

**DESERT TORTOISE COUNCIL**

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**Via email and BLM NEPA ePlanning portal**

January 28, 2025

Attn: Amanda Sparks  
Arizona Strip Field Office  
Bureau of Land Management  
345 East Riverside Drive St. George, UT 84790  
[blm\\_az\\_asdo\\_nepa\\_comments@blm.gov](mailto:blm_az_asdo_nepa_comments@blm.gov)

RE: Big Bend Irrigation Ditch and Access Roads Rights-of-Way – Scoping Comments (DOI-  
BLM-AZ-A010-2024-0017-EA)

Dear Ms. Sparks,

The Desert Tortoise Council (Council) is a non-profit organization comprised of hundreds of professionals and laypersons who share a common concern for wild desert tortoises and a commitment to advancing the public’s understanding of desert tortoise species. Established in 1975 to promote conservation of tortoises in the deserts of the southwestern United States and northern Mexico, the Council routinely provides information and other forms of assistance to individuals, organizations, and regulatory agencies on matters potentially affecting desert tortoises within their geographic ranges.

Both our physical and email addresses are provided above in our letterhead for your use when providing future correspondence to us. When given a choice, we prefer to receive emails for future correspondence, as mail delivered via the U.S. Postal Service may take several days to be delivered. Email is an “environmentally friendlier way” of receiving correspondence and documents rather than “snail mail.”

We appreciate that BLM notified the Council via email about the public scoping period for this proposed action. In addition, we appreciate this opportunity to provide comments on the above-referenced project. Given the location of the proposed project in habitats likely occupied by Mojave desert tortoise (*Gopherus agassizii*) (synonymous with Agassiz’s desert tortoise), our comments include recommendations intended to enhance protection of this species and its habitat

during activities authorized by the Bureau of Land Management (BLM), which we recommend be added to project terms and conditions in the authorizing document (e.g., right of way grant, etc.) as appropriate. Please accept, carefully review, and include in the relevant project file the Council's following comments and attachments for the proposed Project.

### **Description of Proposed Project**

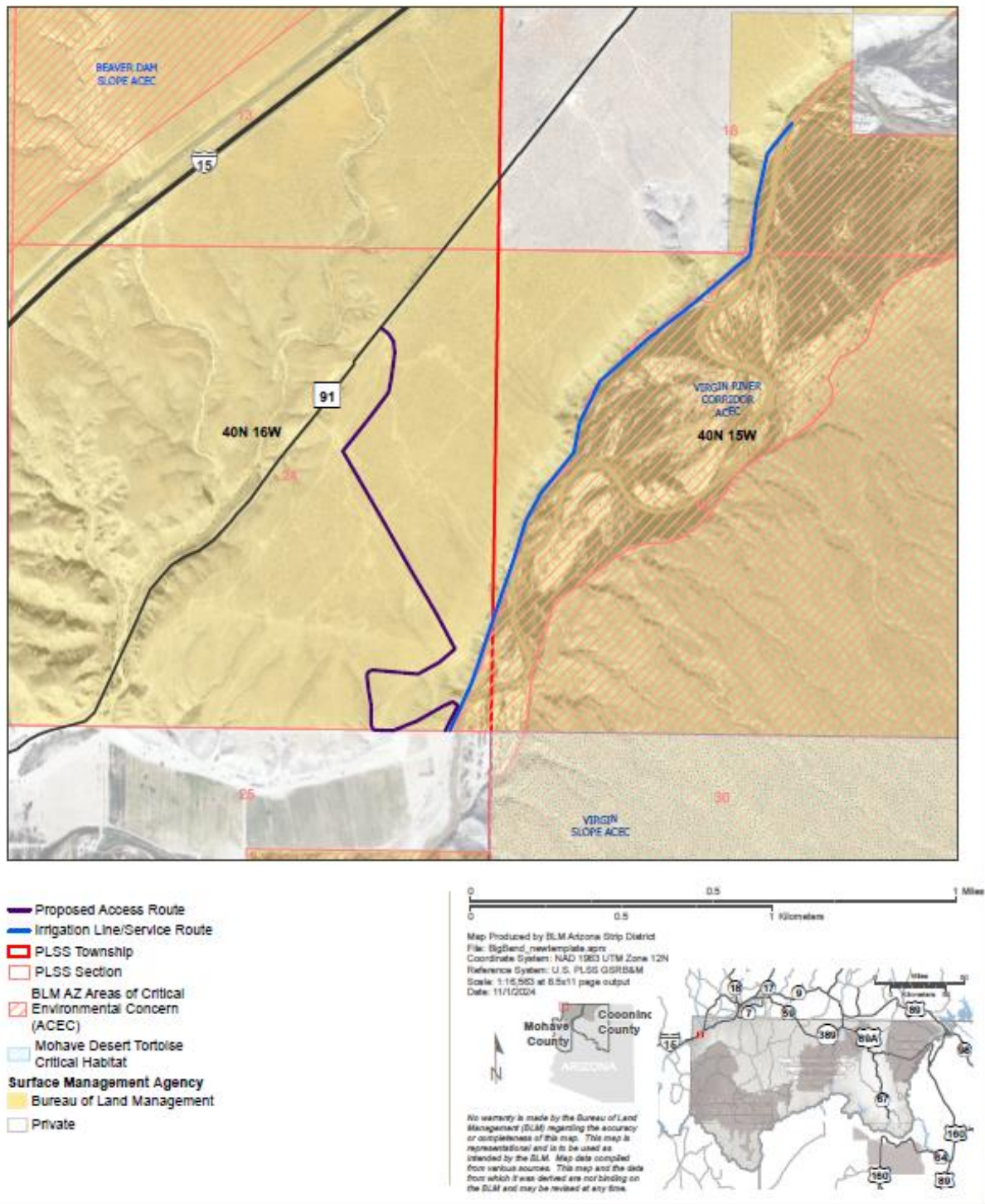
According to BLM's "Notice of 15-Day Scoping Period – Big Bend Irrigation Line and Access Roads" (BLM 2025), BLM has received a request from Colton and Megan Teerlink (applicants) for a right-of-way (ROW) to (1) reconstruct, operate, and maintain an earthen subsurface irrigation ditch (and eventually buried water pipeline) via gravity flow from the Virgin River to private property and (2) upgrade an access road from Highway 91 to the private property (please see Figure 1).

**Irrigation Ditch and Service Road:** The 1.5-mile long ditch would be mainly open and about 10 feet wide. Some portions would pass through culverts (less than 48 inches in size) where the topography does not allow sufficient space for both the ditch and the service road. A headgate with a 48-inch culvert opening and mounted gate and sandgate (a rectangular-shaped catchment area with inlet and outlet gates) would be constructed at the diversion point from the Virgin River. If funding becomes available in the future, the ditch would be replaced with a buried 24-inch, 100 psi PVC pipe. The ROW would be 50 feet wide. The areal portion of this linear ROW would be about 9.1 acres.

Construction equipment could include the use of a mid-size excavator, dozer, grader, and service vehicles. Staging of materials would occur on private lands. The irrigation ditch is located along the western edge of BLM's Virgin River Corridor Area of Critical Environmental Concern (ACEC).

The irrigation ditch would be accessed using an existing dirt service road. The road is about 12 feet wide. No physical change to the service road is proposed.

**Primary Access Road:** The applicants would upgrade an existing two-track road beginning at Highway 91 that travels south to the private property. This approval would result in BLM changing the designation of 0.29 miles of this route from "closed" to "open." In addition, due to topography and slope, approximately 0.42 mile of new disturbance would be required to construct switchbacks from the top of the bluff to the access point of the private property, which would also be designated open. The applicants propose to initially install approximately six inches of gravel road base, with the option to resurface with two inches of asphalt when funding becomes available. Culverts (18-24 inches in diameter) would be installed where necessary to prevent erosion, primarily along the switchbacks. Equipment for construction could include a haul truck, water truck, excavator, dozer, scraper, and blade. Staging of materials would occur on private lands. This portion of the proposed ROW would be approximately 6,873 feet long and 50 feet wide with a 16-foot wide travel surface, containing about 7.9 acres.



**Figure 1.** Map of proposed irrigation ditch/pipeline (blue line) from the Virgin River and improved primary access road (purple line) from Hwy 91 across BLM land to private property. The location is south of Littlefield, Mohave County, Arizona.

## Scoping Comments

The purpose of scoping is to allow the public to participate in an “early and open process for determining the scope of issues to be addressed, and for identifying the significant issues related to a proposed action” [40 Code of Federal Regulations (CFR) 1501.7]. We understand that BLM is proposing to prepare an environmental assessment (EA) to analyze the impacts of the proposed Big Bend Irrigation Ditch and Access Routes ROW project. In the EA BLM should:

1. Describe and analyze more than one action alternative.
2. Discuss how each action alternative complies with the management structure of the current land management plan for the area [e.g., Record of Decision for the Arizona Strip Field Office Resource Management Plan (BLM 2008a)], including management of adjacent/nearby lands, and meets the regulatory requirements and most important, the statutory requirements under the Federal Land Policy and Management Act (FLPMA).
3. Provide maps of critical habitat for the Mojave desert tortoise (USFWS 1994a) and other areas identified by the U.S. Fish and Wildlife Service (USFWS) as essential to the survival and recovery of the tortoise.
4. Provides maps of critical habitat for other listed species in/near the project area.
5. Provide maps of Areas of Critical Environmental Concern (ACECs), and other areas identified for special management by BLM and how each action alternative may directly and indirectly impact the resources for which these lands are managed.
6. Provide maps of all areas identified by the Arizona Game and Fish Department (AZGFD) and BLM that are managed for the tortoise and other special status wildlife species and if those lands are mitigation lands for previous projects.
7. Provide results of monitoring studies for the tortoise for those areas near the project area and the Northeastern Mojave Recovery Unit, summarize the findings of these studies from their inception through to present day, document trends in tortoise populations, and analyze how the proposed project may or may not impact tortoises/tortoise habitat and the movement of tortoises within the Northeastern Mojave Recovery Unit.
8. Provide maps that identify the ownership of the lands associated with the proposed alternatives and ownership of surrounding lands.
9. Provide maps with existing and proposed developments/surface disturbance activities on the project site and adjacent lands surrounding the project area where indirect impacts would occur.
10. Provide maps of connectivity habitat for the tortoise and other listed, proposed, candidate, and special status species and where the action alternatives are located with respect to these habitats.

11. Ensure that in the EA, BLM clearly demonstrates how it is complying fully with measures, regulations, and policies in the following documents:
- BLM National Environmental Policy Act Handbook H-1790-1 (2008b)
  - BLM Special Status Species Management. Handbook 6840 (2008c).
  - BLM Mitigation Handbook (H-1794-1) (2021b).
  - BLM Mitigation Manual (MS-1794) (2021c).
  - BLM Instruction Memorandum IM 2021-046 on Mitigation (2021a).
  - BLM Habitat Connectivity on Public Lands Instruction Memorandum 2023-005.
  - Council on Environmental Quality's (CEQ) Guidance for Federal Departments and Agencies on Ecological Connectivity and Wildlife Corridors. March 21, 2023.

### **Issues Identified that Apply for All Projects in Tortoise Habitat**

**Affected Environment:** For this section of the EA, please ensure that these issues and information are included in the EA.

*Status of the Population of the Mojave Desert Tortoise:* The Mojave desert tortoise is an indicator species and umbrella species of ecosystem health (Berry and Medica 1995). Indicator species are used to monitor environmental changes, assess the efficacy of management, and provide warning signals for impending ecological shifts. An umbrella species is a species whose conservation is expected to confer protections to a large number of co-occurring species. Thus, when the Mojave desert tortoise is declining in density, numbers, and recruitment, this decline is an indicator of environmental change that is degrading the desert environment, ineffective management by land management agencies, and a warning that ecological shifts in the Mojave and Colorado deserts are occurring. In addition, this decline may indicate that other species in the Mojave and Colorado deserts are also declining in density, numbers, and recruitment. Consequently, BLM should consider the data on the demographic trend of the tortoise as a “wake-up call” that more must be done to effectively manage for the tortoise and other species in the Mojave and Colorado deserts. Impacts to other local and wide-ranging species and their habitats should be analyzed in the EA.

The Council provides the following information so that these or similar data may be included in the EA. The Council believes that BLM's failure to implement recovery actions for the Mojave desert tortoise as given in the recovery plan (both USFWS 1994b and 2011) has contributed to substantial tortoise declines between 2004 and 2014 (Table 1; USFWS 2015) and through 2021 (Table 3: USFWS 2016, 2018, 2019a, 2020a, 2022a, 2022b). There are 17 populations of Mojave desert tortoise described below that occur in Critical Habitat Units (CHUs) and Tortoise Conservation Areas (TCAs); 14 are on lands managed by the BLM; and 4 of these are in the Northeastern Mojave Recovery Unit.

**Table 1.** Summary of 10-year trend data for 5 Recovery Units and 17 CHUs/TCAs for Mojave desert tortoise. The table includes the area of each Recovery Unit and CHU/TCA, percent of total habitat for each Recovery Unit and CHU/TCA, density (number of breeding adults/km<sup>2</sup> and standard errors = SE), and the percent change in population density between 2004 and 2014. Populations below the viable level of 3.9 breeding individuals/km<sup>2</sup> (10 breeding individuals per mi<sup>2</sup>) (assumes a 1:1 sex ratio) and showing a decline from 2004 to 2014 are in red.



Recovery Unit: Designated Critical Habitat Unit/Tortoise Conservation Area	Surveyed area (km <sup>2</sup> )	% of total habitat area in Recovery Unit & CHU/TCA	2014 density/km <sup>2</sup> (SE)	% 10-year change (2004–2014)
<b>Western Mojave, CA</b>	<b>6,294</b>	<b>24.51</b>	<b>2.8 (1.0)</b>	<b>-50.7 decline</b>
Fremont-Kramer	2,347	9.14	2.6 (1.0)	-50.6 decline
Ord-Rodman	852	3.32	3.6 (1.4)	-56.5 decline
Superior-Cronese	3,094	12.05	2.4 (0.9)	-61.5 decline
<b>Colorado Desert, CA</b>	<b>11,663</b>	<b>45.42</b>	<b>4.0 (1.4)</b>	<b>-36.25 decline</b>
Chocolate Mtn AGR, CA	713	2.78	7.2 (2.8)	-29.77 decline
Chuckwalla, CA	2,818	10.97	3.3 (1.3)	-37.43 decline
Chemehuevi, CA	3,763	14.65	2.8 (1.1)	-64.70 decline
Fenner, CA	1,782	6.94	4.8 (1.9)	-52.86 decline
Joshua Tree, CA	1,152	4.49	3.7 (1.5)	+178.62 increase
Pinto Mtn, CA	508	1.98	2.4 (1.0)	-60.30 decline
Piute Valley, NV	927	3.61	5.3 (2.1)	+162.36 increase
<b>Northeastern Mojave</b>	<b>4,160</b>	<b>16.2</b>	<b>4.5 (1.9)</b>	<b>+325.62 increase</b>
Beaver Dam Slope, NV, UT, AZ	750	2.92	6.2 (2.4)	+370.33 increase
Coyote Spring, NV	960	3.74	4.0 (1.6)	+ 265.06 increase
Gold Butte, NV & AZ	1,607	6.26	2.7 (1.0)	+ 384.37 increase
Mormon Mesa, NV	844	3.29	6.4 (2.5)	+ 217.80 increase
<b>Eastern Mojave, NV &amp; CA</b>	<b>3,446</b>	<b>13.42</b>	<b>1.9 (0.7)</b>	<b>-67.26 decline</b>
El Dorado Valley, NV	999	3.89	1.5 (0.6)	-61.14 decline
Ivanpah Valley, CA	2,447	9.53	2.3 (0.9)	-56.05 decline
<b>Upper Virgin River</b>	<b>115</b>	<b>0.45</b>	<b>15.3 (6.0)</b>	<b>-26.57 decline</b>
Red Cliffs Desert	115	0.45	15.3 (6.0)	-26.57 decline
<b>Range-wide Area of CHUs - TCAs/Range-wide Change in Population Status</b>	<b>25,678</b>	<b>100.00</b>		<b>-32.18 decline</b>

**Table 2.** Estimated change in abundance of adult Mojave desert tortoises in each recovery unit between 2004 and 2014 (Allison and McLuckie 2018). Decreases in abundance are in red with the pertinent recovery unit highlighted in yellow.

Recovery Unit	Modeled Habitat (km <sup>2</sup> )	2004 Abundance	2014 Abundance	Change in Abundance	Percent Change in Abundance
Western Mojave	23,139	131,540	64,871	-66,668	-51%
Colorado Desert	18,024	103,675	66,097	-37,578	-36%
Northeastern Mojave	10,664	12,610	46,701	34,091	270%
Eastern Mojave	16,061	75,342	24,664	-50,679	-67%
Upper Virgin River	613	13,226	10,010	-3,216	-24%
<b>Total</b>	<b>68,501</b>	<b>336,393</b>	<b>212,343</b>	<b>-124,050</b>	<b>-37%</b>

**Table 3.** Summary of data for Agassiz’s desert tortoise, *Gopherus agassizii* (=Mojave desert tortoise) from 2004 to 2021 for the 5 Recovery Units and 17 CHUs/TCAs. The table includes the area of each Recovery Unit and CHU/TCA, percent of total habitat for each Recovery Unit and CHU/TCA, density (number of breeding adults/km<sup>2</sup> and standard errors = SE), and percent change in population density between 2004-2014 (USFWS 2015). Populations below the viable level of 3.9 breeding individuals/km<sup>2</sup> (10 breeding individuals per mi<sup>2</sup>) (assumes a 1:1 sex ratio) (USFWS 1994b, 2015) or showing a decline from 2004 to 2014 are in **red**.

Recovery Unit: Designated CHU/TCA &	% of total habitat area in Recovery Unit & CHU/TCA	2004 density/ km <sup>2</sup>	2014 density/ km <sup>2</sup> (SE)	% 10- year change (2004– 2014)	2015 density/ km <sup>2</sup>	2016 density/ km <sup>2</sup>	2017 density/ km <sup>2</sup>	2018 density/ km <sup>2</sup>	2019 density/ km <sup>2</sup>	2020 density/ km <sup>2</sup>	2021 density/ km <sup>2</sup>
<b>Western Mojave, CA</b>	<b>24.51</b>		<b>2.8 (1.0)</b>	<b>-50.7 decline</b>							
Fremont-Kramer	9.14		2.6 (1.0)	-50.6 decline	4.5	No data	4.1	No data	2.7	1.7	No data
Ord-Rodman	3.32		3.6 (1.4)	-56.5 decline	No data	No data	3.9	2.5/3.4*	2.1/2.5*	No data	1.9/2.5*
Superior-Cronese	12.05		2.4 (0.9)	-61.5 decline	2.6	3.6	1.7	No data	1.9	No data	No data
<b>Colorado Desert, CA</b>	<b>45.42</b>		<b>4.0 (1.4)</b>	<b>-36.25 decline</b>							
Chocolate Mtn AGR, CA	2.78		7.2 (2.8)	-29.77 decline	10.3	8.5	9.4	7.6	7.0	7.1	3.9
Chuckwalla, CA	10.97		3.3 (1.3)	-37.43 decline	No data	No data	4.3	No data	1.8	4.6	2.6
Chemehuevi, CA	14.65		2.8 (1.1)	-64.70 decline	No data	1.7	No data	2.9	No data	4.0	No data
Fenner, CA	6.94		4.8 (1.9)	-52.86 decline	No data	5.5	No data	6.0	2.8	No data	5.3
Joshua Tree, CA	4.49		3.7 (1.5)	+178.62 increase	No data	2.6	3.6	No data	3.1	3.9	No data
Pinto Mtn, CA	1.98		2.4 (1.0)	-60.30 decline	No data	2.1	2.3	No data	1.7	2.9	No data
Piute Valley, NV	3.61		5.3 (2.1)	+162.36 increase	No data	4.0	5.9	No data	No data	No data	3.9

<b>Northeastern Mojave AZ, NV, &amp; UT</b>	<b>16.2</b>		<b>4.5 (1.9)</b>	<b>+325.62 increase</b>							
Beaver Dam Slope, NV, UT, & AZ	2.92		6.2 (2.4)	+370.33 increase	No data	5.6	1.3	5.1	2.0	No data	No data
Coyote Spring, NV	3.74		4.0 (1.6)	+ 265.06 increase	No data	4.2	No data	No data	3.2	No data	No data
Gold Butte, NV & AZ	6.26		2.7 (1.0)	+ 384.37 increase	No data	No data	1.9	2.3	No data	No data	2.4
Mormon Mesa, NV	3.29		6.4 (2.5)	+ 217.80 increase	No data	2.1	No data	3.6	No data	5.2	5.2
<b>Eastern Mojave, NV &amp; CA</b>	<b>13.42</b>		<b>1.9 (0.7)</b>	<b>-67.26 decline</b>							
El Dorado Valley, NV	3.89		1.5 (0.6)	-61.14 decline	No data	2.7	5.6	No data	2.3	No data	No data
Ivanpah Valley, CA	9.53		2.3 (0.9)	-56.05 decline	1.9	No data	No data	3.7	2.6	No data	1.8
<b>Upper Virgin River, UT &amp; AZ</b>	<b>0.45</b>		<b>15.3 (6.0)</b>	<b>-26.57 decline</b>							
Red Cliffs Desert**	0.45	29.1 (21.4-39.6)**	15.3 (6.0)	-26.57 decline	15.0	No data	19.1	No data	17.2	No data	
<b>Rangewide Area of CHUs - TCAs/Rangewide Change in Population Status</b>	<b>100.00</b>			<b>-32.18 decline</b>							

\*This density includes the adult tortoises translocated from the expansion of the Marine Corps Air Ground Combat Center, that is resident adult tortoises and translocated adult tortoises.

\*\*Methodology for collecting density data initiated in 1999.



Important information from these tables includes:

*Change in Status for the Mojave Desert Tortoise Range-wide*

- Twelve of 17 populations of the Mojave desert tortoise declined from 2004 to 2021.
- Eleven of 17 populations of the Mojave desert tortoise are below the population viability threshold. These 11 populations represent 89.7 percent of the range-wide habitat in CHUs/TCAs.

*Change in Status for the Mojave Desert Tortoise in the Northeastern Mojave Recovery Unit*

- All 4 populations of the Mojave desert tortoise in this recovery unit declined since 2014.
- Three of the 4 populations of the Mojave desert tortoise are below the population viability threshold. These 3 populations represent 79.6 percent of the habitat in this recovery unit.

*The Endangered Mojave Desert Tortoise:* The Council believes that the Mojave desert tortoise meets the definition of an endangered species. In the Federal Endangered Species Act (FESA), Congress defined an “endangered species” as “any species which is in danger of extinction throughout all or a significant portion of its range, Because many populations of the Mojave desert tortoise were non-viable in 2014, the number of non-viable populations increased in 2021, most populations are declining, and the threats to the Mojave desert tortoise are numerous and have not been substantially reduced throughout the species’ range, the Council believes the Mojave desert tortoise should be designated as an endangered species by the USFWS.

The Mojave desert tortoise is now on the list of the world’s most endangered tortoises and freshwater turtles. It is in the top 50 endangered species. The International Union for Conservation of Nature’s (IUCN) Species Survival Commission, Tortoise and Freshwater Turtle Specialist Group, now considers Mojave desert tortoise to be Critically Endangered (Berry *et al.* 2021), which is a “species that possess an extremely high risk of extinction as a result of rapid population declines of 80 to more than 90 percent over the previous 10 years (or three generations), a current population size of fewer than 50 individuals, or other factors.” It is one of three turtle and tortoise species in the United States to be critically endangered.

The summary of data above indicates that BLM’s current management actions for the Mojave desert tortoise have been inadequate to help the desert tortoise to survive and recover. BLM has been ineffective in halting population declines, which has resulted in non-viable populations. The Council believes that BLM’s management actions are inadequate in preventing the extirpation of the Mojave desert tortoise in most of the recovery units.

*Standardized Surveys – Desert Tortoise and Other Special Status Species:* For the EA to analyze the effects of the proposed project and identify potentially significant impacts to wildlife, plants and their habitats, the following surveys should be performed to determine the extent of rare plant and animal populations occurring within areas to be directly and indirectly impacted, and therefore adequately and accurately analyze the direct, indirect, and cumulative impacts to these resource issues.

Focused surveys should be conducted for all rare plant and animal species reported in the vicinity of the proposed project. Results of the surveys will determine appropriate permits from AZFGD, BLM, and USFWS and associated avoidance, minimization, and mitigation measures. Focused plant and animal surveys should be conducted by knowledgeable biologists for respective taxa (e.g., rare plant surveys should be performed by botanists), and to assess the likelihood of occurrence for each rare species or resource (e.g., plant community) that has been reported from the immediate region. Focused plant surveys should occur only if there has been sufficient winter rainfall to promote germination of annual plants in the spring. Alternatively, the environmental documents may assess the likelihood of occurrence with a commitment by the proponents to perform subsequent focused plant surveys prior to ground disturbance, assuming conditions are favorable for germination.

*Migratory Birds/Eagles:* BLM should ensure that all actions it authorizes are implemented in compliance with the Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act (BGEPA), and associated regulations, executive orders, and policies (e.g., Driscoll 2010, Pagel et al. 2010) to avoid mortality or injury to migratory birds and harassment of eagles.

*Burrowing owl:* Surveys for western burrowing owl (*Athene cunicularia*) should be coordinated with the USFWS as the species is protected under the Migratory Bird Treaty Act. BLM should require the implementation of the Burrowing Owl Project Clearance Guidance for Landowners (AZGFD 2009). Surveys for burrowing owls should be conducted by persons with both knowledge and field experience in the biology, ecology, and behavior of burrowing owls and identifying burrowing owl sign. BLM should also require surveying transects at 30-, 60-, 90-, 120-, and 150-meter intervals in all suitable habitats adjacent to the subject property to collect data to help assess the potential indirect impacts of the Project on this species (CDFG 2012). If burrowing owl sign is found, AZGFD and/or USFWS should describe appropriate minimization and mitigation measures to offset those impacts.

In addition, BLM should demonstrate in the EA how it will comply with “E.O. 13186 – Responsibilities of Federal Agencies To Protect Migratory Birds.” If burrowing owl sign is found, BLM and the applicants should develop a science-based relocation, mitigation, monitoring, adaptive management plan with the USFWS and AZGFD and ensure that this plan is implemented. We recommend that researchers with expertise on the western burrowing owl from the U.S. Geological Survey, the scientific research branch of the Department of the Interior, be included in the developing relocation, mitigation, monitoring, and adaptive management plans if burrowing owls or sign are found in the project area.

*Mojave Desert Tortoise Surveys:* We request that protocol-level surveys for the tortoise and other listed species be performed in the action area of the proposed project and other action alternatives. Formal protocol surveys for Mojave desert tortoise (USFWS 2019b) must be conducted at the proper times of year. Because USFWS (2009) requires only experienced biologists to perform protocol surveys, USFWS biologists should review surveyors’ credentials prior to initiating the surveys. Per this protocol, if the action area is larger than 500 acres, the surveys must be performed in the time periods of April-May or September-October so that a statistical estimate of tortoise densities can be determined for the “action area” (please see below). BLM should provide the survey results to the USFWS and coordinate with them to determine whether the proposed project is likely to adversely affect the tortoise or other listed species. If likely, then BLM should initiate formal consultation with the USFWS.

To determine the full extent of impacts to tortoises and to facilitate compliance with the FESA, BLM must consult with the USFWS to determine the action area for this Project. The USFWS defines “action area” in the Code of Federal Regulations and their Desert Tortoise Field Manual (USFWS 2009) as “all areas to be affected directly or indirectly by proposed development and not merely the immediate area involved in the action (50 CFR §402.02).” BLM should clearly describe the USFWS’s action area for the proposed project and alternatives.

In the EA, BLM should provide the results from conducting these surveys for the tortoise, other listed species per their protocols, migratory birds/eagles, and rare plants and describe how BLM is complying with the FESA, MBTA, and BGEPA prior to conducting any ground disturbance in the project area including project-related activities on private land.

**Environmental Consequences:** For this section of the EA, please ensure that these issues and analyses are included in the EA.

*Mojave Desert Tortoise Impacts Analysis:* The EA should include a thorough analysis of the status and trend of the tortoise in the action area, nearby TCAs (e.g., Beaver Dam Slope, etc.), recovery unit(s), and rangewide. Tied to this analysis should be a discussion of all likely sources of mortality for the tortoise and degradation and loss of habitat construction, use, and maintenance of the irrigation ditch/pipeline and access road. BLM should use the data from focused plant and wildlife surveys in its analysis of the direct, indirect, synergistic, growth inducing, and cumulative impacts of the proposed project on the Mojave desert tortoise and its habitat, other listed and special status species designated by USFWS, AZGFD, and BLM.

The EA should document the number of acres and locations that would be impacted directly by the proposed project and the number of acres and locations of indirect impacts to tortoises, tortoise habitat, and those of other listed and special status species. Please see below for issues specific to the proposed action that would result in indirect impacts.

*Road Effect Zone:* We request that the EA include information on the locations, sizes, and arrangements of roads within and near the action are of the proposed project, who will have access to them, whether the improved roads will be open to human use and what impacts that designation brings with respect to direct and indirect impacts (e.g., road kill, vandalism and collection, subsidies for tortoise predators from roadkill, spread and proliferating of invasive plant species, additional sources of fire (e.g. catalytic converters, vehicle fires, lit cigarettes, etc.) to the tortoise and tortoise habitat. The presence/use of roads even with low vehicle use has numerous adverse effects on the desert tortoise and its habitats that have been reported in the scientific literature. These include the deterioration/loss of wildlife habitat, adverse impacts to hydrology, geomorphology, and air quality that degrade/destroy nearby, downwind, and downgradient vegetation; increased competition and predation (including by humans); and the loss of naturalness or pristine qualities. The impacts of road use are extensive and far reaching. Road construction, use and maintenance impacts wildlife through numerous mechanisms that can include mortality from vehicle collisions, and loss, fragmentation, alteration/destruction of habitat, collection, vandalism, increased predation, and modification of behavior. Field studies (LaRue 1992; Nafus et al. 2013; von Seckendorff Hoff and Marlow 2002) have shown impact zones from road use eliminate or substantially reduce tortoise numbers along/near roadways.

Vehicle use on new roads and increased vehicle use on existing roads equates to increased direct mortality and an increased road effect zone for desert tortoises. Road construction, use, and maintenance adversely affect wildlife through numerous mechanisms that can include mortality from vehicle collisions, and loss, fragmentation, and alteration of habitat (Nafus et al. 2013; von Seckendorff Hoff and Marlow 2002).

In von Seckendorff Hoff and Marlow (2002), they reported reductions in Mojave desert tortoise numbers and sign from infrequent use of roadways to major highways with heavy use. There was a linear relationship between traffic level and tortoise reduction. For two graded, unpaved roads, the reduction in tortoises and sign was evident 1.1 to 1.4 km (3,620 to 4,608 feet) from the road. Nafus et al. (2013) reported that roads may decrease tortoise populations via several possible mechanisms, including cumulative mortality from vehicle collisions and reduced population growth rates from the loss of larger reproductive animals. Roads act as population sinks for tortoises. Other documented impacts from road construction, use, and maintenance include increases in roadkill of wildlife species as well as tortoises, creating or increasing food subsidies for common ravens, and contributing to increases in raven numbers and predation pressure on the desert tortoise.

Please include the five major categories of primary road effects to the tortoise and special status species in the EA analyses: (1) wildlife mortality from collisions with vehicles; (2) hindrance/barrier to animal movements thereby reducing access to resources and mates; (3) degradation of habitat quality; (4) habitat loss caused by disturbance effects in the wider environment and from the physical occupation of land by the road; and (5) subdividing animal populations into smaller and more vulnerable fractions (Jaeger et al. 2005a, 2005b, Roedenbeck et al. 2007). These analyses should be at the population, recovery unit, and rangewide levels.

Road establishment/increased use is often followed by various indirect impacts such as increased human access causing disturbance of species' behavior, increased predation, spread of invasive species that alters/degrades habitat, and vandalism and/or collection. Modification of surface hydrology is another indirect impact should be analyzed in the EA, because of its impacts on vegetation and soil moisture down-gradient from the road. Devitt et al. (2022) found that a simple service road had decoupled the flow of water from up gradient washes to down gradient washes and once decoupled, altered the area in which rain water harvesting by native vegetation occurred. The decoupling of the wash system led to a significant decline in soil moisture, canopy level NDVI (Normalized Difference Vegetation Index) values and mid-day leaf xylem water potentials. Plants within the first 300 m from where the wash was decoupled were placed under significantly greater stress during the summer months of higher environmental demand (Devitt et al. 2022). Schwinning et al. (2011) argued that the overall health of desert ecosystems is directly linked to the integrity of their surfaces and such drainage systems. The analysis of the impacts from road establishment, use, and maintenance should include cumulative effects to the tortoise with respect to nearby critical habitat/TCAs, other TCAs, and occupied habitats; areas identified as important linkage habitat for connectivity between nearby critical habitat units, TCAs, and occupied habitats as these linkage areas serve as corridors for maintaining genetic and demographic connectivity between populations, recovery units, and rangewide (see *Desert Tortoise Habitat Linkages/Connectivity among Populations and Recovery Units* below).

Tortoise behavior is also negatively impacted by the presence and use of roads. Research that tracked free-moving Mojave desert tortoise behavior found that tortoises would avoid roads or altered movement near roads (Hromada et al. 2020, Hromada et al. 2023, Peaden et al. 2017). Harju et al. (2024) reported that “the negative impact of the highway on female movement can reduce connectivity by expanding the road effect beyond the [tortoise exclusion]fence, depressing local populations and thus functioning as a wider fragmentation barrier.”

Roads bring increased likelihood of ignition of wildfires. Morrison (2007) also examined the spatial relationship of roads to wildfires and whether roads enable wildfire ignitions. Of human-caused wildfires, 95% occurred within ½ mile of a road. Human-caused wildfires occur much more commonly next to roads than would be predicted by random occurrence across the landscape. Road access is a statistically significant contributing factor in the probability of occurrence of wildfires.

Brooks and Matchett (2006) mapped the ignition points for fires in the Mojave Desert between 1980 and 2004. They distinguished between human-caused and lightning fires. They reported that most ignition points of human-caused fires occurred along major roadways. For example, between July 1 and 2, 2024, two vehicles travelling on separate roads caught fire and started two wildfires in the southern California desert. Roads provide other ignition sources such as cigarettes and other burning objects tossed from a vehicle. Current road systems increase risks of human-caused fire. In contrast, areas that are distant from roads have significantly lesser human-ignited fires (Morrison 2007).

Road-related threats contributed ~22% of the total impacts to the Mojave desert tortoise in an aspatial conceptual model of risk to the species, not including effects of population fragmentation (Darst et al. 2013, Averill-Murray and Allison 2023). These and other indirect impacts to the Mojave desert tortoise should be analyzed in the EA from road construction, use, and maintenance.

*Desert Tortoise Habitat Linkages/Connectivity among Populations and Recovery Units:* The EA should analyze how this proposed project would impact the movement of tortoises relative to linkage habitats/corridors. The EA should include an analysis of the minimum linkage design necessary for survival and recovery of the desert tortoise (e.g., USFWS 2011, Averill-Murray et al. 2013, Averill-Murray et al. 2021, Hromada et al. 2020). Please analyze how this proposed project may impact proximate conservation areas, such as BLM-designated ACECs, etc.

### **Additional Issues Specific to the Proposed Project**

The Council requests that (1) the issues listed below be described and analyzed in the EA; (2) current scientific literature and reports be used in this analysis; and (3) BLM demonstrate compliance with applicable federal laws, regulations, executive orders, policies, and best management practices in its discussions and analyses in the EA. We request that these three actions be implemented for listed, proposed, and candidate species under the FESA, for BLM special status species, and for AZGFD special status species. These species include, but are not limited to, the tortoise, Arizona toad, relict leopard frog, woundfin, Virgin spinedace, Virgin River chub, speckled dace, flannelmouth sucker, desert sucker, yellow-billed cuckoo, and southwestern willow flycatcher (pages 8 and 9 from AZGFD Special Status Species by Watershed Code<sup>1</sup>).

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<sup>1</sup> [https://azgfd-portal-wordpress-pantheon.s3.us-west-2.amazonaws.com/wp-content/uploads/2024/11/26102217/SSS\\_By\\_Watershed\\_20241125.pdf](https://azgfd-portal-wordpress-pantheon.s3.us-west-2.amazonaws.com/wp-content/uploads/2024/11/26102217/SSS_By_Watershed_20241125.pdf)

The analysis should include the areas that would be impacted directly and indirectly by the proposed action. For example, water withdrawal from the Virgin River would likely impact water quality and water quantity/seasonal water flow downstream from the diversion site and impact special status fish and riparian habitat for special status birds. This area of indirect impact would be different than that for the tortoise from implementation of the proposed action, with some of these indirect impacts listed above. Please provide this analysis for the terrestrial, riparian, and aquatic habitats likely to be impacted by the proposed project especially for listed, proposed, candidate, and special status species.

For a proposed project in tortoise habitat, the Council requests that in the EA, BLM should include a plan that would effectively monitor desert tortoise/habitat impacts, including verification that desert tortoise connectivity corridors are functional. The required FESA consultation should further define this plan to monitor the *impacts* of the taking. This is very different than monitoring take. The monitoring plan should (1) be scientifically and statistically credible; (2) be implementable; and (3) require BLM/applicants to implement adaptive management to correct promptly land use practices if the mitigation is not accomplishing its intended purposes. Compliance with Chapter 11 of the BLM National Environmental Policy Act (NEPA) Handbook H-1790-1 BLM (2008b) is needed to ensure this occurs.

Specifically to the proposed project, please ensure that the EA discusses and analyzes the following:

1. What is the purpose and need for the 1.5-mile long ditch/future pipeline? Are alternative locations possible to withdraw water from the Virgin River to supply water to the private land? The diversion point from the Virgin River is located about 1.5 miles upstream from the private land, which is the destination of the diverted water. Is it possible for water to be diverted closer to the private property? What would be the schedule for diverting water into the irrigation ditch? Would more water be diverted in the summer under a low flow period that would have a greater adverse impact on listed/special status fish species and riparian obligate species? We ask these questions and identify these issues to encourage BLM to provide an adequate description of the proposed project as the foundation for the analysis of impacts. In addition, we ask these questions to determine whether BLM is identifying and providing an adequate description of alternatives under NEPA and to comply with BLM's mandate under FLPMA, which requires that in managing public lands, BLM shall take any action necessary to prevent unnecessary or undue degradation of the lands. For example, would a shorter ditch in the Virgin River Corridor ACEC be an alternative that would prevent unnecessary or undue degradation to the habitat for listed/special status species?
2. We ask similar questions for the proposed primary access road. From the map provided by BLM and in examining satellite imagery of the proposed project area from 2023 (Figure 2), we located a wide-bladed area with vehicles on it located on the north side of the agriculture fields. This wide-bladed area appears to be used currently as a road to the private property from Highway 91. Thus, for BLM to approve a second road that would be constructed with a gravel base and improved further as a paved road that is located in native



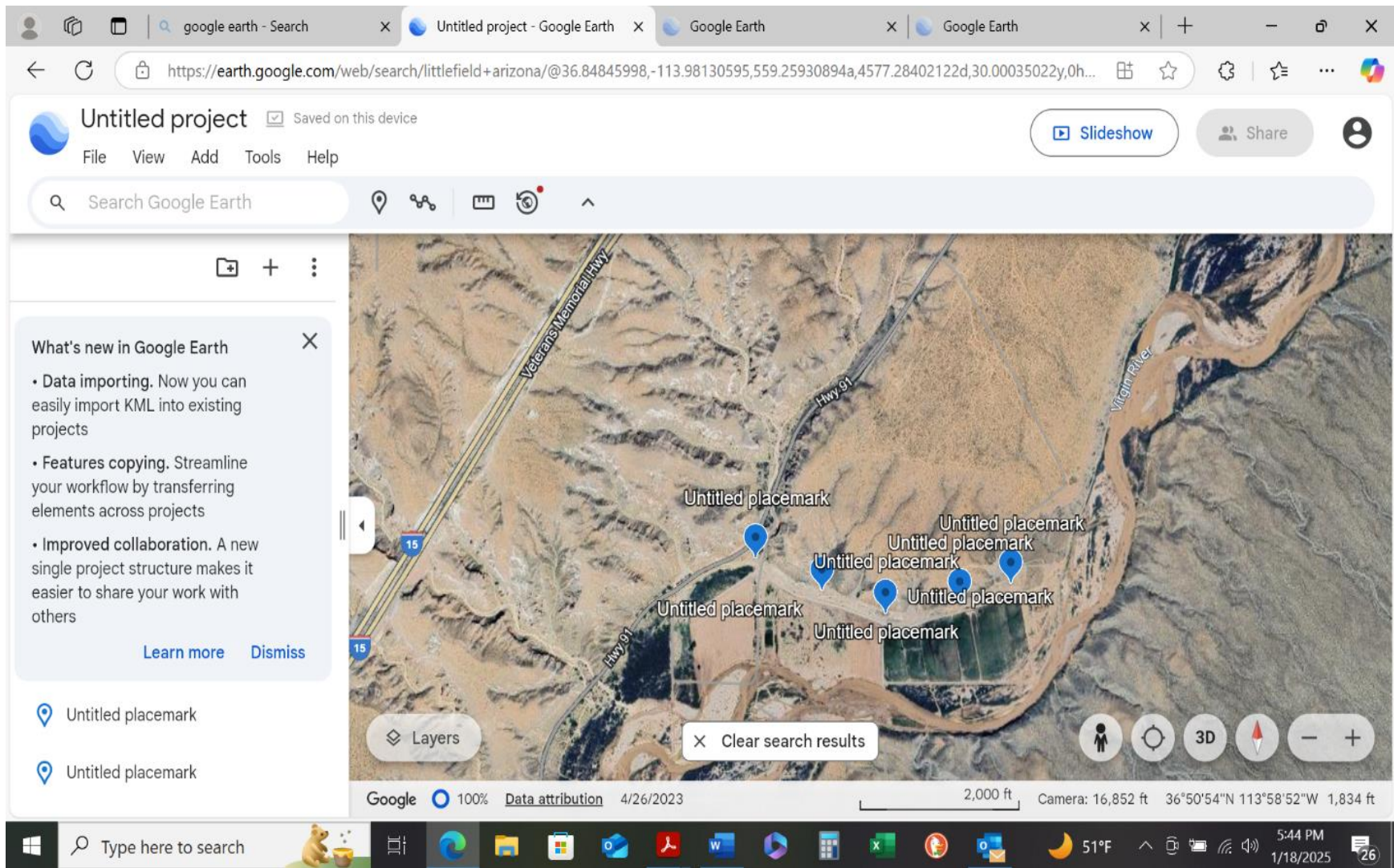
vegetation does not seem to comply with FLPMA's mandate of preventing unnecessary or undue degradation to public lands. The access road the applicants want to improve appears to be located in a creosote vegetation association and is likely tortoise habitat. In addition, BLM's proposed change in the designation of this road from closed to open to the public would result in numerous adverse direct and indirect impacts to tortoise habitat and tortoises as well as other wildlife and their habitats (please see *Road Effect Zone* above). BLM should describe and analyze these impacts with respect to the survival and recovery of the tortoise in the Northeastern Mojave Recovery Unit in the EA.

As one alternative, we suggest that the applicants improve a linear strip of the existing wide bladed area that provides the shortest access route between the private property and Highway 91 (please see Figure 2). There are likely other viable alternatives given the proximity of the private property to Highway 91.

BLM mentions that the applicants would reconstruct approximately 1.5-miles of earthen ditch adjacent to an existing dirt service road "beginning at the designated diversion point from water certificate 1968.0003 and traveling south to the private property." BLM provided a water certificate number 1968.0003, we presume from the Arizona Department of Water Resources for the water right and diversion. BLM should provide additional information that this water certificate, which may have been issued several decades ago, remains valid.

BLM describes the access road to be improved and modified as the primary access road. We understand the need to provide access to private property across BLM land when that property is not accessible from an existing public roadway. However, this description of the access road as the primary access point suggests that there is another road that already provides access to the private property (please see Figure 2). BLM should describe all information in the EA with respect to the existing road(s) that provide access to the private property and analyze their impacts if they are improved. Under FLPMA's requirement of undue degradation to public lands, BLM would determine whether there is already adequate access to the private property and no need to authorize improving and modifying a closed road and changing the road designation to open for public use. This would be appropriate as part of BLM's analysis of alternatives in the EA. Issuing a ROW to improve and modify a closed road and change its designation to "open" to the public when other alternatives may exist including access via an existing road on private land would result in BLM granting a road ROW that would result in unnecessary and undue degradation to public lands and noncompliance with FLPMA.

*Adverse Impacts to Listed and Special Status Aquatic Species:* Construction, use, and maintenance of the facilities associated with the irrigation ditch have the potential to adversely impact water quality downstream and thus take woundfin and other listed/special status aquatic species at the proposed diversion point and downstream. They also have the potential to trap these species in the irrigation ditch facilities and result in injury or mortality. Reduced flows downstream of the diversion point especially in summer and early fall under low flow periods may degrade or destroy aquatic habitat used by aquatic species for feeding, breeding, and/or shelter. Please describe and analyze these impacts in the EA.



**Figure 2.** Location of private property (agricultural area) and existing east-west access (blue balloons) from Highway 91.

Adverse Impacts to Listed and Special Status Riparian Species: Construction, use, and maintenance of facilities associated with the irrigation ditch have the potential to adversely affect water quantity and seasonal flow downstream from the diversion point. Reduced flows downstream of the diversion point especially in summer and early fall under low flow periods may degrade or destroy riparian habitat used by riparian obligate species for feeding, breeding, and/or shelter and migratory birds for feeding and shelter, thus contributing, causing mortality. Please describe and analyze these impacts in the EA.

Agricultural Practices (e.g., Pesticide Use, etc.): From the limited information BLM provided on this project in its scoping document (BLM 2025), we presume the applicants desire the irrigation ditch/pipeline and additional access to their private property to conduct agricultural practices. The private land shown where the proposed irrigation ditch/pipeline and access road would terminate at the public land – private land interface is mostly agricultural fields. Part of the proposed project would occur on this private land (e.g., staging of materials). We presume from this information that the proposed project is linked to the activities that would occur on the private land, that is, but for the approval of the ROW for the irrigation ditch and access road, certain future activities on the private property would not be able to occur.

If so, in the EA and the biological assessment, these proposed future activities that would occur on the private land because they depend on BLM's issuance of these ROWs should be described in the EA and included in the analysis of impacts. We presume these future activities are related to agriculture and may include the uses of pesticides. The impacts of these agricultural activities including the use of pesticides should be described and analyzed in the EA with respect to the tortoise and other listed and special status species downwind/down gradient from the private property. If future use of the private property does not depend on BLM's issuance of the ROWs, then there is no need to issue the ROWs. Issuing them would violate FLPMA because it would result in unnecessary or undue degradation of the lands.

Road Construction, Use, and Maintenance: Although use and maintenance are not mentioned in the BLM's scoping document, we presume that the applicants would periodically maintain the proposed access road and the service road for the irrigation ditch/pipeline. These activities should be described and the impacts from these activities analyzed for the tortoise and other special status species in the EA.

Opening a closed road for public access and improving the road that would facilitate faster vehicle speeds and more use of the road by the public and the resulting direct, indirect, and cumulative impacts to tortoises and other wildlife including their habitats should be described and analyzed in the EA. Please see the *Road Effect Zone* section above for a description of some of the indirect impacts to tortoises and tortoise habitat that should be analyzed in the EA.

Is an Incidental Take Permit Needed?: BLM should not approve a ROW until the applicant has obtained an incidental take permit from the USFWS for the activities that they will be conducting on private lands that are likely to result in the take of any listed species under FESA. We recommend this action because BLM has no management control/enforcement authority on the private lands for activities that are likely to result in taking of listed species.

What will the water be used for? How will it change the current baseline condition of what is occurring on private property? BLM should not limit its description of the proposed project to only what would occur on BLM land. We consider the activities that the applicants are requesting would allow them to conduct new activities or expand activities to new areas on their private property. These activities may be interrelated or depend on BLM's granting the ROWs for them to occur. BLM has no management control/enforcement authority over the activities that would occur on private lands as a result of granting this ROW. Consequently, if these activities are likely to result in take of a listed species, this take cannot be authorized under a biological opinion issued to BLM. The Council recommends that BLM determine and describe in the EA whether the activities to be conducted on private property are interrelated or interdependent on granting the ROW and whether the activities are likely to result in take including harm or harass. If yes, then BLM should require that the applicants obtain a Section 10(a)(1)(B) incidental take permit before considering the ROWs application.

*Impacts from Trenching/Installing Pipe:* The impacts of excavating and maintaining an irrigation ditch and constructing and maintaining a below-ground pipeline for irrigation purposes should be described and analyzed in the EA. These activities result in hazards to all age classes of tortoises and may result in trapping, injury, or mortality. The USFWS usually requires standard mitigation measures for a project whenever trenching is part of the project description to ensure that tortoises and other wildlife are not trapped in these trenches and if they are, how these animals will be examined (to ensure they are not injured, experiencing hyperthermia, etc.), released, and monitored. They also require that pipes touching soil or located a few inches above the ground have their ends covered to prevent tortoises and other wildlife species from entering them. After installation and when not in use, the ends of the pipeline should be covered to prevent tortoises and other wildlife from entering.

*Mitigation for Degraded and Destroyed Habitats:* The EA should analyze the direct and indirect impacts to the tortoise and other special status species and describe the mitigation that would be implemented to offset the remaining direct and indirect impacts after BLM has required that measures be implemented to avoid, minimize, reduce, and rectify these impacts. This accounting is requested to comply with BLM's Mitigation Policy, Handbook, and Manual (BLM 2021a, b, c).

## **Cumulative Effects**

In the cumulative effects analysis of the EA, please ensure that the CEQs "Considering Cumulative Effects under the National Environmental Policy Act" (1997) is followed, including the eight principles, when analyzing the cumulative effects of the proposed action on the tortoise and its habitats in the EA. CEQ states, "Determining the cumulative environmental consequences of an action requires delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystems, and human communities of concern. The range of actions that must be considered includes not only the Project proposal but all connected and similar actions that could contribute to cumulative effects." The analysis "must describe the response of the resource to this environmental change." Cumulative impact analysis should "address the sustainability of resources, ecosystems, and human communities." This would include, past, present, and foreseeable future projects and their impacts to the tortoise and other special status species. CEQs guidance on how to analyze cumulative environmental consequences is given in the eight principles listed below:

**1. Cumulative effects are caused by the aggregate of past, present, and reasonable future actions.**

The effects of a proposed action on a given resource, ecosystem, and human community, include the present and future effects added to the effects that have taken place in the past. Such cumulative effects must also be added to the effects (past, present, and future) caused by all other actions that affect the same resource.

**2. Cumulative effects are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who (federal, non-federal, or private) has taken the actions.**

Individual effects from disparate activities may add up or interact to cause additional effects not apparent when looking at the individual effect at one time. The additional effects contributed by actions unrelated to the proposed action must be included in the analysis of cumulative effects.

**3. Cumulative effects need to be analyzed in terms of the specific resource, ecosystem, and human community being affected.**

Environmental effects are often evaluated from the perspective of the proposed action. Analyzing cumulative effects requires focusing on the resources, ecosystem, and human community that may be affected and developing an adequate understanding of how the resources are susceptible to effects.

**4. It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.**

For cumulative effects analysis to help the decision maker and inform interested parties, it must be limited through scoping to effects that can be evaluated meaningfully. The boundaries for evaluating cumulative effects should be expanded to the point at which the resource is no longer affected significantly or the effects are no longer of interest to the affected parties.

**5. Cumulative effects on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries.**

Resources are typically demarcated according to agency responsibilities, county lines, grazing allotments, or other administrative boundaries. Because natural and sociocultural resources are not usually so aligned, each political entity actually manages only a piece of the affected resource or ecosystem. Cumulative effects analysis on natural systems must use natural ecological boundaries and analysis of human communities must use actual sociocultural boundaries to ensure including all effects.

**6. Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects.**

Repeated actions may cause effects to build up through simple addition (more and more of the same type of effect), and the same or different actions may produce effects that interact to produce cumulative effects greater than the sum of the effects.

**7. Cumulative effects may last for many years beyond the life of the action that caused the effects.**

Some actions cause damage lasting far longer than the life of the action itself (e.g., acid mine damage, radioactive waste contamination, species extinctions). Cumulative effects analysis needs to apply the best science and forecasting techniques to assess potential catastrophic consequences in the future.

**8. Each affected resource, ecosystem, and human community must be analyzed in terms of its capacity to accommodate additional effects, based on its own time and space parameters.**

Analysts tend to think in terms of how the resource, ecosystem, and human community will be modified given the action's development needs. The most effective cumulative effects analysis focuses on what is needed to ensure long-term productivity or sustainability of the resource.

Note that CEQ includes analysis of interactive and synergistic impacts with cumulative impacts. We request that the EA (1) include these eight principles in its analysis of cumulative impacts to the Mojave desert tortoise; (2) address the sustainability of the tortoise in the region/given the information on the *Status of the Mojave Desert* given herein; and (3) include mitigation along with monitoring and adaptive management plans that protect desert tortoises and their habitats during construction, operation, maintenance, and decommissioning of approved facilities.

In addition, we request that BLM add this Project and its impacts to a database and geospatial tracking system for special status species, including Mojave desert tortoises, that track cumulative impacts (e.g., surface disturbance, paved and unpaved routes, linear projects, invasive species occurrence, herbicide /pesticide use, wildfires, etc.), management decisions, and effectiveness of mitigation for each project. Without such a tracking system, BLM is unable to analyze cumulative impacts to special status species (e.g., desert tortoises) with any degree of confidence.

We appreciate this opportunity to provide scoping comments on this project and trust they will help protect tortoises during any resulting authorized activities. Herein, we reiterate that the Desert Tortoise Council wants to be identified as an Affected Interest for this and all other projects funded, authorized, or carried out by the BLM that may affect desert tortoises, and that any subsequent environmental documentation for this Project is provided to us at the contact information listed above. Additionally, we ask that you respond in an email that you have received this comment letter so we can be sure our concerns have been registered with the appropriate personnel and office for this Project.

Respectfully,



Edward L. LaRue, Jr., M.S.  
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