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Shaping the Future

Final



Lincoln County Land Act Road, Fence, and Trail Plan for SLCHCP

February 6, 2012

Prepared For
Lincoln County

Final

Lincoln County Land Act

Road, Fence, and Trail Plan for SLCHCP

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Lincoln County

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Table of Contents

Chapter 1	Plan Overview.....	1-1
	1.1 Plan Purpose and Need.....	1-1
	1.2 Plan Objectives.....	1-1
	1.3 Regulatory Framework.....	1-2
	1.3.1 LCLA Lands.....	1-2
Chapter 2	LCLA Lands and Desert Tortoise Conservation.....	2-1
	2.1 Environmental Setting.....	2-1
	2.2 Desert Tortoise.....	2-1
	2.2.1 Threats.....	2-2
	2.2.2 Conservation.....	2-2
	2.2.3 Species Status.....	2-8
	2.2.4 SLCHCP Desert Tortoise Conservation Measures.....	2-11
Chapter 3	Plan Components.....	3-1
	3.1 Roads.....	3-1
	3.2 Fencing.....	3-2
	3.2.1 Temporary.....	3-8
	3.2.2 Permanent.....	3-8
	3.3 Trails.....	3-9
	3.4 Signage and Kiosks.....	3-10
	3.5 Vehicle Barriers/Gates/Guards.....	3-10
Chapter 4	Plan Implementation and Funding.....	4-1
	4.1 Plan Implementation.....	4-1
	4.1.1 Coordination with BLM.....	4-1
	4.1.2 Coordination with LCLA Developers.....	4-1
	4.2 Funding.....	4-2
	4.2.1 Desert Tortoise Habitat Mitigation Fees.....	4-2
	4.2.2 Fees Generated by LCLA Development Area General Improvement District (GID) Revenues.....	4-2
Chapter 5	Monitoring, Maintenance and Reporting.....	5-1
	5.1 Monitoring.....	5-1
	5.2 Maintenance and Repairs.....	5-1
	5.3 Annual Reporting.....	5-2
Chapter 6	References.....	6-1

Appendices

Appendix A	Representative Site Photos	
Appendix B	Recommended Specifications for Desert Tortoise Exclusion Fencing	
Appendix C	Suitability Analysis for Desert Tortoise Movement across the LCLA Perimeter	
Appendix D	Tortoise Guard Specifications and Photos	

Tables

Table 1	Type of Fencing Required for each LCLA Parcel	3-7
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Figures

Figure 1	LCLA Vicinity Map	2-3
Figure 2	LCLA Project Site	2-9
Figure 3	Existing Roads and Trails	3-3
Figure 4	Proposed Roads, Fencing, Signs and Kiosks	3-5
Figure 5	Proposed Tortoise Controls for Hydrologic Features at the Project Site	3-13

Acronyms

ACEC	area of critical environmental concern
ASL	above sea level
BLCC	Board of Lincoln County Commissioners
BLM	Bureau of Land Management
CC&Rs	covenants, conditions, and restrictions
CFR	Code of Federal Regulations
CHU(s)	critical habitat unit(s)
DA	Development Agreement
DTCC	Desert Tortoise Conservation Center
DTRO	Desert Tortoise Recovery Office
DTRPAC	Desert Tortoise Recovery Plan Advisory Committee
DWMA(s)	Desert Wildlife Management Area(s)
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act of 1976
GID	General Improvement District

Lincoln County Land Act
Road, Fence, and Trail Plan for SLCHCP: Final

GIS	Geographical Information System
HCP	Habitat Conservation Plan
I-15	Interstate-15
IMC	Implementation and Monitoring Committee
LCCD	Lincoln County Conservation District
LCCRDA	Lincoln County Conservation, Recreation, and Development Act of 2004
LCIMC	Lincoln County Implementation and Monitoring Committee
LCLA	Lincoln County Land Act of 2000
MDM	Mt. Diablo Meridian
MSHCP	Multi-species Habitat Conservation Plan
NRS	Nevada Revised Statutes
OHV	off-road highway vehicle
Plan	LCLA Road, Fence and Trail Plan
R&PPA	Recreation and Public Purposes Act
RMP	Resource Management Plan
ROW(s)	rights-of-way(s)
RTC	Regional Transportation Commission
SLCHCP	Southeastern Lincoln County Habitat Conservation Plan
SNPLMA	Southern Nevada Public Land Management Act of 1998
URTD	upper respiratory tract disease
USFWS	U.S. Fish and Wildlife Service

iv Table of Contents

Plan Overview

This Road, Fence, and Trail Plan (Plan) has been prepared as required by the Southeastern Lincoln County Habitat Conservation Plan (SLCHCP) (Cardno ENTRIX 2010), to discourage unauthorized vehicle access to desert tortoise critical habitat units (CHUs) and protect areas of critical environmental concerns (ACECs). The SLCHCP was developed as a requirement of the Lincoln County Land Act (LCLA) of 2000. The goal of the SLCHCP is to ensure the long-term conservation and recovery of natural habitats and native species within southeastern Lincoln County, while allowing planned growth and development. The permit area for the SLCHCP includes that portion of Lincoln County encompassing the LCLA land sale, which is all non-federal lands (private, municipal and State) south of the 38th parallel and below 5,000 feet in elevation (Figure 1). Species covered by the SLCHCP include desert tortoise (*Gopherus agassizii*) and southwestern willow flycatcher (*Empidonax trailii extimus*).

1.1 Plan Purpose and Need

The purpose of this Plan is to allow controlled access and use of the public lands in the SLCHCP area while providing protection to the listed species and their habitat (to avoid and minimize effects to desert tortoise and/or their habitats from future development and maintenance activities). The intent of this plan is to control pedestrian and vehicle access to the adjacent ACEC areas surrounding the LCLA parcels or project site (Figure 1). Additionally, the Bureau of Land Management (BLM) Arizona Strip Field Office intends to undertake an ACEC Management Plan for the Beaver Dam Slope ACEC¹ which will include a travel management plan for this ACEC. The LCLA Road, Fence, and Trail Plan does not address any road or trail issues on private lands; however, any future changes by the developers on the LCLA parcels will be addressed through Development Agreements (DAs) with Lincoln County (see Section 4.1.2 herein).

1.2 Plan Objectives

The main objectives of the Plan are:

- To discourage unauthorized vehicle access to desert tortoise habitat and protect areas of critical environmental concern;
- To provide controlled access to surrounding public lands; and
- To prevent access to the Plan area by wild desert tortoises.

¹ The Beaver Dam Slope ACEC encompasses 48,519 acres and lies in the far southwest corner of the State of Utah and shares boundaries with the states of Arizona and Nevada.

1.3 Regulatory Framework

1.3.1 LCLA Lands

Congress has enacted two public laws (Lincoln County Land Act of 2000 and the Lincoln County Conservation, Recreation, and Development Act of 2004 [LCCRDA]) that directed the auction of public lands in order to provide for development in Lincoln County. Subsequently, the Board of Lincoln County Commissioners (BLCC) authorized the development of the SLCHCP to support an application for an incidental take permit for federally-listed species under Section 10 of the federal Endangered Species Act (ESA), so that non-federal lands, such as the LCLA area, are available to accommodate projected growth in the area without being vulnerable to potential violations associated with take of species protected under the ESA.

The LCLA (P.L. 106-298) was passed by Congress to accommodate population growth in an area dominated by federal lands. Under the LCLA, 13,520 acres of public land was sold by the Bureau of Land Management (BLM) in several parcels to numerous developers for \$47.5 million. Lincoln County anticipates that development of the LCLA land will occur over a 30-year period. Housing capability of the area is estimated to be about 3.3 dwellings per gross acre and totaling about 44,500 dwelling units by the end of the 30-year development period. The development will likely include a variety of residential, commercial, industrial, and public facilities.

Lincoln County anticipates that as land in Clark County is built-out over time, populations will spread into adjacent Lincoln County. This is highly probable for the LCLA lands adjacent to the City of Mesquite.

LCLA Lands and Desert Tortoise Conservation

2.1 Environmental Setting

The LCLA lands, project site, encompassing 13,520 acres, are bordered by Clark County to the South, and Mohave County, Arizona to the East. BLM land lies to the north, west, and east of the LCLA parcels and are designated as desert tortoise ACECs (Mormon Mesa ACEC and Beaver Dam Slope ACEC) (Figure 1). Representative site photos are included in Appendix A. Adjacent parcels to the south of the project site are located in the City of Mesquite in Clark County, and are under private ownership. The City of Mesquite Land Use Plan identifies these adjacent parcels to be residential and some of the parcels are currently being developed (Carter & Burgess, Inc. 2007).

The project site is located in southeastern Nevada, at the border with Utah and Arizona within the Great Basin Region. The area features basin and range topography, marked by narrow north-south mountain ranges with peaks exceeding 9,000 feet above sea level (ASL) separated by broad alluvial valleys near the 3,000 foot ASL elevation. Precipitation is highly variable and ranges from approximately 5 to 25 inches depending on elevation, generated primarily by winter storms from October to March, with the remaining contribution from brief thunderstorms in the summer months (Lincoln County 2010).

Vegetation and habitat type throughout the project site include pinyon-juniper, Mojave Desert scrub, buckbrush, sagebrush, riparian, salt desert scrub, and lowland riparian. Native vegetation on the valley floors and piedmont slopes in south Lincoln County consists of sparse salt-shrub plant communities generally dominated by single shrub species. In higher elevation zones with slightly more precipitation, sagebrush environments are common, intergrading with grassland. Small narrow riparian areas and meadows are associated with stream channels and floodplains at the project site (Merkler 2000).

Meadow Valley wash and the White River drain to the Colorado River (Merkler 2000). Town Wash runs through the eastern portion of the project site. Surface water is scarce in the project region, but flood conditions are common during winter storms and localized summer showers. Springs wells and catchments supply water for livestock and wildlife on the rangelands in and adjacent to the project site.

2.2 Desert Tortoise

The entire Mojave population of desert tortoise (*Gopherus agassizii*) west of the lower Colorado River in California and Nevada, and north of the lower Colorado River in Arizona and Utah, including the Beaver Dam slope, is listed as threatened (55 FR 12178–12191) under the federal ESA. Critical habitat for the species was designated on February 8, 1994 (59 FR 5820–5866), described further below.

The desert tortoise is a large, herbivorous reptile found in portions of California, Arizona, Nevada, and Utah. It also occurs in Sonora and Sinaloa, Mexico. The Mojave population of desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, southwestern Utah, and in the Sonoran Desert in California. Optimal habitat has been characterized as creosote bush scrub (*Larrea tridentata*) in which precipitation ranges from 2 to 8 inches, where a diversity of perennial plants is relatively high, and production of ephemerals is high (Luckenbach 1982). Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. Desert tortoises occur from below sea level to an elevation of 7,300 feet, but the most favorable habitat occurs at elevations of approximately 1,000 to 3,000 feet (Luckenbach 1982).

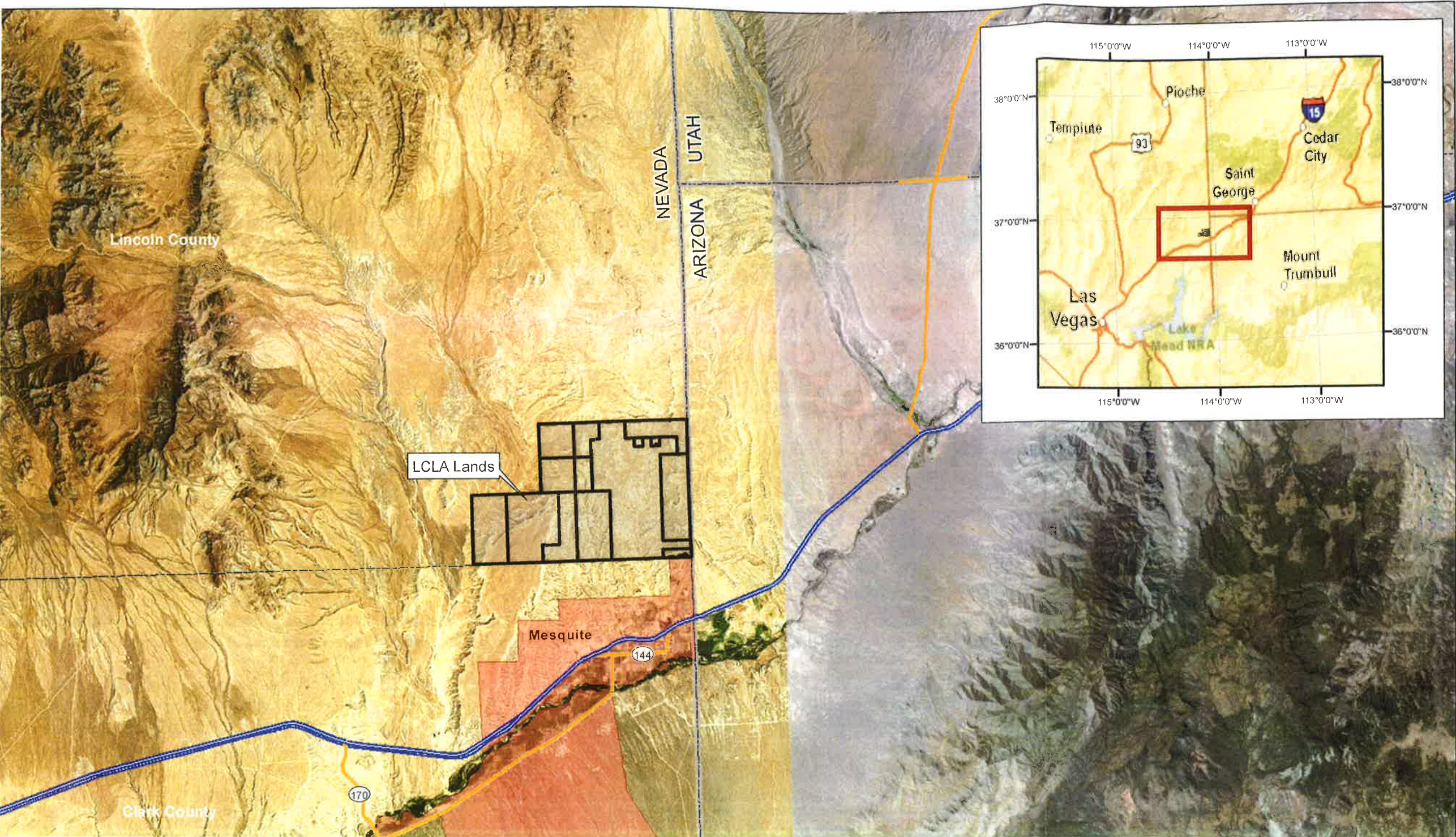
The size of desert tortoise home ranges varies with respect to location and year (e.g., drought years). Females have long-term home ranges that are approximately half that of the average male, which range from 25 to 200 acres (Berry 1986). Desert tortoises are most active during the spring and early summer, when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rainstorms. Desert tortoises spend the remainder of the year in burrows, escaping the extreme conditions of the desert. In Nevada and Arizona, desert tortoises are considered to be active from approximately March 15 through October 15. Further information on the range, biology, habitat and ecology of the desert tortoise can be found in Berry and Burge (1984), Bury et al. (1994), Germano et al. (1994), Luckenbach (1982), and USFWS (1994).

2.2.1 Threats

Threats to the desert tortoise include factors such as loss of habitat from construction projects such as roads, housing and energy developments, and conversion of native habitat to agriculture. Grazing and off-highway vehicle activities not only degrade tortoise habitat but may collapse burrows, killing any tortoises present. Also, threatening the desert tortoise's continuing existence are illegal collection by humans for pets or consumption, predation on juvenile desert tortoises by common ravens and kit foxes, and collisions with vehicles on paved and unpaved roads.

2.2.2 Conservation

On August 4, 1989, the USFWS published an emergency rule listing the Mojave population of the desert tortoise as endangered (54 FR 42270). On April 2, 1990, the USFWS determined the Mojave population of the desert tortoise to be threatened (55 FR 12178). Reasons for the determination included significant population declines, loss of habitat from construction projects such as roads, housing and energy developments, and conversion of native habitat to agriculture. Grazing and OHV activity have degraded additional habitat. Also cited as threatening the desert tortoise's continuing existence was the illegal collection by humans for pets or consumption, upper respiratory tract disease (URTD), predation on juvenile desert tortoises by common ravens and kit foxes, fire, and collisions with vehicles on paved and unpaved roads.



On June 28, 1994, the USFWS approved the final Desert Tortoise (Mojave Population) Recovery Plan (USFWS 1994), and then on May 6, 2011, issued a Revised Recovery Plan for the Mojave Population of the Desert Tortoise (USFWS 2011). The Desert Tortoise Recovery Plan divides the range of the desert tortoise into 6 recovery units and recommends establishment of 14 Desert Wildlife Management Areas (DWMAs) throughout the recovery units. Within each DWMA, the Recovery Plan recommends implementation of reserve-level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. The design of DWMAs should follow accepted concepts of reserve design. As part of the actions needed to accomplish recovery, the Desert Tortoise Recovery Plan recommends that land management within all DWMAs should restrict human activities that negatively impact desert tortoises (USFWS 1994, 2011). The DWMAs have been designated by the BLM through development or modification of their land use plans in Arizona, Nevada, Utah, and parts of California.

In Nevada, BLM's Las Vegas, Ely, and Battle Mountain field offices manage desert tortoise habitat; 941,800 acres of desert tortoise habitat were designated as ACECs by the Las Vegas and Ely field offices. The regulation of activities within critical habitat through ESA Section 7 consultation is based on recommendations in the Desert Tortoise Recovery Plan (USFWS 1994, 2011).

2.2.2.1 Recovery Units

There are six recovery units designated for desert tortoise: Northern Colorado, Eastern Colorado, Upper Virgin River, Northeastern Mojave, Eastern Mojave, and Western Mohave. The LCLA parcels are located only the Northeastern Mojave Recovery Unit in Nevada.

Northeastern Mojave Recovery Unit

The Northeastern Mojave Recovery Unit occurs primarily in Nevada, but it also extends into California along the Ivanpah Valley and into extreme southwestern Utah and northwestern Arizona. Vegetation within this unit is characterized by creosote bush scrub, big galleta-scrub steppe, desert needlegrass scrub-steppe, and blackbrush scrub (in higher elevations). Topography is varied, with flats, valleys, alluvial fans, washes, and rocky slopes. Much of the northern portion of the Northeastern Mojave Recovery Unit is characterized as basin and range, with elevations from 2,500 to 12,000 feet. Desert tortoises typically eat summer and winter annuals, cacti, and perennial grasses. Desert tortoises in this recovery unit, the northern portion of which represents the northernmost distribution of the species, are typically found in low densities (about 10 to 20 adults per square mile).

A kernel analysis was conducted in 2003–2004 for the desert tortoise (Tracy et al. 2004) as part of the assessment of the 1994 Desert Tortoise Recovery Plan. The analyses revealed several areas in which the kernel estimations for live desert tortoises and carcasses did not overlap. The pattern of non-overlapping kernels that is of greatest concern is those in which there were large areas where the kernels encompassed carcasses but not live animals. These regions represent areas within DWMAs where there were likely recent die-offs or declines in desert tortoise populations. The kernel analysis indicated large areas in the Piute-Eldorado Valley, where there were carcasses but no live desert tortoises. For this entire area in 2001, 165 km (103 miles) of transects were walked, and a total of 6 live and 15 dead desert tortoises observed, resulting in a

live encounter rate of 0.06 desert tortoises per mile of transect for this area. This encounter rate was among the lowest that year for any of the areas sampled in the range of the Mojave desert tortoise (Tracy et al. 2004).

Kernel analysis for the Coyote Spring DWMA showed areas where the distributions of carcasses and living desert tortoises do not overlap; however, densities of adult desert tortoises for the region do not show a statistical trend over time. Thus, while there may be a local die-off occurring in the northern portion of this DWMA, this does not appear to influence the overall trend in the region as interpreted by study plot data. Because permanent study plots for this region were discontinued after 1996, if there have been recent declines in numbers they are not reflected in the analysis. Nevertheless, large regions of non-overlapping carcass and live desert tortoise kernels in the regions were not identified adjacent to the Coyote Spring DWMA. The probability of finding either a live desert tortoise or a carcass was relatively very low for Beaver Dam Slope and Gold-Butte Pakoon, and moderately low for Mormon Mesa/Coyote Spring.

2.2.2.2 Critical Habitat

On February 8, 1994, the USFWS designated approximately 6.45 million acres of critical habitat for the Mojave population of desert tortoise in portions of California (4.75 million acres), Nevada (1.22 million acres), Arizona (339 thousand acres), and Utah (129 thousand acres) (59 FR 5820-5846, also see corrections in 59 FR 9032-9036), which became effective on March 10, 1994. Desert tortoise critical habitat was designated by the USFWS to identify the key biological and physical needs of the desert tortoise and key areas for recovery, and focuses conservation actions on those areas. Desert tortoise critical habitat is composed of specific geographic areas that contain the primary constituent elements of critical habitat, consisting of the biological and physical attributes essential to the species' conservation within those areas, such as space, food, water, nutrition, cover, shelter, reproductive sites, and special habitats. The specific primary constituent elements of desert tortoise critical habitat are:

- Sufficient space to support viable populations within each of the six recovery units, and to provide for movement, dispersal, and gene flow;
- Sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species;
- Suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; and
- Sufficient vegetation for shelter from temperature extremes and predators and habitat protected from disturbance and human-caused mortality.

Critical habitat units were based on recommendations for DWMA's outlined in the Desert Tortoise Recovery Plan (Mojave Population) (USFWS 1994, 2011). Because the critical habitat boundaries were drawn to optimize reserve design, the CHU may contain both "suitable" and "unsuitable" habitat. Suitable habitat can be generally defined as areas that provide the primary constituent elements. The Desert Tortoise Recovery Plan further states that desert tortoises and habitat outside recovery areas may be important in the recovery of the tortoise. Healthy, isolated tortoise populations outside recovery areas may have a better chance of surviving catastrophic effects such as disease, than large, contiguous populations (USFWS 1994, 2011).

The project site is located within the Northeastern Mojave Recovery Unit which includes four critical habitat units, of which two are located partially within Lincoln County: the Mormon Mesa CHU, and the Beaver Dam Slope CHU. The Mormon Mesa CHU is located in both Lincoln and Clark counties, and in total encompasses 427,900 acres. The portion of the Mormon Mesa CHU located in Lincoln County is 133,911 acres (31 percent of the Mormon Mesa CHU). The Beaver Dam Slope CHU is located in Nevada, Utah, and Arizona, and in total encompasses 204,629 acres. The portion of the Beaver Dam Slope CHU located in Lincoln County is 87,400 acres (43 percent of the Beaver Dam Slope CHU) (USFWS 1994, 2011). A total of 250,564 acres of critical habitat have been designated within Lincoln County (Figure 2).

2.2.2.3 BLM Areas of Critical Environmental Concern

An ACEC is a designation that highlights areas where special management attention is needed to protect and prevent irreparable damage to important historic, cultural and scenic values; fish, wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards. BLM establishes special management measures for these areas through land use planning. The designation is a record of significant value that must be accommodated when BLM considers future management actions and land use proposals (BLM 2011a). Congress mandated the designation of ACECs through the Federal Land Policy and Management Act (FLPMA) to manage areas containing truly unique and significant resource values. In 2000, there were 838 ACECs managed by BLM covering 14,045,540 acres (BLM 2011d).

The BLM's approved Final Resource Management Plan/Environmental Impact Statement (RMP/EIS) for the Ely District (BLM 2008) outlines how 754,600 acres of public lands administered by the BLM Ely Field Office will be managed to aid in the recovery of the desert tortoise, in compliance with the Desert Tortoise Recovery Plan. Within Lincoln County, BLM has designated three ACECs, which are managed by the BLM primarily for the recovery of the desert tortoise (BLM 2000): Kane Springs, Mormon Mesa, and Beaver Dam Slope ACECs. Overall, a total of 212,600 acres of tortoise habitat within Lincoln County are designated as ACECs. Two of the three ACECs lie adjacent to LCLA land: Mormon Mesa and Beaver Dam Slope (Figure 2).

2.2.2.4 Mormon Mesa ACEC

The Mormon Mesa ACEC is located along the Clark and Lincoln county line. Creosote-bursage scrub and mixed Mojave shrub are the dominant vegetation communities within the 149,000-acre ACEC. Mormon Mesa contains diverse geologic features, including large bajadas that provide prime desert tortoise habitat, and steep mountainous areas such as in the Mormon Mountains and Meadow Valley Mountain Wilderness Areas. The Mormon Mesa ACEC is also contiguous with the Kane Springs and Beaver Dam Slope ACECs, also found in the Ely District. U.S. Highway 93, State Route 168, and the Coyote Springs Development separate the Mormon Mesa ACEC from the Coyote Springs ACEC (BLM 2011b) (Figure 2).

2.2.2.5 **Beaver Dam Slope ACEC**

Beaver Dam Slope ACEC is comprised of 48,519 acres in the southwest corner of Utah, at the boundary of both Arizona and Nevada². The Beaver Dam Slope ACEC includes 36,900 acres in Lincoln County (BLM 2000). The ACEC provides critical habitat for the desert tortoise in the Northeastern Mojave Recovery Unit, as well as supporting numerous other listed and sensitive species. Tortoise populations in the Northeastern Mojave Recovery Unit have decreased due to factors including disease, predation, and drought. Joshua Tree National Natural Landmark and the Woodbury Desert Study Area are located within the Beaver Dam Slope ACEC in Arizona (BLM 2011c). A range of vegetation occurs within the Beaver Dam Slope ACEC, including various desert shrub communities and annual grasslands (Figure 2).

Management guidelines set forth in the Final RMP/EIS for the Ely District (BLM 2008) no longer allow livestock grazing within ACECs. Within ACECs, OHVs are allowed only on roads and vehicle trails specifically designated for OHV use, but only for casual use; competitive OHV use is not allowed. Management guidelines are for zero wild horses and burros, and no disposal of public lands within ACECs. Additional guidelines for the management of rights-of-ways (for utility/transportation corridors, communication sites, and materials sites), fire outbreaks, and transportation/public access are also outlined in the Final RMP/EIS for the Ely District (BLM 2008). Additionally, the Bureau of Land Management (BLM) Arizona Strip Field Office intends to undertake an ACEC Management Plan for the Beaver Dam Slope ACEC³ which will include a travel management plan for this ACEC.

2.2.3 **Species Status**

2.2.3.1 ***Desert Tortoise Surveys Conducted on LCLA Lands***

Those areas that are considered to provide some of the best tortoise habitat in the vicinity have been designated by BLM as ACECs and USFWS as CHUs. In 2010, tortoise densities within the Mormon Mesa ACEC were estimated at 14.2 tortoises per square mile and 8.5 tortoises per square mile in the Beaver Dam Slope (USFWS 2010).

Desert tortoise transect surveys conducted by BLM in the vicinity of the LCLA parcel indicate that tortoise densities in this area range from very low (less than 10 tortoises per square mile) to low (10 to 45 tortoises per square mile) (USFWS 2001). More recent transect surveys conducted in 2006 for the LCLA Groundwater Development Project estimated relative densities for 30 transects resulting in 1 transect equal to 10 per square mile, 4 transects equaling 7 per square mile, and 25 equaling 3 or less per square mile (BLM 2008a). Documented observations of desert tortoise near the LCLA lands are shown on Figure 2.

² The Beaver Dam Slope ACEC in Nevada is managed according to the Ely RMP (BLM 2008) and the portion in Arizona is managed according to the Arizona Strip RMP Revision (BLM and National Park Service [NPS] 2007).

³ The Beaver Dam Slope ACEC encompasses 48,519 acres and lies in the far southwest corner of the State of Utah and shares boundaries with the states of Arizona and Nevada.

Beaver Dam Slope
ACEC

on Mesa
CEC

00825105
"G"

00826110
"G"

00826109
"F"

00826102
"A"

00826101
"A"

00826104
"A"

Landfill

Shooting
Range

00825102
"H"

00826107
"H"

00826108
"A"

00826112
"E"

00825103
"J"

00825104
"I"

00825106
"B"

00826111
"B"

00826105
"C"

00826114
"D"

00826113
"D"

Beaver Dam Slope
ACEC

Wolf Creek
Golf Course

2.2.4 SLCHCP Desert Tortoise Conservation Measures

Conservation measures are those actions that avoid, minimize and/or mitigate the potential effects of the Covered Activities on the Covered Species. The following avoidance, minimization, and mitigation measures will be implemented in order to fulfill the statutory criteria for issuing a Section 10 permit for implementation of the SLCHCP and to meet the biological goals and objectives for the desert tortoise.

2.2.4.1 Biological Goals and Objectives for the Desert Tortoise

Biological goals and objectives for the desert tortoise recovery are described in the USFWS Desert Tortoise Recovery Plan (USFWS 1994, 2011). The Final RMP/EIS for the Ely District (BLM 2008) describes conservation measures for land managed by the BLM within and adjacent to the Covered Area. The aforementioned plans were considered during development of biological goals and objectives for the SLCHCP to ensure consistency with other on-going planning efforts throughout southeastern Lincoln County.

Recovery Goal

Maintain or improve existing desert tortoise habitat quality and quantity within the Covered Area of the SLCHCP and to maintain stable or increasing desert tortoise populations within the Covered Area.

Recovery Objectives

- Ensure that current levels of disturbance in ACECs and adjacent desert tortoise habitat from land-disturbing activities are either reduced or do not exceed the baseline level.
- Implement select management activities on public lands to facilitate the recovery of the desert tortoise.
- Manage roads or traffic levels into adjacent ACECs to avoid or reduce desert tortoise mortality.
- Offset the loss of up to 19,840 acres of desert tortoise habitat under the SLCHCP and the potential effects of taking desert tortoises on these lands by participating in a Head Start Program and Translocation of Desert Tortoises, Habitat Restoration of Burned Desert Tortoise Habitat Areas, Research Efforts on the Ecological Implications of Fire, and Public Outreach and Education Program as appropriate to avoid or reduce desert tortoise mortality.

2.2.4.2 Avoidance and Minimization Measure

The avoidance and minimization measures to be implemented by the developers who enter into agreement with Lincoln County under the SLCHCP are: (1) desert tortoise clearance surveys, process and transport; (2) temporary fencing; and/or (3) permanent tortoise-proof barriers (described further in Section 6.3.1 of the SLCHCP). Desert tortoise clearance surveys and the process and transport of desert tortoises found within the area proposed for construction is discussed below. The requirements for erecting temporary fencing and/or permanent tortoise-proof barrier are described further in Chapter 3.0 Plan Components.

Clearance Surveys, Process, and Transport

Prior to habitat disturbance, tortoises will be cleared from proposed construction areas by a USFWS qualified biologists, according to the procedures outlined below, and transported to the Desert Tortoise Conservation Center (DTCC). Desert tortoise clearance surveys will be completed in accordance with the USFWS Desert Tortoise Pre-project Field Survey Protocol (USFWS 2009) and/or other more recent USFWS approved protocols (refer to Appendix B)

Pre-construction surveys within the enclosed area will be conducted by qualified biologists to locate and remove desert tortoises prior to grading or actions which might result in harm to desert tortoises. A USFWS qualified biologist will oversee the survey for and removal of tortoises using techniques providing 100-percent coverage of all areas. Unless superseded by a USFWS protocol, two complete passes of 100-percent coverage will be accomplished. Additionally, tortoise burrows will be cleared of tortoises and eggs and then collapsed. Any desert tortoises or eggs found within the fenced area during construction activities will be removed under the supervision of a qualified tortoise biologist in accordance with USFWS protocol.

Tortoises cleared from the project site will be processed (genotyped and marked) and screened for diseases at the Desert Tortoise Conservation Center before the ultimate translocation back into the wild. The data collected from these surveys (i.e., location of all tortoises and tortoise signs, habitat characteristics, and physiognomy of the cleared areas) will help determine the status of the desert tortoise and its habitat within the SLCHCP Covered Area. The tortoises cleared from the construction area(s) will be kept separate from tortoises collected from other locales. Cleared tortoises will be used in the head start and translocation programs administered by the USFWS or other desert tortoise related studies that will contribute to the recovery of the tortoise.

2.2.4.3 Mitigation Measures

As stated in the SLCHCP, the avoidance and minimization measures to be implemented by the LCLA land developers and the other SLCHCP Permittees, listed above, will not offset all of the potential effects from land disturbance activities on desert tortoise habitat; therefore, the land developers and the other SLCHCP Permittees, if applicable, have committed to paying a per-acre development fee of \$550/acre, the maximum allowable mitigation fee that Lincoln County can impose pursuant to NRS Chapter 349 (further discussed in Section 6.3.2 of the SLCHCP). The mitigation fees are and will be used toward the implementation of the following mitigation measures, including development and implementation of the LCLA Road, Fence and Trail Plan and public education and outreach (i.e., facilitated through the use of pamphlets, interpretive trails, kiosks, signs, etc.), to compensate for the effects of incidental take on the desert tortoise within the SLCHCP Covered Area:

- Head Start Program for the desert tortoise
- Translocation Program for the desert tortoise
- Fund Research of the Ecological Implications of Fire
- Other Applied Research
- Habitat Restoration

- Public Education and Outreach
- Implement the LCLA Road, Fence and Trail Plan
- Predator Monitoring Control

The development, design, timing and implementation of these mitigation measures are in the process of being developed as part of the mitigation plan prescribed for the SLCHCP by the Implementation and Monitoring Committee (IMC), one of the governing bodies of the SLCHCP.

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Chapter 3

Plan Components

The three main components of the LCLA Road, Fence and Trail Plan are: (1) the development of roads for ingress and egress to the project site, (2) installation of desert tortoise-proof fencing, either temporary or permanent, prior to construction activities, and (3) the use of trails to access the adjacent BLM lands situated to the North and West of the 13,520-acre property (project site) (Figure 2). Subcomponents also discussed in this chapter include: signage and kiosks, vehicle barriers and gates, and drainages associated with the development.

A master plan, referred to as the Toquop Township Traffic Master Plan, for future development on the LCLA parcels was prepared by Carter & Burgess, Inc. in 2007. The project site (also referred to as Toquop Township in the Master Plan) is planned to accommodate communities offering single family detached home, primary and second home, active-adult home, and vacation home communities, as well as planned open space and recreation areas (Figure 2). Employment, retail shopping, institutional, and other opportunities to make Toquop Township self-sustaining are also planned. At build out, Toquop Township is expected to be an autonomous community with a wide spectrum of facilities and amenities. Approximately 44,350 dwelling units and up to 11.4 million square feet of commercial (retail and office) development are anticipated within the project boundaries (Carter & Burgess, Inc. 2007).

3.1 Roads

The project site is located in southeastern Lincoln County approximately, 54 miles from Caliente, 75 miles northeast of Las Vegas, and 40 miles southwest of St. George, Utah (Figure 1). The LCLA parcels are located immediately north of the Clark County-Lincoln County border, south of the 38th parallel, and immediately west of the Nevada-Arizona border. Overall, little development has occurred in tortoise habitat within Lincoln County. A landfill is located near the center of the LCLA parcels, connected to the City of Mesquite by a paved road. Existing roads throughout the project site are shown in Figure 3.

Interstate 15 (I-15), in conjunction with other access roadways, will provide regional access to the project site, according to the Traffic Master Plan prepared by Carter & Burgess, Inc. (2007). I-15 is a four lane divided interstate highway, with two lanes in each direction. The posted speed limit on I-15 varies from 70 to 75 miles per hour (mph) in the vicinity of the City of Mesquite. Future east and west I-15 connections are planned to link Toquop Township to I-15 (Carter & Burgess, Inc. 2007). According to the Traffic Master Plan, project traffic using these future connections to I-15 is expected to bypass the existing development in the City of Mesquite. A future interchange, around Mile Post 3 of Scenic Boulevard in Arizona, will provide eastern access to I-15. The western I-15 access is planned for the east side of the Toquop Wash at approximately Mile Post 115. Five major north-south routes through various parcels of Toquop would provide access in and out of the City of Mesquite (Carter & Burgess, Inc. 2007). Proposed roads within the LCLA lands are shown in Figure 4.

The Toquop Township Planned Unit Development Ordinance dictates some of the minimum standards for the design and construction of improvements on the LCLA parcels. In accordance with this ordinance, roadway designs must conform to NDOT standards as well as the Regional Transportation Commission (RTC) uniform standards and specifications, including all types of roadways, bikeways, sidewalks, driveways, cul-de-sacs, knuckles, alleys, medians, and bus turnouts (Carter & Burgess, Inc. 2007).

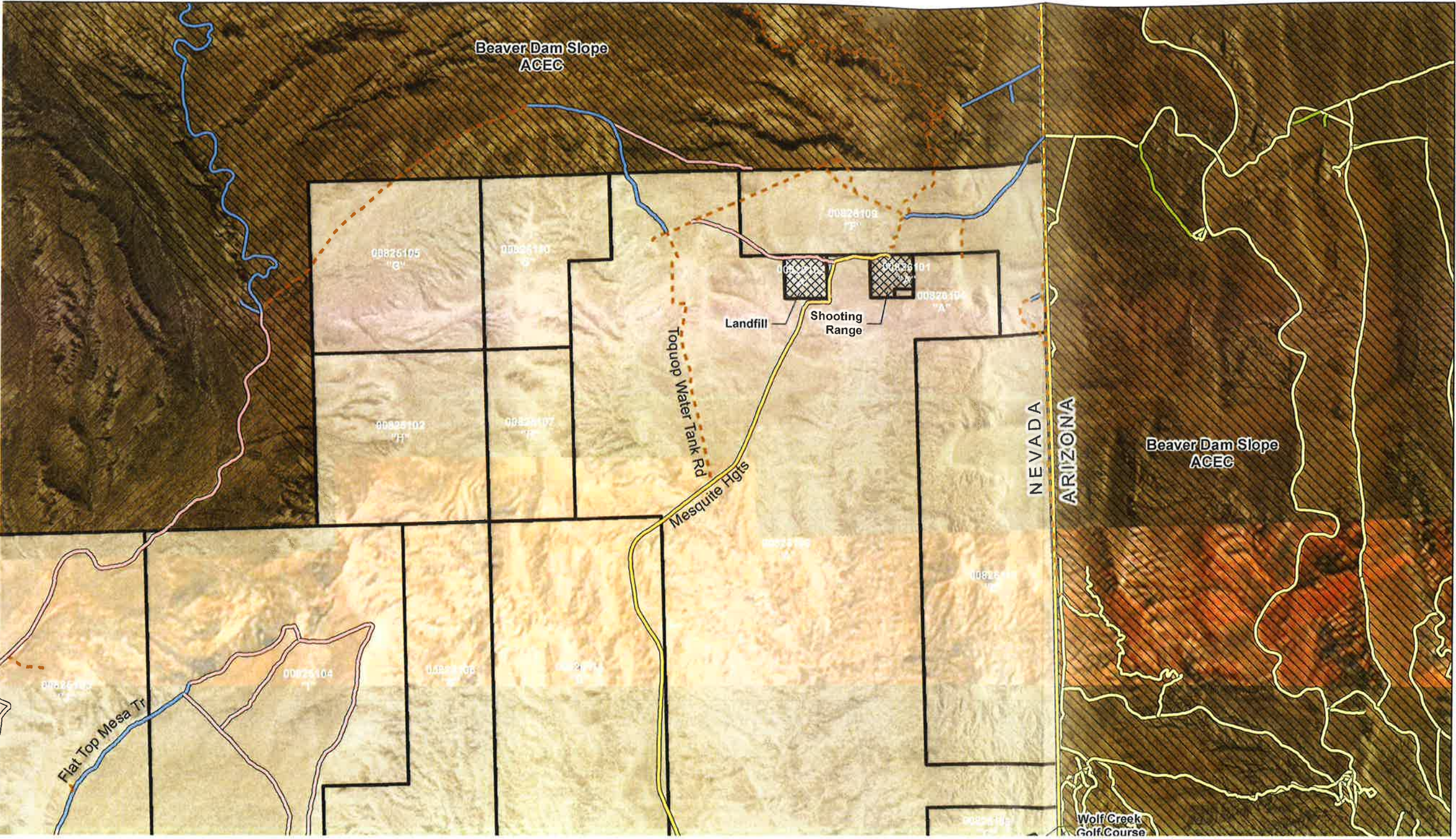
3.2 Fencing

The importance of fencing, whether temporary or permanent in nature, is to prevent tortoises from accessing dangerous areas (i.e., developed areas) where they may be subject to collection, injury or death. With regards to clearance surveys and fencing, the LCLA developers, in collaboration with Lincoln County under the SLCHCP, may choose one of the following measures:

- The developer clears a determined amount of acreage, within pre-installed temporary tortoise exclusion fencing, as development occurs, eventually replacing the temporary fencing with a permanent desert tortoise-proof barrier described below, surrounding the full extent of the proposed developed area;
- The developer clears all the land proposed for development up front and constructs a permanent desert tortoise-proof barrier (described below); and/or
- For projects with atypical site conditions (e.g., pre-existing adjacent development, steep terrain, pre-existing adjacent tortoise exclusion fencing or barriers, other non-standard site conditions), the developer will submit a site-specific fencing plan to Lincoln County and USFWS. To facilitate Lincoln County and USFWS review, the submittals will include:
 - Clear presentation of atypical site conditions where variances are believed warranted,
 - Text describing the alternative barrier plan, and
 - Exhibits supporting the alternative barrier plan.

Notification to Lincoln County and USFWS would be submitted at least 45 days before the onset of construction. If USFWS does not provide written objections or project-specific conditions within 30 days from the receipt of the complete submittal, the work would be authorized as proposed.

Based on two separate site visits to the project site, the conceptual land use map provided in the Toquop Township Traffic Master Plan (Carter & Burgess, Inc. 2007), consultation with USFWS and the BLM both in Nevada and Arizona, and the suitability analysis conducted by Cardno ENTRIX (Appendix C), the expected location of temporary and permanent fencing is shown in Figure 4. It is important to note that an existing 4-strand wire fence runs along Arizona BLM/Nevada private property boundaries, specifically LCLA parcels, from north to south, F and E (Figure 4). The approximate length of temporary and permanent fencing that will be required as part of the LCLA Road, Fence, and Trail Plan for each parcel is provided in Table 1. The primary goal of this Plan is to have all permanent fencing installed prior to complete build-out of the project site.



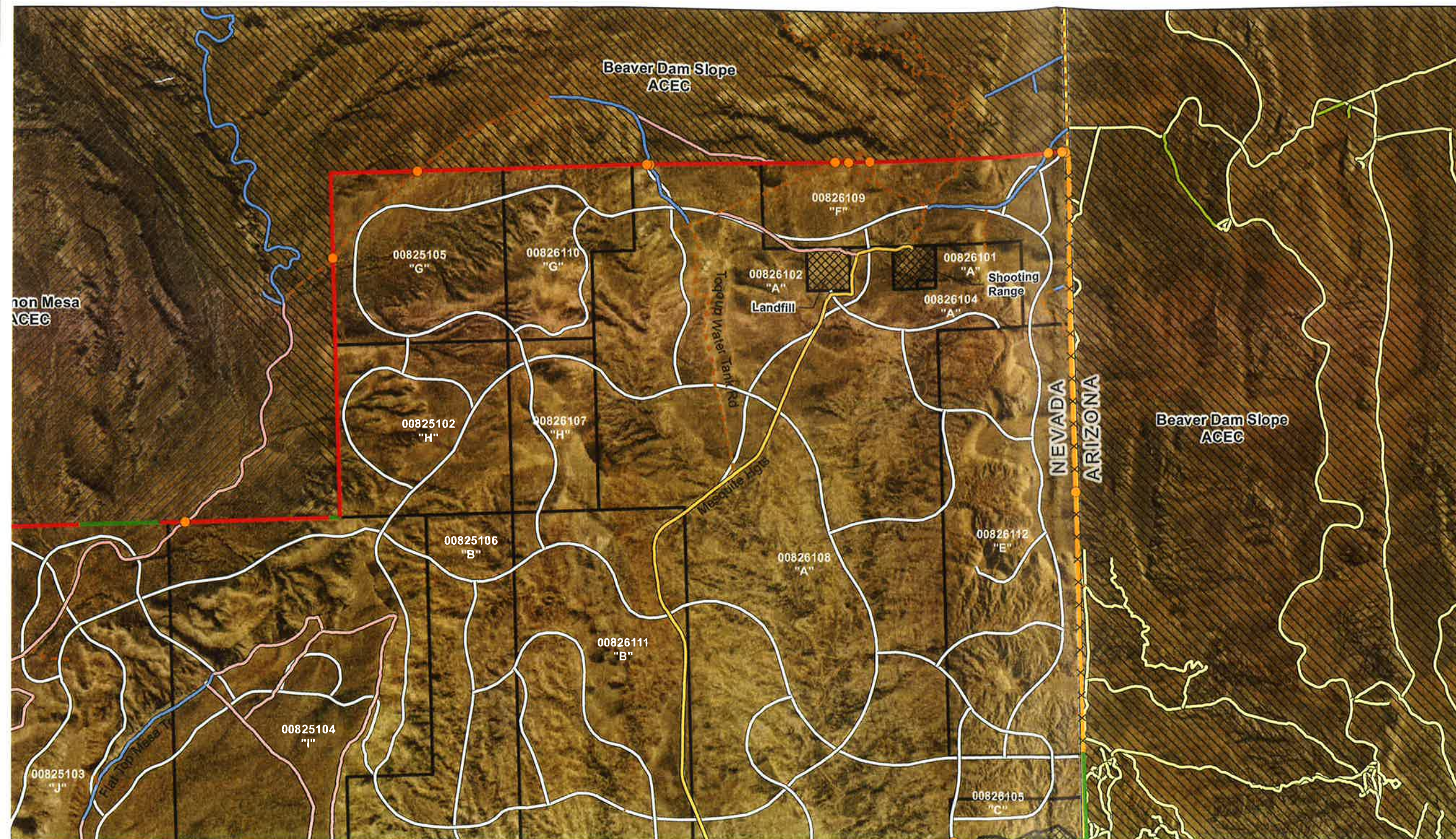


Table 1 Type of Fencing Required for each LCLA Parcel

Parcel Letter	Existing Fencing (ft)	Temporary Fencing (ft)	Permanent Fencing (ft)	Developed Lands/ No Fencing Required (ft)
A		9,242*	3,958	
B		10,569*		
C		1,605*		
D				3,195
E	13,140			
F	5,344		9,512	
G			14,527	
H			5,282	
I		5,570*	4,998	
J		10,166*	11,732	
TOTAL	18,484	37,152	50,009	3,195

*The need for temporary fencing at the southern boundary of these parcels is subject to change based on whether or not development has occurred on the adjoining parcels to the south in Clark County.

There are a couple of exceptions with regards to the installation of temporary fencing prior to the onset of construction on the LCLA parcels adjacent to the southern boundary of the LCLA Lands. For example, parcel D has already been developed; therefore, parcel D will not require either temporary and/or permanent fencing along the southern boundary, which is adjacent to existing development in Clark County. Additionally, if the adjoining parcels to the south of LCLA parcels J, I, B, A and C (moving from west to east) have already been developed in Clark County prior to the onset of construction on the above mentioned LCLA parcels, then those parcels will also not require temporary and/or permanent fencing along the southern boundary of their properties. If the adjoining parcels to the south of these properties are not developed and support desert tortoise habitat, then either temporary or permanent fencing as described in the SLCHCP and Section 3.2 of this Plan must be installed around the entire perimeter of the construction site to ensure desert tortoises that may occur in adjacent habitat do not gain access to the construction site and are not placed in harm's way.

As stated above, there is an existing 4-strand wire fence that runs along these parcels at the Arizona state line. As of January 29, 2008, the BLM Arizona Strip Field Office received approval on the Tortoise Fencing on the Beaver Dam Slope Project (DOI-BLM-AZ-A010-2009-0021-CX). The pending Project involves installation of tortoise fencing, installation of new 4-strand wire fencing on which to install the tortoise fencing, and installation of two cattleguards (Appendix D). As part of the Project, fencing would be installed along both sides of Highway 91 (from Beaver Dam, Arizona, north to the Arizona/Utah state line) and along BLM/private property boundaries (in Nevada) for a total of approximately 77,982 linear feet (or 13.4 miles). For these parcels with regards to installation of any additional fencing, this Plan is proposing that the landowners consult with the BLM Arizona Strip Field Office prior to the onset of construction on any needed repairs to the fence if already installed.

3.2.1 Temporary

If the developer chooses not to clear all the land proposed for development up front and constructs a permanent desert tortoise-proof barrier, then prior to commencing any land disturbance activities, temporary (interim) desert tortoise-proof fence will be constructed to confine tortoises to a certain area or exclude them from harmful situations. Fences should be constructed with durable materials suitable for desert environments, alkaline and acidic soils, wind, and erosion. Specifications for desert tortoise exclusion fencing require 1-inch horizontal by 2-inch vertical, galvanized welded wire, from the ground to 18 to 24 inches above ground surface (USFWS 2005). In situations where it is not feasible to bury the fence, the lower 6 to 12 inches of the fence will be bent at a 90-degree angle towards potentially approaching tortoises and covered with cobble or other suitable material to ensure that tortoise or other animals cannot dig underneath. This modification has already been approved for use on BLM lands as part of the Ely District Approved RMP/EIS (BLM 2008).

Installing and maintaining the temporary fence during construction will be the responsibility of the developers or individual landowners. All temporary tortoise exclusion fencing used during construction will be located, designed, inspected, and maintained by the landowners according to USFWS *Recommended Specifications for Desert Tortoise Exclusion Fencing* (USFWS 2005, Appendix B). All desert tortoise fences will be inspected on a regular basis by the individual landowner in coordination with Lincoln County and sufficient enough to maintain an effective barrier to tortoise movement. Specific recommendations are discussed in Chapter 5 herein.

3.2.2 Permanent

Permanent desert tortoise-proof barriers will prevent tortoises from entering developed LCLA lands post-construction and minimize vehicle-related tortoise mortality. Permanent desert tortoise-proof barriers should be constructed at the boundaries between future development areas and ACECs to protect existing desert tortoise populations and other sensitive resources (refer to Figure 4). However, due to the prohibitive logistics and costs associated with installing permanent desert tortoise-proof barriers along the entire lengths of the parcels adjacent to the ACECs to the north, west, and east of the project site, barriers should be placed strategically to complement natural physiography where possible.

In the Mojave Desert, tortoise occurrences are less common at higher elevations and on steep slopes. In prior studies, very steep or mountainous slopes have been considered unsuitable habitat for desert tortoise (USFWS 2006). During previous translocations in Nevada, mountainous areas that provided a precipitous change in elevation in excess of 2,500 feet functioned as barriers to the movements of translocated tortoises (Nussear 2004). If local topography or hydrologic flows make construction of block walls infeasible, alternative permanent barriers must be approved by USFWS. As described in the SLCHCP, individual developers may submit a site-specific plan for their projects describing the atypical site conditions, the proposed alternative barrier plan, and exhibits supporting the proposal.

For this Plan, areas assumed to block tortoise movement were identified using ArcGIS analysis. Slopes were calculated for the entire project, including an additional one-mile buffer around the parcels. Areas with greater than or equal to 33 degrees (64.9 percent) were assumed to be unsuitable based on the most conservative literature estimates (USFWS 2006, Berry et al. 2006).

A map showing the resulting slope values for the project site is included as Appendix C. Photos showing topography at the project site are included in Appendix A.

Additionally, washes and drainage features that receive seasonal flow may also be challenging to fence and maintain. Washes and drainage features at the project site where permanent fencing might not be practical were identified using USGS “blueline” stream maps and visual assessment of satellite photos. The Toquop Township Drainage Master Plan prepared by G.C. Wallace Companies (2007) proposes the construction of new storm drains, channels, detention basins and culverts at the project site. Controls such as specialized culverts will be implemented, as necessary to limit access by desert tortoise through washes or drainage areas that traverse the perimeter of the site. These structures will be designed to allow flows across the LCLA boundary during the wet season, while excluding tortoise entry during the dry season. Based on current information, it is expected that tortoise controls will be needed at the locations shown in Figure 5.

In summary, at a minimum, permanent fencing must comply with the most recent USFWS *Recommended Specifications for Desert Tortoise Exclusion Fencing* (USFWS 2005, Appendix B). Perimeter block walls are considered effective tortoise barriers. Other barriers to tortoise movement may include decorative walls and fences at least 18 inches high that do not have openings larger than 0.5 inch below two-feet from ground surface. To ensure the integrity of the barrier at road entries to active development areas, gates or cattle guards that serve as tortoise barriers would be installed and maintained to ensure that any tortoise that falls underneath has a path of escape without crossing the intended barrier.

All permanent desert tortoise-proof barriers (i.e., block walls) will be designed and constructed by the developers according to USFWS recommendations. Installing and maintaining the fence during construction will be the responsibility of the developers or individual landowners. During and after construction, Lincoln County will oversee the inspection of the fence; however, any needed repairs will be the responsibility of the landowner.

3.3 Trails

Open space and recreational opportunities are considered an essential component of the multiple use land management strategy in Lincoln County; particularly for the economic, historical and cultural values they provide (Lincoln County 2010). Recreation in Lincoln County has included heritage tourism, as well as dispersed activities in the backcountry. Hunting, fishing, hiking and camping are some of the popular uses in undeveloped, recreation areas. Growth in nearby urban areas and increased interest in activities, such as OHV use have fueled a dramatic increase in visitorship. Annual on- and off-road racing, equestrian events, and multi-use events on Lincoln County trails draw many recreators to the area (Lincoln County 2010).

There are existing trails (biking, hiking and equestrian), two track roadways, and OHV/jeep routes in and adjacent to the project site (Figure 3). As development occurs within the LCLA area, these existing roads and trails could receive a much greater volume of vehicular traffic as well as backpacking, hiking and other pedestrian activities. As stated in the Toquop Township Traffic Master Plan, a network of walkways and trails shall be planned for each parcel. Multi-use trails shall be constructed along street right-of-ways within the landscape buffer or in the open

space system for various activities such as walking, hiking, jogging, and bicycling. The trails shall be constructed with material suitable for the designated use (Carter & Burgess, Inc. 2007).

No specific, new trail routes have yet been proposed, but future trails are intended to provide connections from LCLA open space and recreation areas to adjacent land uses, including BLM lands. A combination of additional Open Space, Parks and Recreation areas are planned under the Toquop Township Traffic Master Plan (Figure 2). To achieve the goal of balancing recreation access and the protection of sensitive resources contained in the ACECs, trail connections will be coordinated with the BLM Ely District.

3.4 Signage and Kiosks

As part of the desert tortoise conservation efforts of the SLCHCP, informational signs and/or kiosks will be established at all exits from private land to federal or other governmental lands. The HCP Plan Facilitator may elect to organize an educational sub-committee to assist with these and other educational programs. The kiosks would include maps and general information, a summary of applicable regulations regarding use of roads and trails (horses, bikes, speed limits, etc.), and other informational items. For example, kiosks could be used for educational purposes, such as describing the benefits of using the designated system of roads and trails and the detriments of using unofficial trails.

Additional signage will also be installed to communicate with road users and recreationists, i.e.: “This road closed,” “No Motorized Vehicles,” “Pedestrian Traffic Only,” “Stay on existing Roads and Trails,” “Dead End,” End of road, “No travel beyond this Point” etc. These signs would be installed by the developers at all intersections with main routes where needed and most effective according to the annual work plan. Informational and recreational signs will be the minimum number and size necessary to effectively communicate desired messages, and will display information in a consistent format.

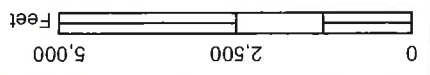
Based on the existing roads and trails, and those proposed in the Master Traffic Plan, Figure 4 shows the expected locations of kiosks and/or informational signs along the perimeter of the project site. As trails are proposed and developed throughout the project site, the need for additional signs will be assessed. These needs will be analyzed as part of the annual work plan of the SLCHCP (described in Chapter 5 herein).

3.5 Vehicle Barriers/Gates/Guards

Tortoise-proof gates, cattleguards, and/or other strategies will be required at all access points to control access to, or from, any existing roads and trails (refer to Figure 4). Installation will be coordinated with the BLM Ely District, and installation and maintenance of the gates and/or cattleguards during construction will be the responsibility of the developers or individual landowners. During and after construction, Lincoln County will oversee the inspection of the gates and/or cattleguards; however, any needed repairs will be the responsibility of the landowner. Additionally, if there are gaps in the fencing due to roads or trails crossing the perimeter of the project site, tortoise guards would be installed by the developer in conjunction with the BLM Ely District. A schematic of a typical tortoise guard is provided in Appendix D. These additional procedures would also be followed:

- Approved desert tortoise-proof fencing should extend along the fence line to the cattleguard.
- Approved fencing should also extend along the wing of the cattleguard closest to the road so that a tortoise approaching the cattle guard from the side away from the road and falling through the guard rails will be prevented from passing on to the road side and will be channeled up, out of the guard ditch to the side of the fence away from the road.

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- Tortoise Controls (i.e. culverts)
- Stream or Creek
- Developed
- Project Parcel
- BLM ACEC -- Beaver Dam Slope
- BLM ACEC -- Mormon Mesa

Image Source: NAIP, 2010





Plan Implementation and Funding

4.1 Plan Implementation

The BLCC is responsible for the administration and implementation of the SLCHCP under the conditions of the Section 10 permit(s) issued in relation thereto. The Lincoln County IMC has been established by the BLCC to assist with these responsibilities. A Plan Facilitator has also been identified and authorized to administer the SLCHCP.

The Lincoln County IMC oversees implementation of the SLCHCP with the assistance of the technical advisor(s) and the Plan Facilitator. The Lincoln County IMC, consisting of the permittees and plan participants, may review, comment, and make recommendations to the BLCC regarding prioritized conservation measures (minimization/mitigation) and budget proposals. Budgets will be considered annually to coincide with the Lincoln County budget process.

4.1.1 Coordination with BLM

The LCLA Road, Fence and Trail Plan will comply with all applicable requirements of the Final RMP/EIS for the Ely District (BLM 2008), as well as the Final EIS (BLM 2007a) and Record of Decision for the Arizona Strip Field Office Resource Management Plan. Access to any federal lands adjacent to private lands will be limited to existing roads and trails, unless specifically authorized by BLM (Nevada Ely District Office and/or Arizona Strip Field Office).

4.1.2 Coordination with LCLA Developers

Development of the lands disposed under the LCLA will be conducted in accordance with a development agreement (DA) between the developer(s) and Lincoln County as stipulated in the SLCHCP. As part of this agreement, the developers are required to prepare and obtain Lincoln County approval of a land use map identifying the general concept for a master planned development on the parcels of property. The DA will also contain covenants, conditions, and restrictions (CC&Rs) to minimize the effects of development on the desert tortoise. The CC&Rs will include: 1) community fencing requirements to prevent desert tortoise ingress and domestic animal egress; 2) appropriate control such as leash laws for domestic animals; 3) litter and trash control programs; and 4) prohibition of possession of pet tortoises (native or non-native) within the community.

The BLCC has the responsibility to ensure that the DAs adhere to the terms and conditions of Lincoln County's Section 10 permit for the SLCHCP and include the responsibilities of the developers as described in the SLCHCP and Implementing Agreement. The DAs are part of the network of mechanisms to commit developers to the terms and conditions placed on the County by the Section 10 permit(s). The Plan Facilitator will review all DAs for compliance with the SLCHCP Section 10 incidental take permits and consult with USFWS as needed.

4.2 Funding

Lincoln County will fund the permit management and conservation measures presented in the SLCHCP primarily from long term funding sources but will pursue supplemental revenue sources as well. All long term revenues received have and will be deposited into the Section 10 Trust Fund Account, as allowed by law, and be utilized to address expenses required to implement the Annual Work Plan for the SLCHCP.

4.2.1 Desert Tortoise Habitat Mitigation Fees

Lincoln County will require that, unless exempt, any developer or landowner that conducts new land disturbances in desert tortoise habitat must pay a mitigation fee. The mitigation fee will be imposed on all land disturbance on private lands within the SLCHCP Covered Area that is subject to development permits as defined by Lincoln County and will be paid at the time of issuance of the building or grading permit or prior to land disturbance.

The per-acre development fee will be used toward the implementation of conservation efforts to mitigate for the loss of desert tortoise habitat associated with the Covered Activities of the SLCHCP. A fee of \$550/acre will apply to development occurring south of the northern-most location of critical habitat for desert tortoise or 38th parallel within the Covered Area of the SLCHCP that includes the LCLA lands (Figure 1). In the event that Nevada Revised Statutes (NRS) 349 is revised to allow higher mitigation fees or accommodate inflation, then Lincoln County may, over the permit term, adjust the mitigation fees upon consultation with the USFWS. Assuming that 90 percent of the 13,520 acres of the LCLA lands projected by this plan are actually disturbed and subject to fees during the term of the Section 10 permit, the habitat mitigation fee for the LCLA lands will generate over \$6,682,500 in fees during the term of the SLCHCP (refer Section 9.1.1 of the SLCHCP).

4.2.2 Fees Generated by LCLA Development Area General Improvement District (GID) Revenues

A GID has been formed under NRS 318 to govern the new private lands resulting from development of the LCLA lands (refer to Section 8.0: Plan Implementation of the SLCHCP, (Cardno ENTRIX 2010). Under NRS 318, a GID is authorized to exercise the power, rights, privilege, and immunities to serve a public use and promote the health, safety, prosperity, security, and general welfare of the inhabitants. The services to be provided by the GID will include those required by the Section 10 permit for the preservation of the desert tortoise as provided in NRS 318.1177. This section states:

“In the case of a district created wholly or in part for the establishment of an area or zone for the preservation of one or more species or subspecies of wildlife that has been declared endangered or threatened pursuant to the federal ESA of 1973, 16 USC. 1531 et seq., the board shall have the power to: Establish, control, manage and operate, or provide money for the establishment, control and management and operation of the area or zone.”

Other basic services provided by the GID may include permanent desert-tortoise-proof fence maintenance, streets, flood control, sanitary facilities for sewerage, water supply, garbage collection and disposal and recreation.

NRS 318 allows the GID to generate revenues on a permanent basis based on a general ad valorem property tax. Present assessment standards in Nevada require the county assessor to appraise property without regard to purchase price. The assessed value of residential property is calculated at 35 percent of the appraised value of residential property assigned by the county assessor. For purposes of analysis in the SLCHCP, Lincoln County took the average appraised value of \$250,000, which was consistent with the existing residential home market in the City of Mesquite at that time, and an ad valorem tax rate of \$0.03/\$100.00 assessed value was applied to estimate annual revenues generated. Over the next 30 years, any change in the tax rate would be a minor amendment to the SLCHCP, as described in Section 8.0: Plan Implementation of the SLCHCP (Cardno ENTRIX 2010).

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Monitoring, Maintenance and Reporting

Management of the plan components will include continued monitoring, maintenance and repairs, and reporting. In the future, seasonal use restrictions, closure, abandonment, rehabilitation, or easement of restrictions of routes or activities may be applied, if necessary.

5.1 Monitoring

During and after development of the LCLA parcels, Lincoln County will be responsible for inspecting all fence and cattleguard inventories at least twice per year. However, during the first two to three years, all inspections will be conducted quarterly at a minimum, to identify and document breaches, and any problem areas such as wash-outs, vandalism, and cattleguards that fill-in with soil or gravel. Inspections of fencing will, at a minimum, meet the requirements of the USFWS *Recommended Specifications for Desert Tortoise Exclusion Fencing* (USFWS 2005, Appendix B). GPS coordinates and mileages from existing highway markers should be recorded in order to pinpoint problem locations and build a database of problem locations that may require more frequent checking. Following two to three years of initial inspection, subsequent inspections should focus on known problem areas that will be inspected more frequently than twice per year. In addition to semi-annual inspections, problem areas prone to wash-outs should be inspected following precipitation that produces potentially fence-damaging water flow. A database of problem areas will be established whereby checking fences in such areas can be done efficiently (USFWS 2005).

5.2 Maintenance and Repairs

Maintenance and repairs to the fencing during construction will be the responsibility of the developer and could include: (1) realignment of the fence out of the wash if possible to avoid the problem area, or (2) re-construction of the desert tortoise-proof fencing. Gaps and breaks in the fencing could require: (a) repairs to the existing fence in place, with similar diameter and composition of original material, (b) replacement of the damaged section to the nearest T-post, with new fence material that original fence standards, (c) burying fence, and/or (d) restoring zero ground clearance by filling in gaps or holes under the fence. Desert tortoise-proof fencing should be constructed and maintained at cattleguards to ensure that a desert tortoise barrier exists at all times. After development, the maintenance and repairs to the fencing will be the responsibility of the landowner.

The risk level for a desert tortoise encountering a breach in the fence is greatest in the spring and fall, particularly around the time of precipitation. All fence damage will be repaired within 72 hours after discovery during periods of higher desert tortoise activity and within 10 days during periods of lower desert tortoise activity to ensure that tortoises do not travel through damaged sections (USFWS 2005).

All fence damage should be repaired in a timely manner to ensure that tortoises do not travel through damaged sections. Similarly, cattleguards will be cleaned out of deposited material

underneath them in a timely manner. All cattleguards that serve as tortoise barriers should be installed and maintained to ensure that any tortoise that falls underneath has a path of escape without crossing the intended barrier (USFWS 2005).

5.3 Annual Reporting

An annual report will be prepared by (September 30) of each year, outlining the monitoring and maintenance actions performed during the previous calendar year. The annual report will include at a minimum:

- Findings of any quarterly, bi-annual, or post-rain event inspections performed;
- A description of site conditions and progress, including a summary of temporary and permanent fencing, roads, trails, and signage installation, and any approved changes to fencing and signage type and/or road and trail locations;
- A map outlining permanent fencing and signage locations, including any new fencing and signage installed during the monitoring year, areas where fencing and/or signage required repairs, and areas where post-rain event inspections were conducted due to frequent maintenance concerns; and
- Any recommendations for maintenance or management actions to maintain fencing and signage for the following year.

The annual report will be submitted to the Lincoln County Board of Commissioners and IMC and made available to the USFWS and BLM on September 30 of each year. The USFWS and BLM will have 30 days to comment on the annual report and provide comments to the BLCC by October 31 of each year.

Chapter 6

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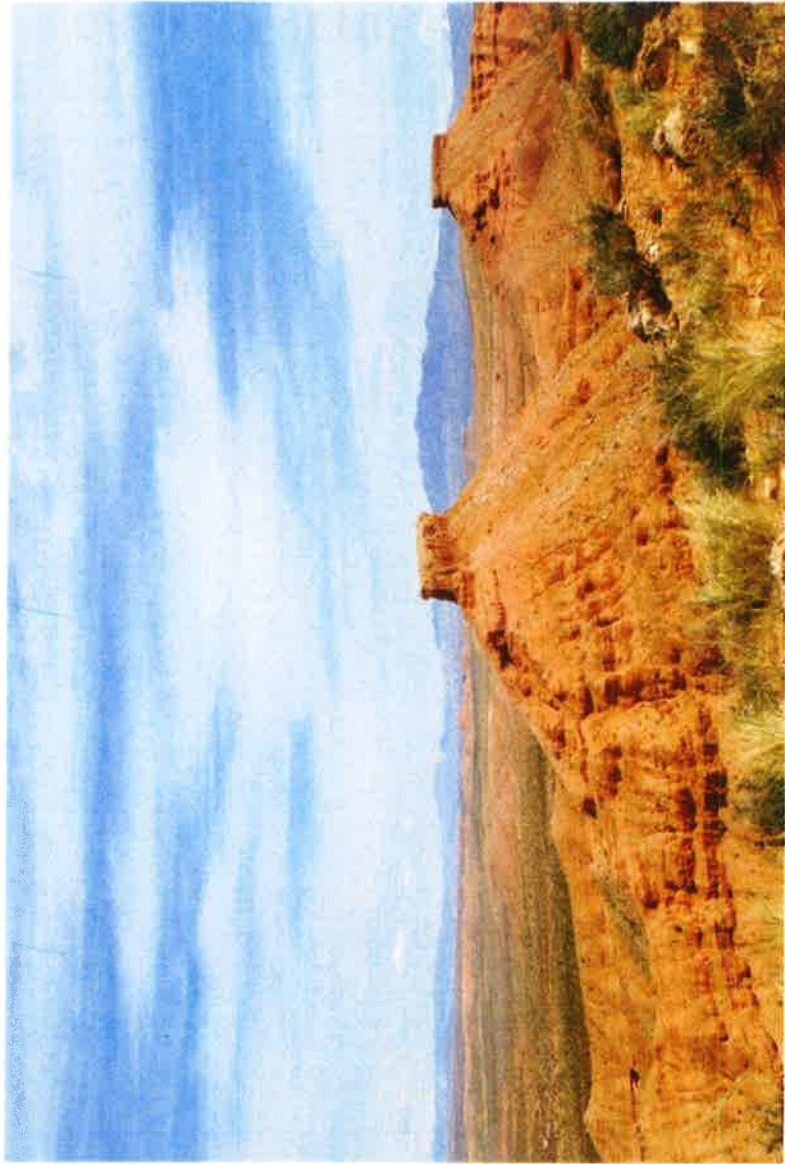
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Appendix A

Representative Site Photos





Appendix B

**Recommended Specifications
for Desert Tortoise Exclusion
Fencing**

CHAPTER 8. DESERT TORTOISE EXCLUSION FENCE

RECOMMENDED SPECIFICATIONS FOR DESERT TORTOISE EXCLUSION FENCING

These specifications were developed to standardize fence materials and construction procedures to confine tortoises or exclude them from harmful situations, primarily roads and highways. Prior to commencing any field work, all field workers should comply with all stipulations and measures developed by the jurisdictional land manager and the U.S. Fish and Wildlife Service for conducting such activities in desert tortoise habitat, which will include, at a minimum, completing a desert tortoise education program.

Fence Construction

Materials

Fences should be constructed with durable materials (*i.e.*, 16 gauge or heavier) suitable to resist desert environments, alkaline and acidic soils, wind, and erosion. Fence material should consist of 1-inch horizontal by 2-inch vertical, galvanized welded wire, 36 inches in width. Other materials include: Hog rings, steel T-posts, and smooth or barbed livestock wire. Hog rings should be used to attach the fence material to existing strand fence. Steel T-posts (5 to 6-foot) are used for new fence construction. If fence is constructed within the range of bighorn sheep, 6-foot T-posts should be used (see New Fence Construction below). Standard smooth livestock wire fencing should be used for new fence construction, on which tortoise-proof fencing would be attached.

Retrofitting Existing Livestock Fence

Option 1 (see enclosed drawing). Fence material should be buried a minimum of 12 inches below the ground surface, leaving 22-24 inches above ground. A trench should be dug or a cut made with a blade on heavy equipment to allow 12 inches of fence to be buried below the natural level of the ground. The top end of the tortoise fence should be secured to the livestock wire with hog rings at 12 to 18-inch intervals. Distances between T-posts should not exceed 10 feet, unless the tortoise fence is being attached to an existing right-of-way fence that has larger interspaces between posts. The fence must be perpendicular to the ground surface, or slightly angled away from the road, towards the side encountered by tortoises. After the fence has been installed and secured to the top wire and T-posts, excavated soil will be replaced and compacted to minimize soil erosion.

Option 2 (see enclosed drawing). In situations where burying the fence is not practical because of rocky or undigable substrate, the fence material should be bent at a 90E angle to produce a lower section approximately 14 inches wide which will be placed parallel to, and in direct

contact with, the ground surface; the remaining 22-inch wide upper section should be placed vertically against the existing fence, perpendicular to the ground and attached to the existing fence with hog rings at 12 to 18-inch intervals. The lower section in contact with the ground should be placed within the enclosure in the direction of potential tortoise encounters and level with the ground surface. Soil and cobble (approximately 2 to 4 inches in diameter; can use larger rocks where soil is shallow) should be placed on top of the lower section of fence material on the ground covering it with up to 4 inches of material, leaving a minimum of 18 inches of open space between the cobble surface and the top of the tortoise-proof fence. Care should be taken to ensure that the fence material parallel to the ground surface is adequately covered and is flush with the ground surface.

New Fence Construction

Options 1 or 2 should be followed except in areas that require special construction and engineering such as wash-out sections (see below). T-posts should be driven approximately

24 inches below the ground surface spaced approximately 10 feet apart. Livestock wire should be stretched between the T-posts, 18 to 24 inches above the ground to match the top edge of the fence material; desert tortoise-proof fencing should be attached to this wire with hog rings placed at 12 to 18-inch intervals. Smooth (barb-less) livestock wire should be used except where grazing occurs.

If fence is constructed within the range of bighorn sheep, two smooth-strand wires are required at the top of the T-post, approximately 4 inches apart, to make the wire(s) more visible to sheep. A 20 to 24-inch gap must exist between the top of the fence material and the lowest smooth-strand wire at the top of the T-post. The lower of the top two smooth-strand wires must be at least 43 inches above the ground surface.

(72-inch T-posts: 24 inches below ground + 18 inches of tortoise fence above ground + 20 to 24-inch gap to lower top wire + 4 inches to upper top wire = 66 to 70 inches).

Inspection of Desert Tortoise Barriers

The risk level for a desert tortoise encountering a breach in the fence is greatest in the spring and fall, particularly around the time of precipitation including the period during which precipitation occurs and at least several days afterward. All desert tortoise fences and cattleguards should be inspected on a regular basis sufficient to maintain an effective barrier to tortoise movement. Inspections should be documented in writing and include any observations of entrapped animals; repairs needed including bent T-posts, leaning or non-perpendicular fencing, cuts, breaks, and gaps; cattleguards without escape paths for tortoises or needed maintenance; tortoises and tortoise burrows including carcasses; and recommendations for supplies and equipment needed to complete repairs and maintenance.

All fence and cattleguard inventories should be inspected at least twice per year. However, during the first 2 to 3 years all inspections will be conducted quarterly at a minimum, to identify and document breaches, and problem areas such as wash-outs, vandalism, and cattleguards that fill-in with soil or gravel. GPS coordinates and mileages from existing highway markers should be recorded in order to pinpoint problem locations and build a database of problem locations that may require more frequent checking. Following 2 to 3 years of initial inspection, subsequent inspections should focus on known problem areas which will be inspected more frequently than twice per year. In addition to semi-annual inspections, problem areas prone to wash-outs should be inspected following precipitation that produces potentially fence-damaging water flow. A database of problem areas will be established whereby checking fences in such areas can be done efficiently.

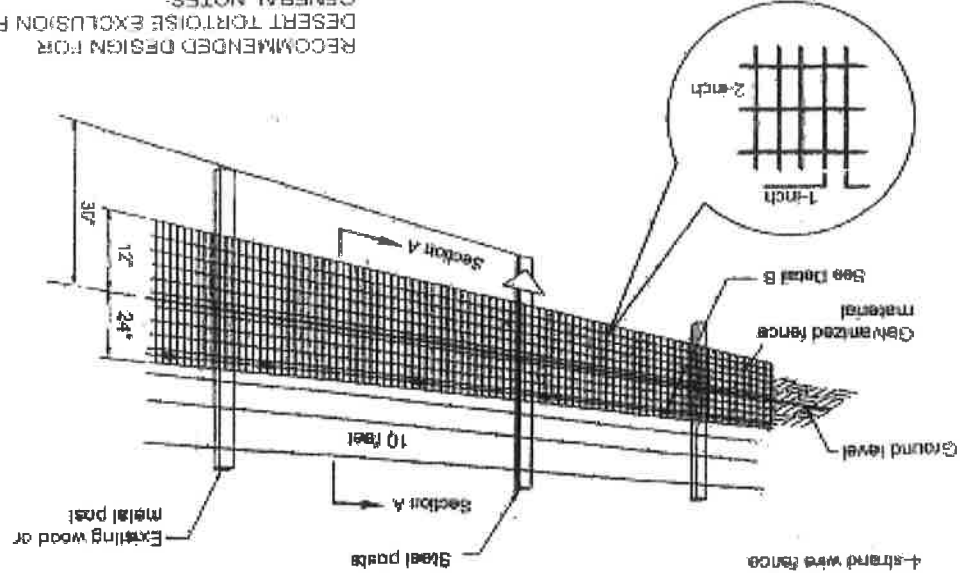
Repair and Maintenance of Desert Tortoise Barriers

Repairs of fence wash-outs: (1) realign the fence out of the wash if possible to avoid the problem area, or (2) re-construct tortoise-proof fencing using techniques that will ensure that an effective desert tortoise barrier is established that will not require frequent repairs and maintenance.

Gaps and breaks will require either: (a) repairs to the existing fence in place, with similar diameter and composition of original material, (b) replacement of the damaged section to the nearest T-post, with new fence material that original fence standards, (c) burying fence, and/or (d) restoring zero ground clearance by filling in gaps or holes under the fence and replacing cobble over fence constructed under Option 2. Tortoise-proof fencing should be constructed and maintained at cattleguards to ensure that a desert tortoise barrier exists at all times.

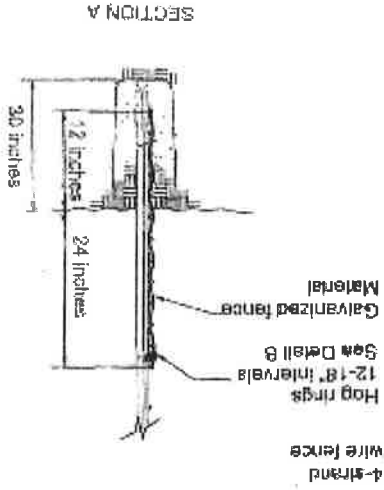
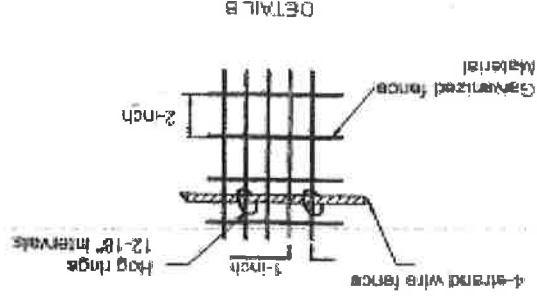
All fence damage should be repaired in a timely manner to ensure that tortoises do not travel through damaged sections. Similarly, cattleguards will be cleaned out of deposited material underneath them in a timely manner. In addition to periodic inspections, debris should be removed that accumulates along the fence. All cattleguards that serve as tortoise barriers should be installed and maintained to ensure that any tortoise that falls underneath has a path of escape without crossing the intended barrier.

DESERT TORTOISE EXCLUSION FENCE (2005)



RECOMMENDED DESIGN FOR
DESERT TORTOISE EXCLUSION FENCE
GENERAL NOTES:

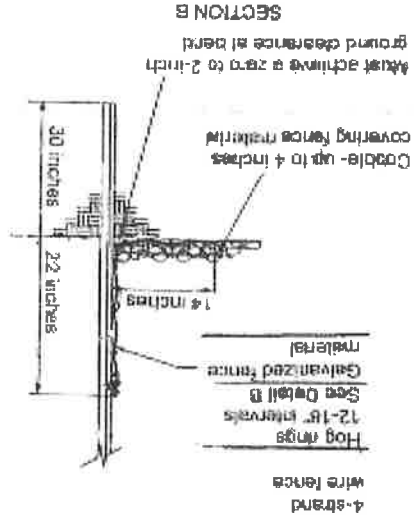
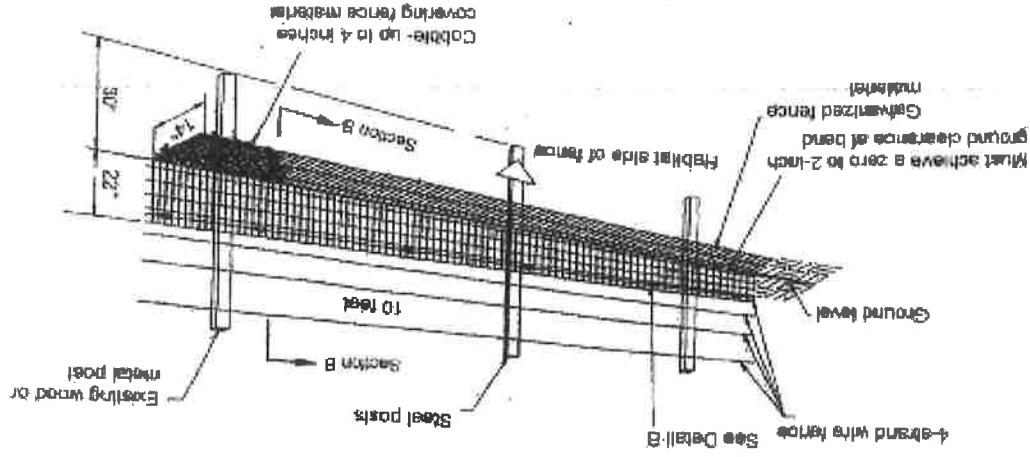
1. Ensure that fence posts and materials conform to the standards approved by the U. S. Fish and Wildlife Service.
2. Ensure that the height above ground level is no less than 16 inches and no higher than 24 inches.
3. Ensure that the depth of fence material below ground level is about 12 inches but no less than 6 inches. (See SECTION A above)
4. Install additional steel posts when span between existing fence posts exceed 10 feet.
5. Attach fence material to existing fence or wire using hog rings at 12-inch intervals.
6. Fasten fence material to posts with 3 tie wires with a wire near the top, bottom, and center of the fence material.



7. Backfill trenches with excavated material and compact the material.
8. Attach fence material to all gates. Ensure that clearance at base of gate achieves zero ground clearance.
9. Substitute smooth wire for barbed wire if additional support wires are necessary.
10. The number and placement of support wires may be modified to allow sheep and deer to pass safely.
11. Erosion at the edge of the fence material where the fence crosses washes may occur and requires appropriate and timely monitoring and repair.
12. Tie the fence into existing culverts and colligations when determined necessary to allow closed tortoise passage under nearby roadways.

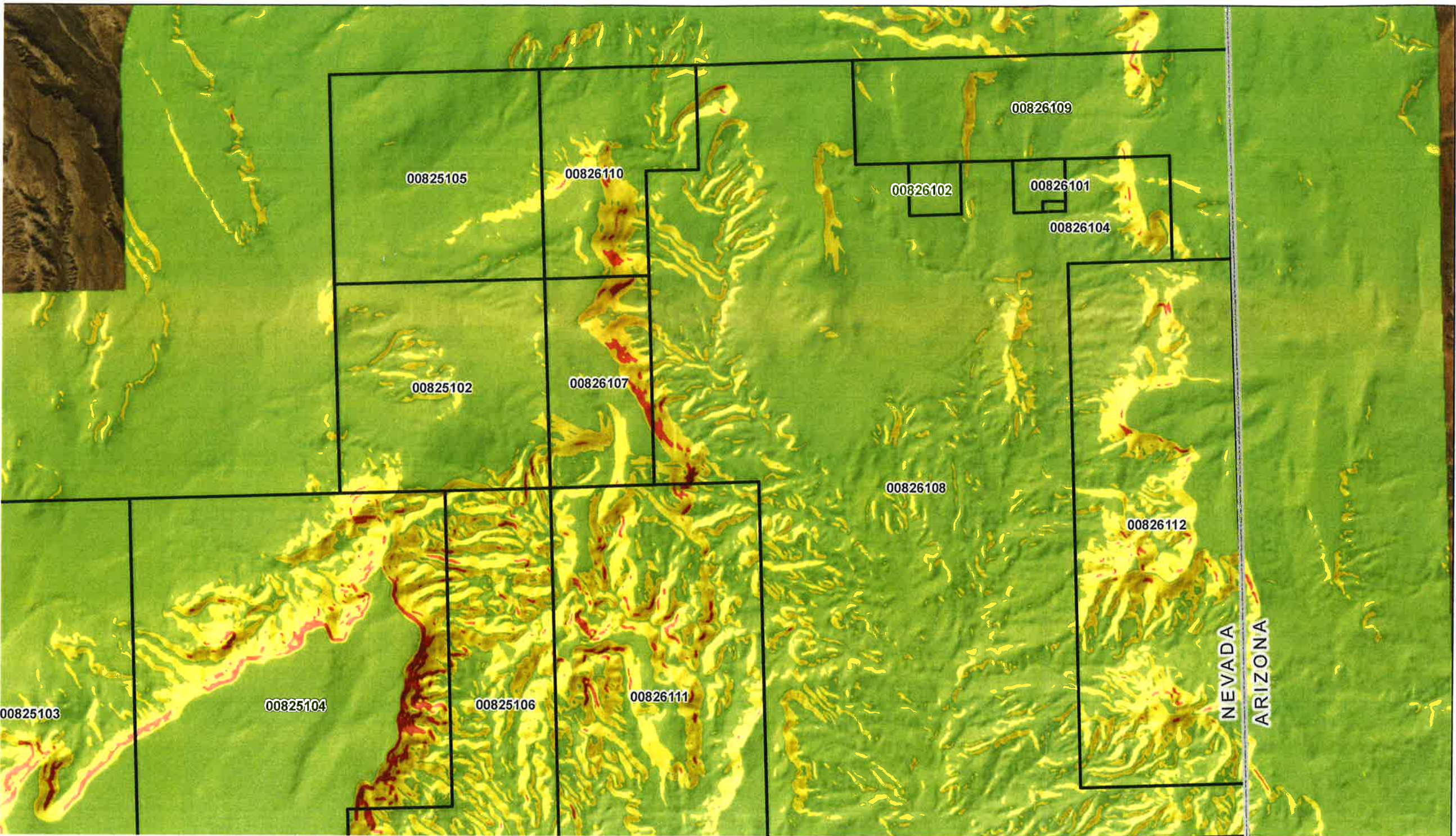
FOR BEDROCK OR CALICHE SUBSTRATE

1. Use this fence design (see below) only for that portion of the fence where fence material cannot be placed 8 inches below existing ground level due to presence of bedrock, large rocks or caliche substrate.
2. Ensure that the fence height above ground level is no less than 22 inches.
3. Ensure that there is a zero to 2-inch ground clearance at the bend.
4. Ensure that the bent portion of the fence is lying on the ground and pointed in the direction of desert tortoise habitat.
5. Cover the portion of the fence that is flush with the ground with cobble (rocks placed on top of the fence material to a vertical thickness up to 4 inches).
6. When substrate no longer is composed of bedrock or caliche, install fence using design shown above.



Appendix C

Suitability Analysis for Desert Tortoise Movement across the LCLA Perimeter



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NEVADA

ARIZONA

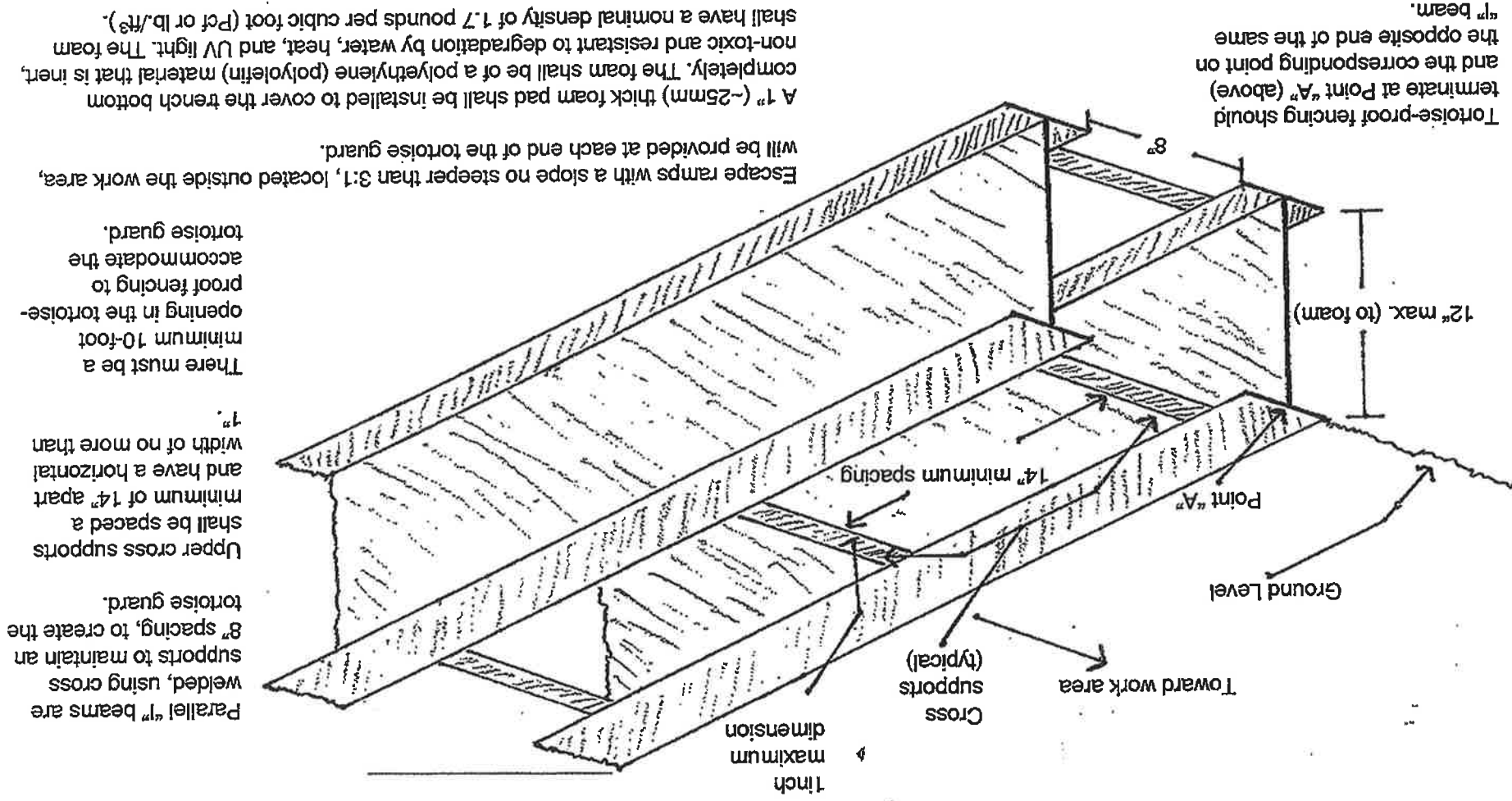
Appendix D

Tortoise Guard Specifications and Photos



Tortoise Guard Specifications

SNWA 11/ 2006



Parallel "1" beams are welded, using cross supports to maintain an 8" spacing, to create the tortoise guard.

Upper cross supports shall be spaced a minimum of 14" apart and have a horizontal width of no more than 1".

There must be a minimum 10-foot opening in the tortoise-proof fencing to accommodate the tortoise guard.



Shaping the Future

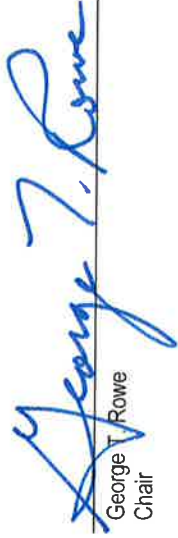


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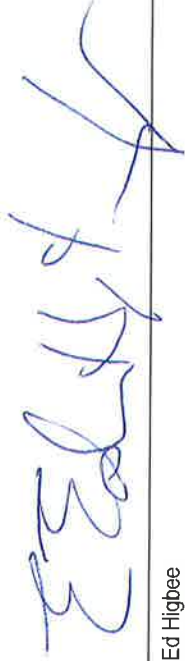
Signatures

This Plan has been prepared by Cardno ENTRIX on behalf of Lincoln County. **IN WITNESS THEREOF**, the Parties (Lincoln County Commissioners) hereto have caused this Lincoln County Land Act Road, Fence, and Trail Plan for the Southeastern Lincoln County Habitat Conservation Plan to be executed and to be in effect as of February 6, 2012.


George T. Rowe
Chair

2-6-12

Date



Ed Higbee
Vice-Chair

2-6-12

Date



Paul Mathews

2-6-12

Date



Kevin Phillips

2-6-12

Date



Paul Donchue

2-6-12

Date

February 2012

Cardno ENTRIX

Signatures i

