuries to the contiguous pre-wall habitat. Survival of this area’s indigenous animals, plants, and microorganisms is already seriously compromised by large-scale, long-term habitat loss throughout their natural ranges, not to mention the increasingly frequent disturbances from violent storms and extreme temperatures due to climate change.

This makes reestablishing the native plant base an essential part of the proposed surface remediation. We recommend the following remediations. First, decompact the soil to improve water filtration and encourage native revegetation. For site-specific guidance, CBP should contact the New Mexico Department of Transportation (NMDOT), New Mexico State University (NMSU), and a regional consultant/contractor experienced in arid soil remediation. In addition, make use of the already excavated soil in your spoil piles; it will contain at least some of the native seed bank. Please do not transfer soil from adjacent undisturbed areas, which would

defeat the purpose by creating more damage. To improve the regeneration rate, active reseeding should be done with seed from plants native to that area, or implement outplanting with native species. An online literature search suggests that the latter is more successful; perhaps a mix of both approaches would yield the best results while keeping costs manageable. To acquire more information about the most effective approaches and to find experienced arid-land restoration consultants/contractors, we suggest that the El Paso CBP regional office network with the BLM, the Animas Foundation and Nature Conservancy, NMDOT-South Regional Design (<https://www.dot.nm.gov/infrastructure/south-regional-design/>), NMSU-Plant and Environmental Sciences department (<https://pes.nmsu.edu/>), and the USDA/ARS Jornada Experimental Range (<https://www.ars.usda.gov/plains-area/las-cruces-nm/range-management-research/>). There are also regional private sector entities that could be useful for consulting, one being Robledo Vista Nursery (<http://www.robledovista.com/home.html>), 3 miles south of Radium Springs in Doña Ana County; they are experienced large-scale desert landscapers/consultants. Even the Freeport McMoran mine operations in Grant County may be able to advise and refer to contractors for revegetation of your remediation sites. Sequencing will be important. It would seem that some areas would still be needed for staging during other remediation activities; these would be the last areas to restore after completion of the rest of your remediation projects.

Project: Disposing of residual materials

Reuse rocks and soil already excavated from prior construction as your source for rip rap and for soil remediation.

Project: Completing Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practices (BMP) repairs

This project actually encompasses two other listed projects:

- Project: installing and completing permanent erosion control and slope stabilization measures
- Project: completing or installing drainage to prevent flooding

The aforementioned revegetation process is an integral part of an overall plan to reduce runoff, erosion, and pollution. Revegetation is part of every best management practice (BMP) for stormwater management. Of course, there are other components to stormwater management. "Drainage to prevent flooding" is a very general description and suggests a context more suitable to protecting property or dewatering fields where moving water away from a site is the overriding concern. It often entails hard infrastructure. Given the desert wildland context, we must urge you to avoid/minimize the use of concrete and other "grey infrastructure." Concrete forms an impervious surface that prevents precipitation from percolating into the ground, and since it has relatively little roughness to slow runoff, it increases the destructive energy of sheet flow, and entombs vast tracts of fertile soil. Furthermore, if it is mixed up onsite, water will need to be trucked in. Tapping into local aquifers elsewhere along the border wall has already badly depleted irreplaceable groundwater. This is especially concerning since Luna County is already in the top 15 [at-risk watersheds](#) in New Mexico. Please avoid tapping into local aquifers as much as possible especially in regard to dust suppression and concrete mixing.

The El Paso sector's border transects 10 known aquifers:



From Caroline Tracey “Researchers solve one of the Borderlands’ biggest water puzzles. Officially, the U.S. and Mexico share 11 groundwater basins. A new map bumps that figure up to a stunning 72.” High Country News Jan. 9, 2023

(<https://www.hcn.org/articles/south-water-researchers-solve-one-of-the-borderlands-biggest-water-puzzles>)

Hidalgo County has over 30 springs associated with five of these aquifers that underlie the border (see <https://www.topozone.com/new-mexico/hidalgo-nm/spring/>). And to the west of the bootheel in Mexico, there are agricultural operations that likely are tapping into one of these aquifers. We have no data about how much water was pumped from these aquifers to make concrete for the length of the existing installed pedestrian barrier along the NM-El Paso/Mexico region nor do we know how this activity impacted regional groundwater and the springs. But what we do know is that given the current, well-known, worrisome cross-border drawdown, CBP’s proposed projects should not be pumping any more water from these aquifers to make concrete.

Better alternatives for stormwater management, known as green infrastructure, have been implemented for quite some time. The following EPA website provides general information about options and techniques: “Green and Gray Infrastructure Research,”

<https://www.epa.gov/water-research/green-and-gray-infrastructure-research>. The NMDOT Drainage Design Bureau could be a useful source for advice and for referral to knowledgeable stormwater management contractors/consultants (<https://www.dot.nm.gov/infrastructure/program-management/drainage-design/>). Another excellent resource would be New Mexico Environment Department’s Surface Water Quality Bureau (<https://www.env.nm.gov/surface-water-quality/stormwater/>) which has regional offices in Las Cruces and Silver City.

Some general recommendations:

1. Decompact the soil to improve water filtration and plant native vegetation (see above).
2. Enable passive water infiltration by contouring of the land, using seeded fiber rolls (<https://www.epa.gov/system/files/documents/2021-11/bmp-fiber-rolls.pdf>).
3. Road runoff may be best mitigated by bioswales as well as riprap (see <https://www.bernco.gov/public-works/wp-content/uploads/sites/76/2023/05/GSI-04-Biosw>

[ale-BIOSWALE_new-logo.pdf](#)). See also City of Las Cruces, Arroyo Management Plan, 2015, p. 43

(<https://www.lascruces.gov/DocumentCenter/View/767/Arroyo-Management-Plan-PDF>):



Bioswales are vegetated, mulched or xeriscaped channels that provide treatment and retention as they move stormwater from one place to another. Swales slow, and filter stormwater flows. As linear features, vegetated swales are particularly suitable for draining water from streets and parking lots. Photo: Dave Leonard Tree Specialists, www.dlarborist.com

4. Some of the photos on the interactive maps show a road surface that appears to be made up of cement block:



5. Perhaps the soil between and within blocks could be aerated and then seeded with a very tough, very short xeric native grass. The resultant high surface roughness would slow runoff and dissipate its erosive energy and possibly allow some water to infiltrate into the soil.
6. Remove construction debris that forms in-channel obstructions to allow flood flows to move naturally through all naturally existing washes.
7. That said, no unconstrained runoff with its mud and pollutants should be deliberately directed into a stream or an arroyo. These features should not be used as stormwater retention ponds. Dry arroyo beds can cover estivating amphibians, encysted insect eggs, and dormant plant seeds, all of which could become entombed or poisoned by very heavy debris/mud flows if overwhelmed by excessive road runoff. Also, the scrub/grasses that dot the slope may hide nesting sites or burrows.
8. Ensure adequate placement of flood gates in FEMA-identified flood zones; this includes most of the border wall in El Paso County east of the Rio Grande.
9. If culverts are deemed absolutely necessary, follow best management practices for protecting the inlet and outlet from erosional undermining and downslope blowout.
10. Care should be taken to prevent the spread of invasive species in all project areas by cleaning equipment
11. Create and maintain an invasive species monitoring and eradication project for target species identified by the New Mexico Department of Game and Fish, the Texas Parks

and Wildlife Department, and the USDA's Invasive Plants and Weeds of the National Forests and Grasslands in the Southwest Region.

A major consideration here is to avoid the use of materials and methods that exacerbate runoff or displace runoff to new, undamaged areas. Consulting with appropriate state and federal agencies, as well as vetted construction remediation and stormwater management contractors experienced with arid-land projects and land contouring, is essential.

Project: Completing prior construction of patrol, maintenance, and access roads by adding guardrails, signage, and integrating existing roadways to address safety concerns

We recommend removing and remediating as many roads as possible in addition to lining essential enforcement zone roads with live fencing (agave, cactus, and other native shrubs). Furthermore, adding roads means increased soil compaction, erosion, and runoff in addition to damaging and disturbing habitat—which must be mitigated with the measures described above.

GAPS, GATES, AND WILDLIFE CORRIDORS

Project: Closing small gaps and installing gates that were only partially installed or incomplete

Project: Installing small wildlife passages

We had a meeting with the local CBP office on April 1, 2022 in which we were told that the gaps in this sector would not be filled with new wall. Has this changed?

No images were provided to show the nature of these gaps or incomplete gates, which makes it hard to make an informed comment. Would these be the automatic gates as described on CBP's website: <https://www.cbp.gov/frontline/border-wall-prototype-designs> (updated Jan 2022). The website also states that "CBP has been working closely with a host of federal, municipal, and local agencies, conducting biological and cultural surveys to determine how construction might impact animals, plants, and populations. . . . During construction in 2008 [what about now?], design changes were included to prevent disruption to species migration patterns, including ocelots, pronghorn antelope, and other migrating animals . . . Native vegetation was also nurtured to prevent erosion, along with other efforts conducted in coordination with the U.S. Department of the Interior to mitigate unavoidable impacts of barrier construction." Fourteen years later, is this policy still applicable to the currently proposed gap closure/gate installation?

What is desperately needed along New Mexico's border are multiple open passages to allow wildlife migration to occur along critical nature corridors, such as near various mountain ranges and corridors, for example, at or near the Franklin Mountains, Carrizalillo Hills, Potrillo Volcanic Field, the East Potrillo Mountains, and the area near Antelope Wells. Another identified corridor is between coordinate N31.782972, W106.908322 and coordinate N31.78116, W107.28582. Both of these locations have been used in the past by tagged endangered wolves; now, however, this section is bound by a continuous border wall that prevents the migration and

interbreeding of this endangered population. Tagged collar data shows that different wolves have tried to use the same points to cross the border while successful in 2017, construction since then (99 new miles) has prevented other wolves attempting to cross these same points in 2021. In addition to establishing migratory wildlife corridors, it is important to avoid construction in the spring and summer to minimize impacts to wildlife during seasonal migration and reproduction.

With the proposed project, we see an opportunity for CBP to mitigate some of the environmental damage being generated by the wall: keep gates/gaps open, at least periodically, to enable the movement of large animal species across the border at times determined by input from USFWS, BLM, USFS, and NPS; from state agencies such as New Mexico Game and Fish; and from nongovernmental entities such as UTEP's Department of Ecology and Evolutionary Biology, NMSU's Department of Fish, Wildlife and Conservation Ecology, and The New Mexico Natural Heritage Program, a program within the [Museum of Southwestern Biology](#) and the [Biology Department](#) of the [University of New Mexico](#). Other regional institutions, for example, The Nature Conservancy and the Animas Foundation, may be able to provide data on the cross-border movement of large, terrestrial wildlife.

Please address the very limited efficacy of the proposed "installation of small wildlife passages." We do not believe the small wildlife passages previously described as small "cat hole" (8.5 by 11 inches) are sufficient at addressing the needs of wildlife migration especially considering that NM's bootheel (Hidalgo County) is one of the most diverse migratory paths in North America as well as the "Sky Island" mountains in the county are home to very sensitive ecosystems. Endangered species sighted or established in Hidalgo county include but are not limited to the Mexican Gray Wolf, New Mexico ridge-nose rattlesnake, the lesser long-nosed bat, Mexican long-nosed bat, ocelot, jaguar, coatimundi, and Mexican spotted owl.

We do feel that the small wildlife passages have value, but it does not remediate the environmental harm from obstructing the movement of important large species such as bear, wolves, jaguar, antelope, foxes, coyotes, all which must move periodically in search of scarce food and water and in search of mates. The last is significant to ensure sufficient genetic variability and reproduction rates to avoid a catastrophic population collapse and extinction. The proposed gate/gap project, with a modest reallocation of human resources already available and a modest investment in small-scale smart technology, can thus serve an additional beneficial environmental function.

If this approach proves feasible and effective, we would further recommend that it be applied retroactively to the gates in the other sectors.

Finally, we urge that USCBP collaborate with other federal (e.g., USFWS and BLM) and NM/Texas state agencies and universities (as mentioned above) to share costs and human resources to monitor the impacts of the border wall on all biota (including plants and insects). Furthermore, investing in the monitoring wildlife with smart technology such as GPS satellite tracking reduces costs and labor as well as provides continuous real-time information about

migration paths and timing and how wildlife interact with the border wall. This is a much more effective and accurate tool than camera trap studies.

ADDITIONAL CONSIDERATIONS

Razor wire removal

In other sectors the border wall has been encrusted with razor wire. If anything is unsafe for humans and other animals, this surely is. We do not know the extent razor wire has been attached to the border barriers within the El Paso sector or future plans to do so. We urge you in the strongest terms not to attach such brutally dangerous hardware, and if it is already present, to remove it as legitimate part of your “make safe” goals.

Sites or areas of cultural significance

Consult with tribes regarding traditional cultural resources impacted by construction. The restoration of these sites needs to be addressed, and tribes need to be compensated for the damages. Consultation outreach for the NM-El Paso sector is encouraged but is not limited to the Chiricahua Apache, Mescalero Apache, Tiwa, Ysleta del Sur, and Tortugas People.

CONCLUSION

We request that you take our recommendations into careful consideration. We have discussed the impacts of electrical infrastructure, especially lighting, surface soil remediation, gaps, gates, and wildlife movement in relation to the border wall on this fragile and delicate landscape. These are some of the most beautiful, diverse, and breathtaking places on earth. We need to protect them and all of the flora and fauna that reside there.

Sincerely,

Marcia Stout and Denise Smith
Aldo's Silver City Broadband Leaders
Great Old Broads for Wilderness

Antoinette Reyes
Southern NM & El Paso Organizer
Sierra Club: Rio Grande Chapter