



DESERT TORTOISE COUNCIL

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Via email only

October 6, 2025

Alexander Lee, Planner
San Bernardino County
Land Use Services Department, Planning Division
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San Bernardino, CA 92415
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RE: Tentative Tract Map (TTM) 20577 (PROJ-2023-00028)

Dear Mr. Lee,

The Desert Tortoise Council (Council) is a non-profit organization comprising 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 this opportunity to provide comments on the above-referenced project. Given the location of the proposed project in habitats potentially occupied by the 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 that may be authorized by the County of San Bernardino, Land Use Services Department, Planning Division (County), which we recommend be added to project terms and conditions in the authorizing documents [e.g., issuance of permits, etc.] as appropriate. Please accept, carefully review, and include in the relevant project file the Council's following comments and attachment for the proposed project.

The Mojave desert tortoise is among the top 50 species on the list of the world's most endangered tortoises and freshwater turtles. The International Union for Conservation of Nature's (IUCN) Species Survival Commission, Tortoise and Freshwater Turtle Specialist Group, now considers the Mojave desert tortoise to be Critically Endangered (Berry et al. 2021), "... based on population reduction (decreasing density), habitat loss of over 80% over three generations (90 years), including past reductions and predicted future declines, as well as the effects of disease (upper respiratory tract disease/mycoplasmosis). *Gopherus agassizii* (sensu stricto) comprises tortoises in the most well-studied 30% of the larger range; this portion of the original range has seen the most human impacts and is where the largest past population losses have been documented. A recent rigorous rangewide population reassessment of *G. agassizii* (sensu stricto) has demonstrated continued adult population and density declines of about 90% over three generations (two in the past and one ongoing) in four of the five *G. agassizii* recovery units and inadequate recruitment with decreasing percentages of juveniles in all five recovery units."

This status, in part, prompted the Council to join Defenders of Wildlife and the Desert Tortoise Preserve Committee (DTPC) to petition the California Fish and Game Commission (Commission) in March 2020 to elevate the listing of the Mojave desert tortoise from Threatened to Endangered under the California Endangered Species Act (CESA) (Defenders of Wildlife et al. 2020). Importantly, following California Department of Fish and Wildlife's (CDFW) (2024a) status review, in their April 2024 meeting the Commission voted unanimously to accept the CDFW's petition evaluation and recommendation to uplist the tortoise from threatened to endangered under the CESA. This unanimous vote was based on the scientific data provided on the species' status, declining trend, numerous threats, and lack of effective recovery implementation and land management (CDFW 2024b). On July 15, 2025, the tortoise was officially uplisted to endangered status under the CESA (Commission 2025).

Thank you for including the Council on the County's list of Affected Interests and contacting us via email on 9/5/2025 regarding the public comment period on this "Initial Study and Mitigated Negative Declaration for Tentative Tract Map 20577 (PROJ-2023-00028), Mirtilla Alliata di Montereale, APN: 0600-111-04" (County 2025) (proposed Project).

The Notice of Intent (NoI) from the County provides the following description for this proposed Project: "A Tentative Tract Map (TTM) 20577 to subdivide a 19.67-acre parcel into six (6) parcels, ranging from 2.58 acres to 3.07 acres in size; and to build out six (6) Single-Family Residences; Located at 4252 Sunburst Avenue, Joshua Tree; Within the Rural Living (RL) Land Use Category and Joshua Tree/Rural Living Zoning District (JT/RL)." Further, the NoI provides links to the Biological Resources Assessment, prepared by Jennings Environmental, LLC., dated February 2025 (herein "Jennings" and "biological report").

Unless otherwise noted, page numbers cited herein refer to Jennings' (2025) assessment.

We note on page 4 of the biological report that the consultant was retained to perform a "...literature review and reconnaissance-level survey." On page 5, Jennings (2025) reports, "Jennings biologist, Gene Jennings, conducted the *general reconnaissance survey* [*emphasis added*] within the Project site to identify the potential for the occurrence of special status species, vegetation communities, or habitats that could support special status wildlife species. The surveys

were conducted on foot, throughout the Project site between 0800 and 1030 hours [*emphasis added*] on March 25, 2023.”

Our following concerns are given sequentially as they appear in Jennings’ (2025) biological report:

(1) It is not clear to us why the consultant’s report, dated February 2025, is referring to surveys that were performed 2.5 years ago in 2023. On page 5, we note that the consultant has erroneously referred to “reconnaissance-level surveys for tortoises.” It is not until page 11 that we read, “Surveys for this species were conducted using the 2018 Survey Protocol from the USFWS. This consisted of walking transects spaced 10 meters (30 feet) apart.” The acreage given in the NOI is 19.67 acres. Whereas the consultant reported spending approximately 2.5 hours surveying the Project site, several Board members have performed tortoise protocol surveys since 1990 when they were first required by U.S. Fish and Wildlife Service (USFWS) and CDFW, and we find that an appropriate survey rate is about four acres/hour. So, it should have taken at least five hours to adequately survey the 19.67-acre Project site, which does not include burrowing owl surveys in adjacent areas as required by the CDFG (2012), or surveys in the remaining part of the “action area” for the tortoise under the formal tortoise protocol survey (USFWS 2019), which would likely take several more hours.

The “action area” is defined in 50 Code of Federal Regulations 402.2 and the USFWS 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.” Thus, the action area is larger than the project footprint/project site. The size of the action area is usually determined through coordination between the project proponent and the USFWS and CDFW.

According to the USFWS (2019) the surveyor should provide the complete results of their work so the USFWS “can fully understand the project-specific circumstances, such as the conditions under which the survey was conducted (e.g., weather, experience of the surveyors, access to the survey area, degree of disturbance of the land, etc.).” This information should be provided in the biological report as well as when the results of the report were submitted to the USFWS and CDFW and their responses.

Formal protocol surveys must be performed for the County to be able to ascertain the use of the action area by the tortoise and to comply with FESA and CESA. Consequently, the County has insufficient information to adequately determine whether tortoises use the action area and what the impact would be on the tortoise from the construction, use, and maintenance of the proposed Project.

Given the recent confirmed presence of tortoises in the immediate area (CMBC 2024; see discussion below under point #4), and that the survey protocols from the USFWS were not followed, a new protocol survey should be performed to ascertain the persisting absence of tortoises on the site as reported by Jennings (2025) (see next point).

(2) Because the tortoise survey was performed more than 2.5 years ago on March 25, 2023, the Council advises the County that the proponent or their consultant should contact the USFWS and CDFW and inquire whether another survey is required. USFWS (2019) states the following with regards to the longevity of the validity of a given survey: “If the survey data *are more than a year*

old [emphasis added], we encourage project proponents to contact us at the earliest possible time to allow us to assess the specific circumstances under which the data were collected (e.g., time of year, drought/rainfall conditions, size and location of the site, etc.) and to discuss whether additional surveys would be appropriate. Spatial information can be provided in pdf and GIS formats.”

In addition, CDFW usually accepts survey results for up to one year after they were performed. For surveys completed more than a year ago, CDFW usually requires that the formal survey protocol for the tortoise be implemented again and cover the action area for small projects such as this one.

There is a substantial difference between conducting a reconnaissance survey of a site for evidence of use by special status species and conducting a survey protocol whose methodology is tailored to the ecological and behavioral characteristics specific to each special status species. The formal survey protocol for the tortoise has been developed using ecological and behavioral parameters for the tortoise as well as statistical analysis of the ability of qualified biologists to detect tortoises. Detection rates decline substantially when tortoises are in burrows. Consequently, a reconnaissance survey is more likely to result in a finding of no evidence of tortoise use or presence on a project site, which in many cases would be an inaccurate representation of the use of the project site by the tortoise.

(3) It is commendable that, as reported on page 5 of the biological report, Jennings consulted the California Natural Diversity Data Base (CNDDB) and other references. However, we have found that these resources are inadequate in determining actual occurrences of tortoises in a given region. CNDDB is not always current in entering all occurrence data reported and not all surveyors, biologists, etc. report their findings to CNDDB. Biologists with Circle Mountain Biological Consultants, Inc. (CMBC), including the primary author of this comment letter, have performed surveys on 309 sites for 16,274 acres of proposed projects and 138.65 linear miles of pipelines since 1988 in the Morongo Basin, which encompasses the Project site. Numbered references are available on request.

(4) In Figure 1a, the results of tortoise surveys are depicted as green where tortoise sign was found and red polygons and lines where no tortoise sign was found. Figure 1a shows the results of 13 surveys on 11 sites between 1,900 feet northwest (Surveys #294 and #306 in the figure) and 3.7 miles southeast (Survey #34), where tortoises and/or their signs were found on the dark green sites (Survey #284 overlapped with #23 and #216, hence the darker color). Although no tortoise sign was found along the red lines, it is important to note that these surveys were often with a narrow 30-to-50-foot pipeline right-of-way, so less time was spent surveying adjacent areas; that, and they generally followed roads where tortoise occurrence is often suppressed (LaRue 1992). So, one can see that tortoise signs have been found on most of the sites surveyed in the immediate region of the Project site.

Importantly, last year, CMBC (2024) found 2 hatchling tortoises at a natal burrow at a nest in the process of hatching, 1 adult carcass, 13 fresh adult scats, 7 older scats, 3 fresh subadult scats, 1 older subadult scat, 5 active adult burrows, and 7 inactive subadult burrows on a 304-acre parcel. Most of that sign and the hatchling tortoises were on the southern half of that site, within approximately 1,900 feet of the subject property. This tortoise recruitment is atypical for much of

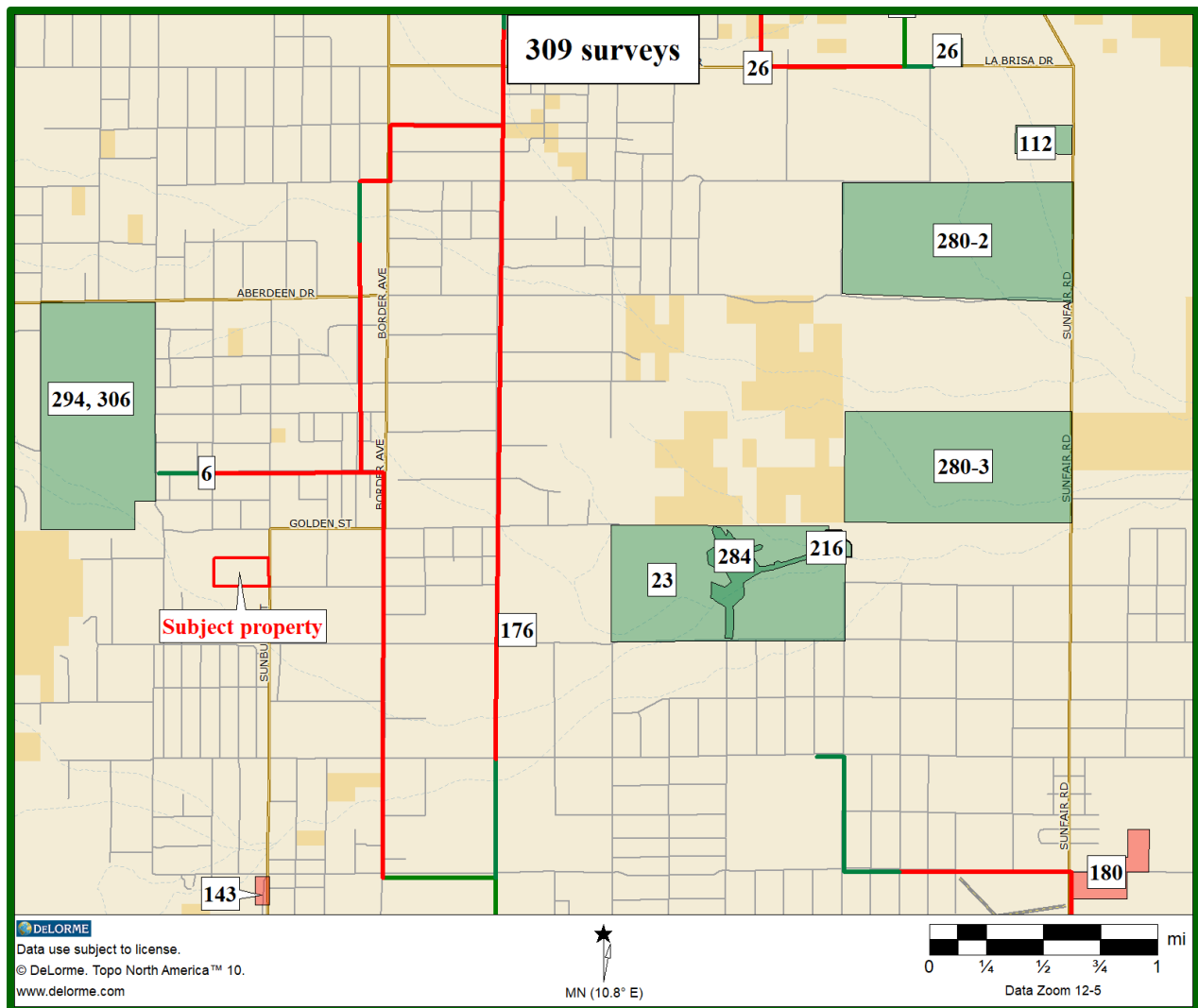


Figure 1a. Locations of recent tortoise surveys relative to the subject property where tortoise signs have been found either onsite (dark green), in adjacent areas (light green), or not at all (red).

the tortoise population in the Western Mojave Desert (Allison and McLuckie 2018). Importantly, there was more sign on this site in 2024 than three years earlier (CMBC 2021) when tortoise signs included 2 adult tortoise carcasses, 4 subadult carcasses, 12 fresh subadult scat, 4 older adult scat, 2 active adult burrows, and 4 inactive adult burrows.

(5) Figure 1b depicts a regional overview of tortoise surveys in the region, where the numbers have been removed to better depict locations of tortoise sign. Although there are a dozen parcels and pipeline segments colored red to signify sites where no tortoise signs were found, these are mostly in the centralized urban portions of the community of Joshua Tree. Tortoise signs have been found on most of the sites north of the community, including the region in which this site is located. These new data are provided to the County to emphasize the importance of performing USFWS (2019) protocol surveys that follow all the requirements in the survey methodology (e.g., survey

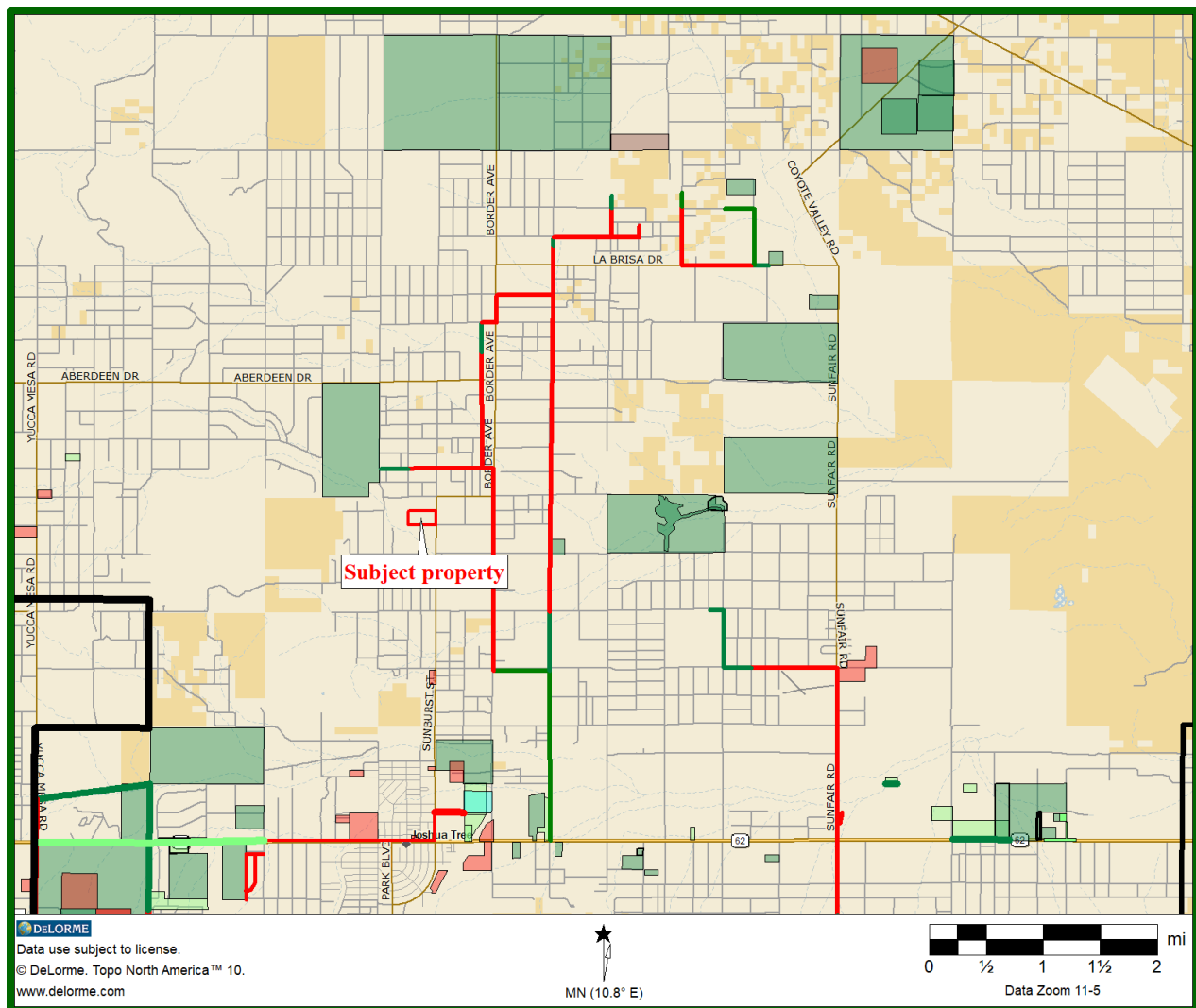


Figure 1b. Locations of recent tortoise surveys in the region where red polygons and lines indicate that no tortoise sign was found, green signifies that tortoise sign was found, and light blue indicates that tortoise sign had been found on a previous survey but not on the subsequent survey.

width, conducted by biologists deem qualified by USFWS and CDFW, survey the entire action area, conduct surveys within one year, etc.) to ascertain tortoise absence.

(6) We understand that the proposed action is a parcel split, which is a paper transaction that would not, in and of itself, result in physical impacts to the Project site, but that it would authorize the "... build out [of] six (6) Single-Family Residences." Therefore, there may be immediate direct impacts to the tortoise if the project is developed as well as indirect, cumulative, growth-inducing, and synergistic impacts. In the absence of new protocol-level surveys that definitively confirm the absence of tortoises, the County risks violating the California Environmental Quality Act (CEQA), CESA, and FESA by approving this Project and not ensuring that the Project proponent has complied with these environmental laws.

(7) We read the following findings on page 11: “No desert tortoise were observed and no sign of desert tortoise were observed. However, because the site is marginally suitable, it is recommended that pre-construction surveys be completed for this species. These surveys should be conducted by a qualified biologist and at an appropriate time of day/year to observe signs of desert tortoise using the 2018 Survey Protocol from the USFWS.”

Herein we recommend that new protocol-level tortoise surveys (USFWS 2019) that follow all conditions of the USFWS (2019) protocol be performed so the County may base its mitigated negative declaration on updated survey results. If this recommendation is not acceptable, we advise the County to require formal *clearance* surveys (USFWS 2009), which may be the same as the “pre-construction” surveys recommended by Jennings (2025). Clearance surveys require that a given site be surveyed a minimum of twice along transects spaced at 5-meter intervals and other requirements (USFWS 2009, Chapter 6).

We agree with Jennings that “...surveys should be conducted by a qualified biologist and at an appropriate time of day/year to observe signs of desert tortoise,” but point out that the protocol should follow the USFWS’s current 2019 version, which replaces the 2018 protocol. The County should amend this recommendation to inform the proponent that if *any* tortoise sign is found (i.e., certainly tortoises, but also scats, burrows, carcasses, and egg shell fragments), ground disturbance must be postponed until which time the proponent and/or County contact both USFWS and CDFW to determine if incidental take permits are required for Project development.

We further recommend that the clearance surveys be conducted within about 48 hours of ground disturbance to avoid the scenario where a tortoise enters onto the site between the time of the survey and ground disturbance. This temporal restriction would not apply to protocol surveys, which we recommend be performed to comply with USFWS and CDFW protocols for the tortoise but may be performed within about a year prior to ground disturbance.

We contend that the County cannot effectively assess the potential significance of impacts to the tortoise based on the promise of future surveys. Nor can the County assess the direct, indirect, cumulative, growth-inducing, and synergistic impacts from the construction, use, and maintenance of the proposed Project based on the results of implementing a reconnaissance survey that was inadequate to find tortoises/tortoise signs, did not cover the action area, and the results of which are 2.5 years old. We contend that these data should not be used to ascertain the current status of tortoises on/near the proposed Project site and therefore, not used to determine impacts, mitigation, or appropriate CEQA document analysis regarding significance.

(8) In the Initial Study and Mitigated Negative Declaration (County 2025, page 28), we found the following information:

“According to the California Essential Habitat Connectivity Project, the Project site is not mapped within an area for wildlife movement. However, the site is within a wildlife linkage as mapped by Mojave Desert Land Trust, the proposed Project will have minimal impacts on it as the remainder of the immediate vicinity of the linkage is largely undeveloped. Wildlife will have the ability to go around the site to access the remainder of the linkage. Terrestrial animals are more likely to use the ephemeral wash to the southwest for movement as that remains undeveloped upstream and downstream and will not be affected by the proposed Project. The

regional area around the Project site, while rural, is largely developed. This will further limit wildlife from traversing that site, as they will prefer to use routes that go around development. Therefore, the proposed Project will have a less than significant impact on any current wildlife corridors.”

In searching the California Essential Habitat Connectivity Project website (CDFW 2010), we discovered that the proposed Project is located in a Mitigation Target Area for the tortoise. On this webpage CDFW says that more detailed analyses under the Desert Renewable Energy Conservation Plan (DRECP) Conservation Strategy, which was completed in 2016. Under the DRECP, linkage habitats were identified for the tortoise. The proposed Project appears to be located in an area identified as linkage habitat needed to provide population connectivity between the Ord-Rodman Tortoise Conservation Area to the northwest of the Project site and Joshua Tree National Park to the south of the Project site (BLM 2016, Averill-Murray et al. 2021).

In addition, San Bernardino County should have a Conservation and Open Space Element in its General Plan and have included an element for wildlife connectivity. Please include this information in the Initial Study/Mitigated Negative Declaration with respect to the tortoise and the Project site.

Several scientific reports and journal articles have been written on this issue of connectivity between populations for the tortoise. A recent publication by Averill-Murray et al. (2021), mentioned above, discusses the importance of connectivity of Mojave desert tortoise populations and linkage habitats. The authors emphasized that “[m]aintaining an ecological network for the Mojave desert tortoise, with a system of core habitats (TCAs = Tortoise Conservation Areas) connected by linkages, is necessary to support demographically viable populations and long-term gene flow within and between TCAs.”

“Ignoring minor or temporary disturbance on the landscape could result in a cumulatively large impact that is not explicitly acknowledged (Goble, 2009); therefore, understanding and quantifying all surface disturbance on a given landscape is prudent.” Furthermore, “habitat linkages among TCAs must be wide enough to sustain multiple home ranges or local clusters of resident tortoises (Beier and others, 2008; Morafka, 1994), while accounting for edge effects, in order to sustain regional tortoise populations.” Consequently, effective linkage habitats are not long narrow corridors. Any development within them has an edge effect (i.e., indirect impact) that extends from all sides into the linkage habitat further narrowing or impeding the use of the linkage habitat, depending on the extent of the edge effect.

Averill-Murray et al. (2021) further notes that “To help maintain tortoise inhabitation and permeability across all other non-conservation-designated tortoise habitat, all surface disturbance could be limited to less than 5-percent development per square kilometer because the 5-percent threshold for development is the point at which tortoise occupation drops precipitously (Carter and others, 2020a).” They caution that the upper threshold of 5 percent development per square kilometer may not maintain population sizes needed for demographic or functional connectivity; therefore, development thresholds should be lower than 5 percent.

The lifetime home range for the Mojave desert tortoise is more than 1.5 square miles (3.9 square

kilometers) of habitat (Berry 1986) and tortoises may make periodic forays of more than 7 miles (11 kilometers) at a time (Berry 1986).

In addition, a fundamental tenet of conservation biology is the need for gene flow to occur between populations to maintain genetic diversity; this enables a species to more likely survive, especially during climate change, which enables biodiversity. Linkage habitats are important as they provide gene flow/genetic connectivity among wildlife populations to maintain viability within each species and biodiversity in the current and future distribution of species when adapting to the impacts of climate change. Consequently, development in tortoise linkage habitat that exceeds this development threshold in non-conservation-designated tortoise habitat such as the Ord-Rodman TCA to Joshua Tree National Park linkage habitat would result in the loss of the function of the linkage habitat, the loss of population connectivity, and would be considered a significant impact to the tortoise.

The information provided by the County in the Initial Study/Mitigated Negative Declaration appears to contradict the information provided in the scientific literature regarding the properties of functioning linkage habitats for the tortoises. For example, the County says that the proposed Project will have minimal impacts on the linkage habitat as the remainder of the immediate vicinity of the linkage is largely undeveloped. Wildlife will have the ability to go around the site to access the remainder of the linkage.

The proposed Project is a permanent disturbance to this linkage habitat and would result in permanent edge effects (=indirect impacts) during construction and use that extend into the linkage habitat reducing its effectiveness. The County needs to analyze the remaining linkage habitat using the criteria provided in Averill-Murray et al. (2021) to determine whether it would contain the requisite properties needed to function as linkage habitat for the tortoise from the impacts from existing development and activities, the addition of the construction and use of the proposed Project, and future planned projects and activities. This would include new roads and increased vehicle use as well as the indirect impacts mentioned in #8 of this letter. The County's assertion that the wash to the southwest would be used by terrestrial animals would not necessarily meet the properties of a functioning linkage habitat for the tortoise. The County needs to demonstrate in the CEQA document that the proposed Project with existing and future planned projects is "wide enough to sustain multiple home ranges or local clusters of resident tortoises (Beier and others, 2008; Morafka, 1994), while accounting for edge effects [=indirect impacts], in order to sustain regional tortoise populations" (Averill-Murray et al. 2021). Consequently, effective linkage habitats are not long narrow corridors or washes. One tortoise home range is more than one square mile.

Please revise the CEQA document to include this information and the information on requirements for linkage habitats for the tortoise in Averill-Murray et al. (2021) when the County conducts its analysis of impacts to the tortoise on movements and population connectivity from the proposed Project.

(9) As previously mentioned, the proposed Project would result in indirect, cumulative, synergistic, and growth-inducing impacts to the tortoise. We remind the County of the demographic status of the tortoise. The USFWS has documented substantial declines in tortoise abundance and density since 2004, especially in California (see attachment Appendix A –

Demographic Status and Trend of the Mojave Desert Tortoise including the Tortoises in Western Mojave Recovery Unit). The primary reason for its substantial decline has been from increased mortality caused by indirect impacts from human activities. These include human activities that result in the destruction, degradation and/or fragmentation of tortoise habitat; surface disturbance and introduction of non-native invasive plant species via construction equipment, vehicles, and other sources; replacement of native forbs with high nutritional and water value with low nutritional non-native invasive grasses (Drake et al. 2016); increased occurrence of fire size, intensive, and frequency of human-caused wildfires from fuels provided by non-native invasive plant species (Brooks and Esque 2002); increased predation from increased numbers of predators that utilize subsidies of food, water, and nesting locations (Boarman 2003); and increased human access that provides opportunities for vandalism and collecting tortoises for pets. Major sources of surface disturbance include residential, commercial, and industrial development projects and associated roads/highways (such as the proposed project); military training; and off-highway vehicle use (USFWS 2011, Tuma et al. 2016).

An example of one indirect impact from the Project's construction, use, and operations and how it is likely to result in take of the tortoise is increased tortoise predation. Common ravens are known to prey on juvenile desert tortoises based on direct observations and circumstantial evidence, such as shell-skeletal remains with holes pecked in the carapace (Boarman 1993). The number of common ravens increased by 1,528% in the Mojave Desert since the 1960s (Boarman 1993). This increase in raven numbers is attributed to unintentional subsidies provided by humans in the Mojave Desert.

In the Mojave Desert, common ravens are subsidized predators because they benefit from resources associated with human activities that allow their populations to grow beyond their "natural" carrying capacity in the desert habitat. Kristan et al. (2004) found that human developments in the western Mojave Desert affect raven populations by providing food subsidies, particularly trash and roadkill. Boarman et al. (2006) reported raven abundance was greatest near resource subsidies, specifically food (= trash) and water. Human subsidies include food and water from landfills and other sources of waste, reservoirs, sewage ponds, agricultural fields, feedlots, gutters. Subsidies also include perch, roost, and nest sites on power towers, telephone poles, light posts, billboards, fences, freeway or railroad overpasses, abandoned vehicles, and buildings (Boarman 1993). The human-provided subsidies allow ravens to survive in the desert during summer and winter when prey and water resources are typically inactive or scarce. Boarman et al. (1993) concluded that the human-provided resource subsidies must be reduced to facilitate a smaller raven population in the desert and reduced predation on the tortoise.

Coyotes are known predators of tortoises. High adult tortoise mortality from coyote predation was reported by Petersen (1994), Esque et al. (2010) and Nagy et al. (2015) in part of the range of the tortoise. In some areas, numbers of ravens correlated positively with coyote abundance (Boarman et al. 2006). Lovich et al. (2014) reported tortoise predation may be exacerbated by drought if coyotes switch from preferred mammalian prey to tortoises during dry years. Because the Mojave Desert has been in a multi-decade drought (Stahle 2020, Williams et al. 2022) due to climate change and drought conditions are expected to continue and intensify in future years, increased predation pressure from coyotes on tortoises is expected to continue.

The proposed Project would likely increase the availability of human-provided subsidies for predators of the tortoise including the common raven and coyote during the construction, use, and maintenance phases of the Project. For example, during the construction phase the water used to control dust and the waste generated during construction including food brought to the Project site by workers for meals, etc., are examples of food and water subsidies for ravens and coyotes that would attract these predators to the Project site and increase their numbers in the surrounding area. Grading the site would expose, injure, or kill fossorial animals and provide a subsidized food source for ravens and coyotes. During the use and maintenance phases, the presence of food waste in uncovered trash cans and dumpsters would provide food subsidies for ravens and coyotes that would attract them to the project area and increase the likelihood of them preying on tortoises in the project area. Vertical structures (e.g., light poles, structural canopies, etc.) provide nesting subsidies for common ravens and increase their numbers in the project area resulting in greater predation on tortoises in nearby areas. Vehicles driving to and from the Project site daily are likely to result in roadkill of wildlife that would subsidize ravens and coyotes thus increasing their numbers in the Project area and increasing predation pressure on the tortoises in the area. Other impacts to the tortoise from new roads and vehicle use include repeatedly transporting invasive plants to the area by vehicle use, providing an enhanced supply of water to areas along roads that collect water during precipitation events and depositing it off of the shoulder of the road. This increased amount of water promotes the growth of non-native invasive plant species near the roadway for its entire length, outcompetes native plants, provides a fuel source for fire, provides a recurring seed source of non-native seed for the seed bank near the road – all of this promotes the growth of non-native plants that provide inadequate nutrition for tortoises to survive (Drake et al. 2016). Thus, a new road and its use establish a long-term cycle that promotes the growth of invasive annual vegetation.

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. These impacts are attributed to roadkill with roads acting as a population sinks for tortoises.

Nafus et al. (2013) state that the ecologically affected areas along roads, otherwise known as “road-effect zones,” are those in which a change in wildlife abundance, demography, or behavior is observed. Von Seckendorff Hoff and Marlow (2002) reported that they detected reductions in tortoise numbers and sign from infrequent use of roadways to major highways with heavy use. There was a linear relationship between traffic level and 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 = 0.68 to 0.87 mile) from the road.

Currently the priority for managing the tortoise is to substantially reduce mortality and manage desert tortoise habitat for persistence and connectivity of the species (Averill-Murray et al. 2021, Holcomb 2025 personal communication). The major threat to the tortoise is mortality from human sources, either directly or indirectly. These sources of mortality must be substantially reduced or eliminated if the tortoise is to survive in the near future. The indirect impacts from the proposed

Project that are not addressed in the Initial Study/Mitigated Negative Declaration include all the indirect impacts listed earlier in this letter and possibly more (e.g., presence of unleashed dogs, etc.).

These and other indirect impacts to the tortoise and its habitat from implementation of the proposed Project should be described and analyzed in the CEQA document and effective mitigation required to offset these impacts.

(10) In the section on “Mandatory Findings of Significance,” two of the three questions under the CEQA Handbook are applicable to the tortoise. They are:

Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

and

Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

To assist the County in answering these two questions regarding the impacts to the tortoise from the construction, use, and maintenance of the proposed Project, we are attaching “Appendix A – Demographic Status and Trend of the Mojave Desert Tortoise including Tortoises in the Western Mojave Recovery Unit.” Note that the proposed Project is in the Western Mojave Recovery Unit, the tortoise populations in this Unit are below the density needed for population viability (Allison and McLuckie 2018), and the density of tortoises continues to decline in the Western Mojave Recovery Unit (USFWS 2025). The adult tortoise population declined by about 50 percent and the number of juvenile tortoises decline by 91 percent between 2004 and 2014 (Allison and McLuckie 2018), and this downward trend continues (USFWS 2025). Also note that the tortoise cannot achieve recovery, that is, be removed from the list of threatened species under FESA unless it achieves recovery in all five recovery units including the Western Mojave Recovery Unit (USFWS 2011). This includes having viable populations. We conclude that having populations below the density needed for population viability means these populations are below the level needed to be self-sustaining, and any additional impacts to these populations would exacerbate this declining trend and remain below the level of self-sustaining. Using the information in this Appendix, we conclude the answer to these two questions is “yes,” which means the impacts from the proposed Project would be significant. Please include this information in the County’s analysis of the Project in the CEQA document.

Because the County has prepared an Initial Study/Mitigated Negative Declaration, it contains mitigation and monitoring sections that are supposed to demonstrate that implementation of mitigation and monitoring actions will reduce the level of impacts from the construction, use, and maintenance of the proposed Project to less than significant. However, until the County (1) determines the use of the Project site and surrounding area by tortoises; (2) determines the type

and extent of the direct, indirect, cumulative, synergistic, and growth-inducing impacts to the tortoise/tortoise habitat from the construction, use, and maintenance of the proposed Project; and (3) analyzes these impacts to the tortoise, the County is unable to identify the appropriate mitigation and monitoring to offset these impacts. Consequently, the County is currently unable to determine whether a mitigated negative declaration or an environmental impact report is the appropriate CEQA document to prepare for the proposed Project with respect to impacts to the tortoise.

(11) Although the biological report provides extensive background information for western burrowing owl on page 8, there is no indication on page 5 that the “general reconnaissance survey” satisfied the burrowing owl survey requirements as described by the CDFG (2012), which requires that five transects spaced at 30-, 60-, 90-, 120-, and 150-meter intervals be surveyed in all adjacent areas for signs of burrowing owls. Given open, undeveloped lands surrounding the site (see Figure 2 below taken from the biological report), these transects would need to be surveyed before burrowing owl absence can be ascertained.



Figure 2. Location of proposed parcel split and construction and use of six new residences.

Given our knowledge of the area and familiarity with the species' habitat requirements, we do not agree with the following conclusion given on page 12: "...the site does not contain suitable habitat for this species. No burrowing owls were observed during the site visit. No portion of the project

site showed any evidence of past or present BUOW activity.” In fact, the sparseness of creosote bush scrub on the site is ideal, and because adjacent areas were not surveyed to protocol standards (CDFG 2012), the consultant cannot conclude that burrowing owls are absent and would not be affected. In support of this conclusion, we note that burrowing owls were observed or detected in the same habitats 2.5 miles east (Survey #280-3 in Figure 1a), 2.75 miles northeast (#280-2), and along the pipeline right-of-way located 2,600 feet east (Survey #76), although the actual location may be farther away along other portions of this extensive right-of-way.

Given the above information and the fact that it has been 2.5 years since the partial surveys were conducted, we strongly recommend that new surveys following proper implementation of the burrowing owl survey protocol be performed on the site before the County finalizes the CEQA document for this Project.

The tables on pages 38 through 43 list 20 plant and animal species concluding that all are absent from the subject property. The suitability of habitat for the two raptor species, including prairie falcon and golden eagle, do not account for the fact that both sites are suitable foraging habitat although neither support suitable nesting habitat. Of the sites depicted in Figure 1a, a prairie falcon was observed 3.75 miles east in similar habitats. Habitats for LeConte’s thrasher are ideal along the wash located to the southwest and the smaller wash running through the northeast corner of the Project site. CMBC has observed them 1,900 feet northwest (#294, 306) and 1.5 miles east (#23), so not detecting them during the 2.5-hour survey does not mean they are absent. To supplement the information given in the biological report, CMBC (2010) found 435 Little San Bernardino Mountains linanthus plants 2.5 miles south of the site in similar, creosote bush scrub habitats on a 30-acre recharge basin. The small wash running through the northeast corner of the site appears to be ideal and should be surveyed in late March to mid-April following sufficient winter rainfall.

These tables neglect to include a few animals that have been reported from the region, for which suitable habitats occur onsite. For example, loggerhead shrikes (*Lanius ludovicianus*), a California Bird Species of Special Concern, have been observed 1,900 feet northwest (#294, 306), 1.5 miles east (#23), and 3.9 miles northeast (#112). There are both suitable foraging and nesting habitats (particularly in the Joshua trees) on the subject property, which if developed, will result in loss of habitats for this species. Another species observed 2.5 miles east (#280-3) for which there is suitable habitat is desert unicorn-plant (*Proboscidea althaeifolia*), a California Native Plant Society’s Plants of Limited Distribution and on a watch list. The small wash through the northeast corner is suitable habitat, so the plant should be sought during the pre-construction surveys recommended by Jennings and hopefully required by the County.

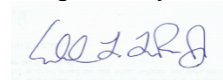
In summary, because of the information the Council has provided to the County on occurrence data of tortoises/tortoise signs and burrowing owls/owl signs and the requirements under FESA and CESA for projects that would result in surface disturbance, the County should require the Project proponent to comply with FESA and CESA requirements and have qualified biologists approved by USFWS and CDFW conduct surveys of the action area/adjacent areas for these species. The results of these surveys should be included in the revised CEQA document and used in the analysis of the direct, indirect, cumulative, growth-inducing, and synergistic impacts to these species. Only after this process is completed will the County have sufficient information to determine the mitigation that needs to be implemented to offset these impacts to the tortoise and

burrowing owl; to ensure that the impacts do not rise to the level of significance under CEQA; and to demonstrate that a mitigated negative declaration with effective mitigation that offsets the direct, indirect, cumulative, growth-inducing, and synergistic impacts is the appropriate CEQA document.

We appreciate this opportunity to provide the above comments and trust they will help protect tortoises during any resulting authorized activities. Herein, we reiterate that the Council wants to be identified as an Affected Interest for this and all other projects funded, authorized, or carried out by the County 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 the County continue to notify the Council at eac@deserttortoise.org of any proposed projects that may affect the desert tortoise so we may comment on them to ensure the County fully considers and implements actions to conserve these tortoises as part of its directive to conserve biodiversity on lands it oversees in San Bernardino County.

Please 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.
Desert Tortoise Council, Ecosystems Advisory Committee, Chairperson

Attachment: Appendix A – Demographic Status and Trend of the Mojave Desert Tortoise including Tortoises in Western Mojave Recovery Unit.

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Appendix A

Demographic Status and Trend of the Mojave Desert Tortoise including Tortoises in the Western Mojave Recovery Unit

Status of the Population of the Mojave Desert Tortoise: The Council provides the following information for resource and land management agencies so that these data may be included and analyzed in their project and land management documents and aid them in making management decisions that affect the Mojave desert tortoise (tortoise).

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; 8 of these are in the California Desert Conservation Area (CDCA).

As the primary land management entity in the range of the Mojave desert tortoise, the Bureau of Land Management's (BLM's) implementation of a conservation strategy for the Mojave desert tortoise in the CDCA through implementation of its Resource Management Plan and Amendments through 2014 has resulted in the following changes in the status for the tortoise throughout its range and in California from 2004 to 2014 (**Table 1, Table 2**; USFWS 2015, Allison and McLuckie 2018). The Council believes these data show that BLM and others have failed to implement an effective conservation strategy for the Mojave desert tortoise as described in the recovery plan (both USFWS 1994a and 2011), and have contributed to tortoise declines in density and abundance between 2004 to 2014 (**Table 1, Table 2**; USFWS 2015, Allison and McLuckie 2018) with declines or no improvement in population density from 2015 to 2024 (**Table 3**; USFWS 2016, 2018, 2019, 2020, 2022a, 2022b, 2025).

Important points from these tables include the following:

Change in Status for the Mojave Desert Tortoise Range-wide

- Ten of 17 populations of the Mojave desert tortoise declined from 2004 to 2014.
- 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 Western Mojave Recovery Unit – California

- This recovery unit had a 51 percent decline in tortoise density from 2004 to 2014.
- Tortoise populations in all three TCAs in this recovery unit have densities that are below viability.

Change in Status for the Superior-Cronese Tortoise Population in the Western Mojave Recovery Unit.

- The population in this recovery unit experienced declines in densities of 61 percent from 2004 to 2014. In addition, there was a 51 percent decline in tortoise abundance.
- This population has densities less than needed for population viability (USFWS 1994a).

Table 1. Summary of 10-year trend data for the 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/km² 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/km² (10 breeding individuals per mi²) (assumes a 1:1 sex ratio) or showing a decline from 2004 to 2014 are in red.

Recovery Unit: Designated Critical Habitat Unit ¹ /Tortoise Conservation Area	Surveyed area (km ²)	% of total habitat area in Recovery Unit & CHU/TCA	2014 density/km ² (SE)	% 10-year change (2004–2014)
Western Mojave, CA	6,294	24.51	2.8 (1.0)	–50.7 decline
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
Colorado Desert, CA	11,663	45.42	4.0 (1.4)	–36.25 decline
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
Northeastern Mojave	4,160	16.2	4.5 (1.9)	+325.62 increase
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
Eastern Mojave, NV & CA	3,446	13.42	1.9 (0.7)	–67.26 decline
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
Upper Virgin River	115	0.45	15.3 (6.0)	–26.57 decline
Red Cliffs Desert	115	0.45	15.3 (6.0)	–26.57 decline
Range-wide Area of CHUs - TCAs/Range-wide Change in Population Status	25,678	100.00		–32.18 decline

¹ U.S. Fish and Wildlife Service. 1994b. Endangered and threatened wildlife and plants; determination of critical habitat for the Mojave population of the desert tortoise. Federal Register 55(26):5820-5866. Washington, D.C.

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.

Recovery Unit	Modeled Habitat (km ²)	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%
Total	68,501	336,393	212,343	–124,050	–37%

Table 3. Summary of data for Agassiz’s desert tortoise, *Gopherus agassizii* (=Mojave desert tortoise) from 2004 to 2024 for the 5 Recovery Units and 17 Critical Habitat Units (CHUs)/Tortoise Conservation Areas (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/km² 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/km² (10 breeding individuals per mi²) (assumes a 1:1 sex ratio) (USFWS 1994a, 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 ²	2014 density/ km ² (SE)	% 10-year change (2004– 2014)	2015 density / km ²	2016 density / km ²	2017 density / km ²	2018 density / km ²	2019 density / km ²	2020 density / km ²	2021 density / km ²	2024 density /km ²
Western Mojave, CA	24.51		2.8 (1.0)	–50.7 decline								
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	1.8
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*	2.7
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	No data
Colorado Desert, CA	45.42		4.0 (1.4)	–36.25 decline								
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	7.4
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	No data
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	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	No data
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	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	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	4.0

Northeastern Mojave AZ, NV, & UT	16.2		4.5 (1.9)	+325.62 increase								
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	1.7
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	2.7
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	No data
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	No data
Eastern Mojave, NV & CA	13.42		1.9 (0.7)	-67.26 decline								
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	
Upper Virgin River, UT & AZ	0.45		15.3 (6.0)	-26.57 decline								
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	No data	17.5†
Rangewide Area of CHUs - TCAs/Rangewide Change in Population Status	100.00			-32.18 decline								

*This density includes the adult tortoises translocated from the expansion of the MCAGCC, that is resident adult tortoises and translocated adult tortoises.

**Methodology for collecting density data initiated in 1999.

†Results from 2023

Change in Status for the Mojave Desert Tortoise in California

- Eight of 10 populations of the Mojave desert tortoise in California declined from 29 to 64 percent from 2004 to 2014 with implementation of tortoise conservation measures in the Bureau of Land Management's Northern and Eastern Colorado Desert (NECO), Northern and Eastern Mojave Desert (NEMO), and Western Mojave Desert (WEMO) Plans.
- Eight of 10 populations of the Mojave desert tortoise in California are below the viability threshold for density. These eight populations represent 87.45 percent of the habitat in California that is in CHU/TCAs.
- The two viable populations of the Mojave desert tortoise in California are declining. If their rates of decline from 2004 to 2014 continue, these two populations will no longer be viable by about 2030.

Change in Status for the Mojave Desert Tortoise on BLM Land in California

- Eight of eight populations of Mojave desert tortoise on lands managed by the BLM in California declined from 2004 to 2014.
- Seven of eight populations of Mojave desert tortoise on lands managed by the BLM in California are no longer viable.

Change in Status for Mojave Desert Tortoise Populations in California that Are Moving toward Meeting Recovery Criteria

- The only population of Mojave desert tortoise in California that did not decline is on land managed by the National Park Service, which increased 178 percent from 2004 to 2014.

Important points to note from the data from 2015 to 2024 in Table 3 are:

Change in Status for the Mojave Desert Tortoise in the Western Mojave Recovery Unit:

- The density of tortoises continues to decline in the Western Mojave Recovery Unit
- The density of tortoises from 2015 to 2024 continues to fall below the density needed for population viability.

Change in Status for the Mojave Desert Tortoise in the Colorado Desert Recovery Unit:

- Many of the populations in this recovery unit have densities that are near the threshold for population viability.

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

- Two of the three population with densities greater than needed for population viability declined to level below the minimum viability threshold.
- Three of the four populations in this recovery unit have densities below the minimum density needed for population viability.

Change in Status for the Mojave Desert Tortoise in the Eastern Mojave Recovery Unit:

- Both populations in this recovery unit have densities below the minimum density needed for population viability.

Change in Status for the Mojave Desert Tortoise in the Upper Virgin River Recovery Unit:

- The one population in this recovery unit is small and appears to have stable densities.

The Endangered Mojave Desert Tortoise: The Council believes that the Mojave desert tortoise meets the definition of an endangered species. In the FESA, Congress defined an “endangered species” as “any species which is in danger of extinction throughout all or a significant portion of its range...” In the California Endangered Species Act (CESA), the California legislature defined an “endangered species” as a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant, which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes (California Fish and Game Code § 2062). Because most of the populations of the Mojave desert tortoise were non-viable in 2014, most 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 and California Fish and Game Commission. Despite claims by USFWS (Averill-Murray and Field 2023) that a large number of individuals of a listed species and an increasing population trend in part of the range of the species prohibits it from meeting the definitions of endangered, we are reminded that the tenants of conservation biology include numerous factors when determining population viability. The number of individuals present is one of a myriad of factors (e.g., species distribution and density, survival strategy, sex ratio, recruitment, genetics, threats including climate change, etc.) used to determine population viability. In addition, a review of all the available data does not show an increasing population trend (please see Tables 1 and 3).

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Demographic Status and Trend of the Mojave Desert Tortoise
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