

APPENDIX C

Protection Measures Designed to Avoid and Minimize Impacts to Desert Tortoises

- Construction in desert tortoise habitat would be done in consultation with BLM biologists and in compliance with USFWS biological opinions developed for the area.
- Dixie Escalante would designate a field contact representative (FCR) who would be responsible for overseeing compliance with protective stipulations for listed species. The FCR would be onsite during all Project activities. The FCR would have the authority to halt all activities that are in violation of the stipulations. The FCR would have a copy of all stipulations when work is being conducted onsite. The FCR would be a project manager, a Dixie Escalante employee, or a contract biologist.
- The FCR would have the authority to halt all non-emergency Project activity should danger to a listed species arise. Work would proceed only after hazards to the listed species are removed, the species is no longer at risk, or the individual has been moved from harm's way by the authorized biologist.
- All Dixie Escalante employees and its contractors involved with the Project would be required to complete a sensitive resources education program. The program would be approved by the USFWS and BLM. The program would cover the distribution, general behavior, and ecology of listed species; sensitivity to human activities; legal protections; penalties for violation of state and federal laws; reporting requirements; and minimization measures. In addition, the program would include fire prevention measures to be implemented during the Project.
- To the extent possible, the project features will be located in previously-disturbed areas or outside of desert tortoise habitat.
- Project activities will only be authorized from October 15 through March 15 within the Beaver Dam Slope ACEC.
- Pre-construction surveys will be conducted to locate desert tortoises that may be injured or killed in the Action Area. The Project will be altered or tortoises in harm's way will be relocated to avoid lethal take of tortoises in the Action Area. Prior to any surface-disturbing activities associated with "projects," work sites will be surveyed for desert tortoises by a qualified biologist approved by BLM and/or NPS. Areas of new disturbance will be surveyed with 100-percent coverage.
- Between October 15 and March 15 a 100-percent coverage survey would be conducted within one week of the Project activities within tortoise habitat. During surveys, occupied desert tortoise burrows in or within 40 feet of areas to be disturbed will be excavated using hand tools under the supervision of an authorized biologist. Tortoises discovered in burrows will be relocated. Burrows will then be collapsed or blocked to prevent entry by tortoises.
- Only biologists authorized and permitted by the USFWS and AGFD will handle desert tortoises and their eggs. Additional biologists can be authorized if BLM submits the name(s) of the proposed authorized biologist(s) to the USFWS for review and approval at least 15 days prior to the onset of activities that can result in a take. Minimum requirements for authorized biologists include attending the Desert Tortoise Council's training course for handling desert tortoises and/or training by an authorized biologist. Authorized biologists must have all valid state and federal permits.
- All desert tortoise burrows or pallets in the Action Area that cannot be avoided would be excavated by an authorized biologist or blocked. All desert tortoise burrows and pallets that fall outside of but within 50 feet of the construction work area would be flagged for avoidance. No stakes or flagging would be placed on the berm or in the mouth of a desert tortoise burrow. Desert tortoise burrows would not be marked in a manner that facilitates poaching. Avoidance flagging would be designed in

consultation with experienced construction personnel and authorized biologists.

- For project activities occurring during the desert tortoise active season (March 15 through October 15) outside of the Beaver Dam Slope ACEC and within desert tortoise habitat, surveys will be conducted within 24 hours of initiation of surface-disturbing activities.
- Within suitable tortoise habitat and during the tortoise active season (March 15 through October 15), or when temperatures and environmental conditions are conducive to tortoise activity, as determined by the authorized biologist, authorized biologists would act as biological monitors and would be present during construction. During the inactive season, authorized biologists would periodically inspect the Project to ensure compliance with stipulations.
- Biological monitors would be responsible for determining compliance with measures as defined by the Biological Opinion or other agreements between Dixie Escalante and agencies.
- When working in desert tortoise habitat during the active season, a biological monitor would also be assigned to each area where operation of large equipment (e.g., clearing, grading, trenching, lowering in) is occurring. A biological monitor would also be assigned to all backfilling, recontouring, and reclamation activities.
- If blasting is required in desert tortoise habitat, a biological monitor would be assigned to each blasting crew or area in which blasting would occur. Prior to any blast, a 200-foot area around the blast site would be surveyed for desert tortoises. Above-ground tortoises would be relocated at least 500 feet from the blast site. Burrows occupied by tortoise within 50 feet of the blast site would be flagged and stuffed with newspaper prior to the blast and burrows assessed for damage following the blast.
- If a tortoise or clutch of tortoise eggs is found in the Action Area, to the extent practicable activities will be modified to avoid injuring or harming it. If activities cannot be modified, the tortoise/clutch will be moved from harm's way by an the authorized biologist the minimum distance possible within appropriate habitat to ensure its safety from death, injury, or collection associated with the project or other activities. The authorized biologist will have some discretion to ensure that survival of each relocated desert tortoise/clutch is likely. Desert tortoises/clutches will not be translocated to lands outside the administration of the Federal government without the written permission of the landowner. Handling procedures for desert tortoises and their eggs will adhere to protocols outlined in Desert Tortoise Council (1999).
- Desert tortoises that are found above-ground that need to be moved from harm's way would be placed in the shade of a shrub in adjacent undisturbed habitat a minimum of 300 feet.
- Desert tortoises moved during inactive periods would be monitored for at least 2 days after placement in new burrows. The authorized biologist would be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely.
- Tortoises excavated from unavoidable burrows along the route would be relocated to unoccupied natural or artificially constructed burrows immediately following excavation. The artificial or natural burrow would be located 150 to 300 feet from the original burrow and would be similar in size, shape, and orientation to the original burrow. Relocated tortoises would not be placed in existing occupied burrows.
- Tortoises removed from occupied burrows and relocated to newly constructed burrows would be handled using disposable surgical gloves. The gloves would be

disposed of after handling each tortoise. Other equipment would be sterilized or changed between uses.

- Tortoises fatally injured or killed by Project activities would be submitted for necropsy, according to Berry (2003), at the expense of Dixie Escalante.
- The authorized biologist will maintain a record of all desert tortoises encountered during project activities. This information will include for each desert tortoise:
 1. The locations and dates of observation
 2. General condition and health, including injuries and state of healing and whether animals voided their bladders
 3. Location moved from and location moved to
 4. Diagnostic markings (i.e. identification numbers of marked lateral scutes)
- Desert tortoises that are handled will be marked for future identification. An identification number (using the acrylic paint/epoxy technique) will be placed on the 4th costal scute (USFWS 1992). No notching of scutes or replacement of fluids with a syringe is authorized.
- Authorized biologists would maintain a record of all special status species encountered during biological surveys and monitoring.
- All activities would be restricted to the approved ROW, approved existing and proposed access roads, and staging areas.
- To the extent possible, previously disturbed areas within the Action Area would be used for temporary storage areas, laydown sites, and any other surface-disturbing activities.
- Cross-country vehicular travel outside of the ROW would be prohibited except for the approved new access to pole locations.
- Incidences of observations of listed species and their sign during construction activities would be conveyed to the FCR and/or authorized biologist.
- A trash abatement program would be initiated during pre-construction phases of the Project, and would continue through the duration of the Project. Trash and food items would be contained in closed (raven-proof) containers and removed regularly (at least once a week) to reduce attractiveness to opportunistic predators such as ravens, coyotes, and feral dogs.
- Firearms and domestic dogs would be prohibited from the Project.
- Any fuel or hazardous waste leaks or spills would be stopped/repared immediately and cleaned up at the time of the occurrence in accordance with a USFWS-approved spill clean-up plan. The storage and handling of hazardous materials would be excluded from the Action Area in areas within 100 feet of active tortoise burrows and wash crossings. Any unused or leftover hazardous products would be properly disposed of offsite.
- A formal Reclamation Plan would be developed by Dixie Escalante and submitted to the resource agencies at least 90 days prior to construction in desert tortoise habitat. All restoration techniques would be designed to achieve rehabilitation criteria established by BLM.

- Efforts would be made to minimize impacts on vegetation and soils in the construction corridor.
- Anytime a vehicle or construction equipment is parked longer than 2 minutes in desert tortoise habitat, the ground around and under the vehicle or equipment would be inspected for desert tortoises before the vehicle or equipment is moved. If a desert tortoise is observed, it would be left to move on its own. If this does not occur within 15 minutes, an authorized biologist would remove and relocate the tortoise.
- Within desert tortoise habitat, any construction pipe, culvert, or similar structure with a diameter greater than 3 inches stored less than 8 inches above the ground for one or more nights would be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored on the construction site.
- Open trenches and other open excavations would be fenced with temporary tortoise-proof fencing, covered at the close of each work day, or provided with tortoise escape ramps. All excavations in tortoise habitat would be inspected periodically throughout and at the end of each work day and immediately before backfilling. Temporary tortoise-proof fencing would consist of silt fence buried at least 6 inches and supported by wooden stakes.
- Water would be applied to the ROW as needed for dust control. During the desert tortoise active season, an authorized biologist would be assigned to patrol each area being watered. The biological monitor would patrol the area immediately after the water is applied and at approximate 60-minute intervals until the ground is no longer wet enough to attract tortoises.
- Cacti, yucca, and agave species would be avoided, transplanted adjacent to the disturbance area, and/or re-transplanted back into the disturbance area after surface disturbing activities are completed.
- Areas of new construction disturbance will be flagged or marked on the ground prior to construction. All construction workers will strictly limit their activities and vehicles to areas that have been marked. Construction personnel will be trained to recognize markers and understand the equipment movement restrictions involved.
- The proposed substation will be enclosed with a permanent desert tortoise barrier fencing to prevent tortoises from wandering onto the project site where they may be subject to collection, death, or injury. Barrier fencing would consist of wire mesh with a maximum mesh size of 1-inch (horizontal) by 2-inch (vertical) fastened securely to the chainlink fence. The wire mesh will extend at least 18 inches above the ground and preferably 12 inches below the surface of the ground. Where burial is not possible, the lower 12 inches will be folded outward, away from the enclosed site, and fastened to the ground so as to prevent tortoise entry. Any gates or gaps in the fence will be constructed and operated to prevent desert tortoise entry (such as installing "tortoise guards" similar to cattle guards, and/or keeping gates closed). Specific measures for tortoise-proofing gates and gaps will be addressed project by project.
- Temporary fencing, such as snow fencing, chain link, and other suitable materials would be used in designated areas as determined by the Bureau to reduce encounters with tortoises from March 15 to October 15 on short-term projects, such as construction of power lines, burial of fiber optic cables, etc, where encounters with tortoises are likely.
- Blading of work areas will be minimized to the extent possible. Disturbance to shrubs will be avoided if possible. If shrubs cannot be avoided during equipment operation

or vehicle use, wherever possible they will be crushed rather than excavated or bladed.

- At no time will vehicle or equipment fluids be dumped on public lands. All accidental spills would be reported to BLM and NPS and cleaned up immediately, using the best available practices according to the requirements of the law. All spills of federally or State-listed hazardous materials that exceed reportable quantities will be promptly reported to the appropriate State agency and the BLM and NPS.
- Temporary access routes, created during project construction, within the Beaver Dam Slope ACEC, will be modified as necessary to prevent further use. The existing road side fence will be reestablished.
- Upon Project completion, all construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes would be removed from the site and disposed of properly.
- After completion of the project, trenches, pits, and other features in which tortoises can be entrapped or entangled, will be filled in, covered, or otherwise modified so they are no longer a hazard to desert tortoises.