

**WASHINGTON COUNTY, UTAH  
DESERT TORTOISE INCIDENTAL TAKE PERMIT  
APPLICATION/DOCUMENTS  
Part III**

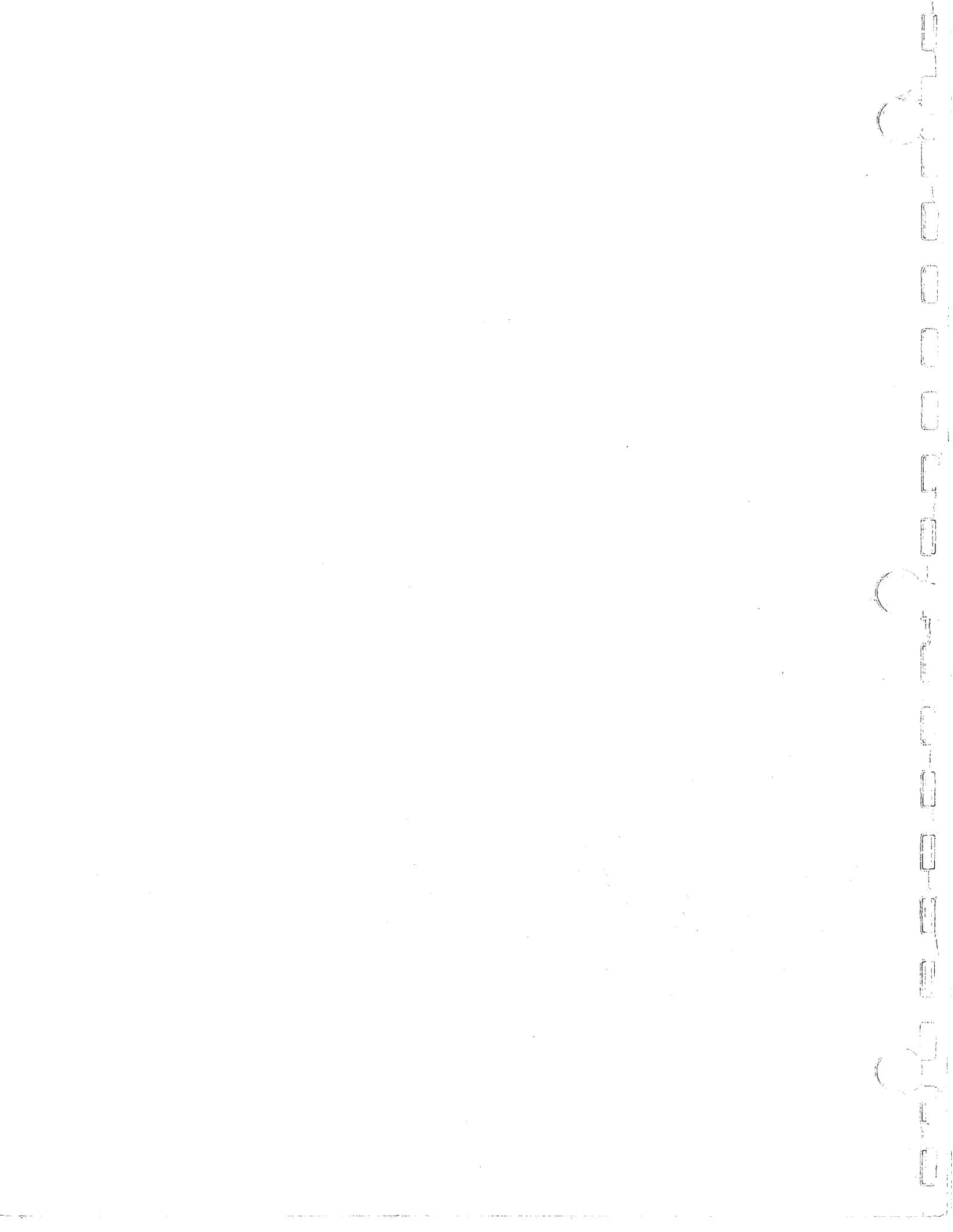
**Final  
Environmental Impact Statement  
for  
Incidental Take Permit Issuance for Desert Tortoise  
Washington County, Utah**

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**Prepared by  
U.S. Fish and Wildlife Service**

**December 1995**





**Final  
Environmental Impact Statement for  
Incidental Take Permit Issuance for Desert Tortoise  
For Washington County, Utah**

Lead Agency:

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Fish and Wildlife Service - Region 6

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**ABSTRACT:** This Final Environmental Impact Statement documents the analysis of three alternatives that were developed for obtaining a section 10(a) permit under the Endangered Species Act for the incidental take of Mojave desert tortoise in Washington County, Utah. The alternatives are: (A) No Action, as required by the National Environmental Policy Act; (B) Issuance of a section 10(a) permit based on the proposed Habitat Conservation Plan with a reserve of 61,022 acres and 12,264 acres of take; or (C) Issuance of a section 10(a) permit based on a Habitat Conservation Plan with a reserve of 44,504 acres and 15,094 acres of take. The selected alternative will guide growth and development in Washington County for the next twenty years, as well as determine the extent of protection afforded the threatened Mojave desert tortoise in the Upper Virgin River Recovery Unit.

**NOTE TO REVIEWERS:** Reviewers should provide the U.S. Fish and Wildlife Service (USFWS) with their comments during the review period. This will enable USFWS to analyze and respond to comments at one time and to use the information to prepare the Final Environmental Impact Statement, thus avoiding undue delay in the decision-making process. Reviewers have an obligation to structure their participation in the National Environmental Policy Act process so that it is meaningful and will alert the agency to reviewers' positions and contentions. Environmental objections that could have been raised at the draft stage may be waived if not raised until after the completion of the Final Environmental Impact Statement (*Wisconsin Heritages, Inc. v. Harris, 490 F. Supp. 1334, 1338 [E.D. Wis. 1980]*). Comments should be specific and should address the adequacy of the statement and merits of the alternatives discussed (40 C.F.R 1503.3).

December 1995



## TABLE OF CONTENTS

LIST OF ACRONYMS .....	iii
EXECUTIVE SUMMARY .....	v
CHAPTER 1.0 PURPOSE OF AND NEED FOR ACTION .....	1
1.1 INTRODUCTION .....	1
1.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTION .....	1
1.3 DECISION TO BE MADE .....	5
1.4 PUBLIC SCOPING SUMMARY .....	5
1.5 ISSUES ELIMINATED FROM FURTHER ANALYSIS .....	7
1.6 MAJOR ISSUES TO BE ANALYZED .....	8
1.7 PLANS, LAWS AND POLICIES .....	9
1.8 PREVIEW OF THE REMAINING CHAPTERS .....	16
CHAPTER 2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION .....	17
2.1 ALTERNATIVES ELIMINATED FROM FURTHER ANALYSIS .....	17
2.2 ALTERNATIVES CONSIDERED .....	19
2.3 COMPARISON OF ALTERNATIVES MATRIX .....	35
CHAPTER 3.0 AFFECTED ENVIRONMENT .....	37
3.1 GENERAL ENVIRONMENTAL SETTING .....	37
3.2 RESOURCES ELIMINATED FROM FURTHER CONSIDERATION ..	37
3.3 SOCIOECONOMICS .....	40
3.4 LAND OWNERSHIP, USE, AND MANAGEMENT .....	48
3.5 AGRICULTURAL RESOURCES .....	51
3.6 THREATENED, ENDANGERED, CANDIDATE, AND SENSITIVE SPECIES .....	52
3.7 WATER RESOURCES .....	64
3.8 VISUAL RESOURCES .....	71
3.9 WILDLIFE RESOURCES .....	72
CHAPTER 4.0 ENVIRONMENTAL CONSEQUENCES .....	75
4.1 ALTERNATIVE A: NO ACTION .....	75
4.2 ALTERNATIVE B (PROPOSED ACTION): SECTION 10(a) PERMIT ISSUED BASED ON PROPOSED HCP .....	84
4.3 ALTERNATIVE C: SECTION 10(a) PERMIT BASED ON HCP WITH A SMALLER RESERVE .....	97
CHAPTER 5.0 LIST OF PREPARERS AND AGENCIES CONSULTED .....	105
5.1 LIST OF PRIMARY PREPARERS .....	105
5.2 INDIVIDUALS AND AGENCIES CONSULTED .....	105

CHAPTER 6.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS RECEIVING THE NOTICE OF AVAILABILITY OF DRAFT EIS . . . . .	107
BIBLIOGRAPHY . . . . .	127
APPENDIX . . . . .	133

**LIST OF TABLES**

Table 1.1.	Comparison of Effects of Alternatives on the Desert Tortoise . . . . .	5
Table 2.1.	Amount of Desert Tortoise Habitat in Incidental Take Areas . . . . .	21
Table 2.2.	HCP Reserve Management Zone Locations and Acreage . . . . .	22
Table 2.3.	HCP Budget Items. . . . .	29
Table 2.4.	Amount of Desert Tortoise Habitat in Incidental Take Areas. . . . .	33
Table 2.5.	HCP Reserve Management Zone Locations and Acreage. . . . .	33
Table 3.1.	Real Estate Tax Notices Mailed by the County Assessor . . . . .	42
Table 3.2.	Percentages of Primary and Secondary Homes, 1985, 1990, and 1993 . . . . .	43
Table 3.3.	Primary and Secondary Housing in Washington County by Type . . . . .	44
Table 3.4.	Land Ownership in Washington County. . . . .	49
Table 3.5.	Grazing Allotments That Could be Impacted by the Action Alternatives. . . . .	51
Table 3.6.	Threatened, Endangered, Candidate, and Sensitive Species Potentially Affected by the Alternatives . . . . .	53
Table 3.7.	Federal and/or State Listed or Candidate/Sensitive Species Unaffected by the Alternatives. . . . .	65
Table 3.8.	Suspended Solids near Virgin, Hurricane, and Littlefield. . . . .	67
Table 3.9.	Water Budget for Washington County in 1989 . . . . .	69
Table 3.10	Non-sensitive Species with Potential to Occur Within Reserve or Take Areas . . . . .	72
Table 4.1.	Economic Evaluation of the No Action Alternative . . . . .	76
Table 4.2	Economic Evaluation of Alternative B . . . . .	85
Table 4.3	Economic Evaluation of Alternative C . . . . .	98

**LIST OF FIGURES**

Figure 1.1	Project Location . . . . .	3
Figure 1.2	Desert Tortoise Habitat within Washington County . . . . .	4
Figure 1.3	Proposed Upper Virgin River DWMA . . . . .	12
Figure 2.1	Alternative B Reserve Management Zones . . . . .	23
Figure 2.2	Alternative C Reserve Management Zones . . . . .	31
Figure 3.1	Population Growth in Washington County & St. George City:1960 - 1993 . . . . .	41
Figure 3.2	St. George City Building Permits from 1982 to 1993 . . . . .	42
Figure 3.3	Building Permit Data for Washington County . . . . .	43
Figure 3.4	Washington County School Enrollment . . . . .	44
Figure 3.5	Habitats of Federally Listed Species . . . . .	54

## LIST OF ACRONYMS

ACOE	Army Corps of Engineers
af	acre-foot
AMP	Allotment Management Plan
AUM	Animal Unit Month
BLM	Bureau of Land Management
cfs	cubic feet per second
CWA	Clean Water Act
DIVISION	Utah Division of State Lands and Forestry
DTRP	Desert Tortoise Recovery Plan
DWMA	Desert Wildlife Management Area
EIS	Environmental Impact Statement
ESA	Endangered Species Act
HCP	Habitat Conservation Plan
MFP	Management Framework Plan
MVP	Minimum Viable Population
NEPA	National Environmental Policy Act
NPS	National Park Service
OHV	Off-Highway Vehicle
RMP	Proposed Dixie Resource Management Plan
SRMA	Special Recreational Management Areas
TE&S	Threatened, Endangered, and Sensitive
UDNR	Utah Department of Natural Resources
UDWR	Utah Division of Wildlife Resources
URTD	Upper Respiratory Tract Disease
USFWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service
USGS	U.S. Geological Service
USPR	Utah State Parks and Recreation
VRBIRM&RP	Virgin River Basin Integrated Resource Management and Resource Program
WCWCD	Washington County Water Conservancy District



## EXECUTIVE SUMMARY

### INTRODUCTION

Washington County, Utah, has developed a county-wide Habitat Conservation Plan (HCP) as part of the application process for a section 10(a) Incidental Take Permit for Mojave desert tortoise under the Endangered Species Act (ESA). The HCP provides for establishment of a desert tortoise reserve using Bureau of Land Management (BLM), State, and private lands. In order to comply with provisions of the National Environmental Policy Act (NEPA), the U.S. Fish and Wildlife Service (USFWS) has prepared this EIS to assess effects of the HCP and alternatives (including No Action) on relevant environmental resources.

### PURPOSE OF AND NEED FOR ACTION

The purpose of the HCP and issuance of a section 10(a) permit is to resolve conflicts between economic growth in Washington County and the continued survival of the Mojave desert tortoise. A wildlife reserve would be established, a portion of which currently supports desert tortoises. This action would allow development to continue legally in desert tortoise habitat in the Upper Virgin River Recovery Unit in Washington County.

The need for a section 10(a) permit and HCP has come about because of rapid growth occurring in Washington County. The mild climate and scenic beauty of this region has attracted many people to the area. A large portion of this growth occurred in and around the cities of St. George, Washington, Ivins, Hurricane, and Springdale. The human population in Washington County is expected to increase with rates between 66 and 186 percent by the year 2010.

The unique geography of the area provides habitat for a variety of plant and animal life, including nine species currently listed as threatened or endangered by USFWS. Among these species is the Mojave desert tortoise. The desert tortoise was officially listed as threatened in April 1990 because of an alarming decline in monitored populations. The decline was felt to be a result of a number of factors, including habitat degradation, direct mortality resulting from human contact, predation, and an upper respiratory tract disease (URTD) (USFWS 1994a). As a result of the listing, desert tortoises are protected from "take." The definition of "take" in the ESA includes the term "harm," which has been further defined to include activities that would modify or degrade habitat in a way that significantly impairs essential behavior patterns (50 C.F.R. § 17.3). Therefore, any activity that may result in the take of desert tortoises or their habitat is prohibited under provisions of the ESA.

In 1982, the ESA was amended to help resolve conflicts between private land use for economic development and protection of threatened or endangered species. Section 10(a)(1)(B) of the ESA allows USFWS to issue a permit to private landowners (including city, County and State lands) that allows take of a listed species provided that such take is incidental to and not the purpose of carrying out an otherwise lawful activity. Washington County is applying for a section 10(a) permit for the Mojave desert tortoise. No other listed species would be included on the permit.

## DECISION TO BE MADE

A decision must be made as to which of the following three alternatives would most benefit the survival of the desert tortoise, yet allow continued growth in Washington County:

- Alternative A – No Action, as required by NEPA.
- Alternative B (Proposed Action) – Issuance of a section 10(a) permit based on the proposed HCP.
- Alternative C – Issuance of a section 10(a) permit based on an HCP with a smaller reserve and greater area of take.

Table ES1 compares the impacts to desert tortoise habitat and individual animals under each of the alternatives.

**Table ES1. Comparison of Effects of Alternatives on Desert Tortoise.**

<u>Alternative</u>	<u>Reserve Acres</u>	<u>Take Acres</u>	<u>Potential Habitat Acres</u>	<u>Estimated # Tortoises Taken</u>
A	0	0	0	0
B	61,022	12,264	11,832	1,169
C	44,504	15,094	11,832	1,709

## PUBLIC SCOPING SUMMARY

In December 1991, five public meetings were held in Washington County to provide an opportunity for the public to learn about and comment on the Proposed Action and alternatives. Attendance at all public scoping meetings totalled 84 people. Public input ranged from support of the HCP and protection of the desert tortoise to expressions of anti-government feelings and a belief that desert tortoises are not native to the St. George area. Eight major issues, concerns, and ideas were raised during the public scoping meetings. An additional comment period, including a public open house, occurred in February 1995 to update the public on changes made to the proposed HCP since the last public meetings. No new concerns were raised during this comment period.

## ISSUES ELIMINATED FROM FURTHER ANALYSIS

The issue of whether desert tortoises are native to the St. George area was eliminated from further analysis because desert tortoises in Washington County are part of the Mojave Desert population and are therefore protected under section 9 of the ESA regardless of their origin. The constitutionality of the ESA was eliminated from further analysis because it is beyond the scope of this analysis.

## **MAJOR ISSUES TO BE ANALYZED**

Based on input from the public, government agencies, and the HCP Steering Committee, seven major issues have been identified for further analysis: 1) Impacts on Washington County's economy; 2) Impacts on threatened, endangered, and sensitive species in Washington County; 3) Impacts on multiple-use activities in non-take areas; 4) Impacts on State School Trust Lands; 5) Impacts on private landowners; 6) Impacts on livestock grazing and other agricultural practices; and 7) Impacts on Virgin River flow.

## **ALTERNATIVES INCLUDING THE PROPOSED ACTION**

Three alternatives have been developed for analysis in this EIS. These alternatives include the NEPA-required No Action Alternative and two action alternatives based on issuance of a section 10(a) permit. The first of these is the Proposed Action Alternative. Five other alternatives were eliminated from further analysis due to their lack of feasibility.

Under the No Action Alternative (Alternative A), no HCP would be prepared, and Washington County would not pursue a section 10(a) permit. Current project-by-project enforcement of the ESA would continue, resulting in individual section 7 and 10(a) permits and section 9 enforcement. No privately funded, large-scale implementation of the Desert Tortoise Recovery Plan (DTRP) would be undertaken, and State and Federal agencies would be responsible for implementing the proposed Upper Virgin River Desert Wildlife Management Area (DWMA).

Under the Proposed Action Alternative (Alternative B), a section 10(a) permit would be issued subject to terms and conditions of the HCP that has been developed by Washington County. The incidental take estimated for this alternative is 12,264 acres of desert tortoise habitat and 11,832 acres of potential habitat. Primary mitigation for take of desert tortoise habitat would be acquisition and management of lands that would be made into a reserve. The reserve would encompass 61,022 acres of land, over half of which would be desert tortoise habitat. The remaining acreage within the reserve would provide habitat for other wildlife species. The reserve lands would be acquired through land purchases and exchanges. Management of the reserve would include fencing reserve boundaries; prohibiting specific activities in areas of high sensitivity; acquiring all grazing permits and prohibiting further grazing at critical times of the year; managing all free-roaming dogs and feral animals within the reserve; and enforcing all Federal, State and local regulations within the reserve.

Also under the Proposed Action, Washington County would be responsible for conducting desert tortoise surveys in take areas prior to development. If desert tortoises were found in these areas, a number of them would be translocated by USFWS. In addition, an environmental education center would be created to help inform people about the values of ecosystems found within the County.

Sources of permanent funding for the HCP would include a county-wide fee assessed when building permits are issued. The fee would be equal to 0.2 percent of total construction costs. A second county-wide fee of \$250.00 per acre would be assessed to developers of subdivisions,

condominiums, town homes, or planned unit developments. It is estimated that over the 20-year period of the section 10(a) permit, revenues from these fees would exceed \$9 million. Of this total, approximately \$7 million would be expended on desert tortoise preservation. The balance would be expended on other threatened, endangered, and sensitive species within the County. Washington County expects to enter into cost sharing agreements with the Utah Department of Transportation, Utah Department of Wildlife Resources, and USFWS for additional funding of the HCP. It is estimated that total cost of the HCP would be \$11,555,000.

Alternative C is similar to the Proposed Action; however, the expected incidental take of desert tortoise habitat would be greater and the size of the reserve would be reduced. The area of incidental take of desert tortoise habitat would be 15,094 acres, and size of the reserve would be 44,504 acres. This smaller reserve may not meet all requirements outlined in the DTRP for the Upper Virgin River DWMA. The proposed DWMA (which would be larger than the 44,483-acre reserve) is considered to be: "...too small to ensure adequate probability of population persistence without careful management" (USFWS 1994a). The reserve would be managed following guidelines of the DTRP; however, more intensive management would be required to ensure desert tortoise population persistence within the reserve.

## **AFFECTED ENVIRONMENT**

The following resources may be impacted by one or more of the alternatives.

### **Socioeconomics**

Southern Washington County is experiencing higher growth rates than other areas of Utah because of its favorable climate and living conditions. The human population of the County increased by 83 percent between 1980 and 1990. This population growth has influenced development of the area in terms of housing, education, and industry.

### **Land Ownership, Use, and Management**

Table ES2 presents the acreage and percentage of lands in Washington County owned by the Federal government, State of Utah, and private individuals (including lands owned by municipalities).

The majority of Federal lands in Washington County are managed by the BLM. Primary multiple uses of these public lands are mining, grazing, and recreation. All BLM lands which have not been withdrawn are generally subject to mineral entry. There are currently 1,192 registered mining claims on approximately 22,800 acres of BLM-managed lands in the County.

Commercial cutting of timber is not permitted on BLM lands. However, cutting of dead-and-down woody material by private individuals is allowed if permits are obtained. Cutting of live green trees is not allowed except for management purposes.

**Table ES2. Land Ownership in Washington County.**

<u>Land Status</u>	<u>Acres</u>	<u>Percent</u>
Federal	1,176,289	76%
State	94,747	6%
Private	280,964	18%
Total	<u>1,552,000</u>	<u>100%</u>

Recreational opportunities are an important aspect of BLM lands in the County, partly because of the scenic beauty of lands adjacent to Zion National Park. For this reason, off-highway vehicle (OHV) use is restricted in areas adjacent to the national park. Five special recreation management areas (SRMAs) have been proposed on BLM lands within Washington County. Each of these SRMAs will be managed to optimize recreational opportunities specific to that area.

All State lands in the County are managed by the Utah Division of State Lands and Forestry (Division), except for Snow Canyon State Park. State lands are available for a variety of recreational opportunities; however, some recreational activities such as OHV use and hunting are restricted in Snow Canyon State Park. A limited amount of mining and woodcutting are permitted on State lands.

Privately owned lands are not subject to use restrictions as long as Federal, State, and local laws, regulations, and ordinances are not being violated.

### **Agricultural Resources**

Currently, BLM lands in Washington County include 110 grazing allotments that support cattle, sheep, and horses. The BLM is responsible for preparing Allotment Management Plans (AMPs) for all grazing allotments. Four grazing allotments, listed in Table ES3, would be impacted by the action alternatives. No farmlands would be impacted by the Proposed Action or other alternatives.

### **Threatened, Endangered, Candidate, and Sensitive Species**

Nine Federally listed threatened or endangered species found in Washington County are expected to be affected by one or more of the three alternatives. They are the Mojave desert tortoise, Mexican spotted owl, bald eagle, peregrine falcon, woundfin, Virgin River chub, dwarf bear-poppy, Siler pincushion cactus, and southwestern willow flycatcher. In addition, 25 candidate species currently under consideration by USFWS for listing as threatened or endangered may be affected.

**Table ES3. Grazing Allotments That Could Be Impacted by the Action Alternatives.**

<u>Name</u>	<u>Total Acreage</u>	<u>Federal AUMs</u>	<u>State AUMs</u>
Alger Hollow	16,878	741	124
Yellow Knolls	2,053	16	0
Washington	20,563	256	870
Red Cliffs	19,022	425	0

### **Water Resources**

Water resources have been a valuable commodity in Washington County since early settlement began in the 1800s. Seven topics must be addressed in order to understand current and future trends that may affect this resource: surface water, groundwater, water quality, water rights, water budgets, present water use, and potential water development.

The Virgin River is the largest watercourse in Washington County. Fed by numerous tributaries, it carries run-off from rain and snowmelt into Lake Mead in Nevada, although frequently sinking into the desert before reaching Lake Mead.

Residents and industry rely heavily on groundwater supplies. Groundwater occurs in both consolidated and unconsolidated rock within the Virgin River Basin. Perched groundwater aquifers are also found within the Basin where underlying strata are impervious to water above aquifers.

Water quality can be affected by several determinants, including biological contaminants, dissolved solids, and suspended solids. Although biological contamination is not a serious problem in the Virgin River Basin, a water treatment plant was built to ensure that clean water is available to human residents of the area. Dissolved solids are the main water quality problem in the Virgin River, with highest concentrations in the reach between La Verkin Springs and St. George. The majority of suspended solids, or sediments, are carried through the Virgin River Basin during high flow periods in spring and summer. High concentrations of sediment increase treatment costs for municipal water supplies.

The diversion and use of water for municipal/industrial and agricultural purposes requires an approved water right application. The Utah Division of Water Rights State Engineer administers water rights within the State. Two issues have the potential of affecting water rights in the Virgin River Basin: adjudication and Federal reserved water rights.

Water budgets have been prepared for 11 areas in Washington County to account for all water flows and uses each year. Water budgets include average water diverted, canal losses due to seepage, run-off and deep percolation, and consumptive use by crops.

Municipal and industrial water is primarily supplied through groundwater wells and springs. Agricultural water is mostly obtained from surface water.

Future water development will be required with the rapid human population increase anticipated for Washington County. Water conservation measures will also likely be required.

### **Visual Resources**

Visual resources in Washington County are varied, and in many cases, spectacular. Zion National Park, on the eastern edge of the County, exhibits exceptional visual resources, particularly in the white cliffs, red rocks, and riparian areas of the Virgin River.

The BLM divided its lands into four inventory classes, with Class I being the highest visual quality ranking and Class IV being the lowest. Within Washington County, only the Beaver Dam Mountains Wilderness Area has received a Class I rating, which is reserved for wilderness areas or similar Congressional designations. About 132,000 acres have received Class II ratings; 333,000 acres have received Class III ratings; and 160,000 acres have received Class IV ratings. Desert tortoise habitat on BLM lands north of Washington City and over to Hurricane are rated Class II, while lands north of St. George are rated Class IV. These classifications apply only to BLM lands.

### **Wildlife Resources**

Due to its location, topography, and climate, Washington County contains a variety of habitats and, in addition to threatened, endangered, and sensitive species, numerous non-sensitive wildlife species. The majority of reserve and take areas are located in the Warm Desert Scrub, while areas higher than 1,200 feet above sea level are located in the Cool Desert Scrub. Additionally, riparian areas, primarily along the Virgin and Santa Clara Rivers, provide habitat for a variety of wildlife species.

## **ENVIRONMENTAL CONSEQUENCES: ALTERNATIVE A (NO ACTION)**

### **Socioeconomics (Alternative A)**

Alternative A would require no additional funds from the County; however, no grading or building permit fees would be collected to fund conservation and mitigation measures for the desert tortoise or other species of concern. Further, no county-wide permit would be issued for incidental take of desert tortoise, leaving land-users to fund their own permits, plans, and mitigation measures as necessary.

When considering the economic impact of the Proposed Action on Washington County it is important to keep in mind the continuing opportunity costs of lands set aside before the HCP is implemented. Opportunity costs are defined as the highest value alternative foregone before making a decision to use a resource in a particular manner. Lands that are to be set aside for the reserve create economic losses to the community equivalent to the social opportunity cost

of the lands. In this sense, the proposed HCP does not create positive net effects on Washington County, rather it reduces the level of economic costs imposed upon the County. However, because avoided costs can be viewed as a benefit, the value of this cost savings should be calculated. The "benefit" of the HCP will be the difference between the economic cost without the HCP and the lower economic costs with the HCP.

The No Action Alternative would deny the County both aesthetic and monetary benefits of the Proposed Action Alternative. Residents would not enjoy the open space, visual quality and protection to wildlife that the reserve would offer, and the County would not gain from increased tourism due to the draw of the reserve and the nature education center. No benefits from the increase in property values of lands adjacent to the reserve would be realized by either the local government or private individuals.

Table ES4 lists the impacts under Alternative A for the following scenarios: 1) Retained Annual Long-run Benefits; 2) Lost Annual Long-run Benefits; 3) Total Lost Construction and Development Values; and 4) Likely Annual Development of Take Areas in the Short Run. All monetary data assume base year values and are expressed in millions of dollars (base year=1996). For purposes of the analysis, it is assumed that all growth and development is stopped on lands identified as containing desert tortoise habitat. However, it is likely that some of the lands would be developed, either with or without a USFWS incidental take permit. It is impossible to quantify what percentage of lands that are desert tortoise habitat would be developed under no action, and which would not. Hence, the assumption that none are developed is made.

**Table ES4. Economic Evaluation of the No Action Alternative.**

Scenario	1996 MMS* Total Industry Output	Jobs Created	Population Supported	Percent Increase in Constrained Long- run Economy
Retained Annual Long-run Benefits	0.00	0.00	0	0.00
Lost Annual Long-run Benefits	-\$1,472.98	-38,349.59	-95,291	16.92
Total Lost Construction and Development Values	-\$34,002.54	N/A	N/A	N/A
Likely Annual Development Benefits of Take Areas	0.00	0.00	0	0.00

\* millions of dollars (base year=1996)

### **Land Ownership, Use, and Management (Alternative A)**

Under Alternative A, there would be no changes to land use on BLM lands. If development were to continue on State and private lands, USFWS may have to be consulted concerning threatened and endangered species.

### **Agricultural Resources (Alternative A)**

There would be no change to agricultural resources under Alternative A.

### **Threatened, Endangered, Candidate, and Sensitive Species (Alternative A)**

Under Alternative A, impacts to Federally listed species on State and private lands would be subject to case-by-case evaluation and consultation with USFWS. Candidate and sensitive species would not be afforded protection under the ESA. However, if some of those species become threatened or endangered in the future, they would then be protected under the ESA.

### **Water Resources (Alternative A)**

Water demand would be expected to increase in Washington County with continued population increase. Conservation measures may be implemented to reduce the amount of additional water necessary for the growing human population.

### **Visual Resources (Alternative A)**

Visual quality may be impacted on State and private lands as a result of maximizing monetary benefit from these lands. BLM lands would continue to be managed according to visual resource management guidelines.

### **Wildlife Resources (Alternative A)**

Continued development of State and private lands would be expected to adversely modify wildlife habitat and eliminate or displace wildlife species. BLM lands would be managed under guidelines outlined in the Dixie Resource Management Plan which is expected to be finalized in the near future.

## **ENVIRONMENTAL CONSEQUENCES: ALTERNATIVE B (PROPOSED ACTION)**

### **Socioeconomics (Alternative B)**

Table ES5 outlines economic impacts of the Proposed Action. Under Alternative B, lost construction and development values and lost annual, long-run benefits are substantially decreased as compared to Alternative A.

## Land Ownership, Use, and Management (Alternative B)

Under this alternative, BLM would contribute 38,034 acres of land to the reserve. Eventually, BLM would manage the majority of reserve lands. No mining or wood cutting would be allowed within the reserve, and certain types of recreation activities would be restricted.

**Table ES5 Economic Evaluation of Alternative B.**

Scenario	1996 MM\$ Total Industry Output	Jobs Created	Population Supported	Percent Increase in Constrained Long- run Economy
Retained Annual Long- run Benefits	\$590.48	15,373.48	38,200	8.17
Lost Annual Long-run Benefits	-\$882.52	-22,976.73	-57,092	10.14
Total Lost Construction and Development Values	-\$18,883.36	N/A	N/A	N/A
Likely Annual Development Benefits of Take Areas	\$16.13	289.00	720	1.16

\* millions of dollars (base year=1996)

Approximately 10,938 acres of State School Trust lands would be contributed to the reserve. In exchange, the State would receive lands of equal value outside the reserve. It is likely that exchange lands which the State would acquire from BLM would have lower development potential; however, they would not be encumbered with ESA compliance requirements. In addition, 4,379 acres of Snow Canyon will be considered part of the reserve. Approximately 2,515 acres of State lands would be in incidental take areas and could be developed.

It is estimated that 7,618 acres of private lands would be incorporated into the reserve. The lands would be exchanged on a value-for-value basis, and private landowners should suffer no net loss of land value. Approximately 9,783 acres of privately-owned lands would be in incidental take areas, and could be developed.

## Agricultural Resources (Alternative B)

Under Alternative B, all current grazing permit holders within the proposed reserve would receive offers to sell their permits according to terms listed in the HCP. The permits would be purchased for both summer and winter areas at an estimated cost of \$120.00 per AUM. The purchase of permits and retirement of grazing from the proposed reserve is expected to benefit the desert tortoise by reducing potential for trampling of individual animals and reducing competition for forage.

Grazing occurs on some portions of BLM land in desert tortoise habitat in Zone 4 north of Hurricane. Grazing in this area is operating under an ESA section 7 permit and would continue to undergo section 7 review under the ESA. It would not be affected by Alternative B.

Grazing on Paiute Tribal Lands would not be affected by Alternative B.

There would be no impacts to farming under this alternative.

### **Threatened, Endangered, Candidate, and Sensitive Species (Alternative B)**

This alternative represents the Proposed Action, which would implement the Washington County HCP under authority of a section 10(a) Incidental Take Permit from USFWS for the Mojave desert tortoise. Under this alternative, a large reserve would be established in desert tortoise habitat west, north, and east of St. George. The reserve would total 61,022 acres, consisting of five distinct zones. The desert tortoise would be protected within the reserve by active management specifically oriented toward protection of the desert tortoise and its habitat and fencing and access and use restrictions, which vary by zone.

Ten incidental take areas are proposed under this alternative, totaling 12,264 acres. Many of the take areas occur in the vicinity of existing rural or urban development. These areas would be subject to take of desert tortoises and/or their habitat through habitat alteration, displacement of individuals, or mortality resulting from development. Multiple use management on BLM lands that are found within take or non-reserve areas would continue to be subject to ESA section 7 consultation with USFWS.

Other TE&S species would benefit from the reserve as well. Negative impacts to other TE&S species as a result of this alternative are insignificant or unknown.

### **Water Resources (Alternative B)**

Any changes in water usage over the next 20 years is considered to be independent actions under the alternatives, including Alternative B. This is because water use is a function of human population, and the population of Washington County is anticipated to increase at the same rate, regardless which alternative is implemented. The alternatives considered in this EIS primarily are concerned with patterns of growth, rather than amount.

### **Visual Resources (Alternative B)**

If Alternative B is adopted, change to visual quality would occur only in take areas. Take areas are, for the most part, adjacent to current population concentrations. Additional development in these areas is not expected to significantly impact visual quality. Exemption of the reserve from development would ensure that visual quality would be maintained and preserved in these areas.

## Wildlife Resources (Alternative B)

The reserve established under this alternative would reduce adverse impacts on wildlife and wildlife habitat resulting from development and OHV use. Hiking, horseback riding, and camping would be restricted to designated areas or trails, vehicles would be restricted to designated roads on much of the reserve, and hunting would be limited to big game and upland bird species during official seasons.

In "take" areas, wildlife may be significantly affected. If development occurs, wildlife may be displaced and existing habitat would likely be modified. Only part of one of the proposed take areas, #8 with 159 acres, lies within priority habitat for big game as delineated by the BLM's proposed Dixie RMP. All other take areas are outside defined big game habitat.

## ENVIRONMENTAL CONSEQUENCES: ALTERNATIVE C

### Socioeconomics (Alternative C)

Adverse economic impacts of this alternative would be lower than those of Alternative B. Table ES6 outlines the economic impacts of this alternative.

**Table ES6. Economic Evaluation of Alternative C.**

Scenario	1996 MM\$ Total Industry Output	Jobs Created	Population Supported	Percent Increase in Constrained Long- run Economy
Retained Annual Long-run Benefits	\$732.83	19,079.55	47,409	10.13
Lost Annual Long-run Benefits	-\$732.81	-19,078.93	047,407	8.42
Total Lost Construction and Development Values	-\$15,771.88	N/A	N/A	N/A
Likely Annual Development Benefits of Take Areas	\$16.13	289.00	720	1.16

\* millions of dollars (base year = 1996)

### Land Ownership, Use, and Management (Alternative C)

Impacts to land ownership would be similar to those under Alternative B, except that reserve acreage would be smaller.

### **Agricultural Resources (Alternative C)**

This alternative would have the same impacts as those described for Alternative B.

### **Threatened, Endangered, Candidate, and Sensitive Species (Alternative C)**

This alternative is a modification of Alternative B, with less total acreage designated as reserve and more acreage designated as "take" areas. The reserve would total 44,504 acres in size, and take areas would total 15,094 acres of State and private lands. Desert tortoises present on these 15,094 acres would be subject to take through habitat alteration, displacement of individuals, or mortality resulting from development. All management of TE&S species in the reserve would be the same as for Alternative B.

### **Water Resources (Alternative C)**

Water usage for Alternative C would be the same as for Alternative B.

### **Visual Resources (Alternative C)**

The impacts to visual quality as a result of this alternative are expected to be worse than under Alternative B. The majority of areas that would be available for development are in desert tortoise population concentration areas with low visual sensitivity; however, more visually sensitive areas, such as Padre and Paradise Canyons, could be developed under this alternative, thus potentially compromising their visual quality.

### **Wildlife Resources (Alternative C)**

Under this alternative, less wildlife habitat would be protected through establishment of a smaller reserve (approximately 27 percent less than under Alternative B). Impacts of the take areas for this alternative on wildlife would be the same as for Alternative B, with the exception of an additional 2,830 take acres, some of which lie within designated priority big game habitat.



## **CHAPTER 1.0 PURPOSE OF AND NEED FOR ACTION**

### **1.1 INTRODUCTION**

In 1991, Washington County (County), Utah appointed a Steering Committee to develop a county-wide section 10(a) Incidental Take Permit application under the Endangered Species Act (ESA) (16 U.S.C. §§ 1531 *et seq.*, as amended) for the Mojave desert tortoise. The purpose of seeking this permit from the U.S. Fish and Wildlife Service (USFWS) is to allow continued growth and development within the County while providing protection for the desert tortoise. The Steering Committee consisted of fifteen members, each representing an interest group or a government agency. Over the last four years, the Steering Committee has developed a county-wide Habitat Conservation Plan (HCP), a required part of the ESA section 10(a) permit application.

In addition to an HCP, section 10(a) of the ESA requires an Implementation Agreement that legally binds the parties, and compliance with the National Environmental Policy Act (NEPA) (42 U.S.C. §§ 4321, *et seq.*, as amended) through preparation of an Environmental Assessment or Environmental Impact Statement (EIS), as appropriate. NEPA review of the Washington County permit application includes this EIS, which analyzes environmental impacts of the proposed Washington County HCP and issuance of the ESA section 10(a) Incidental Take Permit. The EIS has been prepared following Council on Environmental Quality NEPA guidelines, as amended, (40 C.F.R 1500-1508) and the Draft Handbook for HCP Planning and Incidental Take Permit Processing (USFWS 1994b).

### **1.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTION**

The purpose of this action is to resolve conflicts between economic growth in Washington County and the continued survival of the Mojave desert tortoise. Completion of the HCP and issuance of an ESA section 10(a) permit would allow development to continue legally in desert tortoise habitat in Washington County. A 61,022-acre wildlife reserve would be established that would include 38,787 acres of habitat currently supporting desert tortoises. Habitat would also be available for other Federally listed, candidate, and State sensitive species.

The need for an ESA section 10(a) permit for "take" of the Mojave desert tortoise has come about because of rapid human population growth occurring in Washington County, which is located in southwestern Utah (Figure 1.1). The mild climate and scenic beauty of this region has attracted many people. Between 1980 and 1990 the human population grew by 86.3 percent, from 26,125 to 48,560 residents. From 1981 to 1992, annual building permit applications increased 166 percent. Most building permits were for single-family residences.

A large portion of this growth occurred in and around the cities of St. George, Washington, Ivins, Hurricane, and Springdale. The Washington County Water Conservancy District (WCWCD) expects population growth in the County to continue with rates between 66 and 186 percent by the year 2010. In addition to new permanent residents, Washington County has been

the destination for many tourists wishing to explore the nearby national and State parks and forests. These visitors have created an increased demand for service-oriented businesses that contribute significantly to the economy of Washington County. Additional residential, commercial, and industrial developments will be needed as the County's population continues to grow.

Washington County is located in an area where the Great Basin, Mojave Desert, and Colorado Plateau converge. The unique geography of the area provides habitat for a variety of plant and animal life, including nine species currently listed as threatened or endangered by USFWS. These species are the Mojave desert tortoise, bald eagle, peregrine falcon, woundfin, Virgin River chub, dwarf bear-poppy, Siler pincushion cactus, southwestern willow flycatcher, and Mexican spotted owl. The ESA authorizes USFWS to list a species as endangered if the species is in danger of extinction throughout all or a significant portion of its range. A species may be listed as threatened if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Growth and development in Washington County have increasingly come into conflict with one listed species in particular: the Mojave desert tortoise. Figure 1.2 shows the extent of desert tortoise habitat within the County. The Mojave desert tortoise was officially listed as threatened on April 2, 1990 because of an alarming decline in numerous study plots. This decline was due to a number of factors, including habitat degradation, direct mortality resulting from human contact, predation, and an upper respiratory tract disease (URTD) (USFWS 1994a). Because the Mojave desert tortoise is Federally listed as a threatened species, it is protected from "take," which is defined by the ESA to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. The term "harm" has been further defined to include activities that would modify or degrade habitat in a way that significantly impairs essential behavior patterns. Any activity that may result in the take of desert tortoises or their habitat is prohibited by the ESA.

In 1982, the ESA was amended to provide a permit process to help resolve conflicts between private land use for economic development and species protection. According to section 10(a)(1)(B) of the ESA, the Secretary of the Interior may issue a permit that allows take of a listed species if the take is incidental to, and not the purpose of, carrying out an otherwise lawful activity. In order to obtain an ESA section 10(a) permit, the applicant must prepare a conservation plan that specifies the following: (1) what impacts may result from the take; (2) how take will be minimized and mitigated to the greatest extent practicable; and (3) what other alternatives were considered and why those alternatives were not used. In order for a section 10(a) permit to be issued, the following criteria must be met by the permit applicant and addressed in the HCP according to section 10(a)(2)(B) of the ESA: (1) the taking will be incidental; (2) the applicant will to the maximum extent practicable, minimize and mitigate the impacts of such taking; (3) the applicant will ensure that adequate funding for the plan will be provided; (4) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and (5) any other measures required by USFWS will be met.

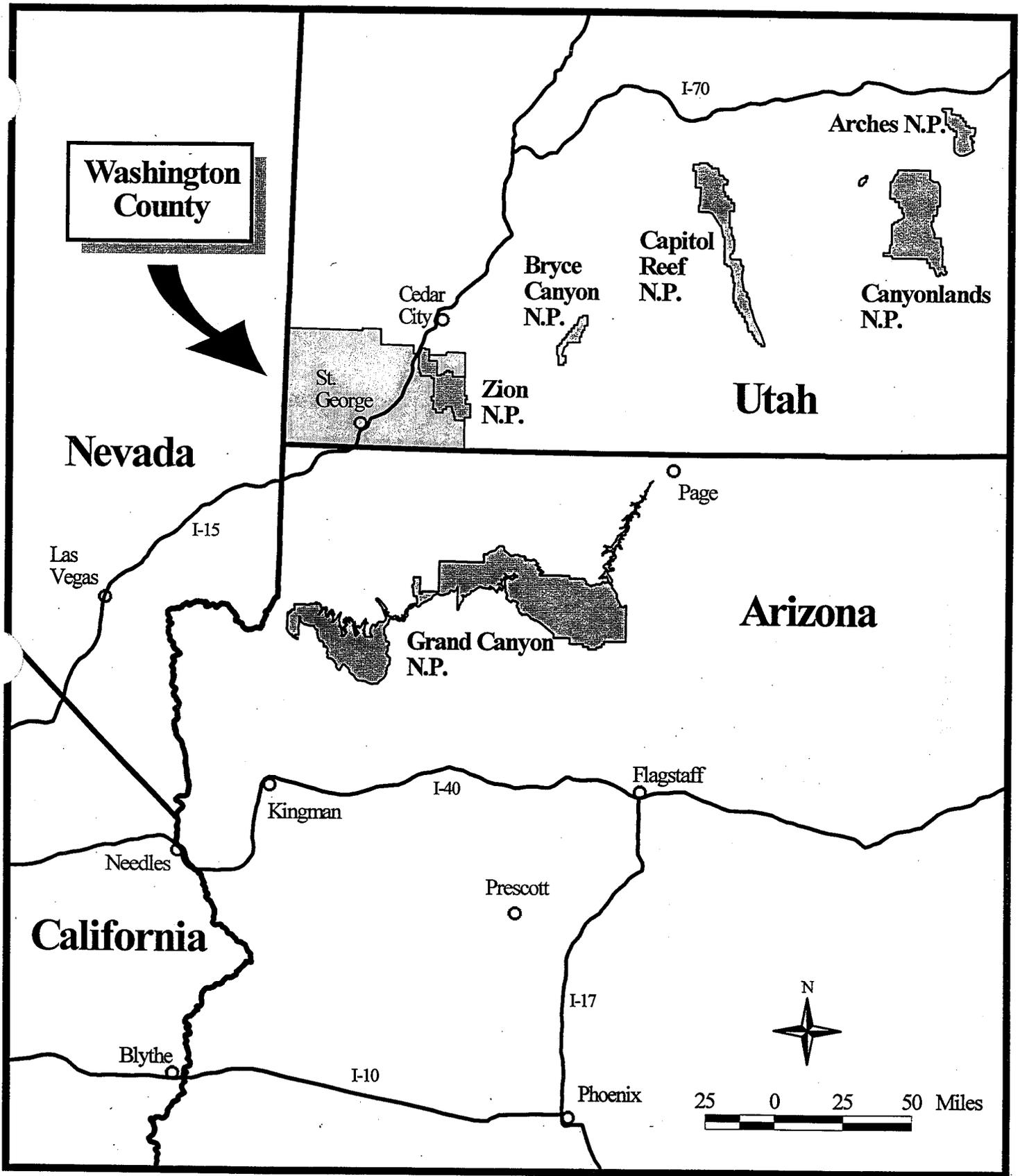
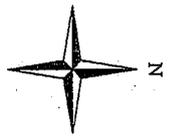
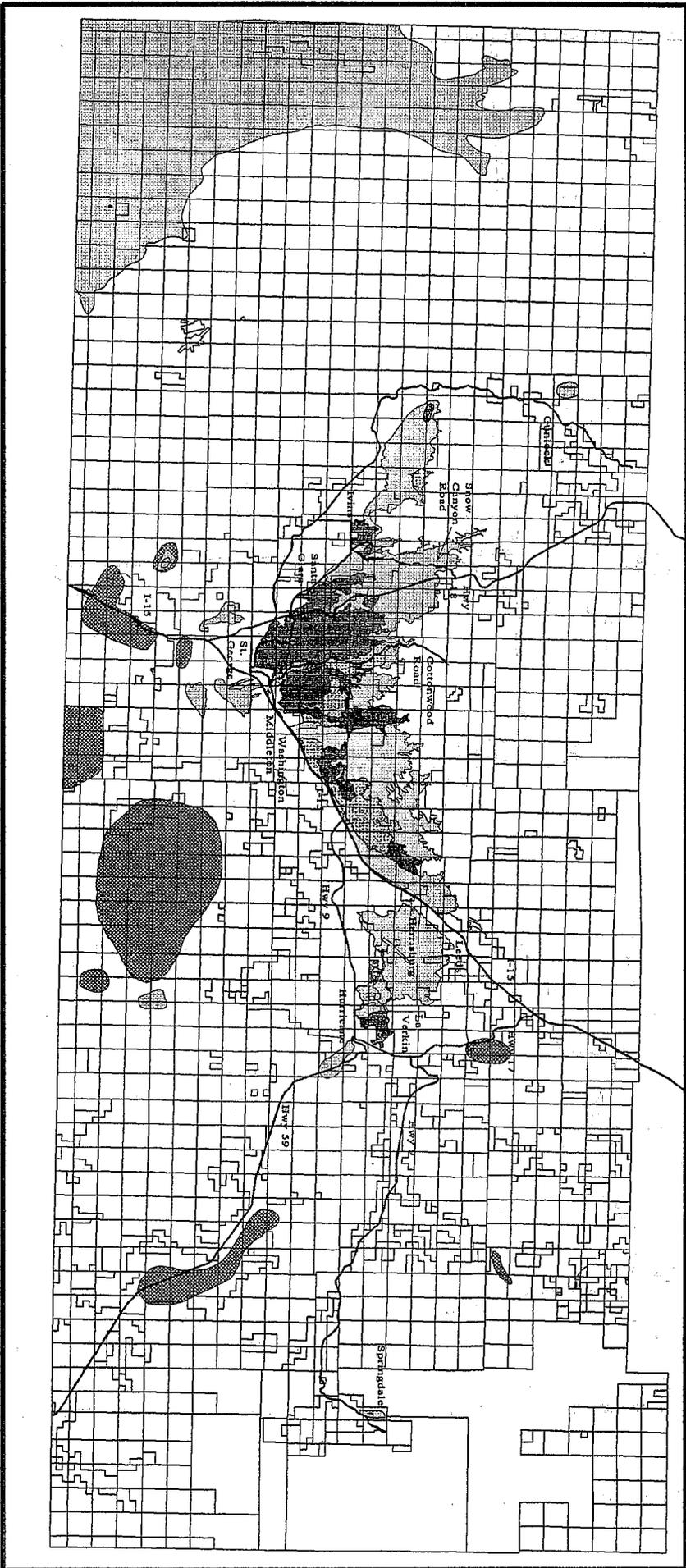


Figure 1.1 Project Location

Figure 1.2 Tortoise Habitat Within Washington County

-  High Tortoise Density
-  Medium Tortoise Density
-  Low Tortoise Density
-  Potential Tortoise Habitat



Under the proposed Washington County HCP, an ESA section 10(a) permit would be issued only for the Mojave desert tortoise, and not for any other listed species. Permits are not required for endangered plant species on State or private lands, and no take is expected for the other listed animal species in Washington County. The permit would allow the otherwise lawful activity of development to continue without violating the ESA. The section 10(a) permit would be for an estimated maximum 1,169 desert tortoises, 12,264 acres of desert tortoise habitat, and 11,832 acres of potential habitat (geographically isolated areas with no documented desert tortoise sign). As partial mitigation for take, the HCP proposes the establishment of a 61,022-acre reserve, including 38,787 acres of habitat currently supporting desert tortoises. The reserve will extend from the Paiute Tribal Lands on the west, to the City of Hurricane on the east. Management within the reserve will focus on the Mojave desert tortoise; however, habitat would also be provided for other Federally listed, candidate, and State sensitive species. Further mitigation for take would include habitat acquisition, fencing, law enforcement, education, and elimination of land uses that compromise desert tortoise survival. Development of desert tortoise habitat would be allowed in designated take areas outside the reserve. Funding for the HCP would be provided through collection of county-wide fees for building and grading permits.

### 1.3 DECISION TO BE MADE

A decision must be made as to which of three alternatives would most benefit the survival of the desert tortoise, yet still allow Washington County to grow. Alternatives include: (A) No Action, as required by the NEPA; (B) Proposed Action - Issuance of an ESA section 10(a) permit based on the proposed HCP; or (C) Issuance of an ESA section 10(a) permit based on an HCP with a smaller reserve and greater area of take. Table 1.1 compares the impacts to desert tortoise habitat and individual animals under each alternative.

**Table 1.1. Comparison of Effects of Alternatives on the Desert Tortoise.**

<u>Alternative</u>	<u>Reserve Acres</u>	<u>Take Acres</u>	<u>Potential Habitat Acres</u>	<u>Estimated # Tortoises Taken</u>
A	0	0	0	0
B	61,022	12,264	11,832	1,169
C	44,504	15,094	11,832	1,709

### 1.4 PUBLIC SCOPING SUMMARY

In December 1991, five public meetings were held in Washington County to provide an opportunity for the public to learn about and comment on the proposed HCP and alternatives. The meetings were held in Springdale, Hurricane, Washington, Ivins, and St. George. Public service announcements aired on local radio stations and appeared in newspapers, and 242 mailers were sent out to inform interested parties of the impending meetings.

The total attendance at the public scoping meetings was 84 people, with an additional 4 individuals commenting through letters. Public input ranged from support of the HCP and protection of the desert tortoise to anti-government feelings and a belief that desert tortoises are not native to the area in question. Concerns, ideas, and issues that were raised during public scoping are summarized below.

- 1) Some participants pointed out that much of the HCP planning has been oriented towards residential and commercial land development. They wanted to know what effect the HCP and take provisions would have on other activities in the County, such as farming, grazing, mining, and recreation.
- 2) A number of individuals stated that funding of the HCP should be fair and equitable. While developers should certainly pay their fair share, all residents of Washington County should help pay for implementation of the HCP because previous development of the County has contributed to the current threatened condition of the Mojave desert tortoise population.
- 3) Many participants expressed their concern regarding the lack of equity in the situation, and spoke about the need for all U.S. citizens to share in the costs of mitigating for loss of desert tortoise habitat, rather than having the burden put solely on the shoulders of Washington County citizens.
- 4) A number of participants at the public meetings relayed historical anecdotes indicating that the desert tortoise has been introduced to this area and is not native in Washington County.
- 5) Several members of the public expressed concern that the area around St. George is at the northern extreme of the desert tortoise's range and that slight climatic changes may seriously influence distribution and densities of desert tortoises. Concern has been expressed regarding long-term viability of a population on a reserve or refuge at the extremes of the species' range because population fluctuations may be more common at the extremes than in the center of the range.
- 6) Some individuals wondered what was going to happen to the two listed plant species in the area (dwarf bear-poppy and Siler pincushion cactus). The dwarf bear-poppy, in particular, is found in the Bloomington area and is currently being severely impacted by off-highway vehicle (OHV) activities.
- 7) An individual questioned how desert tortoise habitat boundaries were verified. Several participants indicated that their properties are designated as habitat on maps but they have never seen a desert tortoise on their land.
- 8) Concern was expressed regarding compensation for lands to be included in the reserve. There is a significant amount of private and State School Trust lands within the reserve.

Participants at the meetings wondered if the Federal government would condemn land if the landowners are unwilling to sell their property. Participants also emphasized that compensation for land must be at fair market value.

- 9) A number of individuals expressed concerns about relinquishing local control. While some people liked the idea of the Federal government managing a desert tortoise refuge, many expressed concern that increased Federal ownership of lands and management responsibilities would reduce local control and therefore, not be advantageous to the County.
- 10) Concern was expressed over effects of groundwater depletion on Virgin River flow and on threatened, endangered, and sensitive species in that ecosystem.

An additional public open house and comment period was held on February 22, 1995. The purpose of this meeting was to update the public on changes made to the previous draft of the proposed HCP. The open house was announced in local newspapers, and mailers were sent out to inform interested parties. A total of 32 people attended this meeting. The majority of time was spent speaking with attendees on an individual basis and attempting to answer their questions. A presentation was then given describing progress in the HCP and EIS processes and announcing when an HCP and draft EIS would be available for public review. The attendees were provided with comment sheets if they chose to offer comments in writing. No additional issues were brought up during this public meeting.

Comments received during the public scoping period and through discussions with government agencies and interested organizations were developed into seven significant issues to be further analyzed in this document. Two issues were eliminated from further analysis and are described below.

## **1.5 ISSUES ELIMINATED FROM FURTHER ANALYSIS**

### **1.5.1 Is the Desert Tortoise Native to the St. George Area?**

The scientific community and long-time residents of Washington County disagree over the origin of the desert tortoise in the area. Many residents claim that no desert tortoises existed in the area prior to their being introduced by humans relatively recently. These residents cite anecdotal reports of scores of desert tortoises being brought to St. George. Scientists who have studied the region contend that the occurrence of associated species, such as Gila monsters (*Heloderma suspectum*) and sidewinders (*Crotalus cerastes cerastes*), and the diverse age structure of the population make it likely that desert tortoises have been in the area for centuries. The Steering Committee Technical Advisory Committee reviewed the various opinions and concluded that it would be impossible to prove the origin of desert tortoises in the St. George area. The USFWS considers the debate to be moot because the Washington County desert tortoises are part of the Mojave desert tortoise population and are protected under section 9 of the ESA regardless of their origin.

### **1.5.2 The ESA is Unconstitutional in that it Permits the Taking of Private Property without Compensation.**

Several commentors noted that the enforcement of the ESA can result in the taking of private property without compensation. The issue of private property taking is highly debated and its constitutionality is beyond the scope of this analysis.

## **1.6 MAJOR ISSUES TO BE ANALYZED**

Based upon input from the public, government agencies, and the Steering Committee, the following issues have been identified as the primary topics for analysis in this EIS.

- 1) What will the impacts be on Washington County's economy?
  - Protection of desert tortoise habitat may reduce the amount of developable land available in the County. Potential effects of the different alternatives will be estimated in number of acres available for development.
  - Desert tortoise preservation could be expensive for the responsible parties. Potential effects of the alternatives will be estimated in terms of amount of money spent on, and the parties responsible for, the funding of desert tortoise preservation.
  - There could be financial or other benefits to the reserve. Such a reserve could increase property value of adjacent lands and might also draw people to the area.
- 2) How will threatened, endangered, and sensitive species in Washington County be impacted?
  - Growth and development could reduce viability of the Mojave desert tortoise population in Washington County. Potential effects of the different alternatives will be estimated by the amount and configuration of acreage of desert tortoise habitat lost due to development.
  - Growth and development in Washington County could pose a threat to the continued existence of dwarf bear-poppy and Siler pincushion cactus. Potential effects of the alternatives on these Federally-listed plants will be estimated in light of the number of acres of bear-claw poppy and Siler pincushion cactus habitat likely to be subject to impact.
- 3) What will be the impacts on multiple-use activities in non-take areas?
  - Activities that could potentially impact desert tortoise habitat would either be restricted to specific areas, or prohibited entirely. Potential effects of the alternatives

will be estimated as acres of land that exclude multiple-use activities that are currently allowed.

- 4) What will impacts be on State School Trust lands?
  - Some State School Trust lands may be excluded from development. Potential effects of the different alternatives will be estimated as acres of State School Trust lands not available for development.
- 5) How will private landowners be impacted?
  - Private landowners with property in desert tortoise habitat may lose the opportunity to develop all or part of those lands. Impacts to landowners will be estimated by net acres of land lost due to desert tortoise preservation.
- 6) How will livestock grazing and other agricultural practices be impacted?
  - Desert tortoise preservation could reduce or eliminate certain lands from grazing. Potential effects of the alternatives will be estimated as number of allotments no longer available for grazing.
- 7) What will impacts be on flow in the Virgin River?
  - Continued growth and development in the County may result in increased water needs that could reduce the flow of the Virgin River and its tributaries. The potential impact from the alternatives will be estimated by acre-feet of water used per year.

## **1.7 PLANS, LAWS AND POLICIES**

The area affected by the proposed HCP includes the jurisdiction of numerous cities and unincorporated areas within Washington County and is subject to regulations of numerous State and Federal agencies. This section lists and discusses the primary plans, ordinances, and policies that may affect issuance of an ESA section 10(a) permit and implementation of the HCP.

### **1.7.1 Federal**

#### **1.7.1.1 U.S. Fish and Wildlife Service**

The USFWS is responsible for administration of the ESA. When a species is listed as threatened or endangered (such as the threatened Mojave desert tortoise), protection of the species is offered partly through section 9 of the ESA, which stipulates that "take" of the species is prohibited (see definition of "take" on page 2). The process provided in section 7 of the ESA (16 U.S.C.A. § 1536), "Interagency Cooperation," also affords protection to listed species because Federal agencies must utilize their authorities in furtherance of species conservation, and

are also required to enter into consultation with the FWS concerning all actions authorized, funded, or carried out by Federal agencies which may affect listed species. Penalties for violations are identified. Section 4 of the ESA states that a recovery plan shall be developed with the objective of delisting the species once specific measurable criteria are met [ESA § 4(f)]. In June 1994, the Desert Tortoise (Mojave Population) Recovery Plan (DTRP) was approved by USFWS (USFWS 1994a). Six distinct population segments or recovery units are presented in the DTRP. The delisting criteria outlined in the plan for each of the recovery units are described below.

- Criterion 1: As determined by a scientifically credible monitoring plan, the population within a recovery unit must exhibit a statistically significant upward trend or remain stationary for at least 25 years (one desert tortoise generation).
- Criterion 2: Enough habitat must be protected within a recovery unit, or the habitat and desert tortoise populations must be managed intensively enough, to ensure long-term viability.
- Criterion 3: Provisions must be made for population management within each recovery unit so that discrete population growth rates are maintained at or above 1.0 (i.e., birthrates are equal to or greater than death rates).
- Criterion 4: Regulatory mechanisms or land management commitments must be implemented that provide for long-term protection of desert tortoises and their habitat.
- Criterion 5: The population in the recovery unit is unlikely to need protection under the ESA in the foreseeable future.

The basic premise to achieve recovery of the species is through establishment of 14 Desert Wildlife Management Areas (DWMAs) in six Recovery Units (USFWS 1994a). Each DWMA is managed for the desert tortoise, with specific desert tortoise population targets. Reaching target goals within DWMAs will be a primary consideration in determining recovery of the species. It is estimated that delisting of the desert tortoise could be initiated in the year 2019 if the above criteria have been met in all the recovery units.

The DTRP includes maps depicting the general location for the DWMAs, and then provides the following seven guidelines for reserve design to help land managers determine exact boundaries:

- (1) Reserves that are well-distributed across a species' native range will be more successful in preventing extinction than reserves confined to small portions of a species' range.
- (2) Large blocks of habitat, containing large populations of the target species, are superior to small blocks of habitat containing small populations.
- (3) Blocks of habitat that are close together are better than blocks far apart.

- (4) Habitat that occurs in less fragmented, contiguous blocks is preferable to habitat that is fragmented.
- (5) Habitat patches that minimize edge-to-area ratios are superior to those that do not.
- (6) Interconnected blocks of habitat are better than isolated blocks, and linkages function better when the habitat within them is represented by protected, preferred habitat for the target species.
- (7) Blocks of habitat that are roadless or otherwise inaccessible to humans are better than blocks containing roads and habitat blocks easily accessible to humans.

It is not necessarily the responsibility of an applicant for incidental take [under either section 7 or 10(a) of the ESA] to effect recovery or implement recovery plans for the affected species, but it is a responsibility not to preclude recovery. The delineation of DWMA's within the desert tortoise recovery plan, however, is of particular concern for the proposed Washington County HCP because the HCP's desert tortoise reserve (Figure 1.3) encompasses the entire Upper Virgin River DWMA (which coincides with the Upper Virgin River Recovery Unit). Consequently, any reserve established as part of the HCP necessarily becomes the recovery plan's DWMA for that area. The USFWS, working with the Steering Committee, has strived to create as effective a DWMA as possible, based both on reserve design criteria and the general criteria for species recovery described above.

The Desert Tortoise Recovery Plan describes activities that should be prohibited within a DWMA, and activities that are appropriate. Appendix F of the plan offers specific management actions for each of the DWMA's. The Washington County HCP would adopt those developed for the Upper Virgin River DWMA (USFWS 1994a, Appendix F). They are as follows:

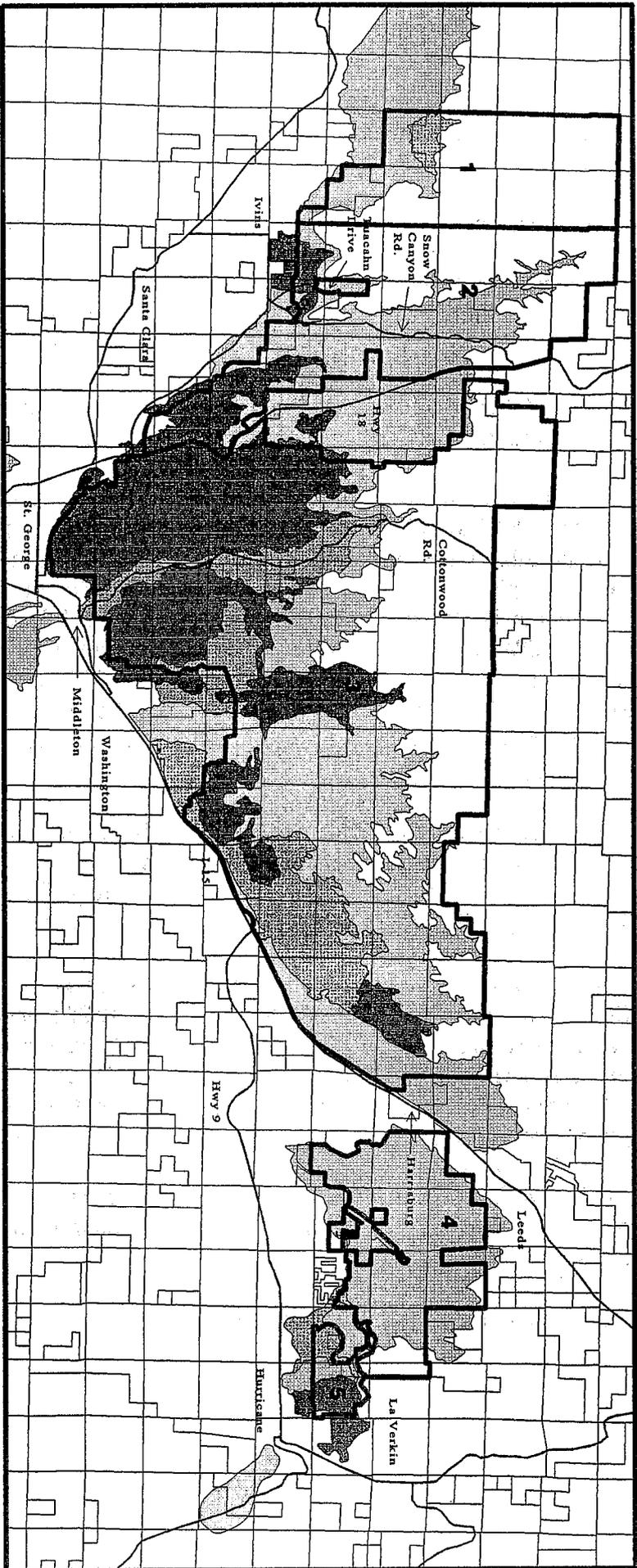
*This is the only DWMA proposed for the Upper Virgin River Recovery Unit. Because of the small size of the this proposed DWMA, management will need to be intensive and promptly implemented if this desert tortoise population is to be given a reasonable chance of long-term persistence. Acquisition of private inholdings (or development of conservation easements in perpetuity) is imperative for recovery, particularly for non-Federal and private lands north and northeast of St. George, Paradise and Padre canyons, and north of Hurricane. In addition to the management actions recommended for all DWMA's (Section II.E.2), the following specific actions should be implemented in the Upper Virgin River DWMA:*

- (1) *Remove livestock grazing from the DWMA.*

Figure 1.3 Proposed Upper Virgin River DWMA

High Tortoise Density  
Medium Tortoise Density  
Low Tortoise Density

DWMA Boundary  
Roads



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- (2) *Construct and maintain desert tortoise barrier fencing along Interstate 15, Highway 18, and the road to the turkey farm.*
- (3) *Install underpasses for desert tortoises along Highway 18 between Paradise Canyon and Twist Hollow, and the road to the turkey farm.*
- (4) *Close the debris dam road north of St. George or restrict access through installation of a locked gate.*
- (5) *Establish a visitor center outside the DWMA which would educate the public about the desert tortoise and serve as a drop-off site for unwanted captive desert tortoises. Develop a program to make these animals available for educational and research purposes.*
- (6) *Consolidate ownership and management of the entire DWMA, primarily for desert tortoise, under Federal management as a National Conservation Area.*

The USFWS has also developed recovery plans for the two listed plant species within the HCP planning area: dwarf bear-poppy and Siler pincushion cactus. These plans call for establishment of reserves (USFWS 1985, USFWS 1986). The Siler pincushion cactus was upgraded to threatened by USFWS on December 27, 1993 (USFWS 1993).

#### **1.7.1.2 Bureau of Land Management**

Approximately 75 percent of the land in Washington County is publicly owned through the Federal government, and most of this is managed by the Bureau of Land Management (BLM). The BLM has been included in HCP discussions since the beginning, participating as a voting member of the Steering Committee because of its large stake in the process. BLM's current management plan, the Virgin River Management Framework Plan (MFP), was approved in 1981 (BLM 1981). In 1990, the Cedar City District of BLM released a new plan, the Proposed Dixie Resource Management Plan/Final EIS (RMP), whose selected alternative called for resource retention (BLM 1990a). This plan, which was intended to guide the resource management of the BLM for the remainder of the decade, has been under litigation since 1990. The BLM is currently redrafting the RMP which is currently undergoing public review. If the HCP is approved before the revised RMP goes into effect, then the existing MFP will be amended.

#### **1.7.2 State**

The Utah Department of Natural Resources (UDNR) has been the umbrella agency for State involvement in Washington County HCP planning. UDNR represents the Division of State Lands and Forestry (Division), Utah State Parks and Recreation (USPR), and Utah Division of Wildlife Resources (UDWR). Among the state's concerns in Washington County are 20,635 acres of State School Trust Lands that may be affected by the proposed HCP. These lands are

managed for the benefit of a trust that was created to aid public education. While there is no overall management plan for these School Trust Lands, by statute, the Division seeks to maximize revenues. As a large landowner of desert tortoise habitat, the Division, through UDNR, has been an active voting member of the Steering Committee.

Snow Canyon State Park, another State responsibility in Washington County, is managed by the USPR. Currently, Snow Canyon is developing a management plan to guide use and development of the Park. As with many scenic attractions in southwestern Utah, its use has increased substantially over the last decade. In order to resolve potential conflicts between the desert tortoise and recreational use of the Park, the USPR has been actively involved in the HCP planning process.

UDWR has responsibility for wildlife management in Utah. They manage ESA section 6 programs for desert tortoise, and have served on the Technical Advisory Committee for the HCP. UDWR also has law enforcement responsibilities with respect to enforcing State and Federal wildlife laws.

### 1.7.3 County

Washington County has administrative responsibility for all unincorporated lands in the County, and is the governmental entity proposing the HCP. Due to increasing conflicts between development and the desert tortoise, the County initiated HCP planning in late 1990 by forming a committee to evaluate options and recommend a course of action to the Washington County Commission. The committee recommended the preparation of an HCP and application for a section 10(a) permit. In January 1991, Washington County organized an HCP Steering Committee to assume responsibility for deciding the content of and making the decisions for the HCP. These efforts have resulted in the proposed Washington County HCP, which is the subject of this EIS.

#### 1.7.3.1 Washington County Water Conservancy District

The Washington County Water Conservancy District (WCWCD) is dedicated to the development of a reliable water supply for the growing population of Washington County through the development and conservation of the water resources in an environmentally sound manner. They are currently preparing a draft management plan for the Virgin River. This Resource Management and Recovery Plan would acquire and set aside riparian, wetlands, and riverine habitat within the Virgin River drainage 100-year floodplain, provide adequate water resources for the economic and growth needs of the County and provide for recovery of endangered species and habitat protection for wildlife and plant species. A Memorandum of Understanding for the *Virgin River Basin Integrated Resource Management and Recovery Program* was signed in October 1995 by BLM, USFWS, UDNR, and WCWCD.

#### 1.7.4 Local

Numerous cities and towns are located in the HCP planning area. Municipalities that were most involved in the HCP planning process were those with the greatest conflicts between development and desert tortoise conservation. These include the Town of Ivins, the City of St. George, Washington City, and Hurricane City. Unincorporated areas were represented by the County.

##### 1.7.4.1 Town of Ivins

The Town of Ivins (Town) is currently preparing a Master Plan that will guide the Town's land use decisions. In developing the Master Plan, the Town is paying careful attention to the habitat requirements of the desert tortoise, and is consulting regularly with USFWS. This Master Plan, which has been reviewed by the Mayor and Planning Committee, will in effect dictate the reserve boundaries within the Town's limits by designating and putting aside desert tortoise habitat. The HCP has incorporated the anticipated boundaries.

##### 1.7.4.2 City of St. George

Concurrent with preparation of the HCP, St. George has developed a Draft General Plan that, when finalized, will guide the community in making land use decisions. Although the General Plan is not a regulatory document, it will influence future development of the City of St. George. The General Plan has adopted two endangered species policies: 1) The City of St. George will support and assist the implementation of the HCP for the desert tortoise and for other endangered or threatened species in the area; and 2) Land use proposals that could have adverse impacts on critical wildlife or plant habitats shall be modified to eliminate or adequately mitigate such adverse impacts.

##### 1.7.4.3 Washington City

Prior to listing of the desert tortoise as a threatened species, Washington City had expended greater public resources for development in desert tortoise habitat areas than any of the other communities mentioned. This placed Washington City in a critical position with respect to relief in the form of areas released for additional development. While there is no general plan for the City, municipal staff worked with the Technical Advisory Committee to identify areas in northern Washington City which could be developed while maintaining reserve integrity.

##### 1.7.4.4 Hurricane City

Hurricane City is responsible for planning and zoning within its jurisdiction. A draft master plan has been prepared, but a final master plan has not been approved or implemented at this time.

## 1.8 PREVIEW OF THE REMAINING CHAPTERS

Chapter 2.0 describes the alternatives that are analyzed in this EIS. The chapter will also briefly describe alternatives which were eliminated from further analysis, and will summarize the environmental consequences of each alternative in a matrix.

Chapter 3.0 describes those resources and issues that may be impacted by the Proposed Action or alternatives. This description of the affected environment is necessary so that the decision maker and other readers of this document understand how the existing environment may be changed by the action alternatives, and a determination may be made as to the significance of those changes.

Chapter 4.0 addresses the environmental consequences of each of the alternatives on the affected environment. This will allow the decision maker and other readers to compare the environmental consequences of the alternatives and determine which alternative may have the least significant impact on the existing environment.

The remaining chapters reference the sources of information used in the preparation of this EIS. Chapter 5.0 lists those individuals involved in preparation of the document, along with those agencies, organizations, and individuals involved in review of this EIS.

## **CHAPTER 2.0**

### **ALTERNATIVES INCLUDING THE PROPOSED ACTION**

Taking into consideration the scope of the Proposed Action and the major issues discussed in Chapter 1.0, three alternatives have been developed for analysis in this EIS. The alternatives include the NEPA-required No Action Alternative and two action alternatives based on issuance of an ESA section 10(a) permit. Under the first action alternative, the Proposed Action, an ESA section 10(a) permit would be issued based on an HCP with a reserve area of 61,022 acres and proposed take of an estimated 1,169 desert tortoises; 12,264 acres of desert tortoise habitat; and 11,832 acres of potential habitat. The other alternative is based on a similar conservation program, but the size of the reserve would be smaller (44,504 acres) and the take areas would be larger (15,094 acres of desert tortoise habitat). These alternatives were developed through discussions between USFWS and the Steering Committee, and are felt to cover the range of issues elicited from public scoping meetings. Other alternatives were considered but eliminated from further analysis due to their lack of feasibility. These are briefly described in Section 2.1. Alternatives that are further analyzed in this EIS are described in detail in Section 2.2. A summary matrix of environmental consequences is provided in Section 2.3.

#### **2.1 ALTERNATIVES ELIMINATED FROM FURTHER ANALYSIS**

##### **2.1.1 Special Legislation by Congress**

This alternative would specifically exempt Washington County from complying with the ESA with respect to desert tortoise. Special legislation is considered unlikely as it is extremely rare and usually implemented only for selected projects and not on a regional level.

##### **2.1.2 Short-term Habitat Conservation Plan**

A short-term/interim HCP would involve issuance of a permit allowing incidental take of desert tortoises on non-Federal lands for a period of one to three years. This alternative would allow development projects to proceed which were in progress at the time the desert tortoise was listed. An appropriate compensation plan would mitigate biological impacts to the desert tortoise. Following completion of a short-term HCP, a long-term HCP would likely be prepared to cover future development actions on non-Federal lands.

A short-term HCP was considered by the Steering Committee as other regions of the country completed short-term plans prior to preparation of long-term plans. While a short-term HCP would allow continued growth in some areas, mitigation measures set forth in a short-term HCP would not constitute a comprehensive solution. Further, the planning and permitting process for a short-term HCP is often comparable to that for a long-term plan. The HCP planning process was initiated by Washington County in advance of heightened development pressure, allowing time to complete the long-term plan. Therefore, a short-term plan was not developed.

### **2.1.3 No Development in Desert Tortoise Habitat**

Under this alternative, no development would be allowed on private or State lands designated as desert tortoise habitat. This would restrict development activities on 29,796 acres, or approximately 47 square miles. Landowners would not be compensated for their inability to develop this property.

This alternative has been eliminated from further consideration for several reasons. First, landowners are not likely to willingly refrain from developing their lands to protect the desert tortoise, particularly without fair compensation. Second, governmental entities in this part of Utah do not support restrictive zoning on desert tortoise habitat held by private parties and the Division to protect the desert tortoise, thus violating the wishes of their constituents. Finally, even if restrictive zoning were accomplished, simply setting aside habitat is not considered enough to achieve recovery of the desert tortoise, according to the Desert Tortoise Recovery Plan. Active management is also required, something this alternative does not offer (USFWS 1994a). Therefore, this alternative was eliminated from further consideration.

### **2.1.4 No Development in Desert Tortoise Habitat/Landowners Compensated**

This alternative is similar to the alternative above, except that all landowners would be compensated for loss of use of their land. There are approximately 29,796 acres of private and State School Trust lands designated as desert tortoise habitat in the Upper Virgin River DWMA. To compensate these landowners at an estimated value of \$5,000 per acre would require approximately \$150 million. Even at half of that estimated price per acre, it would require \$75 million. While compensation would likely sway many landowners to sell their lands, it may not be successful in convincing landowners with key developable pieces to sell, for they may make much higher profits from development than from selling. The primary reason for elimination of this alternative from further consideration is that sufficient money is not available for implementation. Additionally, while this alternative may make it possible to acquire desert tortoise habitat, it does not implement a plan for their protection, nor provide for necessary active management.

### **2.1.5 Issuance of a Section 10(a) Permit Based on an HCP with a 61,769-Acre Reserve**

This alternative is similar to the Proposed Action (Section 2.2.2 below) except that the expected incidental take of desert tortoise habitat would be somewhat smaller and the size of the reserve would be slightly larger. This alternative proposes that private lands be added to the reserve outlined in the Proposed Action, thereby increasing the area of the reserve by approximately 1,000 acres. These 1,000 acres are in areas which would likely aid the biological success of the reserve. This alternative was eliminated from further analysis because the additional private lands are owned by individuals who are unwilling to sell or exchange their lands, and the local governmental entities are unwilling or unable to force them to sell. Acquisition of the additional 1,000 acres by the Federal government would create unresolvable political conflicts. It was strongly believed by most members of the Steering Committee that, although the

additional acreage may improve the viability of the reserve, it was not a significant increase over the Proposed Action. Therefore this alternative was eliminated from further consideration.

## **2.2 ALTERNATIVES CONSIDERED**

### **2.2.1 Alternative A: No Action**

Under the No Action Alternative an HCP would not be prepared, and an ESA section 10(a) incidental take permit would not be pursued by Washington County. If this alternative were selected, current project-by-project enforcement of the ESA would continue by USFWS, resulting in individual ESA section 7 and 10(a) permits, or section 9 enforcement.

No large-scale implementation effort for the DTRP would be undertaken, and USFWS and other State and Federal agencies would be required to implement the proposed Upper Virgin River DWMA to effect recovery of the desert tortoise through ESA sections 6 and 7.

### **2.2.2 Alternative B: Issuance of Section 10(a) Permit Based on Proposed HCP**

The Proposed Action would involve issuance by USFWS of an ESA section 10(a) incidental take permit for Mojave desert tortoise in Washington County. The permit would be subject to the terms and conditions specified in the HCP for Washington County, Utah, and associated Implementing Agreements.

#### **2.2.2.1 The Proposed HCP**

If the ESA section 10(a) permit is issued and the HCP is implemented, take would be permitted on 12,264 acres of desert tortoise habitat on State and private land. Principal mitigation for this take would be a 61,022-acre reserve composed of what are now Federal, State, and private lands. The HCP also provides for creation of plant reserves to protect endangered plant species habitat.

The proposed HCP was developed by the Steering Committee, whose members included all levels of government: BLM Dixie Resource Area, Utah Department of Natural Resources (for UDWR, USPR, and the Division), Washington County, Washington County Water Conservancy District (WCWCD), and the incorporated cities in the County. Environmental groups were represented by The Nature Conservancy and Southern Utah Wilderness Alliance/Humane Society of the United States. Grazing, recreation, and real estate/development interests, as well as Congressional representatives, were also represented on the Steering Committee. The proposed HCP represents the results of an effort to resolve the distinct and often conflicting interests of the members on the Steering Committee while recognizing that compliance with the ESA is required.

During preparation of the HCP, USFWS released a draft and final DTRP. The HCP developed by the Steering Committee sought to implement as many of the recommendations of the recovery

plan as possible. General actions recommended by the DTRP for Desert Wildlife Management Areas (DWMAs) include developing of a management plan, developing of an education program, securing desert tortoise habitat, and signing and fencing DWMA boundaries. More specific actions for the Upper Virgin River DWMA are listed in Section 1.7.1 of this document (USFWS 1994a). All of these recommendations have been incorporated to some degree into the proposed HCP.

In order for an ESA section 10(a) permit to be issued, the following criteria must be met by the permit applicant and addressed in the HCP according to section 10(a)(2)(B) of the ESA:

- The taking will be incidental.
- The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.
- The applicant will ensure that adequate funding for the plan will be provided.
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
- Any other measures required by USFWS will be met.

In the following sections, the Proposed Action is described based on these five evaluation criteria.

#### 2.2.2.2 Will the Taking be Incidental?

The Incidental Take Permit would be a county-wide permit within desert tortoise habitat; therefore, take may occur anywhere in the County outside the established reserve. The HCP process has identified 12,264 acres of desert tortoise habitat where incidental take would likely occur. Take areas were defined by balancing the need for habitat preservation with economic growth and development. Take areas are primarily low-density desert tortoise habitat adjacent to existing development. Table 2.1 shows the amount and type of desert tortoise habitat in incidental take areas.

The term "incidental" implies that take is anticipated by the activity, but is not the purpose of the activity. It is the intent of Washington County that all taking of desert tortoises and desert tortoise habitat would be incidental to the otherwise lawful activity of land development regulated by government authority.

In addition to the 12,264 acres of desert tortoise habitat in incidental take areas, 11,832 acres of potential habitat are expected to be used for growth and development purposes. Potential habitat is defined as areas in which desert tortoises may exist by virtue of the habitat characteristics, but which are generally thought to be devoid of desert tortoises at present. If desert tortoises are found to be present on these lands prior to development, they would need to be removed. These desert tortoises will count towards take authorization.

**Table 2.1. Amount of Desert Tortoise Habitat in Incidental Take Areas.**

<u>Incidental Take Area</u>	<u>Tortoise Density State Lands*</u>			<u>Tortoise Density Private Lands*</u>			<i>Total</i>
	<i>Low</i>	<i>Med</i>	<i>High</i>	<i>Low</i>	<i>Med</i>	<i>High</i>	
Gunlock	0	0	0	196	0	0	196
Ivins/Padre/Paradise	17	0	85	1,073	0	356	1,531
Winchester Hills	656	0	10	2,181	0	245	3,093
St. George	0	0	0	1,852	62	223	2,137
North Washington	554	597	42	204	295	313	2,005
Harrisburg/Leeds/Babylon	307	0	0	1,226	7	0	1,540
Hurricane	54	0	0	703	316	338	1,411
Springdale	0	0	0	159	0	0	159
Bloomington Hill	67	39	0	0	0	0	105
South Hurricane Cliffs	87	0	0	0	0	0	87
Total	<u>1,742</u>	<u>636</u>	<u>137</u>	<u>7,594</u>	<u>680</u>	<u>1,475</u>	<u>12,264</u>

\* State includes only State School Trust lands. Private includes lands owned by Washington County, municipalities, highway right-of-way, as well as private owners.

### 2.2.2.3 How Will Take be Minimized and Mitigated to the Greatest Extent Practicable?

Primary mitigation and minimization, as outlined in the HCP, would be the acquisition and management of a reserve encompassing 61,022 acres of land. Over one-half of the reserve lands (38,787 acres) would consist of desert tortoise habitat. The additional 22,235 acres would provide habitat for other wildlife, including other threatened, endangered, and candidate species. Reserve lands would be acquired through land exchanges and purchase of private, municipal, and State School Trust lands. The HCP divides the proposed reserve into five zones based on management goals. The zones are depicted in Figure 2.1, and approximate locations and acreage of each zone are listed in Table 2.2. The Steering Committee has obtained the support of BLM and the Utah Congressional delegation for designating the reserve as a National Conservation Area. BLM Dixie Resource Area expects to develop a management plan for the portions of the reserve under its management (parts of Zone 2 and all of 3,4, and 5) within two years of issuance of the ESA section 10(a) permit. The Town of Ivins and USPR will also have management responsibilities within Zone 2, and a consistent, cooperative management program between these entities and the BLM is anticipated.

**Table 2.2 HCP Reserve Management Zone Locations and Acreage.**

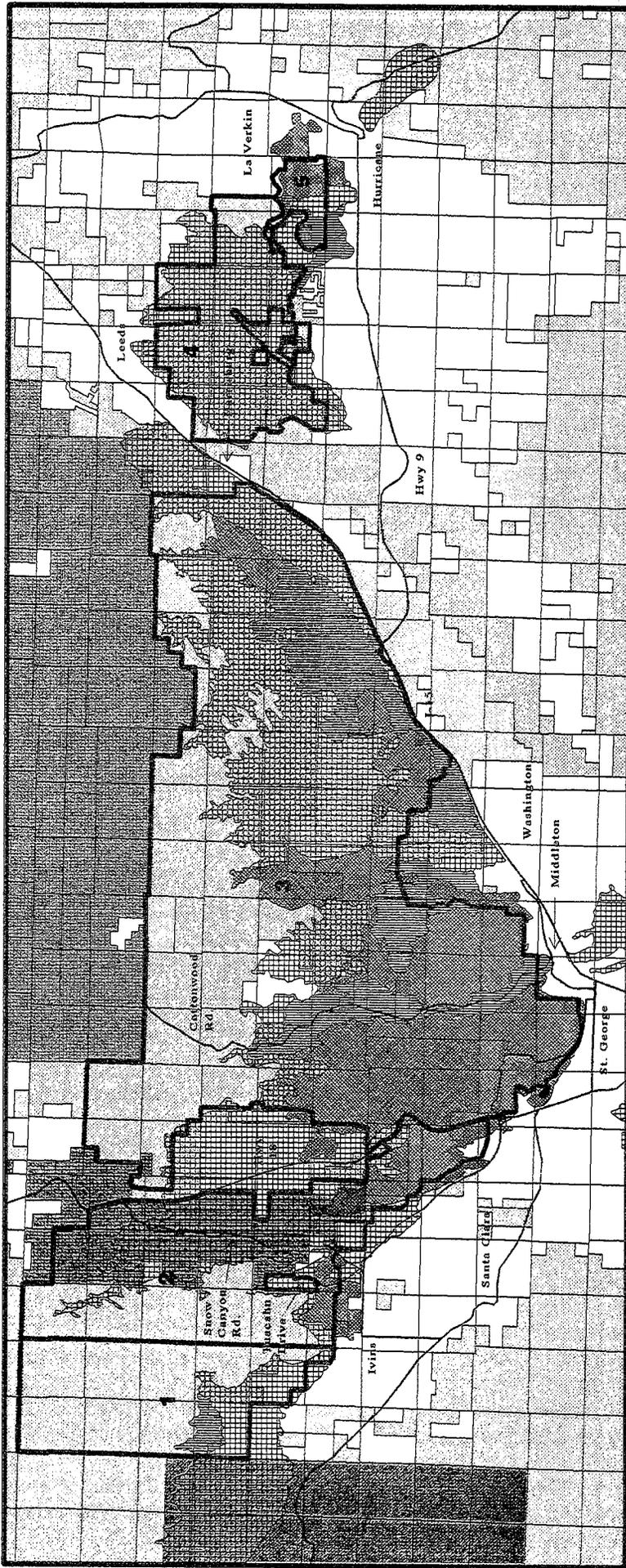
<u>Zone</u>	<u>Name/Approximate Location</u>	<u>Acres</u>
1	Paiute Tribal Land boundary to Ivins	6,146
2	Ivins to Highway 18	10,372
3	Core Zone/Highway 18 to Interstate 15	38,541
4	Babylon/Interstate 15	5,197
5	Hurricane/Between Virgin River and City of Hurricane	766

**Zone 1: Paiute Tribal Land Boundary to Ivins.** Currently, this 6,146-acre parcel is predominantly managed by BLM, but for the most part it lies within the incorporated boundaries of the Town of Ivins. If the HCP were implemented, management of Zone 1 would be the responsibility of the Town of Ivins. The management goal would be to allow low-density housing development consistent with habitat protection; land use restrictions would include the following:

- A maximum overall density of 1 unit per acre.
- Minimized surface disturbance during development.
- Retention of native vegetation and restrictions on exotic plant materials.
- Firefighting should be allowed.
- No grazing will be allowed in desert tortoise habitat.

**Zone 2: Ivins to Highway 18.** Of this 10,372-acre parcel, 4,326 acres fall within Snow Canyon State Park, and 3,787 are managed by BLM. Some acreage also falls within the incorporated limits of the City of St. George and the Town of Ivins. It is envisioned that private and State School Trust lands within Zone 2 would be acquired by BLM and/or USPR through exchange. USPR would manage any lands it acquires as an extension of Snow Canyon State Park. The management goal for Zone 2 would be desert tortoise habitat protection and environmental education. Mitigation measures would include land acquisition, fencing of Highway 18, law enforcement, and environmental education. The following management regulations are recommended for Zone 2:

- Hiking, equestrian use, and hunting including other non-consumptive recreational activities should be restricted to designated trails.
- BLM should be requested to apply for mineral withdrawal for Federal minerals.
- Non-intrusive monitoring of desert tortoise population dynamics should be allowed.
- Maintenance of existing utilities including roads should be allowed.
- Speed restrictions on Tuacahn Road should be enforced.
- Organized or competitive sporting or recreational events should not be allowed, although guided or controlled tours to enhance education may be permissible.
- Desert tortoise translocation should not be permitted except as authorized under approved translocation projects.



10/02/95

- Private/Other
- State of Utah
- BLM
- Dixie National Forest
- Palute Indian Reservation
- Snow Canyon State Park
- DWMA Boundary
- Roads
- Low Tortoise Density
- Medium Tortoise Density
- High Tortoise Density



Figure 2.1 Alternative B Preserve Management Zones



- Existing governmental uses within Zone 2 may continue.
- Firefighting should be allowed.
- No grazing will be allowed in desert tortoise habitat.

**Zone 3: Core Zone.** Spanning the area from Utah State Route 18 to Interstate Highway 15, this 38,541-acre parcel currently includes 23,571 acres managed by BLM and 9,927 acres managed by the State of Utah. Zone 3 would be managed by BLM for preservation and enhancement of the Mojave desert tortoise. Mitigation measures would include land acquisition; fencing Highway 18, Interstate 15, Skyline Drive, the area around northern Washington City and portions of the area around northern St. George; law enforcement; and environmental education. The following management regulations are recommended for Zone 3:

- Hiking, equestrian, and camping should be restricted to designated areas.
- The BLM should be requested to apply for mineral withdrawal for Federal minerals.
- No organized or competitive sporting or recreational events should be allowed.
- Grazing permits should be acquired and retired.
- New utility development should be encouraged to be conducted during the winter months when the desert tortoise is not active.
- Hunting should be restricted to big game or upland birds during official seasons.
- Existing governmental uses, such as the City of St. George pistol range, the debris basin behind City Creek dam, and Pioneer Park should be allowed to continue. Expansion of use of Pioneer Park outside of the existing developed area will be subject to HCAC approval of a desert tortoise management plan.
- Vehicles should be restricted to designated roads.
- Continuation of present activities associated with the Moroni Feeds Turkey Farm should be permitted but new actions, which the reserve manager reasonably believes may harm the desert tortoise, should not be allowed.
- Water development should be allowed consistent with the HCP protocol.
- Firefighting should be allowed.
- Research which will not negatively influence the desert tortoise should be allowed.
- Non-consumptive recreation (e.g., hiking, birdwatching) should be allowed.
- Maintenance of existing utilities including roads should be allowed.
- Desert tortoise translocation should not be permitted except as authorized under approved translocation projects.
- The eventual reconstruction of Skyline Drive should follow the existing alignment as near as possible except where engineering and/or safety considerations require deviations. Biological review under the HCP will be necessary when deviating from the current alignment. From Skyline Drive, no general public access would be permitted into the reserve, except on designated trails. However, access to Skyline Drive will be available for private landowners until their property is acquired.

**Zone 4: Babylon.** This area currently encompasses 5,197 acres of primarily BLM land. The following management regulations are recommended for Zone 4:

- Hiking, equestrian use, and camping should be allowed.
- Grazing, hunting, and mining should be allowed.
- Landowner activities associated with the private residence in the vicinity of "Babylon" should be permitted. However, ground disturbance in the reserve will require clearance prior to occurrence.
- Utility and road corridor maintenance should be allowed.
- New utility easements should be allowed and follow the HCP protocol.
- Vehicles should be restricted to designated roads.
- Firefighting should be allowed.
- Research, including non-intrusive monitoring of desert tortoise population dynamics, should be allowed.
- Non-consumptive recreation (e.g., hiking, birdwatching, photography, casual horseback riding) should be allowed.
- Desert tortoise translocation would not be permitted except as authorized under approved translocation projects.

**Zone 5: Hurricane.** This area is approximately 766 acres in size, of which 130 are currently managed by BLM. Zone 5 would be managed as a desert tortoise reserve by BLM, with the exception of some private land that could be developed for housing. That development would have to leave approximately 75 percent of the impacted habitat in an unaltered state. The following management regulations are recommended for Zone 5:

- Hiking and equestrian use should be restricted to designated trails.
- Utility and road corridor maintenance should be allowed and follow the HCP protocol.
- New utility easements should be allowed and follow the HCP protocol.
- Vehicles should be restricted to designated roads.
- Firefighting should be allowed.
- Research, including non-intrusive monitoring of desert tortoise population dynamics should be allowed.
- Non-consumptive recreation should be allowed.
- Desert tortoise translocation would not be permitted except as authorized under approved translocation projects.
- No grazing will be allowed in desert tortoise habitat.

An HCP requires that measures are taken to minimize and mitigate impacts and to monitor species of concern. Measures to minimize take of desert tortoise are as follows:

- The County would acquire all grazing permits for grazing allotments that overlap the reserve area. Acquisition of permits would be on a "willing buyer/willing seller" basis. Once permits were acquired, annual non-use would be applied for according to BLM requirements. Grazing would not be permitted during the non-use period on acquired allotments until a definitive study of livestock/desert tortoise inter-relationships has been completed that demonstrates that livestock grazing is consistent with reserve management objectives.

- Fencing would be installed along major roads, along portions of the reserve that are most vulnerable to intrusion, and along the proposed endangered plant reserves. It is estimated that 68 miles of fence would be installed.
- In all management zones, free-roaming dogs or feral animals would not be allowed in any reserve areas.
- Two law enforcement agents, one from BLM and one from UDWR, would be responsible for enforcing Federal, State, and local regulations within the desert tortoise reserve and plant reserves. Law enforcement would help protect the desert tortoise from adverse impacts such as OHV use, free-roaming domestic dogs, hikers, campers, shooting and other unpermitted uses.
- Washington County will be responsible for conducting desert tortoise surveys on lands to be developed. Desert tortoises will be collected by the County and housed in a temporary desert tortoise facility, and then turned over to USFWS only during the first five years for permanent translocation. The USFWS will fund a five-year translocation study at their expense. Should translocation prove successful, a long-term translocation program will be developed for implementation by the County.

Mitigation measures for the reserve are as follows:

- Consolidate desert tortoise habitat by forming a reserve, or Upper Virgin River DWMA, for the long-term survival and recovery of the Mojave desert tortoise.
- An environmental education center would be created to provide an opportunity for people to gain a greater understanding of the varied ecosystems found in Washington County. Education of the public concerning the reserve and the desert tortoise in particular is felt to be an important component of minimizing incidental take.

Monitoring measures include:

- Desert tortoise populations within the reserve would be monitored during the lifetime of the permit. A monitoring plan would be developed by UDWR, emphasizing biologically sound and defensible techniques for population estimation and trend analysis.

#### 2.2.2.4 Will Adequate Funding be Provided for the Plan?

A funding mechanism has been devised that would support the mitigation and monitoring elements of the HCP. Washington County has established an Endangered Species Trust Fund. All desert tortoise fees collected would be deposited in the fund, and all HCP-related expenses would come out of the fund. Sources of permanent funding would include:

- A county-wide fee, assessed when building construction permits are issued. This fee would be 0.2 percent of construction costs, and would apply to all new residential, commercial, and industrial construction.
- A county-wide fee of \$250.00 per acre for platted subdivisions, condominiums, town homes, or planned unit developments.
- Funding may also be available through desert tortoise compensation fees collected by BLM. These monies would be transferred to the County Treasurer on a quarterly basis if appropriate.

It is estimated that over the 20-year period, revenues from these fees would exceed \$9,000,000. (Approximately \$7,000,000 would be expended on desert tortoise preservation, and the remaining amount would be expended on conservation of other threatened, endangered, or candidate species in the County.)

The HCP contains a proposed budget, in constant 1994 dollars, for the 20-year period of the ESA section 10(a) permit. It is estimated that the total cost of the HCP would be \$11,555,000. Of this total cost, \$9,055,000 is expected to come from Washington County. Cost sharing with the Utah Department of Transportation, UDWR, and USFWS is proposed for the balance. It is also anticipated that as inflation increases so will the fees associated with the HCP. Table 2.3 provides a break-down of the 20-year HCP budget.

#### 2.2.2.5 Does the HCP Ensure Likelihood of Survival and Recovery of Tortoises in the Wild?

The Mojave desert tortoise has been listed as a Federally threatened species due in part to habitat loss and fragmentation, human contact and direct mortality, predation, and disease (specifically URTD). The concern for this species is that if these conditions continue unabated they could bring about extinction of the desert tortoise.

Assuming that the entire take area in the County would be developed over the 20-year permit period, an estimated take of 1,169 desert tortoises, representing 15 percent of the total estimated desert tortoise population in Washington County (excluding the Beaver Dam Slope) would occur. Development of the entire take area would result in the loss of 12,264 acres of desert tortoise habitat or potential desert tortoise habitat, or approximately 22 percent of the entire desert tortoise habitat within the County.

All remaining desert tortoises and optimum habitat in Washington County would be protected by acquisition and management of a 61,022-acre reserve. The reserve would be designed and managed following the guidelines of the DTRP. The reserve would meet the following important DTRP criteria: 1) the reserve would include the best examples of desert tortoise habitat in the Upper Virgin River Recovery Unit; 2) the reserve would provide protection for the ecosystems upon which entire high-density, healthy desert tortoise populations depend; and 3) the reserve would include heterogeneous terrain and vegetation.

**Table 2.3. HCP Budget Items.**

<u>Budget Item</u>	<u>Total Cost</u>	<u>Washington County</u>	<u>Other Entity</u>
HCP Administrator @ \$54,000/year for 20 years	\$1,080,000	\$1,080,000	\$ 0
HCP Biologist @ \$38,000/year for 20 years	760,000	760,000	0
Office and Travel Expenses @ \$20,000/year for 20 years	400,000	400,000	0
Facilitate Land Exchanges	500,000	500,000	0
Habitat Acquisition	1,000,000	1,000,000	0
BLM Reserve Management @ \$50,000/year for 5 years	250,000	250,000	0
SCSP Management Plan Preparation	50,000	50,000	0
Fencing	2,000,000	500,000	1,500,000 <sup>1</sup>
Purchase Grazing Permits	175,000	175,000	0
Reserve Monitoring (i.e., research)	1,250,000	1,000,000	250,000 <sup>2</sup>
Enforcement @ \$130,000/year for 5 yrs.	650,000	650,000	0 <sup>3</sup>
Translocation			
a) Temporary Desert Tortoise Care @ \$1,000/month for 20 years	240,000	240,000	0
b) Translocation Experiment @ \$150,000/year for 5 years	750,000	0	750,000 <sup>4</sup>
Education	500,000	500,000	0 <sup>5</sup>
Other Species	1,950,000	1,950,000	0
<b>Total</b>	<b>\$11,555,000</b>	<b>\$9,055,000</b>	<b>\$2,500,000</b>

<sup>1</sup> The HCP will work with UDOT to construct desert tortoise fencing along Highway 18 and Interstate 15. Developers along the perimeter of the reserve will construct fencing at their expense.

<sup>2</sup> The UDWR currently spends approximately \$60,000 every five years, including ESA section 6 funding from USFWS, and this funding level is expected to continue through the permit period.

<sup>3</sup> Two law enforcement positions will be funded for the first five years of the plan, one with UDWR to handle wildlife enforcement issues, and one with the BLM to handle reserve management issues.

<sup>4</sup> Translocation research will be funded by USFWS.

<sup>5</sup> The education center will be part of a larger organization, which is yet to be undefined.

#### 2.2.2.6 Will Other Measures Required by USFWS Be Met?

USFWS would require that an Implementation Agreement be prepared that legally binds both the Federal government and Washington County to the terms and conditions of the HCP and the ESA section 10(a) permit. Additionally, USFWS would require that a reserve management plan and a desert tortoise translocation plan be developed. Because Snow Canyon State Park would be within reserve boundaries, a management plan would need to be developed for the Park.

#### 2.2.3 Alternative C: Issuance of Section 10(a) Permit Based on HCP with Smaller Reserve

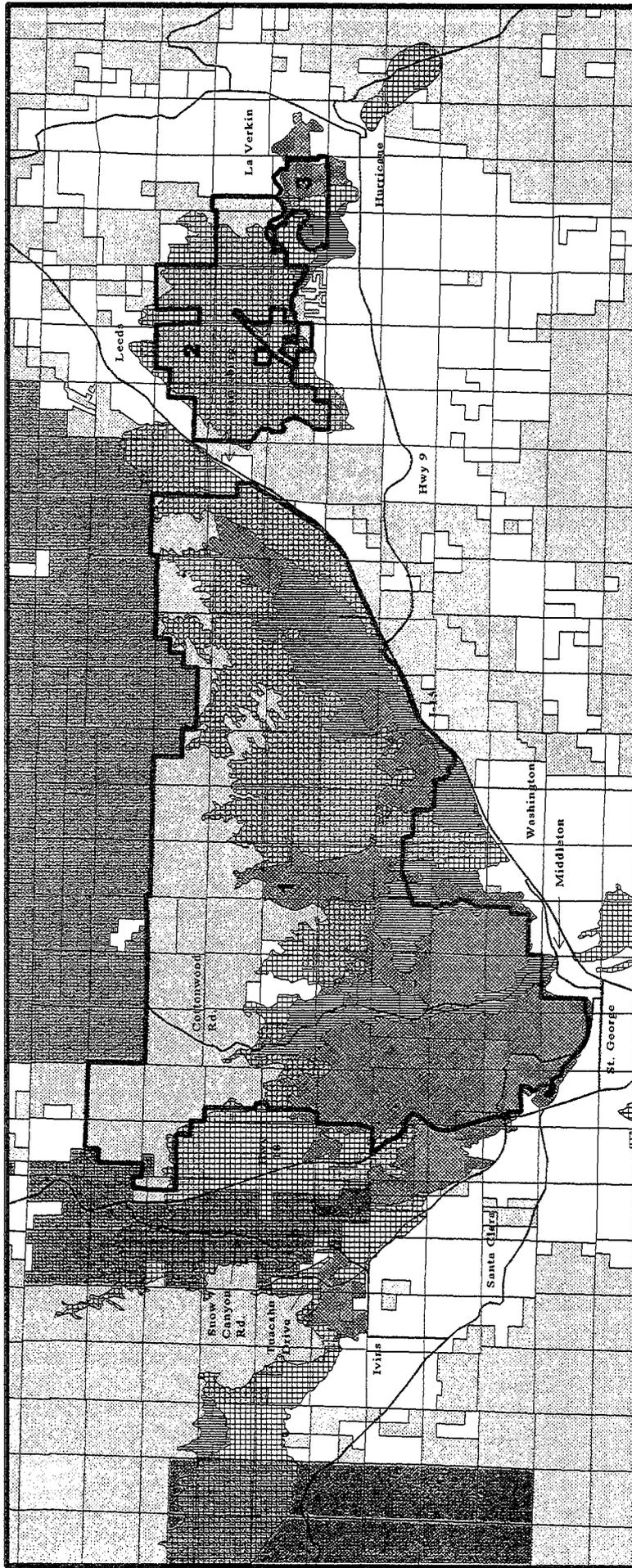
This alternative is similar to the Proposed Action except that the expected incidental take of desert tortoise habitat would be greater and size of the reserve would be reduced. This alternative proposes that the reserve areas identified as Zones 1 and 2 in the Proposed Action be excluded from the reserve, because they are relatively isolated from the rest of the reserve by existing roads and developments. Excluding the two zones would reduce the size of the reserve to 44,504 acres, and the area of incidental take would increase to 15,094 acres.

##### 2.2.3.1 Will the Taking be Incidental?

All taking of desert tortoises and desert tortoise habitat would be incidental to the otherwise lawful activity of land development regulated by government authority. The Incidental Take Permit would be a county-wide permit. The worst-case scenario for this alternative would be the incidental take of 15,094 acres of desert tortoise habitat. Also, 11,832 acres of potential habitat are expected to be used for growth and development purposes. If desert tortoises are found to be present on these lands prior to development they would be removed. However, these potential habitat areas would not count towards incidental take or incremental take formulas, and other incidental take procedures, as outlined in the HCP, would not have to be followed. Table 2.4 shows the amount and type of desert tortoise habitat in the incidental take areas.

##### 2.2.3.2 How Will Take be Minimized and Mitigated to the Greatest Extent Possible?

Mitigation and minimization would be similar to that described for the Proposed Action, except the ratio of reserve lands to desert tortoise habitat take areas would be smaller (almost 5:1 for the Proposed Action and less than 3:1 for this alternative). Private and State lands for the reserve would be acquired by BLM through land exchanges and purchase. The reserve would be managed by BLM and desert tortoise populations within the reserve would be monitored as described for Alternative B. Grazing permits within the reserve area would be acquired by BLM on a "willing seller/willing buyer basis" and they would be retired. The acreage of each management zone is listed in Table 2.5, and the approximate location of the zones are depicted in Figure 2.2.



10/02/95



- Private/Other
- State of Utah
- BLM
- Dixie National Forest
- Paiute Indian Reservation
- Snow Canyon State Park
- DWMA Boundary
- Roads
- Low Tortoise Density
- Medium Tortoise Density
- High Tortoise Density

Figure 2.2 Alternative C Preserve Management Zones



**Table 2.4. Amount of Desert Tortoise Habitat in Incidental Take Areas.**

<u>Incidental Take Area</u>	<u>Tortoise Density State Lands*</u>			<u>Tortoise Density Private Lands*</u>			<u>Total</u>
	<i>Low</i>	<i>Med</i>	<i>High</i>	<i>Low</i>	<i>Med</i>	<i>High</i>	
Gunlock	0	0	0	196	0	0	196
Ivins/Padre/Paradise	492	0	559	2,172	44	1,094	4,361
Winchester Hills	656	0	10	2,181	0	245	3,092
St. George	0	0	0	1,852	62	223	2,137
North Washington	554	597	42	204	295	313	2,005
Harrisburg/Leeds/Babylon	307	0	0	1,226	7	0	1,540
Hurricane	54	0	0	703	316	338	1,411
Springdale	0	0	0	159	0	0	159
Bloomington Hill	67	39	0	0	0	0	106
South Hurricane Cliffs	87	0	0	0	0	0	87
Total	2,217	636	611	8,691	712	2,261	15,094

\* State includes only State School Trust lands. Private includes lands owned by Washington County, municipalities, highway right-of-way, as well as private owners.

Incidental take would also be minimized by fencing, law enforcement, desert tortoise surveys prior to development, and education of the public concerning the desert tortoise.

**Table 2.5. HCP Reserve Management Zone Locations and Acreage.**

<u>Zone</u>	<u>Name/Approximate Location</u>	<u>Acres</u>
3	Core Zone/Highway 18 to Interstate 15	38,541
4	Babylon/Interstate 15	5,197
5	Hurricane/Between Virgin River and City of Hurricane	766

### 2.2.3.3 Will Adequate Funding Be Provided for the Plan?

The funding mechanism for this alternative would be the same as that for the Proposed Action. Washington County would establish an Endangered Species Trust Fund. All desert tortoise fees collected would be deposited into the fund, and all HCP-related expenses would come out of the fund. Revenues for this alternative would be similar to those for the Proposed Action. Revenue projections are based on expected human population growth in Washington County over the next 20 years. The rate of growth is not expected to increase as a result of an additional 3,071 acres of developable land. Therefore, revenues from fees associated with development would not be

expected to increase. Similarly, the proposed budget for this alternative would be similar to that proposed for Alternative B, the Proposed Action.

#### 2.2.3.4 Does the HCP Ensure the Likelihood of Survival and Recovery of Tortoises in the Wild?

Under this alternative, a worst-case HCP scenario has been considered in which the entire take area in the County would be developed over the 20-year permit period. If this were to happen, an estimated 1,709 desert tortoises would be taken (1,169 desert tortoises from take areas of the Proposed Action plus at least 540 individuals from Zones 1 and 2). This represents 22 percent of the total estimated Washington County desert tortoise population (excluding the Beaver Dam Slope). Development of the entire take area would result in the loss of 15,094 acres of desert tortoise habitat, or approximately 27 percent of the entire desert tortoise habitat within the County.

All remaining desert tortoises and habitat in Washington County would be protected by the acquisition and management of a 44,483-acre reserve. This smaller reserve does not meet all of the requirements that are outlined in the DTRP for the Upper Virgin River DWMA. The proposed DWMA (which would be larger than the 44,483-acre reserve) is considered to be: "...too small to ensure adequate probability of population persistence without careful management." (USFWS 1994). The reserve would be managed following the guidelines of the DTRP. However, even with more intensive management, desert tortoise population persistence within the reserve would be unlikely.

#### 2.2.3.5 Will Other Requirements of USFWS Be Met?

USFWS would require that an Implementation Agreement be prepared that would legally bind both the Federal government and Washington County to the terms and conditions of the HCP and the ESA section 10(a) permit. Additionally, USFWS would require that a reserve management plan and desert tortoise translocation plan be developed.

## 2.3 COMPARISON OF ALTERNATIVES MATRIX

ISSUES (concerning where growth occurs, not how much growth)	ALTERNATIVES		
	A	B	C
Socioeconomics	Short-term and long-term costs could be substantial due to individual compliance requirements.	No short-term impacts are expected as a result of the Proposed Action. Long-term impacts are considered to be substantial and adverse, although positive benefits do occur. Increase in development fees.	Similar to Alternative B, yet adverse economic impacts are slightly decreased.
Land Ownership, Use, and Management	There would be no change in the ownership, use, or management of Federal, State, and private lands.	18,698 acres of BLM lands, 10,938 acres of State lands, and 7,618 acres of private lands would be incorporated into a reserve. 2,515 acres of State lands, and 9,785 acres of private lands would be available for development. State and private lands for the reserve would be acquired through land exchanges. Land use within the reserve would be dictated by a management plan.	17,607 acres of BLM lands, 9,145 acres of State lands, and 5,134 acres of private lands would be incorporated into a reserve. 3,464 acres of State lands, and 11,664 acres of private lands would be available for development. State and private lands for the reserve would be acquired through land exchanges. Land use within the reserve would be dictated by a management plan.
Agricultural Resources	No impact would be expected.	Four grazing permits would be acquired by the County on a "willing seller-willing buyer" basis, and grazing would be retired from Zone 3 of the proposed reserve. There would be no impacts to farm lands.	Same as Alternative B.
Threatened, Endangered, Candidate, and Sensitive Species	Impacts to Federally listed species on State and private lands would be subject to case-by-case ESA section 10(a) permitting or section 7 consultation. Candidate and sensitive species would not be afforded any protection.	A 61,022-acre reserve would be established to preserve Mojave desert tortoise populations as well as other threatened, endangered, candidate, and sensitive species. An incidental take of 12,264 acres of desert tortoise habitat is expected.	A 44,504-acre reserve would be established in an attempt to preserve Mojave desert tortoise populations as well as other threatened, endangered, candidate, and sensitive species. An incidental take of 15,094 acres of desert tortoise habitat is expected.
Water Resources	Water usage will increase as the population increases.	Same as Alternative A.	Same as Alternative A.
Visual Resources	Visual quality may be impacted as a result of maximizing monetary benefit from these lands.	Impacts to visual quality would occur only in incidental take areas. Visual quality of reserve lands would receive protection.	Same as Alternative B.
Wildlife Resources	Management of wildlife resources would be dictated by resource management plans on Federal lands. There would be minimal management of wildlife resources on State and private lands.	The reserve would reduce adverse impacts to wildlife resources. However, wildlife resources in the incidental take areas may be displaced if development occurs in these areas.	Same as Alternative B.



## **CHAPTER 3.0 AFFECTED ENVIRONMENT**

### **3.1 GENERAL ENVIRONMENTAL SETTING**

Washington County is located in the southwestern corner of Utah where the Great Basin Desert, Mojave Desert, and Colorado Plateau converge. Elevations range from 2,200 feet above sea level near the Arizona/Utah border to over 10,375 feet at Pine Peak. Temperatures in the region vary greatly depending on elevation. At higher elevations the temperature is generally cooler and the precipitation greater than at lower elevations. Precipitation ranges from 7.5 to 35 inches annually, and between 40 and 205 days are frost-free per year.

### **3.2 RESOURCES ELIMINATED FROM FURTHER CONSIDERATION**

The following elements of the human environment should not be significantly affected by the Proposed Action or other alternatives in this EIS:

- Air Quality
- Floodplains
- Cultural Resources
- Native American Cultural and Religious Sites
- Hazardous Materials
- Wetlands/Riparian Zones
- Wild and Scenic Rivers
- Wilderness
- Geology and Soils
- Topography
- Vegetation

A description of existing conditions for resources present is provided below, with rationale for their exclusion from detailed analysis. The resources that would potentially be affected by the Proposed Action and/or the alternatives are addressed in the remaining sections of this chapter.

#### **3.2.1 Air Quality**

Air quality in Washington County is generally excellent and is rated as Category I under Federal clean air standards in and near St. George. Air quality is predominantly affected near urban areas by vehicle emissions, use of fireplaces and wood-burning stoves in winter months, wind blown dust, and regional sources of pollutants from metropolitan areas such as Los Angeles and Las Vegas (City of St. George 1994).

Air quality can be expected to deteriorate with increasing population size and a correlated increase in vehicle emissions and wood-burning. Because levels of growth or development

would be similar under all alternatives, air quality would not be differentially affected under any of the alternatives.

### **3.2.2 Floodplains**

In the overall project area, major floodplains are associated with the Virgin and Santa Clara Rivers (City of St. George 1994). Portions of some of the take areas, particularly Take Areas 4 and 6, fall within the floodplain of the Santa Clara and/or the Virgin River.

### **3.2.3 Cultural Resources**

The cultural resources of Washington County include archaeological resources (any material remains of past human life or activities which are at least 100 years old) and historic resources associated with more recent settlement in the area.

No cultural resources surveys were conducted as part of this analysis because no potential adverse impacts would occur under any of the alternatives considered. Private and State lands, whether they remain as is under Alternative A or are designated as take areas under Alternatives B and C, would be subject to regulation set forth by the State of Utah regarding the protection of cultural resources, and the National Historic Preservation Act, which is the process (ordinarily delegated to States by the National Park Service) to determine whether sites eligible for listing on the National Register of Historic Places shall in fact be so listed. Private and State lands within the proposed reserve would be subject to Federal regulations once they are exchanged to BLM. Archaeological or historic resources that may be present on these lands would therefore be afforded greater protection under Alternatives B and C than under Alternative A. All BLM lands would continue to be subject to Federal regulations regarding protection of cultural resources.

### **3.2.4 Native American Cultural and Religious Sites**

No comprehensive ethnographic or cultural survey was conducted as a part of this analysis, and it is not known whether such resources exist within the project area (both the proposed reserve and the areas identified for take).

### **3.2.5 Hazardous Materials**

All lands which may be acquired by the Federal Government, whether by purchase, donation, or exchange will be subject to survey for hazardous substances and hazardous wastes, as defined by EPA regulations implementing the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA) and hazardous waste management laws adopted by the State of Utah pursuant to its RCRA program delegation from EPA. It is expected that property owners whose lands may be exchanged for Federal lands will also require hazardous waste surveys prior to accepting title to such lands from the United States.

### **3.2.6 Wetlands/Riparian Zones**

Wetlands and riparian zones within the project area are primarily restricted to the Virgin and Santa Clara Rivers. Because human population growth would not be expected to be greater under any particular alternative, impacts to these resources are largely unrelated to any of the alternatives analyzed in this document. Wetlands and riparian areas on private lands along the Santa Clara and Virgin Rivers would likely fall under the jurisdiction of the ACOE and any development would be subject to compliance with the CWA, regardless of whether they occur in designated take areas (Alternatives B or C) or not (Alternative A).

### **3.2.7 Wild and Scenic Rivers**

BLM has identified Deep Creek, the North Fork of the Virgin River, and the Virgin River through the gorge as potentially eligible for designation as wild and scenic rivers, although they have not yet been designated as such. Neither the Proposed Action nor the other alternatives would impact those reaches of any of the streams identified as potentially eligible for inclusion in the National Wild and Scenic Rivers System.

### **3.2.8 Wilderness**

Existing wilderness areas within Washington County are restricted to the BLM-administered Beaver Dam Mountains Wilderness Area southwest of St. George and a wilderness area administered by the Dixie National Forest in the Pine Valley Mountains (U.S. Soil Conservation Service 1990). Neither wilderness area is located within proposed reserve or take areas, and therefore would not be impacted under any of the alternatives.

### **3.2.9 Geology and Soils**

The project area falls within the Colorado Plateau Province and includes primarily sedimentary rocks, and to a lesser degree volcanics, basalts, and eolian and alluvial deposits (U.S. Soil Conservation Service 1990). Because the primary geologic features of interest are generally associated with Zion National Park, neither the Proposed Action nor its alternatives would be expected to significantly impact this resource.

The Virgin River Basin-Utah Cooperative Study (U.S. Soil Conservation Service 1990) identified areas within the Basin which are subject to accelerated erosion and sedimentation. These areas occur throughout the County, but several areas of critically eroding soils occur within the reserve proposed under Alternatives B and C. Because increased erosion in these (and other) areas has been attributed to poor range condition (U.S. Soil Conservation Service 1990), restriction of access and elimination of livestock grazing in the reserve proposed under Alternatives B and C would likely help reduce excessive erosion in these areas.

### **3.2.10 Topography**

Potential development on State and private lands, under any of the alternatives, would not be expected to significantly alter either local or regional topography.

### **3.2.11 Vegetation**

Vegetation types within the project area include creosote, blackbrush, desert shrub, grass, and pinyon-juniper associations. Development under any of the alternatives would result in removal of some native vegetation. Removal of vegetation as a result of development would occur in or near areas with existing urban or rural development. No vegetation types unique to the region or State would be impacted under any of the alternatives. Listed plant species are addressed elsewhere in this EIS.

## **3.3 SOCIOECONOMICS**

The Washington County/St. George area is experiencing greater human population growth than other areas of Utah. This has resulted from a favorable climate, a high level of tourism, college environment, family-oriented lifestyle, desirable amenities for retired people, and a positive environment for industry (WCWCD 1994).

During the early 1980s, area growth was neither fully planned or anticipated. Projections of population growth and demand for real estate were therefore conservative and inaccurate. Despite efforts of State and Federal agencies to develop an accurate model to predict human population growth, real growth has consistently exceeded projections (WCWCD 1994). This strong growth has coincided with marketing efforts for development projects considered substantial by Washington County standards.

### **3.3.1 County Population Growth and Trends**

Growth in Washington County has been strong, with human population increasing by 83 percent from 1980 to 1990 (WCWCD 1994). St. George had the greatest small-community growth in the State during this period, with population growing from 13,146 to 28,502, or 117 percent. This growth included the annexation of Bloomington and Bloomington Hills, causing some distortion of actual growth figures. Population figures for St. George and Washington County are presented in Figure 3.1 (WCWCD 1994).

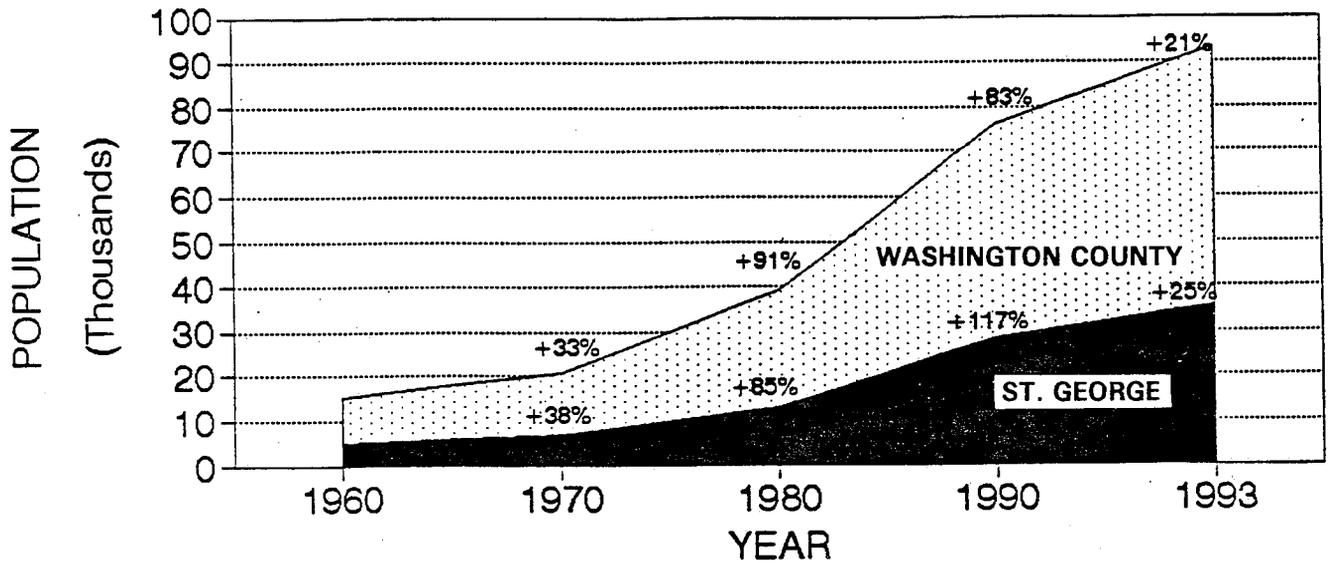


Figure 3.1 Population Growth in Washington County and St. George City: 1960 - 1993

### 3.3.2 St. George and Washington County Dwelling Unit Growth

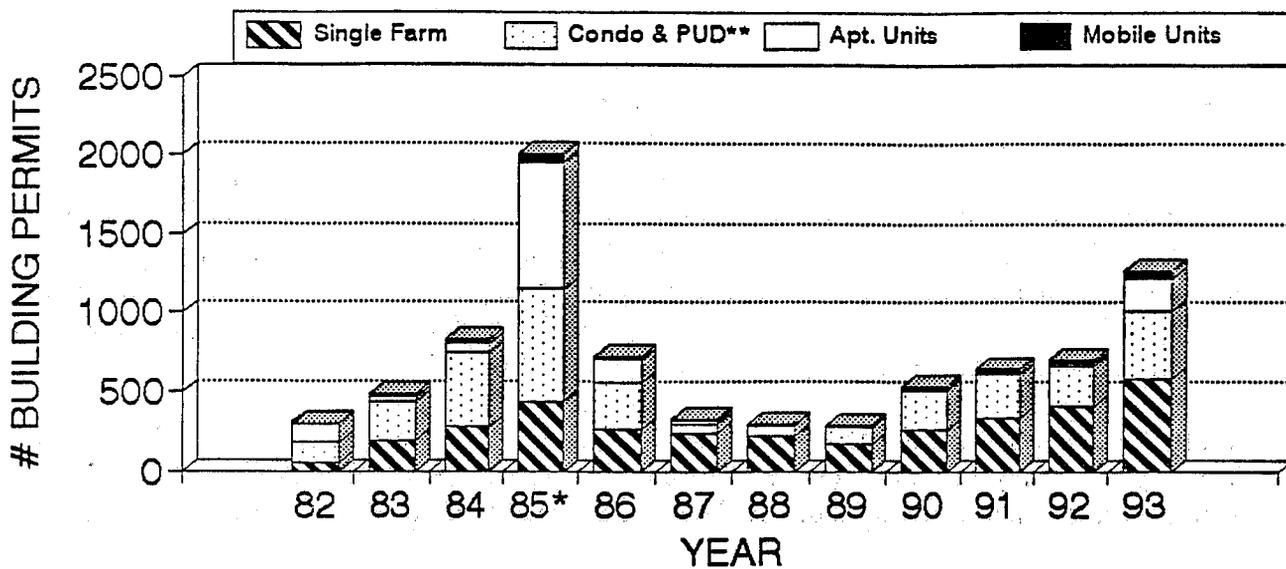
Dwelling unit growth trends in Washington County are reflected in the number of building permits issued and real estate tax notices sent out in recent years. These data indicate strong growth for both the City of St. George and Washington County as a whole. Data also show a faster growth rate for secondary homes than for primary homes. Figure 3.2 presents an 11-year history of building permit activity in St. George (for residential building only). Figure 3.3 presents complete annual building permit data and value for Washington County.

Table 3.1 reports the number of real estate tax notices sent out each year since 1982 by the Washington County Assessor's Office. These notices reflect the number of new lots or Planned Unit Developments, showing individual ownerships that required separate tax notices.

Every lot owner and developer with a separately described and legally recorded lot in a new subdivision receives a tax notice for each described lot, although the lots may still be under one ownership. Apartment or twin home-type projects having a single owner are recorded as one parcel. The 1990 real estate tax notices for dwelling units (not unimproved lots or acreage) were sent to 12,896 owners. The census that year indicated a population of 47,825, indicating 3.7 people per dwelling unit. It must be noted, however, that apartment buildings are counted as one ownership even though there may be 200 people living in that unit.

**Table 3.1. Real Estate Tax Notices Mailed by the County Assessor.**

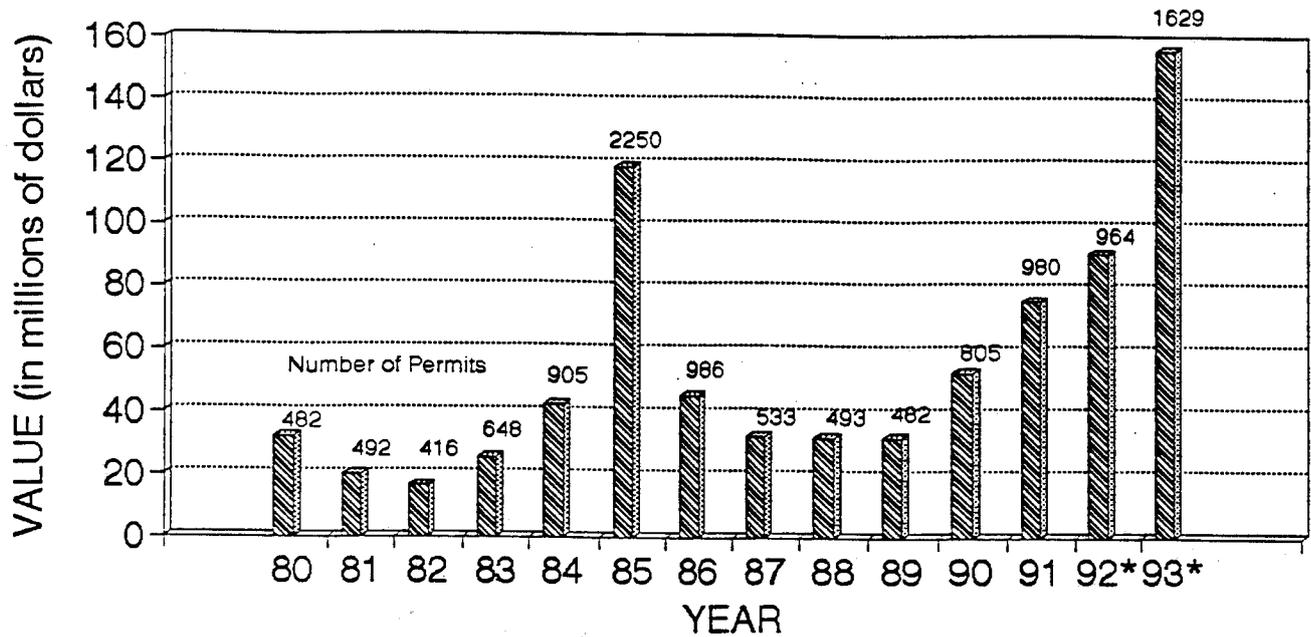
<u>Year</u>	<u>Number of Tax Notices Mailed</u>	<u>Increase Over Previous Year</u>
1982	25,363	
1983	25,979	616
1984	26,636	657
1985	27,407	771
1986	30,487	3,080
1987	31,707	1,220
1988	32,993	1,286
1989	33,691	698
1990	34,588	897
1991	35,395	807
1992	36,287	892
1993	38,002	1,715



\* In 1985 the City of St. George announced an increase in building permit fees of approximately 100 percent, resulting in a decrease in numbers of permits issued during the 1986 to 1989 period. Builders who obtained prior approval on subdivision plots and purchased building permits in 1985 were exempt from these increased rates. These advance purchases distort permit data for at least the following four years.

\*\* PUD = Planned Unit Development.

**Figure 3.2 St. George City Building Permits from 1982 to 1993**



\* This number of permits reflects only St. George City and the unincorporated portions of Washington County, effectively understating the total number of permits in the County for these two years.

**Figure 3.3 Building Permit Data for Washington County**

The purchase of second homes in St. George is an aspect of growth not normally found in other communities. The benefit of second homes is reflected in lower costs to the community. Owners do not send their children to school, while police, garbage removal, and other public service needs also diminish. Property taxes for second homes are based on 95 percent of market or assessed value, rather on 67 percent as are primary residences. Part-time residents of the City usually consider their official place of residence to be elsewhere, and are not included in typical methods of determining population.

The Washington County Assessor's office supplied the information presented in Tables 3.2 and 3.3 regarding primary and secondary homes in the St. George area. These figures were obtained by the assessor from requests sent to property owners with their tax notices. From 1985 to 1992, the percentage of non-resident owners has increased from 14 to 17 percent, indicating an average growth of 8.7 percent per year for seven years.

**Table 3.2. Percentages of Primary and Secondary Homes, 1985, 1990, and 1993.**

Year	Total	Primary Homes		Secondary Homes	
1985	10,673	9,172	86%	1,501	14%
1990	15,424	12,896	84%	2,528	16%
1993	18,251	15,301	84%	2,950	16%

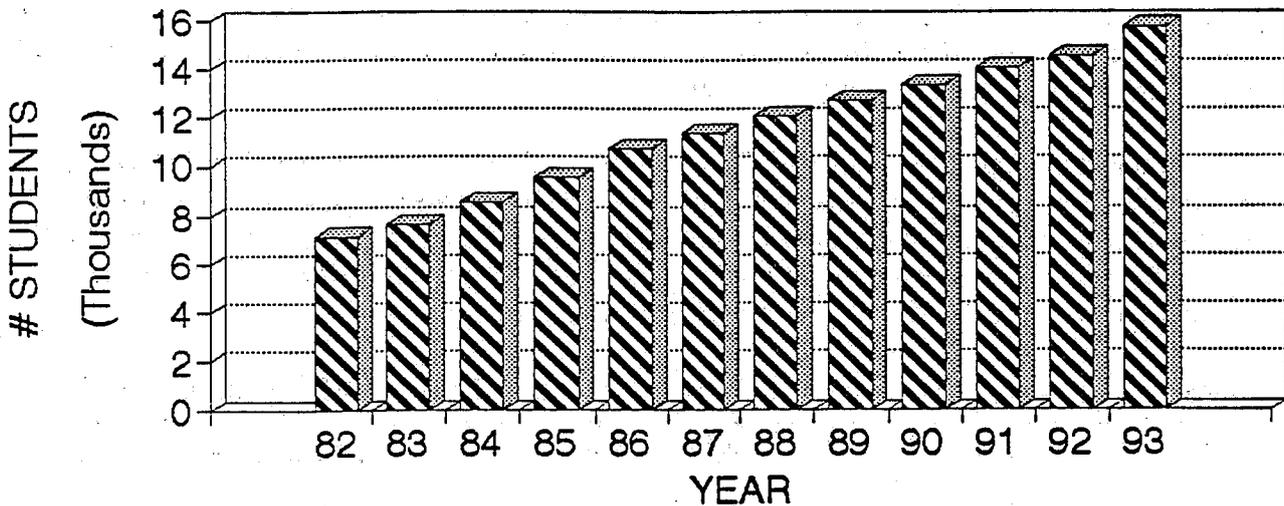
**Table 3.3. Primary and Secondary Housing in Washington County by Type.**

<u>Type of Housing</u>	<u>Percent Primary</u>	<u>Percent Secondary</u>
Single Family	96.0-97.0	3.0-4.0
Condominiums	65.0	35.0
Mobile Homes	80.0	20.0
Apartment/Multi-Family*	100.0	0.0
Total	85.2	14.8

\* Apartment and multi-family structures are assumed by the Assessor to be primary residences. However, they are counted as one parcel since only one tax notice is sent to the owner of an apartment or mobile home rental park.

### 3.3.3 School Population Growth

The student increase rate suggests strong growth in young families. Thus, in a so-called "retirement community," bi-modal population growth may be assumed, split between young families and retirees. Growth in young families has been a product of the demand for workers in service and other area industries. Future growth in the retirement segment of the community will be followed by growth in young families as workers move into the area to meet the demand for additional services. Figure 3.4 presents Washington County school enrollment, which has doubled over the last ten years. Growth in enrollment has also occurred at Dixie College in St. George.



**Figure 3.4 Washington County School Enrollment**

### **3.3.4 Regional Impact**

Growth in Washington County has impacted other communities in the area. For example, with the heavy population growth of retired people and second home owners, an increase in jobs has been created in Mesquite, Nevada, 36 miles southwest of St. George. Mesquite has over 1,500 motel rooms used in combination with the gaming industry. Washington County provides housing and schools to approximately 25 percent of the employees of the recreation and gaming business establishments in Mesquite.

Washington County experienced an average annual compounded growth rate of 6.34 percent from 1980 through 1993 (Utah Division of State Lands and Forestry 1994). Marketing of major projects will further enhance growth, causing that figure to grow. Development within the community, such as shopping facilities, professional services, better land planning, increased tourism, and recreational and tourist facilities, should further enhance growth prospects.

### **3.3.5 Opportunity Costs**

The following is paraphrased from a report entitled "The Economic Impact of Alternative Desert Tortoise Habitat Plans for Washington County, Utah" (Groesbeck 1995).

Opportunity costs are formally defined as the highest valued alternative foregone by making a decision to use a resource in a particular manner. The very definition of "economic impact," therefore, must include the full opportunity costs of any policy. The opportunity cost of a decision to set aside a natural resource for one use is the lost value associated with the highest valued alternative use of that resource.

An important dimension of opportunity cost is that these costs persist and change over time as the highest valued alternative use changes, due to the dynamic nature of markets. Further, artificial barriers, such as government policies restricting the use of a resource, do not eliminate the opportunity costs of that resource at a social or individual level. When lands are initially set aside by government to protect a listed species, the opportunity costs of the land persist, despite a policy barrier against alternative uses. Further, as time passes and the resource continues to have legal constraints on alternative uses, the annual opportunity costs will rise as the resource in general becomes more scarce.

Such is the case of lands proposed to be managed intensively for desert tortoise habitat in Washington County. While the listing process has complicated economic development of affected lands via the force of law, the opportunity cost of the land continues to persist. Further, as Washington County continues to grow, and prime developable land becomes increasingly scarce, the opportunity costs of habitat lands continue to grow.

When considering the economic impact of the proposed HCP for Washington County it is important to keep in mind the continuing opportunity costs of lands set aside before the HCP is to be implemented. To the extent that the HCP allows for the development of some of the lands

that were previously set aside, this mitigates the negative impact of setting aside valuable land resources for protected desert tortoise habitat. However, the lands that continue to be set aside create economic losses to the community equivalent to the social opportunity cost of those lands.

In this sense, the HCP does not create positive net effects on Washington County, rather it reduces the level of economic costs imposed upon the County. However, because avoided costs can be viewed as a benefit, the value of this cost savings (benefit) should be calculated. This simply means that economic costs should be calculated for all possible scenarios for setting aside land. The "benefit" of the HCP will be the difference between the economic cost without the HCP versus the lower economic costs with the HCP.

#### 3.3.5.1 Method and Assumptions of Economic Impact Estimation

Before estimating the economic cost of removing lands from development in a region, it is essential to determine a) the annual rate at which the affected lands would have been developed; b) the proportions of land use between residential versus commercial/industrial; and c) the 1996 economic value of developed commercial and residential property (land, structures, and commercial sales). Once these factors are estimated on a per-acre basis, then an input-output model of Washington County can be used to assess the annual impact of removing a number of acres from development in the County.

The potential annual rate of development of the lands in question is primarily a function of human population growth and the quantity of equivalent alternative development sites in the County. The Utah Division of State Lands and Forestry (Division) estimated the average annual rate of absorption for all uses in Washington County at around 500 acres for the period between 1994 and 2000 (Utah Division of State Lands and Forestry 1994). This estimated absorption rate is primarily driven by population growth in the region. Therefore, if population growth rises or falls, the absorption rate will vary in the same direction.

The other factor that drives absorption of the lands in the incidental take areas is the number of acres available in equivalent alternative areas. At this time, there is no shortage of equivalent alternative development sites (WCWCD 1994). Estimates of unconstrained prime developable land in Washington County currently exceed 80,000 acres, which implies that increasing the number of developable acres in the take areas will simply shift the existing development pattern geographically in the short run, but will not necessarily increase the overall level of economic activity in the County. In fact, if lands in incidental take areas were instantaneously and simultaneously made available for development, overall land values would fall in Washington County in the short run. It is unlikely that this will occur to any great extent, however, as the inaccessibility of many of these lands will act as a natural barrier to their effectively entering the land development market for several years, until roads and utilities are developed in those areas.

As Washington County is built out and prime lands are fully absorbed, the lands in the take areas will provide unique opportunities for economic growth in the region, and the remaining

lands in the desert habitat reserve will experience rapidly increasing opportunity costs. Therefore, the economic costs and benefits of the entire reserve, and the take areas in particular, will change dramatically over time, making it necessary to provide impacts reported in both the short and long run. Long-run impacts are estimated using the 1996 value of all potential construction and development activities that could be sustained on non-Federal lands in the reserve, as well as the consumer demand that would be generated by households living on the affected lands. This means that long-run impact estimates show the lost economic opportunity (in 1996 dollars) of reserve, non-take lands, as if they were fully built-out, based on the development pattern currently existing in St. George. Further, the long-run reclaimed opportunities (avoided costs) associated with incidental-take area lands are estimated as the 1996 value of the property as if it were fully developed according to the St. George development pattern. Estimates of lost or reclaimed economic opportunities also include the one-year effect of consumption expenditures of new households that would have or will occupy the new residential units, once again in 1996 dollars. Short-run impacts of the HCP are assumed to be zero in all alternatives because of the adequate supply of equivalent development sites in the County.

The second major factor in determining potential economic impact of the HCP is the proportion of land to be used as residential versus commercial and industrial. The current ratio of households to business firms in the County is approximately 12 to 1 (derived from IMPLAN [a computer input-output model which determines economic impacts], assuming an average household size of three persons with two adults and a labor force participation rate of 60 percent). In the Division study cited previously, it was estimated that the annual rate of absorption will be 405 acres for residential lands and 95 acres for commercial/industrial lands. Further, data provided in that study make it possible to derive that total land use per residential unit, including utility and road requirements, is currently .30925 acres (probability weighted between single family, townhome/condos, and apartments). Given this information, the number of housing units per acre will be 3.2336, for a total number of housing units of  $1,309.61 = (3.2336 \times 405)$ . If the ratio of residences per business holds at 12 to 1, this implies that the number of new firms established annually will be 109.13. This being the case, each business will require an average of .8705 acres, or that each acre of commercial/industrial land will support 1.1487 firms.

The value of new construction per residential unit (probability-adjusted for types of housing) in 1996 is assumed as \$93,994. The value of new commercial construction per building per firm is assumed to be \$168,730. These numbers were extrapolated from building permit data for the years 1991-93, and assumed a 4 percent annual inflation rate. Developed land value per residence for 1993 was estimated as \$27,441 in the study previously cited by the Division. Assuming an annual inflation rate for lands equal to the 16-year average (7.9 percent), the value of developed lands for single family residential units will be \$34,471, generating a probability-adjusted value for all residential units of \$23,689. Using the IMPLAN data set, road construction value per residential unit is assumed to be \$4,866, and utility construction value is assumed to be \$12,167. Therefore, raw land value per residential unit, the net of developed value minus development cost, is assumed to be \$6,656, or \$21,522 per acre of undeveloped

prime land. It is further assumed that of the total lands available, one-third of the lands will be used for public domain uses such as parks, utility access, schools, etc. The economic impact of public domain uses is not calculated in this study.

Gross household income for 1996 is assumed to be \$36,676. This number was derived from Utah Tax Commission data for return year 1993, assuming a 4 percent inflation rate and a 2 percent growth rate in real income annually. It is assumed that there will be a 50 percent net leakage of gross income, accounting for the probability of part-time residences, net State and Federal tax payments<sup>1</sup>, savings rates, charitable contributions to entities outside the County, and purchases of out-of-county goods. Therefore, the amount of initially captured income will be \$18,338 per household. Using this number to shock the input-output model will probably create conservative estimates of retained benefits associated with incidental take areas. This is true because net tax payments may actually be a negative number due to the large amounts of Federal and State spending that occur in Washington County caused by relatively high retiree populations and extensive Federal land holdings in the County.

A further assumption that is made is that all Federal lands are completely constrained as far as development is concerned. Further, no attempt has been made to account for lost grazing values beyond the \$183,000 value that current permit holders are estimated to sell those permits for.

These data are used in Chapter 4 to compute the economic impact of the alternatives.

### **3.4 LAND OWNERSHIP, USE, AND MANAGEMENT**

#### **3.4.1 Land Ownership**

Land ownership in Washington County is composed of Federally owned lands, State of Utah lands, and privately owned lands. Table 3.4 defines the acreage and percentage of lands owned by each of these entities.

Federal lands in Washington County are managed by several agencies. The Bureau of Land Management (BLM) manages over half of the Federal lands in the County (53 percent). The U.S. Forest Service (USFS) manages 33 percent, the National Park Service (NPS) manages approximately 11 percent, and the remaining 3 percent is managed by the Paiute Indian Tribe. BLM lands are the only Federal lands that would be affected by the Proposed Action or alternatives. Therefore, Federal lands managed by the other agencies will not be discussed further in this EIS.

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<sup>1</sup> Net State and Federal tax payments equal State plus Federal tax payments, minus State plus Federal spending in the County.

**Table 3.4. Land Ownership in Washington County.**

<u>Land Status</u>	<u>Acres</u>	<u>Percent</u>
Federal	1,176,289	76%
State	94,747	6%
Private	280,964	18%
	-----	-----
Total	1,552,000	100%

Lands owned by the State of Utah consist primarily of Federally granted School Trust lands. As specified in Utah's State Enabling Act, these lands were transferred into State Trust lands for the benefit of the public school system (Utah Division of State Lands and Forestry 1986).

Approximately 90 percent of the privately owned lands in Washington County are currently used for agriculture. However, as the population in the County continues to grow, private landowners are increasingly considering commercial development rather than agriculture. Land uses that are being pursued increasingly by private landowners include resort and golf course development, service-related business development, and residential development.

### **3.4.2 Land Use and Management**

#### **3.4.2.1 BLM Lands**

**Mining and Minerals.** All BLM lands which have not been withdrawn are generally subject to mineral entry. There are currently 1,192 mining claims registered with the BLM in Washington County on approximately 22,800 acres of land (BLM 1990a). Gold and silver have been mined throughout the area in the past. The area has also been explored for uranium but no extraction has occurred to date. The Apex mine, located west of St. George, is the only open gallium and germanium mine in the United States. These rare minerals are mined for use in semiconductors and optical equipment (BLM 1990a). One mine site is located near the town of Hurricane in desert tortoise habitat, and is operating under an ESA section 7 consultation.

Sand and gravel operations are located on BLM lands at the base of the Beaver Dam Mountains southwest of St. George, along Fort Pearce Wash, and along the Santa Clara River. Cinder operations are primarily located east of St. George, and decorative flagstone is extracted by permit only from several locations in southern Washington County (BLM 1990a).

**Timber.** BLM lands in Washington County are dominated by pinyon and juniper trees. No commercial cutting is permitted; however, private cutting of dead and down materials is allowed with a permit. Cutting of green trees is permitted for management purposes only (BLM 1990a).

**Recreation.** BLM lands contain areas of scenic beauty, including those lands adjacent to Zion National Park. The BLM has stated in their Dixie Resource Management Plan (1990a) that the

scenic value of the area will be protected by restricting OHV use on lands adjacent to the national park.

Five Special Recreation Management Areas (SRMAs) have been proposed on BLM lands in Washington County. Two of these, the 87,900-acre Red Cliffs/Sand Mountain SRMA and the 24,000-acre Red Mountain/Santa Clara Creek SRMA, are partially located on lands that would be impacted by the action alternatives. Recreational activities currently permitted in the Red Cliffs/Sand Mountain area include OHV riding, learning natural history, reservoir- and stream-based recreation, picnicking, camping, viewing scenery, scenic driving, primitive recreation, viewing historical and paleontological sites, and horseback riding. Recreational activities currently permitted in the Red Mountain/Santa Clara Creek area include primitive recreation, hiking, viewing scenery, stream-based recreation, picnicking, camping, horseback riding, small game hunting, scenic driving, and viewing archaeological sites (BLM 1990a).

#### 3.4.2.2 State Lands

The Division is responsible for administration of all State School Trust lands. Management is based on multiple-use/sustained-yield principles, except where State law directs otherwise. The only other State lands in Washington County are within Snow Canyon State Park. The park is administered by the USPR to promote recreation, wildlife, and scenic value.

**Mining and Minerals.** Two leases for sand and gravel operations currently exist on State School Trust lands. Both leases are north and east of St. George, outside the area that would be impacted by the action alternatives.

**Timber.** Woodcutting is permitted on State lands, except within Snow Canyon State Park. No commercial cutting of timber occurs on State lands.

**Recreation.** Recreational opportunities within Snow Canyon State Park include camping, picnicking, scenic driving, horseback riding, hiking, and wildlife viewing. The park includes one established campground and is accessible by two paved highways. Recreational opportunities on State Trust lands are less restricted than they are within the State park. Activities on State Trust lands include those listed above, as well as OHV use, hunting, and stream-based recreation.

#### 3.4.2.3 Private Lands

**Mining and Minerals.** Individual landowners are not required to file mining claims with any government agency. Therefore, the extent of mining on private property cannot be determined. No mining is known to occur on city lands within Washington County.

**Timber.** Woodcutting occurs frequently on private lands. Currently there is no large scale commercial cutting taking place on private or city lands.

Recreation. There are no restrictions for recreational opportunities on privately owned lands, provided the activities are in compliance with city and county ordinances.

### 3.5 AGRICULTURAL RESOURCES

#### 3.5.1 Rangeland

There are currently 110 grazing allotments in Washington County, encompassing approximately 539,705 acres of BLM-administered lands, 73,975 acres of State lands, and 54,596 acres of private lands. Some allotments also encompass Paiute Indian Tribal lands, NPS lands, and USFS lands. Livestock grazed on these lands includes cattle, sheep, and horses. Because grazing occurs predominantly on BLM lands, Allotment Management Plans (AMPs) have been prepared by BLM for each allotment, and management is dictated by AMPs. Grazing allotments are managed under one of three categories: 1) Improve, 2) Maintain, and 3) Custodial. The improvement category is applied to allotments with resource management problems that need to be resolved. The maintain category is applied to allotments in favorable condition and management efforts are directed towards maintaining those conditions. The custodial category is applied to those allotments where returns for intensive management are not expected to be great; therefore, minimal management is applied.

Four grazing allotments occur in areas which would be impacted by the action alternatives. The HCP proposes to purchase and retire these allotments. Table 3.5 lists the allotments, total acreage of each allotment, and number of Federal and State Animal Unit Months (AUMs) for each allotment.

**Table 3.5. Grazing Allotments That Could be Impacted by the Action Alternatives.**

<u>Name</u>	<u>Total Acreage</u>	<u>Federal AUMs</u>	<u>State AUMs</u>
Alger Hollow	16,878	741	124
Yellow Knolls	2,053	16	0
Washington	20,563	256	870
Red Cliffs	19,022	425	0

#### 3.5.2 Farmland

No Federal or State land is leased as farmland in Washington County. Farming does occur on private lands in the County, but none of the farmed lands occur in areas that would be impacted by the action alternatives. Crops grown in the area include alfalfa, corn, apples, apricots, and melons.

### 3.6 THREATENED, ENDANGERED, CANDIDATE, AND SENSITIVE SPECIES

Nine Federally listed threatened or endangered species are found in Washington County. They are: Mojave desert tortoise, bald eagle, and Siler pincushion cactus (all threatened), peregrine falcon, woundfin, Virgin River chub, dwarf bear-poppy, Mexican spotted owl, and southwestern willow flycatcher (all endangered). Eight of these may be affected by one or more of the alternatives. Habitats for these species within Washington County are shown in Figure 3.5. In addition, 24 candidate species may be affected (Table 3.6). Habitat information for all 33 affected species is provided below, and the species are analyzed for impacts under each alternative in Chapter 4. Table 3.7, which is provided at the end of this section, lists Federally listed/candidate and State sensitive species present in Washington County that would not be affected. (For additional information and sources, see Chapter 7 of the HCP.)

#### 3.6.1 Mojave Desert Tortoise (*Gopherus agassizii*)

The Mojave desert tortoise is listed as threatened by USFWS. Desert tortoises occur in areas throughout Washington County, and potential habitat for the species includes developable land in the County. The distribution of the Mojave desert tortoise extends from southern California into southern Nevada, northwestern Arizona, and southwestern Utah (see Figure 2.1 of HCP).

A rapid decline in the population led to the emergency listing of desert tortoises north and west of the Colorado River (excluding the Beaver Dam Slope population) as endangered in 1989 (USFWS 1989). The entire Mojave desert tortoise population was listed as threatened on April 2, 1990. Primary reasons for listing included deterioration and loss of habitat, collection for pets or other purposes, elevated levels of predation and, loss of desert tortoises from disease (USFWS 1994a). The USFWS released the final Recovery Plan for the Desert Tortoise (Mojave Population) in August 1994.

An adult desert tortoise has a domed carapace, or upper shell, and relatively flat plastron, or bottom shell. Carapace color is generally light to dark brown, while the color of the plastron is cream and is often mottled. The front legs are adapted for burrowing, with laterally extended limbs and flattened feet, enlarged horny scales, and broad claws. The rear legs are rounded and elephantine. Desert tortoises have rounded heads and blunt, horny beaks. Their unprotected skin is thin and easily penetrated. Adult desert tortoises range in size from 9.25 to 14.5 inches long, while hatchlings are about the size of a silver dollar (approximately 1.4 to 1.8 inches long). The life span of desert tortoises has been estimated at 50 to 100 years. Mortality is highest in juvenile desert tortoises due to their small size and soft shell.

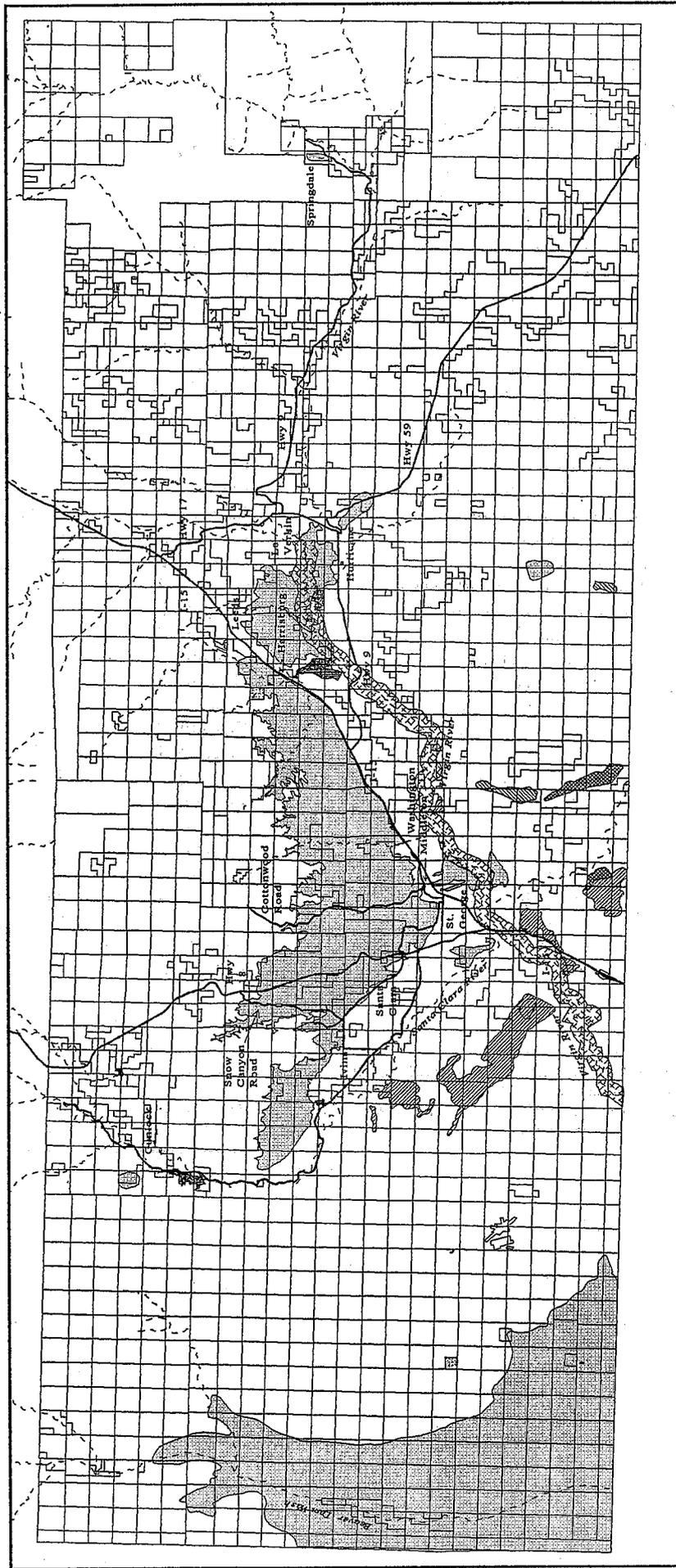
In order to escape extreme desert temperatures, desert tortoises rely on burrows and other forms of cover to regulate body heat. Desert tortoises will excavate burrows using their front legs to scrape away dirt. Once the burrow is deep enough, a desert tortoise may turn around to face the entrance and continue to push dirt out of the burrow with its forelimbs (Ernst and Barbour 1972). In areas with sandy-loamy soil, a desert tortoise can complete a burrow in little more than an hour (Marlow 1979). Burrow construction occurs on flats and sloping bajadas, as well

**Table 3.6. Threatened, Endangered, Candidate, and Sensitive Species Potentially Affected by the Alternatives.**

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal Status</u>	<u>State Status</u>
Mojave Desert Tortoise	<i>Gopherus agassizii</i>	Threatened	Endangered
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Threatened	Endangered
Peregrine Falcon	<i>Falco peregrinus</i>	Endangered	Endangered
Woundfin	<i>Plagopterus argentissimus</i>	Endangered	Endangered
Virgin River Chub	<i>Gila robusta seminuda</i>	Endangered	Endangered
Dwarf Bear-Poppy	<i>Arctomecon humilis</i>	Endangered	S1
Siler Pincushion Cactus	<i>Pediocactus sileri</i>	Threatened	LT
Southern Willow Flycatcher	<i>Empidonax traillii extimus</i>	Endangered	S1/S2
Merriam's Kangaroo Rat	<i>Dipodomys merriami frenatus</i>	Category 2	S2
Pygmy Rabbit	<i>Brachylagus idahoensis</i>	Category 2	-
Ferruginous Hawk	<i>Buteo regalis</i>	Category 2	Threatened
Western Chuckwalla	<i>Sauromalus obesus obesus</i>	Category 2	Threatened
Gila Monster	<i>Heloderma suspectum</i>	Category 2	Endangered
Desert Night Lizard	<i>Xantusia vigilis</i>	Category 2	S2
Glossy Snake	<i>Arizona elegans</i>	Category 2	S2
Utah Banded Gecko	<i>Coleonyx variegatus utahensis</i>	Category 2	S2
Zebra-tailed Lizard	<i>Callisaurus draconoides</i>	Category 2	S2
Lyre Snake	<i>Trimorphodon biscatus lambda</i>	Category 2	S2
Western Blind Snake	<i>Leptotyphlops humilis</i>	Category 2	S2
Sidewinder	<i>Crotalus cerastes</i>	Category 2	S2
Holmgren Milk-vetch	<i>Astragalus holmgreniorum</i>	Category 1	S1
Gumbo Milk-vetch	<i>Astragalus ampullarius</i>	Category 2	S2
Virgin Spinedace	<i>Lepidomeda mollispinis mollispinis</i>	Category 1	Endangered
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Category 3	Threatened
Common Yellowthroat	<i>Geothlypis trichas</i>	Category 2	S1
Yellow-breasted Chat	<i>Icteria virens</i>	Category 2	S1
Bell's Vireo	<i>Vireo bellii</i>	Category 2	S1/S2
Flannelmouth Sucker	<i>Catostomous latipinnis</i>	Category 2	-
Arizona Toad	<i>Bufo microscaphus microscaphus</i>	Category 2	S1
Lowland Leopard Frog	<i>Rana yavapaiensis</i>	Category 2	S1
Northern Leopard Frog	<i>Rana pipiens</i>	Category 2	-
Mojave Patchnose Snake	<i>Salvadora hexalepis mojavensis</i>	Category 2	S2

Key:

- S1: Any wildlife species which, although still occurring in numbers adequate for survival, whose population has been greatly depleted, is declining in numbers, distribution, and/or habitat.
- S2: Any wildlife species which, although still occurring in numbers adequate for survival, occurs in limited areas and/or numbers due to a restricted or specialized habitat.



09/27/95

-  Mojave Desert Tortoise
-  Bald Eagle
-  Peregrine Falcon
-  Woundfin Minnow and Virgin River Chub
-  Dwarf Bear-Claw Poppy
-  Silver Pincushion Cactus



Figure 3.5. Habitats of Federally Listed Species

as on the relief provided by wash banks, berms, hillsides, and mountain slopes (Karl 1983). Desert tortoises are generally found in areas where soil is suitable for burrow construction. Soil must be sufficiently free from rocks to permit digging and compact enough to maintain a strong archway over the burrow (Woodbury and Hardy 1948).

Desert tortoises generally use four types of cover: burrows approximating the width of the desert tortoise and at least as long as the desert tortoise, pallets or soil depressions with no soil cover, shrubs high enough to provide shade, and openings in rock or caliche that can hold one or more desert tortoises. Desert tortoises are active during temperate times of the year, such as the spring and fall. Their active season begins in early March and ends in late October or early November. Desert tortoises will usually remain dormant through the winter months, and are relatively inactive during the hottest summer months. Desert tortoises will emerge from their burrows during inactive seasons if the temperature is mild or water is available. Daily activity during their active season is dictated mainly by temperature. Desert tortoises are active between ambient temperatures of 65 to 105 degrees Fahrenheit. This temperature range generally occurs in the morning, shortly after daylight, and again in the late afternoon. Nocturnal activity is rare.

Diet of desert tortoises is composed mainly of forbs (small annual flowering plants) and annual grasses. These plants generally bloom from March to May and, depending on rainfall, in early fall. Other forage includes perennial grasses, woody shrubs, and cacti (Esque 1992).

Characteristics of habitat occupied by the desert tortoise reflect the species' burrowing and foraging behavior as well as physiological constraints associated with climate. Conditions include, but are not limited to, an appropriate mix of vegetation and soils, together with access to seasonal food and water sources. Perennial vegetation is essential to the desert tortoise for cover and also protects some types of annuals found in the understory. Roots of perennials also provide stability to soils, thereby improving suitability of burrow sites.

Creosote bush is the dominant perennial shrub in the Mojave Desert and is an indicator of desert tortoise habitat (Karl 1983). In Nevada, California, and Utah, desert tortoises are found in low densities in creosote-blackbrush ecotones and in creosote-saltbush communities, but rarely where creosote is entirely absent from the surrounding community.

### 3.6.2 Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle was listed by USFWS as an endangered species, but has been recently upgraded to threatened (final rule effective July 12, 1995). Adult bald eagles have a white tail, tail coverts, throat, chin, nape, and head. The rest of the body is dark brown to black. Eagle eyes, bill, and talons are mostly yellow. Juveniles are marked by brown rather than white feathering on the head and tail, while subadults (2-4 years old) have mottled white and brown head and tail feathers. These birds mature rather slowly, not attaining breeding maturity until their fourth or fifth year. A number of studies have shown that eagles mate for life, and commonly nest in the

same location for many years. Bald eagles are noted for their size; adult bird wingspans range from 45 to 55 inches (Johnsgard 1990).

Bald eagles are found from the Bering Strait south to Florida and Baja California, Mexico. Because fish is their primary food, eagles tend to inhabit areas such as coasts and inland waterways where fish are abundant. During winter months, eagle populations require suitable roosting sites as well as food supplies (Johnsgard 1990).

In Utah, bald eagles favor side canyons with bowl-shaped ravines that offer environmental protection, and selectively perch in large and open trees located near tops of ridges, thereby allowing easy access to valleys (Edwards 1969). Most observations of bald eagles in Washington County are along the Virgin and Santa Clara Rivers, and bodies of water associated with these rivers. Other areas used by bald eagles include the sewage ponds in Hurricane, and the Quail Creek, Baker Dam, Sand Cove, Gunlock, Ivins, and Ash Creek reservoirs (BLM 1990b, UDWR 1991).

### 3.6.3 Peregrine Falcon (*Falco peregrinus*)

The peregrine falcon is currently listed as an endangered species by USFWS. It was listed as endangered in 1970 when it was discovered that the pesticide DDT and its metabolites were having direct impact on the falcon's survival. Subsequent banning of DDT in the United States and institution of protective measures has resulted in the apparent recovery of the species. Peregrine falcons are now known to be present in numbers greater than the goal postulated in the Recovery Plan (Skaggs et al. 1988). A proposed rule to remove the Peregrine Falcon from listed status was published in the Federal Register on June 30, 1995.

Peregrine falcons are raptors specialized in hunting and killing their prey in mid-air. These birds inhabit open wetlands near cliffs, and prey chiefly on waterfowl and shore birds. Peregrines fly with extreme power and speed, often attacking their prey with a vertical dive from great heights, as well as sometimes engaging in direct pursuit. Adults may be identified by their black crown and nape and the black wedge extending below the eye to form a distinctive "helmet" which is absent in other falcons. Back and upper wing coverts are dark slate with blue-gray bars and feather fringing and upper tail coverts are blue-gray with black barring. The white belly is barred with black. White leg feathers have black barring and the tail is black with eight or more gray bands and a thick, white terminal band (National Geographic 1987, Clark and Wheeler 1987).

Peregrine falcons are found from Alaska south throughout the western United States to southern Baja California, Mexico. In the southwestern U.S., breeding sites are generally associated with high sheer cliffs (at least 200 feet). Some type of wetland is almost always associated with the nest site so that abundant prey is available to the adult birds (Johnsgard 1990).

Known nesting sites in Washington County include approximately 12 nest sites in Zion National Park, one at Welcome Spring near the south end of the Beaver Dam Mountains, one at Snow Canyon State Park, and one at the Red Cliffs Recreation Area (UDWR 1991).

#### **3.6.4 Woundfin (*Plagopterus argentissimus*)**

The Woundfin has been listed as endangered by USFWS, and critical habitat has been identified in the main channel of the Virgin River below La Verkin Springs (USFWS 1992). The Woundfin is a streamlined silvery minnow with a flat head and a conspicuous, sharp dorsal spine, from which its common name was derived. The only breeding color noted has been a wash of light-yellow at the bases of the pectoral and pelvic fins. The species rarely achieves a standard length of more than three inches (USFWS 1992).

The Woundfin was historically found throughout several tributaries of the lower Colorado River as well as in the mainstream of the Colorado. This fish species was found at the confluence of the Salt and Verde Rivers at Tempe, Arizona, to the mouth of the Gila River near Yuma, Arizona (Gilbert and Scofield 1898). Because of impoundment, introduction of non-native fishes, water depletions, and overall habitat loss, range of the Woundfin has been diminished to the mainstream of the Virgin River and the lower portion of La Verkin Creek, downstream to Lake Mead (Miller and Hubbs 1960, Minckley and Deacon 1968). On April 5, 1995 USFWS proposed that the area from the confluence of Ash and La Verkin creeks to Lake Mead be listed as critical habitat for the Woundfin.

All attempts to re-establish this fish in other parts of its native range have failed (unpublished data, Arizona Game and Fish Department). The Virgin River Fishes Recovery Plan (USFWS 1995) identifies major limiting factors for the woundfin, Virgin River chub, and other native fish species as loss of habitat and introduction and establishment of nonnative fish, particularly red shiner. Loss and degradation of habitat has occurred through building of dams and associated reservoirs, water diversion structures, canals, laterals, aqueducts, and dewatering of streams. The decline in both species' range and population numbers is due to the physical reduction in available habitats within the various river systems caused by these water projects. This loss of habitat has been exacerbated due to introduction and establishment of exotic species, further reducing the suitability of remaining habitats for woundfin and Virgin River chub.

#### **3.6.5 Virgin River Chub (*Gila robusta seminuda*)**

The Virgin River chub is currently listed as endangered by USFWS. This fish is a very silvery medium-sized minnow that averages 8 inches in total length, although it can grow to a length of 18 inches. The Virgin River chub can be distinguished from other subspecies of *G. robusta* by the number of rays (9-10) in the dorsal, anal, and pelvic fins, and the number of gill rakers (24-31). The back, breast, and part of the belly have small, deeply embedded scales that are difficult to see and may be absent in some individuals (USFWS 1992).

The Virgin River chub historically occurred within the mainstem Virgin River from Pah Tempe Springs, Utah downstream to the confluence with the Colorado River (Cope and Yarrow 1875, Cross 1975). At present this species occurs within the mainstem Virgin River from Pah Tempe Springs downstream to the Mesquite Diversion and in Muddy River, Nevada (USFWS 1992). The major limiting factors for this species are the same as for the woundfin.

### 3.6.6 Dwarf Bear-Poppy (*Arctomecon humilis*)

The dwarf bear-poppy was listed as endangered by USFWS on November 6, 1979 (USFWS 1985). The most severe threat to the poppy, other than the continued rapid expansion of St. George, is OHV use associated with recreation and mineral exploration. The poppy is characterized by several unique features including stature, leaf morphology, and floral parts. Its short leafy stems are only 12-15 cm tall, and the white flowers appear to float above the clusters of leaves, thereby accentuating the plant's low stature. The dwarf bear-poppy usually has four petals and the leaves are slightly lannate with deeply three-toothed leaves at the apex (USFWS 1985).

*A. humilis* is the easternmost species of the genus. It occurs at the eastern edge of the Mojave Desert in Washington County, in the vicinity of St. George. The poppy grows on select gypsiferous slopes of the Moenkopi Formation. South of St. George, the poppy grows on low hills at three sites: between Webb Hill and the Price City Hills, at White Dome, and near the ghost town of Atkinville. There are large populations at the base of Red Bluff just west of Bloomington and at the base of the north side of Santa Clara Butte. Low-density groups occur at the base of Boomer Hill, the White Hills, and near Val Spring. On the east, a healthy population occurs at the base of Warner Ridge from Punchbowl Dome south to Warner Valley Road. A small outlying colony also occurs at the south end of Warner Ridge on Beehive Dome less than a mile from the State line. A colony of a few dozen plants also occurs at the base of the south side of Shinob Kibe, a small butte across the Virgin River from the City of Washington (USFWS 1985).

### 3.6.7 Siler Pincushion Cactus (*Pediocactus sileri*)

The Siler pincushion cactus was listed as endangered by USFWS on November 26, 1979, and downlisted to threatened on December 27, 1993. The cactus is threatened by adverse impacts of its habitat due to mining activities, extensive OHV use, trampling by grazing livestock, and direct loss of plants due to collecting (USFWS 1986).

The Siler pincushion cactus is a small, solitary or occasionally clustered, globose cactus about four inches tall. Each areole contains three to seven brownish-black straight or slightly curved central spines, becoming pale gray or nearly white with age. Additionally, there are 11-16 whitish radial spines per areole. The central spines are about one inch long and the radials are slightly shorter. Flowers are about one inch in diameter, with yellowish marginally scarious petals with maroon veins, and fruits are greenish-yellow (USFWS 1986).

The present and historical ranges of the Siler pincushion cactus are assumed to be similar, although limited historical data is available on the species. The cactus grows on low hills with outcrops of gray or red clay from several geologic formations. Its distribution is mainly associated with the Great Basin desert scrub biotic community. The eastern range of the cactus is southeast of Fredonia in Coconino County, Arizona. Its western boundary is in north-central Mojave County, Arizona. The range extends north into Kane and Washington Counties, Utah, and south into Mojave County, Arizona (USFWS 1986).

### **3.6.8 Southwestern Willow Flycatcher (*Empidonax traillii extimus*)**

The southwestern willow flycatcher has recently been Federally listed as endangered (March 1995). The species is also considered a State sensitive species. The flycatcher is a small, brownish-olive bird with a pale olive breast and a pale yellow belly, whose spring and summer range is the southwestern United States (Unitt 1987). This species uses low to mid elevation and stream habitats, generally nesting among willow or reed thickets, but inhabiting forested, wetlands, and rangeland during other parts of the year. Flycatchers feed primarily on insects, seeds, and berries. Their winter range is from southern Mexico to Panama (Ehrlich et al. 1988). Southwestern willow flycatchers have been recorded along the Virgin and Santa Clara Rivers. While suitable breeding habitat exists along these rivers, no perennial populations or nests have been documented (pers. commun., R. Fridell, 1992). However, summer records of this species imply potential breeding in the area.

### **3.6.9 Merriam's Kangaroo Rat (*Dipodomys merriami frenatus*)**

The Merriam's kangaroo rat is a Federal Category 2 species and is also considered a State sensitive species. The preferred habitat of this rodent includes sagebrush and saltbush/creosote communities. Its range includes southwestern Utah, southern Nevada, southern California, and parts of southern and western Arizona (Burt and Grossenheider 1976). In Utah, this species has been recorded on the Beaver Dam Slope and in areas directly north of St. George (pers. commun., R. Fridell, 1993).

### **3.6.10 Pygmy Rabbit (*Brachylagus idahoensis*)**

This species is a Federal Category 2 species. The pygmy rabbit is the smallest cottontail rabbit. It inhabits tall sagebrush communities throughout Oregon, Idaho, Nevada, and Utah. Although pygmy rabbits have been seen in the day, they are primarily nocturnal. These rabbits inhabit burrows within dense sagebrush and rarely travel more than 30 yards from their homesite (Burt and Grossenheider 1976). In 1992, pygmy rabbits were recorded at three sites in Washington County (pers. commun., R. Fridell, 1993)

### **3.6.11 Ferruginous Hawk (*Buteo regalis*)**

The ferruginous hawk is a Federal Category 2 species, and is State-designated as threatened. This hawk inhabits arid and semi-arid grasslands in the western United States. Ferruginous

hawks avoid high elevations, forest interiors, narrow canyons, and cliff areas (Palmer 1988). This species has been recorded throughout Washington County.

### **3.6.12 Western Chuckwalla (*Sauromalus obesus obesus*)**

The western chuckwalla, a Federal Category 2 and State threatened species, may be found near rocks and rocky crevices at the base of cliffs and slopes throughout the Sonoran and Mojave Deserts (Berry 1974). This species is known to occur in rocky outcrops and boulder fields of lower hills in Washington County. Chuckwallas have been recorded throughout those portions of Washington County that may be impacted by the action alternatives.

### **3.6.13 Gila Monster (*Heloderma suspectum*)**

This large reptile, a Federal Category 2 species, ranges from south of San Bernardino, California, to southwestern Utah, to southwestern New Mexico, and into Mexico (Stebbins 1985). In Utah, this species typically inhabits basaltic lava substrates and loose Navajo Sandstone boulder fields. It is believed to be declining in the State and is listed as State endangered. It has been recorded in a number of locations in Washington County, including those portions of Washington County that may be impacted by the action alternatives (pers. commun., R. Fridell, 1992; Beck 1985).

### **3.6.14 Desert Night Lizard (*Xantusia vigilis*)**

This predominantly diurnal and crepuscular lizard occurs in the Mojave Desert and coast ranges of California, as well as southern Nevada, Utah, and central Arizona. It lives primarily under fallen branches of Joshua trees and in dead clumps of various other species including yucca, nolina, and agaves (Stebbins 1985). In Washington County, desert night lizards have been recorded from the Beaver Dam Slope, St. George, Washington, and the Castle Cliffs area. It is believed that the distribution of this secretive lizard may be limited by the presence of the plant species described above, which provide essential cover. Because it is seldom found in the open away from cover, this species was once considered rare, but is now known to be one of the most abundant lizard species in its range (Stebbins 1985). The status and distribution of this species within Washington County is poorly known, as a result of incomplete survey data and likely difficulties in making density or abundance estimates due to its secretive nature. It is a State sensitive species (pers. commun., R. Fridell, 1992).

### **3.6.15 Glossy Snake (*Arizona elegans*)**

This snake occurs in open areas in a variety of habitats including chaparral, grassland, desert scrub, sagebrush flats and woodlands from southern California through Arizona and New Mexico and from Kansas south into Mexico (Stebbins 1985). Within Washington County, it appears to be restricted to Mojave Desert Scrub and has been recorded in St. George, near Bloomington, on the Beaver Dam Slope, near Castle Cliffs, and between Santa Clara and St.

George. Distribution and abundance of this species within the County is poorly understood at this time. This species is designated as State sensitive.

**3.6.16 Utah Banded Gecko (*Coleonyx variegatus utahensis*)**

This lizard occurs in Mojave Desert Scrub in southern Nevada, northwestern Arizona, and southwestern Utah, where it is found on red sandstone. Records for this species exist throughout Washington County including areas in and near St. George, Santa Clara, Bloomington, Gunlock, the Beaver Dam Mountains, and Zion National Park. Status of populations within Washington County is not well known at this time. The Utah banded gecko is designated as State sensitive.

**3.6.17 Zebra-Tailed Lizard (*Callisaurus draconoides*)**

This lizard occurs in desert washes in Mojave and Sonoran Desert Scrub habitats from central Nevada to southern California and from the southwestern corner of Utah into central and southern Arizona (Stebbins 1985). In Washington County, zebra-tailed lizards are common in Mojave Desert Scrub habitats from the Beaver Dam Slope to Zion National Park. Records of this species exist for Leeds, Virgin, Santa Clara, and St. George. The zebra-tailed lizard is a State sensitive species.

**3.6.18 Lyre Snake (*Trimorphodon biscutatus lambda*)**

This snake ranges from southern California to southern Nevada and southwestern Utah, and into central and southern Arizona, where it inhabits rocks and crevices in Mojave or Sonoran Desert Scrub habitats. Relatively little is known about distribution and abundance of this snake in Washington County, where it has been recorded from Zion National Park and areas near Springdale and St. George. The lyre snake is designated as State sensitive.

**3.6.19 Western Blind Snake (*Leptotyphlops humilis*)**

This species ranges from southern California, southern Nevada, and southwestern Utah into southern New Mexico and western and southern Arizona, where it appears to prefer sandy soils with relatively moist subsoils (Stebbins 1985). Within Washington County, it has been recorded in and near St. George, Washington, and in Snow Canyon State Park. This species is designated as State sensitive.

**3.6.20 Sidewinder (*Crotalus cerastes*)**

This species is restricted to Mojave Desert Scrub habitats in southeastern California, southern Nevada, southwestern Utah, and western Arizona, where it occurs on rocky, gravelly, or sandy substrates (Stebbins 1985). It is known to occur in or near St. George, Hurricane, and Paradise Canyon, and is designated as a State sensitive species.

### **3.6.21 Holmgren Milk-Vetch (*Astragalus holmgreniorum*)**

This Virgin-Mojave endemic occurs in Warm Desert Scrub communities, and known populations exist south of St. George (Utah TES Plant Guide 1991). This plant is thought to be a young endemic and is found only in areas where human impacts already exist. Specificity to a particular geologic formation and low reproductive output are likely to predispose this species to decline. It is also believed that alteration of water flow patterns in the range of this species could have adverse effects (pers. comm., K. Harper, 1993). The Holmgren milk-vetch is a Federal Category 1 species, and is currently considered for listing by USFWS. It is designated by the State as a sensitive species.

### **3.6.22 Gumbo Milk-Vetch (*Astragalus ampullarius*)**

This plant occurs in mixed desert scrub and scattered juniper community types. In Washington County it has been recorded in areas east and southeast of St. George and near Washington, on silt and sand substrates of the Chinle Formation. Most of the known populations occur on BLM lands (Welsh and Chatterley 1985). This species is Federal Category 2 and State sensitive.

### **3.6.23 Virgin Spinedace (*Lepidomeda mollispinis mollispinis*)**

The Virgin spinedace was proposed for listing as threatened in May 1994. Critical habitat was proposed in April 1995. The Virgin spinedace is also a State endangered species. On November 8, 1995 both the Virgin spinedace listing and critical habitat proposals were withdrawn by USFWS due to a signed conservation agreement that, when implemented, will provide for long-term conservation of the species. Virgin spinedace have been found in the upper reaches of the Virgin River below Zion Canyon Narrows as well as in nine of its tributaries including the Santa Clara River, Beaver Dam Wash, Ash Creek, La Verkin Creek, North Creek, North Fork Virgin River, East Fork Virgin River, and Shunes Creek. It is generally found in areas of these systems with solid substrate rather than sandy bottoms. The spinedace prefers to forage in slow moving pools or riffles, where it feeds primarily on aquatic insects.

### **3.6.24 Yellow-Billed Cuckoo (*Coccyzus americanus*)**

This bird species typically nests in riparian cottonwood-willow habitats. There is a single breeding record from Beaver Dam Wash. There are no nesting records from either the Santa Clara or the Virgin Rivers, but it could potentially occur in suitable riparian habitat along these waterways. The yellow-billed cuckoo is listed as a State threatened species.

### **3.6.25 Common Yellowthroat (*Geothlypis trichas*)**

This species typically nests in riparian habitats in marsh or emergent vegetation. Potential habitat occurs along the perennial waterways in Washington County. It is a State sensitive species.

**3.6.26 Yellow-Breasted Chat (*Icteria virens*)**

This species nests in dense riparian habitats and has been recorded from Beaver Dam Wash and the Santa Clara and Virgin Rivers.

**3.6.27 Bell's Vireo (*Vireo bellii*)**

This species nests in streamside willows along the Virgin River and Beaver Dam Wash, which largely comprise the extent of its distribution within the State. It is a State sensitive species.

**3.6.28 Flannelmouth Sucker (*Catostomous latipinnis*)**

The flannelmouth sucker is a Federal Category 2 species, with a range including the Colorado, Virgin, and Gila Rivers. This species is found in a variety of habitats, from riffles to backwater areas, in large rivers and streams.

**3.6.29 Arizona Toad (*Bufo microscaphus microscaphus*)**

The Arizona toad is a Federal Category 2 species. This species is found near wetlands associated with shrub steppes, pinyon-juniper woodlands, and pine-oak forests in Arizona and southern Utah. The Arizona toad inhabits shallow permanent or intermittently flowing water over sand or rocky substrates (Sullivan and Price 1988). Anthropogenic alterations of habitat have allowed the Woodhouse's toad (*Bufo woodhousii*) to invade habitat formerly occupied solely by the Arizona toad. Hybridization between these two species is a serious threat to long-term viability of the Arizona toad (Sullivan 1991).

**3.6.30 Lowland Leopard Frog (*Rana yavapaiensis*)**

This frog is often found in foothill streams and stock tanks in desert grassland, oak, and oak-pine habitats. It has been recorded in the Virgin River near St. George and is a Federal Category 2 and State sensitive species.

**3.6.31 Northern Leopard Frog (*Rana pipiens*)**

This frog ranges from Canada to central Arizona, and has been recorded near St. George, Leeds, Santa Clara, and Hurricane. It is thought to be relatively common in Washington County, as suitable habitat occurs along the Virgin River.

**3.6.32 Mojave Patchnose Snake (*Salvadora hexalepis mojavensis*)**

This species ranges from southern California, southern Nevada, and southwestern Utah, into northwestern Arizona. It occurs in a variety of habitats including grasslands, chaparral, sagebrush plains, and desert scrub. It is a State sensitive species. Its status and distribution

within Washington County are not well known, but it has been recorded from the Beaver Dam Slope, near Leeds, and north and west of St. George.

### **3.6.33 Listed Species Not Expected to be Impacted by the HCP**

Table 3.7 lists all Federal listed/candidate and State sensitive species likely to be found in Washington County but which are not expected to be affected by any of the alternatives. This is because their habitats are absent from the reserve and take areas, no species records exist, or insufficient distribution data is available to determine impacts of the proposed alternatives.

While the shem milk-vetch, a Candidate 2 species recommended for a Federal status change to Candidate 1, will not be affected by the HCP, it is of great concern as more than 50% of its population has been destroyed in the past year. There are four remaining populations of shem milk-vetch in Washington County, all of them extremely small (USFWS 1995). None of the populations fall within the proposed HCP reserve or take areas, and hence, will not be affected, either adversely or beneficially, by the HCP. Some protection is offered to the two populations that occur on BLM lands through Federal management strategies while the population on Paiute Tribal Lands and the one on State lands will receive no protection from the HCP.

A summary of existing data for these species, including habitat and known distribution, can be found in Chapter 8 of the HCP.

## **3.7 WATER RESOURCES**

Water resources have been a valuable commodity in Washington County since early settlement began in the 1800s. Settlers expended much of their time searching for and developing ways to use water supplies. The search for additional water resources continues today as Washington County human populations continue to increase.

Seven categories of water resources will be discussed in order to understand current and future trends that may affect this resource. The categories include surface water, groundwater, water quality, water rights, water budgets, present water use, and potential water development.

### **3.7.1 Surface Water and Runoff**

The Virgin River is the largest river in Washington County and is fed by many tributaries, including North Creek, La Verkin Creek, Ash Creek, Quail Creek, Santa Clara River, and Beaver Dam Wash (UDWR 1983, U.S. Soil Conservation Service et al. 1990). Prior to construction of Hoover Dam, the Virgin River was itself a tributary to the Colorado River. Presently, the Virgin River drains into Lake Mead in Nevada, although frequently sinking into the desert before reaching Lake Mead. Surface water running into the Virgin River and its tributaries is influenced by surface run-off and groundwater entering channels from springs.

Run-off in the Virgin River Basin is the result of rainfall and snowmelt. Melting snowpack contributes the largest amount of water from run-off and greatly increases flow during April and May. Years of above-average snowpack correlate with high flows in the spring. Rainstorms

**Table 3.7. Federal and/or State Listed or Candidate/Sensitive Species Unaffected by the Alternatives.**

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal Status</u>	<u>State Status</u>
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	Threatened	Threatened
Spotted Bat	<i>Euderma maculatum</i>	Category 2	S1
Shem Milk-vetch	<i>Astragalus eremiticus</i> var. <i>ampullarioides</i>	Category 2	S1
Wet Rock Physa	<i>Physella zionis</i>	Category 2	S2
Bonneville Cutthroat Trout	<i>Oncorhynchus clarki utah</i>	Category 2	S1
Virgin River Montane Vole	<i>Microtus montanus rivularis</i>	Category 2	S1/S2
Northern Goshawk	<i>Accipiter gentilis</i>	Category 2	S1
White-faced Ibis	<i>Plegadis chihi</i>	Category 2	-
Mountain Plover	<i>Charadrius montanus</i>	Category 1	S2
Black Tern	<i>Chlidonias niger</i>	Category 2	S1
Western Least Bittern	<i>Ixobrychus exilis hesperis</i>	Category 2	-
Relict Leopard Frog	<i>Rana onca</i>	Category 3a	Extinct
Boreal Toad	<i>Bufo boreas boreas</i>	Proposed	S1
Utah Mountain Kingsnake	<i>Lampropeltis pyromelana infralabialis</i>	Category 2	S1
Utah Milk Snake	<i>Lampropeltis triangulum taylori</i>	Category 2	S2
Desert Iguana	<i>Dipsosaurus dorsalis</i>	Category 2	S2
Speckled Rattlesnake	<i>Crotalus mitchellii</i>	Category 2	S2
Mojave Rattlesnake	<i>Crotalus scutulatus</i>	Category 2	S2
Sanderson's Ambrosia	<i>Ambrosia sandersonii</i>	Category 2	-
Pink Egg Milk-vetch	<i>Astragalus oophorous</i> var. <i>lonchocalyx</i>	Category 2	S1S2
Guard Milk-vetch	<i>Astragalus zionis vigulus</i>	Category 2	S1
Baird's Evening Primrose	<i>Camissonia bairdii</i>	Category 2	-
Gould's Evening Primrose	<i>Camissonia gouldii</i>	Category 2	S1
Zion Tansy	<i>Sphaeromeria ruthiae</i>	Category 2	S2
Pinyon Penstemon	<i>Penstemon pinorum</i>	Category 2	S1
Canaan Mountain Beardtongue	<i>Penstemon ammophilus</i>	Category 2	S2?
Nevada Willowherb	<i>Epilobium nevadense</i>	Category 2	S1
Canaan Daisy	<i>Erigeron canaani</i>	Category 3	S2?
Pine Valley Goldenbush	<i>Haplopappus crispus</i>	Category 2	S2
Cedar Breaks Goldenbush	<i>Haplopappus zionis</i>	Category 2	S2
no common name	<i>Haplopappus leverichii</i>	Category 2	-
Zion Canyon Violet	<i>Viola clauseniana</i>	Category 2	-
Zion Daisy	<i>Erigeron zionis</i>	Category 2	S2
Virgin River Thistle	<i>Cirsium virginensis</i>	Category 2	S1
Utah Chaetarthrian Water Scavenger Beetle	<i>Chaetarthria utahensis</i>	Category 2	S2?
Spotted Warner Valley Dunes June Beetle	<i>Polyphylla avittata</i>	Category 2	S2?
MacNeill Sooty Wing Skipper	<i>Hesperopsis gracilae</i>	Category 2	S1

Key:

Sensitive: Any wildlife species which, although still occurring in numbers adequate for survival, whose population has been greatly depleted, is declining in numbers, distribution, and/or habitat (S1); or occurs in limited areas and/or numbers due to a restricted or specialized habitat (S2); or both (S1S2).

also contribute to run-off. Certain parts of the Virgin River Basin are susceptible to flash flooding from summer thunderstorms. Peak flows from flash floods can be very high and cause extreme erosion and property damage. The peak flow of a flash flood that occurred in December of 1966 was recorded as 35,200 cubic feet per second (cfs) near Littlefield, Arizona.

### **3.7.2 Groundwater**

Residents and industry rely heavily upon groundwater supplies. The Draft Utah State Water Plan states that, in 1990, 7,666 acre-feet (af) of water was withdrawn by wells in Washington County. This number is up 66 af from the 1968-1970 average of 7,600 af, an increase of less than one percent. Recharge of groundwater has been estimated at 155,000 af per year (U.S. Soil Conservation Service et al. 1990).

Groundwater occurs in both consolidated and unconsolidated rock within the Virgin River Basin. Additionally, perched groundwater aquifers are found within the basin where underlying strata are impervious to water above aquifers. Approximately 80 percent of the water withdrawn by wells in the Virgin River Basin is supplied by unconsolidated aquifers consisting of alluvial fans and channel fill deposits. Consolidated aquifers supply approximately 30 percent of the area wells and springs, and originate from Navajo, Moenkopi, Chinle, Moenave, Kayenta, and Basalt Formations, in addition to tertiary igneous rocks from the Pine Valley Mountains. Consolidated aquifers are able to store greater amounts of groundwater than unconsolidated aquifers, although quality of water tends to be poor in lower elevations due to soluble mineral-leaching from rock formations (UDWR 1983, U.S. Soil Conservation Service et al. 1990).

### **3.7.3 Water Quality**

Water quality can be affected by several determinants including biological contaminants, dissolved solids, and suspended solids.

#### **3.7.3.1 Biological Contaminants**

Biological pollution is not a serious problem in the Virgin River Basin, although the East Fork of the Virgin River and La Verkin Creek received significant contributions of coliform from animal waste (UDWR 1983, U.S. Soil Conservation Service et al. 1990).

In 1986, St. George began planning a split stream water treatment plant to be served by Quail Creek Reservoir and the Virgin River. The plant was completed in July of 1989 and proved to be very useful after the 1989 flood event while the reservoir was out of commission. During 1989-1990, the water treatment plant processed 830 million gallons of water. Currently, it delivers two to six million gallons of water per day to St. George. The treatment plant has the potential to increase its output to ten million gallons per day (City of St. George 1992).

### 3.7.3.2 Dissolved Solids

Soluble minerals in soils and rock formations along with high evaporation rates increase concentrations of dissolved solids in the Virgin River and are the main water quality problem of the Virgin River Basin. La Verkin Springs is a major point source of dissolved solids, carrying an average of 0.2 million tons of dissolved solids per year at concentrations of 9,800 mg/l. Additional point sources that increase dissolved solid concentrations are groundwater inflow from Fort Pierce drainage area and return flows from cultivated land. Dissolved solid concentrations are at their greatest from La Verkin Springs to St. George and dissolved solid concentrations decrease from St. George to Littlefield (U.S. Soil Conservation Service et al. 1990).

### 3.7.3.3 Suspended Solids

Natural erosion rates are high in this area due to low vegetative cover, steep gradients, and unstable substrates. The majority of suspended solids, or sediment, are carried through the Virgin River Basin during high flow periods in spring and summer. High concentrations of sediment causes water quality problems. The U.S. Geological Survey (USGS) has recorded data on suspended solids near Virgin, Hurricane, and Littlefield (Table 3.8).

## 3.7.4 Water Rights

Diversion and use of water for municipal/industrial and agricultural uses requires a water right permit. The Utah Division of Water Rights State Engineer administers the water rights of Utah. Two water rights issues have the potential of affecting water rights in the Virgin River Basin: 1) adjudication; and 2) Federal reserved water rights (UDWR 1983, U.S. Soil Conservation Service et al. 1990, City of St. George 1992).

**Table 3.8. Suspended Solids near Virgin, Hurricane, and Littlefield.\***

<u>Recording Gage</u>	<u>Virgin</u>	<u>Hurricane</u>	<u>Littlefield</u>
Years of Record	1963-70	1968-73	1949-68
Flows (cfs/day)	77,034	86,559	67,055
Suspended Solids Load (tons)	1,705,544	2,373,144	2,443,112
Suspended Solids Concentration (mg/l)	9,603	11,964	13,403

\* Source: Utah Natural Resources and Energy 1983 (data based on USGS records)

### 3.7.4.1 Adjudication

An adjudication order directs the State Engineer to prepare a proposed determination of water rights in a River basin. Recorded rights are checked against actual usage. Water rights may be reduced if it is shown that the irrigated acres corresponding to water rights are no longer

irrigated. Irrigated lands are mapped and records are researched to correlate water rights with irrigated lands. Approval from the State Engineer is needed before irrigated lands can be expanded on a water right.

#### 3.7.4.2 Federal Reserved Water Rights

Reserved water rights are claimed by the Federal government and are allocated with a priority date based on when the reserve was created. The amount of water claimed is based on the amount required to carry out the purposes of the reserve. Reserved water rights within Washington County have been claimed by the Federal government for USFS, Zion National Park, and the Paiute Tribal Lands. Water rights claimed by BLM are appropriative, not reserved, and are obtained pursuant to State law. The Forest Service has reserved claims to maintain instream channel and fisheries maintenance flow. Zion National Park has reserved all surface and groundwater needs to maintain the Park, and the Paiute Tribal Lands has claimed 11,355 af annually for tribal needs (U.S. Soil Conservation Service et al. 1990).

#### 3.7.5 Water Budgets

Water budgets have been prepared to account for all of the water flows and uses within an area each year. They include average water diverted, canal losses due to seepage, run-off and deep percolation, and consumptive use by crops. Water budgets have been prepared for 11 areas in Washington County. Table 3.9 outlines the water budget for 1989. Shortages occur when potential consumptive use of a cropland area is not met. Gunlock has the worst shortage of any of these areas in Washington County (UDWR 1983, U.S. Soil Conservation Service et al. 1990).

#### 3.7.6 Present Water Use

Municipal and industrial (M&I) water is primarily supplied through groundwater wells and springs, whereas agricultural water is supplied mostly from surface waters.

##### 3.7.6.1 Public Water Use

M&I water is used in homes, businesses, and for irrigating lawns and gardens. M&I water demands vary greatly from day to day depending upon how much water is used to irrigate lawns and gardens (U.S. Soil Conservation Service et al. 1990, City of St. George 1992). The Quail Creek Water Treatment Plant currently supplies between two and six million gallons of water per day to portions of St. George, although they could increase this capacity to ten million gallons per day.

##### 3.7.6.2 Agricultural Water Use

Agricultural water for the most part is diverted from the Santa Clara and Virgin Rivers. Storage reservoirs, such as Quail Creek Reservoir, store water supplies during periods of high flow to

**Table 3.9. Water Budget for Washington County in 1989\***

<u>Irrigation Company</u>	<u>Average Water Diverted (af)</u>	<u>Canal Losses (af)</u>	<u>Run-off and Deep Percolation (af)</u>	<u>Consumptive Use by Crops (af)</u>	<u>Possible Consumptive Use (per year)</u>	<u>Possible Acres Irrigated</u>
Glendale	2,940	294	1,323	1,323	26.9	590
Orderville	1,460	365	657	438	24.8	212
Mt. Carmel East/West	2,704	1,352	811	541	27.4	237
Virgin	1,497	180	856	461	45.1	123
Seep Ditch	971	97	524	350	44.1	95
Hurricane/Bench Lake	12,759	3,828	5,356	3,572	45.0	953
St. George/Wash. Fields	37,022	11,107	17,363	8,552	45.0	2,281
La Verkin Bench Canal	3,696	111	1,793	1,792	36.3	593
Bloomington Canal	1,457	146	590	721	44.8	193
Central	2,395	96	805	1,494	37.3	481
Gunlock	1,335	53	769	512	36.3	169
Ivins	2,220	133	730	1,356	39.9	408
New Santa Clara Fields	4,060	1,015	1,827	1,218	42.7	342
Pine Valley	2,360	354	1,504	501	21.9	275
St. George/Clara Fields	6,023	301	3,719	2,002	45.5	528
Veyo	<u>2,240</u>	<u>90</u>	<u>1,398</u>	<u>752</u>	<u>36.0</u>	<u>251</u>
Total	85,139	19,522	40,025	25,585	599.0	7,731

\* Source: U.S. Department of Agriculture, Soil Conservation Service, Utah Division of Natural Resources, Division of Water Resources 1990 (data from Murray and Preswich 1989)

allow for irrigation during low flow periods (U.S. Soil Conservation Service et al. 1990, City of St. George 1992).

### 3.7.7 Water Development Potential

Future water development will be required with the rapid human population increase anticipated for Washington County. Potential sources for additional water supplies include developing existing surface and groundwater rights that have not been totally appropriated, operating reservoirs at higher yields, building new reservoirs, lowering the instream flow requirement below Quail Creek Reservoir, and converting agricultural water to public use (UDWR 1983, U.S. Soil Conservation Service et al. 1990). In addition to these measures, water conservation measures such as the use of water meters, increasing the cost of water usage, and xeriscaping are expected to be considered in future water development plans.

#### 3.7.7.1 Existing Water Rights

All surface and groundwater rights have been appropriated with the exception of groundwater permits in Hurricane south of the Virgin River, and the area tributary to the Beaver Dam Wash. However, the potential exists to approve short-term, fixed-time applications for small amounts of surface water in areas where prior water rights would not be impacted and beneficial use could be established.

### 3.7.7.2 High Yield Reservoirs

Quail Creek Reservoir was built in the mid-1980s by WCWCD in anticipation of rapid human population growth in the County. Planning began for the 40,000-af reservoir in 1982, and it was half full in 1987. The reservoir was built primarily to supply water for municipal and industrial growth. Water from the reservoir is also used to irrigate farmland in Hurricane, La Verkin, St. George, and Washington. Other facilities served by the reservoir include the St. George water treatment plant, and the Hurricane and Quail Creek Hydroelectric Power Plants (WCWCD 1992).

Computer modeling is currently used on the Quail Creek Reservoir to monitor instream flow requirements below the dam. Modeling has also been used for studies of the proposed North Creek Reservoir. The use of computer models has allowed WCWCD to maximize available water for use and minimize problems associated with changing flow regimes. Simulations are used to determine reservoir yields, hydropower production, water shortages, and impacts to rivers as more reservoirs become operational.

### 3.7.7.3 New Reservoirs

WCWCD is completing site inventories for nine potential reservoirs with storage capacities above 20,000 af. As future water demands increase, these sites would be studied further to determine which site would best provide for future water demands.

Work done by WCWCD on the proposed North Creek Reservoir Project shows that with a 25,000-af reservoir, 5,530 af of yield can be developed over and above the current yield of the Quail Creek Project. A 20,000-af reservoir would increase yield of the system by 4,620 af.

### 3.7.7.4 Instream Flow Requirements

Instream flows are determined primarily by: 1) existing water rights and historical depletions, and 2) operations of Quail Creek Reservoir. The Washington County Water Conservancy District, Utah Division of Wildlife Resources, BLM, and USFWS have been cooperating on physical feature and biological studies to better understand instream flow needs of the endangered fish species, as well as the native fish community.

Washington County has maintained that there will be no adverse impact to the endangered fish as a result of issuance of the incidental take permit. While this issue continues to be a point of discussion with USFWS, as called for in Chapter 9 of the HCP, USFWS and others are in the process of developing the *Virgin River Basin Integrated Resource Management and Recovery Program*. A Memorandum of Understanding was signed on October 19, 1995, in which BLM, USFWS, UDNR, and WCWCD agreed to develop a program within six months that will provide for recovery of Virgin River fish and meet future human water needs. The Recovery Program timeframe will not affect issuance of permitted actions under the Washington County HCP, but is intended to address water development needs and Virgin River Basin conservation.

### 3.7.7.5 Conversion of Agricultural Water

A considerable quantity of irrigation water currently being used within the corporate boundaries of Washington County cities would eventually be displaced as irrigated croplands are bought and converted to developments. Water rights appropriated to these areas would become available and could be used for irrigation of new lands, conversion for public uses, or could remain in streams or reservoirs for aesthetics and recreation.

## 3.8 VISUAL RESOURCES

Visual resources in Washington County are varied and in many cases spectacular. Zion National Park, on the eastern edge of the County, exhibits exceptional visual resources, particularly in the white cliffs, red rocks, and riparian areas of the Virgin River. Other spectacular visual resources include Snow Canyon State Park, Vermilion Cliffs, Hurricane Cliffs, and the Virgin River gorge. These visual resources are primarily unusual due to their geology. However, the County also has a variety of visual vegetation resources, from the Joshua tree forests on the Beaver Dam slope to the pine forests on Pine Valley Mountain. The combination of these resources, depicting the Colorado Plateau and the Basin and Range Physiographic Provinces, make Washington County an outstanding visual resource.

BLM has inventoried visual values for the Dixie Resource Area, which includes the BLM lands in the County. BLM measures scenic quality, visual sensitivity, and distance zone units in an attempt to delineate relative value units. Scenic quality is rated on an A, B, and C scale, with A being the most scenic. The inventory showed that BLM possessed almost 118,000 acres of A-rated lands, and approximately 330,000 acres of B-rated lands. Visual sensitivity measures the degree of public concern for maintenance of scenic quality, rated on a scale of high, medium, and low. For BLM lands, approximately 155,000 acres were rated high; 260,000 acres medium; and 205,000 acres as low. Distance zone units refers to the distance from key observation points, such as major highways and overlook areas. Zero to 2 miles is considered foreground, 2 to 5 miles is middleground, 5-15 miles as background, and over 15 miles is seldom seen. For BLM lands, approximately 90,000 acres are in the foreground; 183,000 acres in the middleground; 51,000 acres in the background; and 303,000 acres in the seldom-seen distance zone.

Using these three criteria, in addition to any Congressional designations such as wilderness, the BLM divided its lands into four inventory classes, with Class I as the highest, and Class IV as the lowest. Class I is reserved for wilderness areas or similar Congressional designations. Therefore only the Beaver Dam Mountains Wilderness Area received a Class I rating. Class II ratings were assigned to approximately 132,000 acres, 333,000 acres received Class III ratings, and 160,000 received Class IV ratings. Desert tortoise habitat on BLM lands north of Washington City and east to Hurricane are rated Class II, while lands north of St. George are rated Class IV. Again, these classifications only apply to BLM lands. Many of the State School Trust lands north of Washington City and Harrisburg would probably also classify as Class II, as would Paradise Canyon.

### 3.9 WILDLIFE RESOURCES

Due to its location, topography, and climate, Washington County contains a variety of habitats that support numerous non-sensitive wildlife species. A majority of the reserve and take areas are located in the Warm Desert Scrub; other areas higher than 1,200 feet above sea level are located in the Cool Desert Scrub (Brown 1982, Welsh et al. 1987).

Some common wildlife species found in desert scrub habitat within Washington County are listed in Table 3.10 (BLM 1987). These species could occur in the reserve or take areas. Those mammals, reptiles, birds and amphibians occurring within proposed take areas could potentially be impacted by loss of habitat. Species occurring within the proposed reserve may be afforded some level of protection through measures taken to protect the desert tortoise.

BLM has delineated big game habitat in the proposed Dixie Resource Management Plan/Final EIS (RMP). Big game includes all of the following: mule deer, desert bighorn sheep, and elk. Defined priority big game habitat lies north of St. George and in the Red Mountains southeast of Gunlock. Critical big game habitat has been delineated near Lava Ridge north and east of Snow Canyon State Park. Other wildlife species specifically identified by BLM for management as game in Washington County include turkey, band-tailed pigeon, cougar, Gambel's quail, and trout.

The proposed Dixie RMP would manage habitat to provide biological diversity of plant and animal species. It should be noted, however, that the plan has not been finalized and is currently undergoing public review.

**Table 3.10 Non-sensitive Species with Potential to Occur Within Reserve or Take Areas.**

<u>Common Name</u>	<u>Scientific Name</u>
<b><u>MAMMALS</u></b>	
Badger	<i>Taxidea taxus</i>
Coyote	<i>Canis latrans</i>
Gray Fox	<i>Urocyon cinereoargenteus</i>
White-tailed Antelope	<i>Ammospermophilus leucurus</i>
Golden-mantled Ground Squirrel	<i>Spermophilus lateralis</i>
Little Pocket Mouse	<i>Perognathus longimembris</i>
Long-tailed Pocket Mouse	<i>Perognathus formosus</i>
Ord Kangaroo Rat	<i>Dipodomys ordii</i>
Chisel-toothed Kangaroo	<i>Dipodomys microps</i>
Western Harvest Mouse	<i>Reithrodontomys megalotis</i>
Canyon Mouse	<i>Peromyscus crinitus</i>
Deer Mouse	<i>Peromyscus maniculatus</i>
Brush Mouse	<i>Peromyscus boylii</i>
Desert Woodrat	<i>Neotoma lepida</i>
House Mouse	<i>Mus musculus</i>
Black-tailed Jackrabbit	<i>Lepus californicus</i>
Desert Cottontail	<i>Sylvilagus auduboni</i>
Mule Deer	<i>Odocoileus hemionus</i>

Table 3.10. (Continued)

<u>Common Name</u>	<u>Scientific Name</u>
<u>BIRDS</u>	
Turkey Vulture	<i>Cathartes aura</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Golden Eagle	<i>Aquila chrysaetos</i>
American Kestrel	<i>Falco sparverius</i>
Gambel's Quail	<i>Lophortyx gambelii</i>
Mourning Dove	<i>Zenaida macroura</i>
Poorwill	<i>Phalaenoptilus nuttallii</i>
Common Nighthawk	<i>Chordeiles minor</i>
Lesser Nighthawk	<i>Chordeiles acutipennis</i>
Ladder-backed Woodpecker	<i>Picoides scalaris</i>
Say's Phoebe	<i>Sayornis saya</i>
Horned Lark	<i>Eremophila alpestris</i>
Bewick's Wren	<i>Thryomanes bewickii</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
House Finch	<i>Carpodacus mexicanus</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Black-throated Sparrow	<i>Amphispiza bilineata</i>
Sage Sparrow	<i>Amphispiza belli</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
<u>REPTILES</u>	
Collared Lizard	<i>Crotaphytus collaris</i>
Desert Spiny Lizard	<i>Sceloporus magister</i>
Eastern Fence Lizard	<i>Sceloporus undulatus</i>
Side-blotched Lizard	<i>Uta stansburiana</i>
Desert Horned Lizard	<i>Phrynosoma platyrhinos</i>
Western Whiptail	<i>Cnemidophorus tigris</i>
Striped Whipsnake	<i>Masticophis taeniatus</i>
Gopher Snake	<i>Pituophis melanoleucus</i>
Desert Glossy Snake	<i>Arizona elegans eburnata</i>
Utah Blind Snake	<i>Leptotyphlops humilis utahensis</i>
Western Rattlesnake	<i>Crotalus virides</i>
<u>AMPHIBIANS</u>	
Woodhouse Toad	<i>Bufo woodhousei</i>
Red-spotted Toad	<i>Bufo punctatus</i>



## CHAPTER 4.0 ENVIRONMENTAL CONSEQUENCES

### 4.1 ALTERNATIVE A: NO ACTION

#### 4.1.1 Socioeconomics

If this alternative were adopted, present restrictions on construction and habitat alterations would continue to apply in those areas with desert tortoise habitat. This means that, although the human population of Washington County would continue to grow, development of businesses, residences, or recreational facilities in certain areas could risk prosecution under section 9 of the ESA unless individual property owners obtained section 10(a) incidental take permits or, if a Federal nexus existed, section 7 consultations with USFWS. Of particular concern would be approximately 12,609 acres of State School Trust lands located within desert tortoise habitat. These lands were given to the State of Utah by the Federal government to support the public school system in exchange for not assessing a State tax on Federal lands. Individual ESA section 7 or 10(a) permitting processes may be relatively expensive and time consuming costs that many small developers may not choose to bear. In addition, individual ESA section 7 permits would result in piecemeal development of threatened or endangered species habitat without benefit of a comprehensive conservation plan. Habitat fragmentation would likely be exacerbated. Further degradation of habitat would occur if some landowners in desert tortoise habitat would be willing to risk prosecution under the ESA rather than incur the expense of seeking a permit.

Alternative A would cost the County no additional money; however, no grading or building permit fees would be collected to fund conservation and mitigation measures for the desert tortoise or other species of concern.

In order to estimate the economic impact of each alternative, Groesbeck (1995) evaluated each alternative using three scenarios: 1) Retained Annual Long-run Benefits; 2) Lost Annual Long-run Benefits; and 3) Total Lost Construction and Development Values. An additional scenario estimates likely annual construction and development values plus annual additions to demand for goods and services by households in incidental take areas (Likely Annual Development of Take Areas in the Short Run). All monetary data assume base year values and are expressed in millions of dollars (base year=1996). Table 4.1 lists these scenarios for the No Action Alternative. For this alternative, the assumption was made that no desert tortoise habitat would be developed. As discussed earlier, it is likely that some landowners would pursue individual incidental take permits, while others may develop their lands without ESA section 9 exemption. However, it is impossible to reasonably estimate which landowner will choose to develop under either scenario, and what the outcome would be. Therefore, a worst-case (economic) scenario of no development in desert tortoise habitat under no action was used.

**Table 4.1. Economic Evaluation of the No Action Alternative.**

Scenario	1996 MMS* Total Industry Output	Jobs Created	Population Supported	Percent Increase in Constrained Long- run Economy
Retained Annual Long-run Benefits	0.00	0.00	0.00	0.00
Lost Annual Long-run Benefits	-\$1,472.98	-38,349.59	-95,291.00	16.92
Total Lost Construction and Development Values	-\$34,002.54	N/A	N/A	N/A
Likely Annual Development Benefits of Take Areas	0.00	0.00	0.00	0.00

\* Millions of dollars (base year=1996)

#### 4.1.1.1 Lost Property Tax Revenues

Lost property tax values per acre of private land lost can be estimated using assumptions listed in the previous section. Assuming that average residential unit value is \$117,683, and average commercial unit value is \$235,412, both including land and buildings, the market value of developed property per acre can be established. Assuming the 12 to 1 mix between commercial and residential units, the assumed value of property per acre becomes \$409,548. If it is assumed that current assessed to market value ratio is 85 percent and property tax rate is 1.33 percent of assessed value,<sup>2</sup> then property tax losses per developed acre equal \$4,630.

Property tax losses per acre of undeveloped land can be estimated assuming that the 1996 value per acre is \$21,522, as derived in the previous paragraph. Applying the same assessed to market value ratio of 85 percent, and a property tax rate of 1.33 percent, property tax losses become \$243.31 per acre. Property tax losses for developed and undeveloped land scenarios for the No Action Alternative are as follows:

- Acres of Land Converted - 17,612.00
- Revenues Lost (Developed Land) - \$81,543,560.00
- Revenues Lost (Undeveloped Land) - \$4,285,176.00

<sup>2</sup> Utah State Tax Commission: Annual Report, July 1991 - June 1992.

These results can be viewed as short-run impacts (undeveloped) versus long-run impacts (developed). Further, these results may be somewhat overstated because a small portion of lands in the category "Private Lands" are lands owned by County and municipal governments.

The No Action Alternative would deny the County benefits of the Proposed Action Alternative. Residents would not enjoy the aesthetic value of the reserve's open space and the added visual quality of the area, as well as the likely increase in property values of those privately-held lands adjacent to the reserve. Additionally, private individuals would have to undertake the time and expense of filing for individual ESA section 10(a) permits which would increase administrative costs for both Federal and local governments. The County would not benefit from the added tourism dollars gained from the draw of the reserve and the educational center and from the increased tax base likely resulting from construction of larger homes as a result of increased property values of private lands adjacent to the reserve.

#### **4.1.2 Land Ownership, Use, and Management**

##### **4.1.2.1 BLM Lands**

Under the No Action Alternative, lands currently managed by BLM would remain under that jurisdiction. Use and management of BLM lands would be subject to restrictions and guidelines of the proposed Dixie Resource Management Plan/Final EIS (RMP) once it is approved. Management actions by BLM in habitat for Federally listed species would continue to be subject to compliance under ESA, NEPA, and Federal Land Policy Management Act.

Should this alternative be adopted, recreational activities on Federal lands would continue to be governed by existing management policies and practices. Few restrictions currently apply to desert tortoise habitat; therefore, impacts from recreational use in this area would continue. Recreation in nearby parks, forests, and BLM lands is gaining popularity with both residents and visitors. Opportunities are expected to expand with continuing human population growth throughout Washington County, thereby increasing potential impacts to desert tortoise habitat.

##### **4.1.2.2 State Lands**

Under Alternative A, land use, management, and ownership would not change for Snow Canyon State Park. If development were proposed within the State Park on lands with desert tortoise habitat (12,609 acres), the State of Utah would continue to be required to obtain an incidental take permit under section 10(a). If State officials chose not to consult, they would risk violating provisions of the ESA.

##### **4.1.2.3 Private Lands**

Approximately 16,993 acres of private land are within desert tortoise habitat. If this alternative were implemented, private landowners with potential threatened and endangered species habitat would have to obtain clearance from USFWS before initiating any ground-disturbing activities

or risk possible prosecution for violating the ESA. It can be expected that some landowners will move forward with development activities without protection of an ESA section 10(a) incidental take permit.

### **4.1.3 Agricultural Resources**

#### **4.1.3.1 Rangeland**

BLM will continue to conduct ESA section 7 consultation with USFWS on grazing permits as necessary.

#### **4.1.3.2 Farmland**

Agricultural production on private property and State lands would not be directly affected by the No Action Alternative. However, without benefit of an ESA section 10(a) incidental take permit, future agricultural production on private or State lands would not be protected from possible ESA section 9 violations. This is a particular concern for a turkey farm north of St. George and for agricultural fields near Ivins. These areas are within or near high-density desert tortoise habitat, and farming practices could affect this habitat.

Under this alternative, the trend in Washington County of converting agricultural land to residential uses may be accelerated. This is because little property other than farmland would be available for development without the necessity of ESA compliance requirements. Cultivated land in this area generally contains little or no threatened or endangered species habitat.

### **4.1.4 Threatened, Endangered, Candidate, and Sensitive Species**

Under Alternative A, impacts to Federally listed threatened and endangered species on State and private lands would be subject to case-by-case ESA section 7 or 10(a) processes with USFWS. Candidate and State sensitive species are not afforded legal protection under the ESA. Some or all of these species, however, could become Federally listed as threatened or endangered in the future. No additional programs for threatened, endangered, candidate, and State sensitive species is anticipated under No Action.

The sections below address potential impacts under Alternative A on all threatened and endangered species that are known to occur, or potentially to occur, in areas affected by the no action alternative. The sections also discuss all candidate and sensitive species that would be directly, indirectly, or cumulatively affected. Candidate or sensitive species for which habitat does not occur, or for which impacts are highly speculative, are listed or discussed briefly.

#### **4.1.4.1 Mojave Desert Tortoise**

Implementation of the No Action Alternative would result in a case-by-case evaluation of development projects proposed for areas with Mojave desert tortoise habitat. ESA section 7

consultation or section 10(a) permit processes with USFWS would have a low probability of allowing take of desert tortoise habitat in the St. George area that would fragment the recovery unit and preclude survival and recovery. Such consultations may have a higher probability of allowing take in marginal habitats. Case-by-case evaluation of projects over the next 20 years or longer may make it difficult to effectively gauge the status and requirements of desert tortoise populations at any one time. This could result in cumulative impacts to the species through habitat degradation and fragmentation. It can reasonably be expected that some areas of currently unoccupied desert tortoise habitat would be developed without USFWS consultation.

This alternative would not involve the establishment, maintenance, monitoring, or funding of a desert tortoise reserve. Desert tortoise habitat in the Upper Virgin River DWMA would be managed by the BLM, USFWS, and the State of Utah under the guidelines of the DTRP, and would require complete funding by the Federal government. Practices permitted under BLM management that may have adverse impacts on desert tortoises, such as livestock grazing, OHV use, and other recreational activities, would be subject to ESA section 7 consultations with USFWS. Uncertainty regarding availability and allocation of Federal funds could compromise management and enforcement efforts, and could result in adverse impacts on desert tortoises from unauthorized uses.

#### 4.1.4.2 Bald Eagle

Implementation of the No Action Alternative is not anticipated to adversely impact bald eagles in Washington County. Bald eagle use in the area is restricted to winter, and mainly occurs near Ivins Reservoir, the City of Hurricane sewer ponds, and the Virgin and Santa Clara Rivers. Potential development near winter foraging areas under this alternative could be subject to section 7 consultation under the ESA. Although residential development in the direct vicinity of Ivins Reservoir or the Hurricane sewer ponds could result in some disturbance to foraging eagles, such development probably would not adversely impact either prey availability or individuals of this species. Disturbance of eagles under all alternatives is more likely related to recreational activities.

#### 4.1.4.3 Peregrine Falcon

Under Alternative A, a peregrine falcon eyrie located near Red Cliffs Recreational Area would continue to be subject to BLM multiple-use management policy and existing private lands along the entrance road could be developed. Multiple use of BLM lands, increased use of the area, and private development could result in increased human activity in the vicinity of this nesting site. Increased activity is not expected to negatively impact the prey base for this species, and may enhance local populations of potentially important prey species such as rock doves (pigeons). Higher use of the area may negatively affect peregrine falcon nesting success at this eyrie, although peregrine falcons have continued to occupy the site despite past recreational use.

Another eyrie has been active for the past six seasons in Snow Canyon State Park. The Park has enacted management plans to protect these falcons. This eyrie will continue to receive protection regardless which alternative is implemented.

#### 4.1.4.4 Woundfin and Virgin River Chub

Potential impacts to these species are expected to be similar under Alternatives A, B, and C. Growth and development in Washington County, which would continue to occur under all the alternatives, would possibly increase pressures to reduce the instream flow requirement in the Virgin River. Under all alternatives, proposed water resource development, increased groundwater pumping, or other actions that would potentially affect threatened or endangered species would be subject to ESA section 7 or 10(a) consultations with USFWS.

To offset potential adverse impacts to the endangered Virgin River fish in the future and to provide a mechanism for meeting the continued growth of Washington County, the USFWS and others are in the process of developing a *Virgin River Basin Integrated Resource Management and Recovery Plan (VRBIRM&RP)*. A memorandum was signed by BLM, USFWS, UDNR, and WCWCD to develop this program within six months.

#### 4.1.4.5 Dwarf Bear-Poppy and Siler Pincushion Cactus

Management of these species would continue to be the responsibility of BLM, and the level of protection would be contingent on Federal funding allocated for this purpose. If Federal funding to better protect these species is not made available, impacts on dwarf bear-poppy and Siler pincushion cactus, including those caused by OHV use, would be expected to continue. BLM management activities in dwarf bear-poppy and Siler pincushion cactus habitat would be subject to section 7 of the ESA.

#### 4.1.4.6 Southwestern Willow Flycatcher

This species has been recorded along the Virgin and Santa Clara Rivers in Washington County. No nesting records exist for willow flycatchers in this area, but breeding activity has been inferred from the species' presence in summer. Impacts of the No Action Alternative, as with the other alternatives, are related primarily to effects of projected population growth, increased water demands on instream flow in the Virgin and Santa Clara Rivers, and resultant effects on riparian vegetation. It is assumed that water demands will be equivalent under all alternatives.

For the purposes of this analysis, it was assumed that instream flow on the Virgin River would continue to be regulated by the Biological Opinion issued for Quail Creek Reservoir, instream flows in the Virgin River would not be reduced, and future water development projects would be subject to ESA section 7 and 10(a) consultations in order to protect habitat for endangered fishes and riparian habitat. Consequently, no impacts would be anticipated under this alternative.

#### 4.1.4.7 Merriam's Kangaroo Rat

Potential habitat for this species exists in Washington County in creosote/saltbush rangeland. Merriam's kangaroo rats have been reported north of St. George. Because the status of this species is currently unclear, impacts of No Action are difficult to determine.

#### 4.1.4.8 Pygmy Rabbit

Small areas of sagebrush north of Santa Clara and northeast of Snow Canyon State Park provide potential habitat for pygmy rabbits within Washington County. However, these areas are unlikely to be important due to their small size and isolation from more continuous sagebrush habitat. Because St. George and surrounding areas are located primarily in desert scrub rather than sagebrush habitats, implementing Alternative A would not be expected to significantly impact this species.

#### 4.1.4.9 Ferruginous Hawk

Ferruginous hawks typically nest in semi-arid grassland types (Johnsgard 1990). Nesting within Washington County is likely restricted to these habitat types near Ivins and Santa Clara and in areas north of Washington City, although no known records of nesting ferruginous hawks exist for these areas. In winter and during migration, ferruginous hawks use a wider range of habitats and may be found foraging near agricultural fields at lower elevations. Under this alternative, potential habitat areas north of St. George would remain under BLM multiple-use management.

#### 4.1.4.10 Western Chuckwalla

Because habitat for this species overlaps habitat for the desert tortoise, impacts are expected to be similar. Chuckwallas and their habitat may acquire some protection as a result of mitigation measures for the desert tortoise implemented as part of individual ESA section 7 or 10(a) permits, but possible additional protection has not been quantified in the HCP or this EIS.

#### 4.1.4.11 Gila Monster

Although Gila monsters on BLM lands would less likely be affected than those on private and State land, multiple-use management and lack of enforcement could result in continued habitat degradation by OHV use, direct mortality through illegal shooting, and population decline by collection. Like chuckwallas, Gila monsters may acquire some protection as a result of desert tortoise protective measures, but possible additional protection has not been quantified in the HCP or this EIS.

4.1.4.12 Desert Night Lizard, Glossy Snake, Utah Banded Gecko, Zebra-Tailed Lizard, Lyre Snake, Western Blind Snake, Sidewinder

There is some overlap or similarity in habitat types used between these species and the desert tortoise, chuckwalla, and Gila monster. In contrast to the desert tortoise, status and distribution of most of these species within Washington County are largely unknown, although records exist for some species in both the reserve and take areas proposed under the action alternatives. Because occurrence and relative abundance of these species within particular areas identified in the HCP are not known, assessment of impacts under all three alternatives is difficult and somewhat speculative.

Under No Action, these species and their habitat would continue to be subject to recreational use, grazing, and other human-related activities, although current impacts of these activities on populations or individuals of these species are not known. Some habitat on State and private lands would likely benefit indirectly from protection afforded for desert tortoise through ESA section 7 or section 10(a) consultations. Habitat on BLM lands would be subject to continued impacts of multiple-use activities including OHV use. BLM management activities within habitat for Federally listed species would continue to be subject to ESA section 7 consultation with USFWS.

4.1.4.13 Holmgren Milk-Vetch

The primary population of Holmgren milk-vetch, which is found in this area, would continue to be subject to habitat degradation or direct mortality resulting from OHV use and livestock grazing.

4.1.4.14 Gumbo Milk-Vetch

Known populations of Gumbo milk-vetch near Washington would be impacted by development of State and/or private lands. If these populations occur in desert tortoise habitat, they may acquire some protection as a result of protection afforded the desert tortoise through other ESA section 7 or 10(a) measures.

4.1.4.15 Virgin Spinedace, Yellow-Billed Cuckoo, Common Yellowthroat, Yellow-Breasted Chat, Bell's Vireo, Flannelmouth Sucker, Arizona Toad, Lowland Leopard Frog, Northern Leopard Frog, Wet Rock Physa, Virgin River Thistle

Impacts on populations or individuals of these species are primarily related to maintenance of instream flow in the Santa Clara and Virgin Rivers, either directly through maintenance of habitat for fish species or indirectly through maintenance of riparian vegetation for bird and amphibian species. Instream flow in the Virgin River is currently regulated by the Biological Opinion issued by USFWS for Quail Creek Dam. Proposed changes in these requirements or other future proposed water developments would likely be subject to future section 7 consultations, but could result from increased growth in Washington County creating an

increased demand for water. Because development and growth in Washington County under Alternative A would also be contingent on numerous other factors, assessment of impacts to these aquatic and riparian species or their habitat may be unrelated to this particular alternative. Impacts are more directly related to potential future changes in instream flow regimes in the Santa Clara and Virgin Rivers and to management of riparian habitats along these waterways. The VRBIRM&RP is being developed to address future impacts to these resources.

#### 4.1.5 Water Resources

Water usage is dependent on human population growth and land use. Growth and development in an area is a function of demand. The annual rate of development of lands within Washington County from 1994 to 2000 is estimated at 405 acres per year for residential development and 95 acres per year for commercial and industrial development (Utah Division of State Lands and Forestry 1994). At this rate of development, 10,000 acres of land will be developed in 20 years.

Currently, approximately 84,683 acres of land unencumbered by ESA compliance requirements are available for development in Washington County, although many of these acres are beset by other problems that complicate development. Over the next 20 years, development will occur at the same rate in the County regardless of whether or not the HCP is implemented and the take areas are made available for development. In fact, at this rate of development, the currently available lands would not be fully developed for 169 years. Therefore, increasing the number of developable acres with the take areas of the HCP will simply shift the existing development pattern geographically in the next 20 years, but will not necessarily increase the overall level of development in the County. Therefore, changes in water usage over the next twenty years are independent of the actions of any of the three alternatives as the amount of growth is likely to be equivalent under all alternatives.

WCWCD estimates a current annual water capacity of 63,000 af. If this capacity is not increased, by the year 2005 the County will have a shortage of 9,626 af/year, assuming growth occurs at a moderate rate for a population total of 118,016 and WCWCD achieves its conservation goal of reducing current usage of 365 gallons per person per day by 25 percent. By 2015, the County will have a shortage of 41,269 af, again estimated from a medium growth rate for a population total of 188,601.

The Utah Division of Water Resources has stated that, in all probability, any future water development for Washington County would be a major project on the Virgin River (Utah Division of Water Resources 1983). Many potential water development projects exist in Washington County, including: creating new reservoirs; allocating water rights not fully utilized; creating high-yield reservoirs using computer modeling; converting irrigation water to municipal and industrial water uses; and reducing the instream flow requirements of the Virgin River. These development potentials are described in Chapter 3. Any of these strategies could potentially impact the flow of the Virgin River, and therefore would be subject to consultation with USFWS.

#### **4.1.6 Visual Resources**

Visual quality is an important resource in Washington County. Under Alternative A, growth in the County would continue to increase within limitations of Federal, State, and local regulations and ordinances. Projects on Federal lands would be subject to public review under NEPA guidelines, and appropriate visual resource impact analyses would be conducted. BLM areas designated as Class II would receive the most protection from visual impacts, with a decreasing amount of protection being afforded Class III and Class IV areas. Impacts to visual resources as a result of actions on State School Trust lands would be dictated by the Division. Visual quality may be impacted as a result of maximizing monetary benefit from these lands. A similar situation may occur on privately owned lands, if maximizing revenues is the goal of landowners.

#### **4.1.7 Wildlife Resources**

Under Alternative A, local access to surrounding Federal and State lands in Washington County would not change. Hunting, grazing, OHV, and other recreational uses in the County would be expected to remain at current levels. Development would continue on private and State lands and would be expected to adversely modify wildlife habitat and eliminate or displace wildlife species or populations. On BLM lands, the proposed Dixie RMP, once approved, should detail general management guidelines and acquisitions of private parcels to reduce the possibility of adverse impacts to wildlife.

### **4.2 ALTERNATIVE B (PROPOSED ACTION): SECTION 10(a) PERMIT ISSUED BASED ON PROPOSED HCP**

#### **4.2.1 Socioeconomics**

Groesbeck (1995) evaluated each alternative using three scenarios: 1) Retained Annual Long-run Benefits; 2) Lost Annual Long-run Benefits; and 3) Total Lost Construction and Development Values. An additional scenario estimates likely annual construction and development values plus annual additions to demand for goods and services by households in incidental take areas (Likely Annual Development of Take Areas in the Short Run). All monetary data assume base year values and are expressed in millions of dollars (base year=1996). Table 4.2 outlines the three scenarios for the Proposed Action.

The Proposed Action Alternative would result in approximately \$19,000 loss in construction and development values, whereas the estimated loss for the No Action Alternative is \$34,000. Furthermore, this alternative will create an estimated 15,000 jobs annually and support an additional 38,000 people over the No Action Alternative.

**Table 4.2 Economic Evaluation of Alternative B.**

Scenario	1996 MMS* Total Industry Output	Jobs Created	Population Supported	Percent Increase in Constrained Long- run Economy
Retained Annual Long-run Benefits	\$590.48	15,373.48	38,200.00	8.17
Lost Annual Long-run Benefits	-\$882.52	-22,976.73	-57,092.00	10.14
Total Lost Construction and Development Values	-\$18,883.36	N/A	N/A	N/A
Likely Annual Development Benefits of Take Areas	\$16.13	289.00	720.00	1.16

\* Millions of dollars (base year=1996)

#### 4.2.1.1 Lost Property Tax Revenues

Assuming the same economic parameters as for the No Action Alternative given in Section 4.1.1.1, property tax losses for developed and undeveloped land scenarios for the Proposed Action Alternative are as follows:

- Acres of Land Converted - 7,750.00
- Revenues Lost (Developed Land) - \$35,882,500.00
- Revenues Lost (Undeveloped Land) - \$1,384,191.00

These results can be viewed as short-run impacts (undeveloped) versus long-run impacts (developed). Further, these results may be somewhat overstated because a small portion of lands in the category "Private Lands" are lands owned by county and municipal governments.

While the proposed HCP creates substantial economic costs, it also creates many benefits. Unfortunately, many of the benefits are difficult or impossible to quantify. These benefits include aesthetic value of the open space that will be created due to the reserve which accrues to both local residents of Washington County and to visitors to the area.

Additional benefits that are not impossible to quantify, but are beyond the scope of this analysis, include the fact that private property values of lands adjacent to the reserve will likely increase substantially. This increase in real land value will likely generate additional construction expenditures for larger homes, as well as generating higher property taxes and increased local expenditures due to higher owner incomes necessary for the more expensive building lots.

Another benefit pertains to the visitor days accruing to the County due to the existence of the education center and the reserve. While it is impossible to accurately predict what the number of annual visitor days will be to the center and reserve, it is possible to provide a rough estimate of the impact of a single visitor day. Conservatively, if there is a \$10.00 per visitor day expenditure, and the County multiplier is approximately 1.75, then that expenditure has a total county impact of \$17.50. If the center generates 10,000 visitor days annually, then the annual economic impact could be \$175,000.00 annually, based on the set of assumptions provided. With a state-of-the-art center drawing visitors from the region, visitor expenditure per day could be as high as \$100.00, and visitation of 100,000 per day, then with the 1.75 multiplier, the annual economic impact could be as high as \$17,500,000 annually.

Finally, if the Proposed Action is not the selected alternative, then a number of individual ESA section 10(a) permit applications would have to be filed with USFWS, which would greatly increase the cost of administration for the Federal government, local governments, and private individuals.

#### **4.2.2 Land Ownership, Use, and Management**

##### **4.2.2.1 BLM Lands**

Under this alternative, BLM would contribute 38,034 acres of land to a 61,022-acre reserve managed for protection of the Mojave desert tortoise. Eventually BLM would have jurisdiction over portions of Zone 2 and all of Zones 3, 4, and 5 of this reserve. Private property and State School Trust lands incorporated into the reserve would be exchanged for BLM lands or purchased.

At present, no mines are operating nor are any lease permits held for mining on BLM lands within the proposed reserve, however, there are three mining claims in Section 24, T. 41 S., R. 16 W. No minerals worth recovery costs have been documented within the reserve. Under Alternative B, access to these mining claims may be limited due to road closures within the reserve.

Mining-related activity outside the reserve and outside the ten proposed incidental take areas could proceed without ESA section 7 consultation with USFWS if no Federal action or permit, such as a right-of-way grant from a Federal agency, would be required for the activity to occur.

Under Alternative B, no woodcutting would be allowed within the proposed reserve. Areas outside the reserve or incidental take areas would not be affected as long as no desert tortoises were taken incidentally. This is true of Federal, State, and private lands.

Certain types of recreation would be affected by Alternative B. Activities such as hiking, camping, bicycle riding, and horseback riding would still be allowed within the reserve, although patterns of use may be affected by restricted vehicular access. The extent to which these activities could occur within the reserve may be further restricted once a management plan or

reserve during normal hunting seasons, although no OHV use would be permitted. Domestic animals would be allowed in the reserve only if leashed.

#### 4.2.2.2 State Lands

Under this alternative, approximately 10,938 acres of State School Trust lands would be exchanged to BLM for inclusion in the reserve. The value of this property would be determined in advance and exchanged for lands outside the proposed reserve on a value-for-value basis. The School Trust system would suffer no net loss of land value; however, the State of Utah believes it is unlikely that land of equivalent development potential could be found for exchange. While this concern is valid, exchange lands with lower development potential would not be encumbered with ESA compliance requirements. In addition, 2,515 acres of State School Trust land in ten areas of incidental take would be available for development. Table 2.1 presents the breakdown of take areas for Alternative B.

Multiple use, including grazing, on State School Trust lands designated for exchange would continue to be managed by the State until the exchange was completed, but such activities would be subject to section 10(a) permitting if they occur within desert tortoise habitat. No mining claims are located on State lands that would be incorporated into the proposed reserve.

#### 4.2.2.3 Private Lands

Implementing this alternative would require exchange of approximately 7,618 acres of private land to BLM to be incorporated into the reserve. As the exchange would be completed on a value-for-value basis, private landowners should suffer no net loss of land value. Like the situation for State lands, land of equivalent development potential may not be available for exchange; however, these BLM exchange lands would not be encumbered with ESA compliance requirements. Under Alternative B, 9,783 acres of private land in ten separate areas of incidental take would be available for development (see Table 2.1).

Mining activities would be permitted on private and State school trust lands in the incidental take areas under this alternative. On BLM lands, any proposed mining activity would have to go through ESA section 7 consultation with the USFWS. Within proposed reserve areas, any proposed mining activities would have to follow the HCP guidelines.

Under Alternative B, planned recreation, such as golf courses, could be built in incidental take areas. Recreational activities in State or Federal parks or the national forest would not be affected directly by adoption of the proposed HCP. However, as St. George and other nearby communities continued to grow, visitation to State parks, Dixie National Forest, and Zion National Park would be expected to rise.

### **4.2.3 Agricultural Resources**

#### **4.2.3.1 Rangeland**

Under Alternative B, all current grazing permit holders within Zone 3 of the proposed reserve would receive offers to sell their permits according to terms of the HCP. The permits would be purchased for both summer and winter areas at an estimated cost of \$75.00 per AUM. Although these grazing permits are operating under an existing ESA section 7 consultation, adverse impacts to desert tortoises and their habitat from livestock grazing (USFWS 1994a) may still occur. Purchase of permits and retirement of grazing from the proposed reserve is expected to benefit the desert tortoise by reduced potential for trampling of individual animals and reduced competition for forage, and is consistent with the DTRP.

Currently, four grazing permits are in effect in Zone 3, which are to be acquired. Permit holders graze their cattle throughout winter months on BLM lands, and in summer months on the Dixie National Forest. Three of these owners appear to be willing to relinquish their permits on both BLM and national forest lands. The fourth owner has not yet decided whether to sell. In the event that owner did not sell, the easternmost allotment within Zone 3 (Red Cliffs) would continue to be grazed under an ESA section 7 consultation. At present, no grazing takes place in designated take areas.

Grazing occurs on some portions of BLM, State, or private land in desert tortoise habitat in Zone 4 north of Hurricane. Grazing in this area is operating under an ESA section 7 permit and would continue to undergo section 7 review. It would not be affected by Alternative B.

Grazing on Paiute Tribal Lands would not be affected by Alternative B.

#### **4.2.3.2 Farmland**

The only private land where farming activity is being conducted within the proposed reserve is a turkey farm which consists of approximately 1.5 square miles. This farm is recognized as an existing use area, and the owners currently have no plans to join the reserve. The area where they are currently raising turkeys was impacted quite some time ago, and appears to no longer contain habitat for the desert tortoise.

Little, if any, farming is conducted on private lands on desert tortoise habitat outside the proposed reserve. Under this alternative, farming would be allowed in incidental take areas.

### **4.2.4 Threatened, Endangered, and Sensitive Species**

This alternative represents the Proposed Action, which would implement the Washington County HCP under authority of an ESA section 10(a) incidental take permit from USFWS for the Mojave desert tortoise. Under this alternative, a reserve would be established in desert tortoise habitat north of St. George. The reserve would total 61,022 acres, consisting of five zones.

The desert tortoise would be protected within the reserve by active management specifically oriented towards protection of the desert tortoise and its habitat, and fencing and access and use restrictions, which vary by zone. Figure 2.1 depicts the location of Zones 1-5 in the reserve. Figure 5.1 of the HCP depicts locations for fencing.

The proposed reserve would protect desert tortoise habitat and individuals, as well as other threatened, endangered, and sensitive (TE&S) species, by restricting OHV use, livestock grazing, hunting, and other activities. Enforcement by BLM and UDWR would serve to control unauthorized uses of reserve lands, including illegal shooting and dumping.

Ten incidental take areas are proposed under this alternative, totaling 12,264 acres. The ten distinct areas are described in Chapter 2 and their locations are depicted in Figure 2.1. Many take areas occur in the vicinity of existing rural or urban development. These areas would be authorized for take of desert tortoises and/or habitat through habitat alteration, displacement of individuals, or mortality resulting from development. Multiple-use management on BLM lands that are found within take or non-reserve areas would continue to be subject to ESA section 7 consultation with USFWS.

Impacts to TE&S species under Alternative B are as follows.

#### 4.2.4.1 Mojave Desert Tortoise

Alternative B would result in the establishment of a 61,022-acre reserve roughly north of St. George, and permit incidental take in ten areas in known desert tortoise habitat totalling 12,264 acres. Under the supposition that all incidental take areas will be fully developed, an estimated total of 1,612 acres of high-density, 1,316 acres of medium-density, and 9,336 acres of low-density desert tortoise habitat would be affected. These figures represent 12,264 acres of desert tortoise habitat out of 55,946 total acres (~22 percent) within Washington County (excluding the Beaver Dam Slope). The estimated take, in numbers of desert tortoises, is 1,169 out of an estimated total of 7,883 desert tortoises within the County (excluding the Beaver Dam Slope). Figures for desert tortoise numbers and acres of habitat were obtained by combining UDWR data for Washington County (using mean values for desert tortoise density within three categories: 25/sq. mile; 75/sq. mile; 250/sq. mile) with BLM desert tortoise density (acreage calculated from BLM Density and Distribution Maps using GIS and desert tortoise densities per category from USFWS Biological Opinion [6780 CA-063.50], page 14).

In addition, 11,832 acres of potential habitat for desert tortoise would be made available for development. Potential habitat is defined as areas considered suitable for this species based on habitat characteristics, but where desert tortoises are currently not known to occur.

The largest section of contiguous habitat containing the highest densities of desert tortoises is found within the proposed reserve north of St. George. This area would be protected under the proposed HCP from some detrimental uses (OHV and other public uses), domestic animals and pets, and disease through fencing, access restriction, and law enforcement by BLM and UDWR.

A public education/information program would be implemented to raise public awareness about the desert tortoise and impacts of human activities. An environmental education center would be established outside the reserve for this purpose. Enforcement by BLM and UDWR and enactment of local ordinances would prohibit the presence of unleashed pets, unauthorized discharge of firearms, and any OHV use within the reserve. Habitat enhancement within the reserve would be achieved by purchasing grazing rights and removing livestock from the premises, cleaning up abandoned dump sites, and restoring disturbed areas.

The majority of proposed take areas on the fringes of the proposed reserve are already impacted by urban development and human intrusion. Other proposed take areas are physically isolated from the reserve by geographical separation, existing urban development, the Virgin River, and/or Interstate 15. Although isolated pockets of habitat may support desert tortoises for an extended period of time, long-term survivability of the desert tortoise in Washington County is more likely achieved through preservation of a large reserve composed of contiguous, protected, and managed desert tortoise habitat.

Enforcement of the ESA with regard to take is difficult for many activities, such as recreational and OHV use, vandalism, dumping, and use of firearms, without physical restriction from the area and enforcement of regulations and ordinances.

Questions have been raised regarding Minimum Viable Population (MVP) size of desert tortoise and whether the proposed reserve represents an MVP. An MVP study for the Mojave population of the desert tortoise, based on computer-generated models, was completed as part of the Desert Tortoise Recovery Plan (DTRP). This study suggests that a minimum size for reserves for populations near minimal viable density (10 adults per square mile) should be at least 1,000 square miles. The study also suggests that for populations well above minimal viable density (30 or more adults per square mile), reserve size can be reduced, but should still support 10,000 to 20,000 desert tortoises. Examination of the Clark County HCP in Nevada reveals that the MVP for this area was estimated to be 20,000 desert tortoises at a density of 100 desert tortoises per square mile in an area of 250,000 acres (Clark County 1991, Gilpin 1990).

In all of Washington County, an estimated 10,498 desert tortoises exist on 122,890 acres of habitat at densities varying from 1 to over 400 per square mile. (These figures were developed by the HCP Technical Advisory Board [TAC] for this HCP.) This population falls well below the MVP for Clark County, but within the range proposed in the DTRP for a minimal viable population. However, the Beaver Dam Slope population, consisting of an estimated 2,615 desert tortoises on 66,944 acres, is geographically isolated from populations in the St. George area, resulting in an estimated population figure of 7,883. In addition, an estimated 315 desert tortoises on 5,221 acres of desert tortoise habitat are somewhat isolated from the main population north of St. George by the Virgin River, the Santa Clara River, and/or Interstate 15. This effectively reduces the main population north of St. George to an estimated 7,568 individuals on an estimated 50,725 acres of habitat. Under Alternative B, incidental take allowed in areas that are not isolated from the main population may reduce this population size below 7,000 individuals.

These figures suggest that desert tortoise population size under this alternative would fall below the MVP size recommended in the DTRP (10,000-20,000 individuals at a minimal density of 10/sq. mile). The DTRP also suggests, however, that 5,000 desert tortoises may be sufficient to maintain genetic diversity for long-term evolutionary potential, and that population sizes smaller than 10,000-20,000 individuals may be adequate if extrinsic causes of mortality can be controlled and the discrete growth rate of the population does not fall below 1.0 (USFWS 1994a). Before coming to any conclusions based on these figures, three important points regarding the determination of MVP size need to be considered. First, statistically reliable estimates of MVP are difficult to obtain due to high variance in both demographic (population) and environmental parameters; consequently, many years of data must be collected (Boyce 1992).

Second, estimates of MVP rest on certain assumptions. Researchers must assume that population trends observed in the past can be projected into the future. This can be a problem when available data date back a relatively short time, and may not be representative of population trends over the long term. Assumptions also need to be made about patterns or occurrences of stochastic factors in the future, and about threshold levels of genetic diversity that prevent inbreeding depression in populations. The set of assumptions about stochastic factors is always an unknown, and the set about genetic diversity is largely untested for the desert tortoise. MVP estimates are, in fact, estimates at best; the actual desert tortoise MVP size could be considerably lower or higher than the estimate in the DTRP, although the DTRP MVP size is expected to be conservatively large to handle a margin of error.

The third, and perhaps most important, point regarding determination of MVP is that active management and protection of populations and habitats may lower MVP by reducing adult mortality. Desert tortoises throughout their range experience mortality from a variety of direct and indirect causes, including collection for food and commercial trade, vandalism, disease, habitat destruction and fragmentation, dumping of trash (causing ingestion of foreign objects or entanglement), roadkill, mining and mineral exploration and development, military operations, utility corridors, OHV use, livestock grazing, invasion of non-native plant species, fire, removal of native vegetation, and predation either by native or feral domestic predators (USFWS 1994a).

Protective measures proposed under this alternative could significantly reduce desert tortoise mortality resulting from anthropogenic sources. Fencing of reserve boundaries near urban interfaces would help exclude both domestic predators (pets) and diseased desert tortoises that may be released near urban areas. Eliminating livestock grazing would reduce risk of direct mortality or burrow destruction by trampling. Restrictions on OHV use would reduce direct mortality by crushing and would eliminate habitat degradation often resulting from this activity. Restricting access and building underpasses along Highway 18 and Cottonwood Road may reduce incidences of roadkill. Enforcement by BLM and UDWR would help control vandalism and shooting, illegal dumping, and illegal collecting. USFWS recognizes the need for fire suppression and also supports the DTRP recommendation of aerial suppression as the primary method in DWMA's.

Although this alternative restricts a number of the more impact-causing uses in the reserve, it would allow activities such as camping, horseback riding, hiking, and hunting to occur in parts of the reserve. Research to date is not sufficient to determine precise levels of impacts from a given amount of human use; therefore, it is not known what the impacts of these activities would be on desert tortoises and/or their habitat other than to restate that these activities certainly are not beneficial to the desert tortoise, and could be detrimental. Determination of type and extent of other uses allowed would become a management decision for BLM or USPR, which would have to be based primarily on preservation, protection, and enhancement of the Mojave desert tortoise, and which would be subject to compliance with the ESA and terms of the section 10(a) permit.

Although a considerable amount of data has been collected on the Mojave desert tortoise and MVP estimates have been made, it is believed that this alternative and resulting population size would represent an MVP that would ensure the survival and persistence of the desert tortoise in the Upper Virgin River DWMA. Establishment of the proposed reserve would provide protective measures for a large portion of the desert tortoise population in this area against known or suspected adverse impacts described in the DTRP (USFWS 1994a).

#### 4.2.4.2 Bald Eagle

Overall, implementing this alternative would not be expected to adversely impact wintering bald eagles in Washington County. Some disturbance effects to bald eagles roosting and/or foraging at Ivins Reservoir and the City of Hurricane sewer ponds may occur as a result of further development in the Ivins/Padre Canyon/Paradise Canyon Take Area and the Hurricane Take Area. However, these disturbance effects are not expected to result in adverse impacts to the species.

Both take areas are already impacted by urban development. Roads exist within one-quarter mile of the eastern, northern, and southwestern shores of Ivins Reservoir, and Highway 59 separates the City of Hurricane sewer ponds from the proposed Hurricane Take Area.

The effects of human disturbance on wintering bald eagles are thought to depend largely on the type of activity that takes place. Eagles can apparently become conditioned to automobile and airplane traffic (Krauss 1977), but may be displaced by activities such as boating and fishing (Ingram 1965, Steenhof 1976). Pedestrians are apparently more disturbing than automobile traffic but less disturbing than boat traffic (Stalmaster 1976). In the vicinity of Cedar City, wintering bald eagles are known to roost within several hundred yards of occupied buildings without apparent disturbance to the birds (pers. commun., Ken McDonald, 1993). In the Ivins/Padre Canyon/Paradise Canyon and Hurricane Take Areas, impacts to this species would be expected to occur primarily as a result of recreational use of these areas, which is largely unrelated to implementation of the HCP.

Neither potential roosting sites that may occur along the Santa Clara and Virgin Rivers nor foraging areas used by eagles are expected to be affected by implementation of this alternative.

#### 4.2.4.3 Peregrine Falcon

Under Alternative B, the peregrine falcon eyrie located near the Red Cliffs Recreation Area would be included within the proposed reserve. Other areas that have been identified as potential peregrine falcon nesting habitat, including Paradise Canyon and Red Mountain, would also be included in the reserve. Although these areas are also identified as potential Areas of Critical Environmental Concern (ACECs) in the BLM's proposed Dixie RMP, the RMP and associated EIS have not been finalized and proposed designations and restrictions could change.

Another eyrie has been active for the past six seasons in Snow Canyon State Park. The Park has enacted management plans to protect these falcons. This eyrie will continue to receive protection regardless which alternative is implemented.

This alternative would allow development on private lands located along the entrance road to the area, which would result in more human activity in the area. The specific impacts of this increase in activity on peregrine falcons is not known. Increased human habitation is likely to increase populations of potential prey species, such as rock doves, which could be beneficial to peregrine falcons. Development along the entrance road may result in greater recreational use of the area which may occur regardless of whether or not development takes place along the road. Continued occupancy of this eyrie suggests that current recreational activities may not affect the peregrine falcons here. Additional protection would be afforded to peregrines during the nesting season by access restrictions and fencing.

#### 4.2.4.4 Woundfin and Virgin River Chub

Maintenance and recovery of woundfin and Virgin River chub populations in Washington County are tied primarily to maintenance of instream flow regimes in the Virgin River. Washington County has maintained that there will be no adverse impact to fishes as a result of issuance of the incidental take permit. While this issue continues to be a point of discussion with USFWS, as called for in Chapter 9 of the HCP, USFWS and others are in the process of developing the *Virgin River Basin Integrated Resource Management and Recovery Program*. A Memorandum of Understanding was signed on October 19, 1995, in which parties agreed to develop a program within 6 months that will provide for recovery of Virgin River fishes and meet future human water needs. The Recovery Program timeframe will not affect issuance of permitted actions under the Washington County HCP, but is intended to address water development needs and Virgin River Basin conservation.

#### 4.2.4.5 Dwarf Bear-Poppy and Siler Pincushion Cactus

Implementing Alternative B would provide funding from the proposed HCP to fence endangered plant reserves and enforce OHV restrictions imposed under this alternative. A total of 21.6

miles of fencing would be constructed in areas near the White Hills, Webb Hill, Warner Valley, and south of Pearce Wash. Beneficial effects to these species would be anticipated through a reduction of unauthorized OHV use and associated habitat degradation in these areas.

#### 4.2.4.6 Southwestern Willow Flycatcher

Potential impacts of this alternative to southwestern willow flycatchers would be indirect and related to potential changes in instream flow requirements for the Virgin and Santa Clara Rivers, and changes to riparian habitats adjacent to these rivers. As no take areas have been identified in the riparian habitats, and no changes in the flow of these rivers are anticipated as a result of permit issuance, no adverse impacts are anticipated to the southwestern willow flycatcher.

#### 4.2.4.7 Merriam's Kangaroo Rat

Establishment of a reserve under Alternative B would provide protection for an unknown number of individuals of this species, primarily through fencing and access and use restrictions in a large area of potentially suitable habitat. Distribution and status of this species in Washington County needs to be investigated further before impacts of this alternative can be determined specifically.

#### 4.2.4.8 Pygmy Rabbit

Under this alternative, potential habitat for pygmy rabbits within the proposed reserve would be afforded protection through access and use restrictions. Because sagebrush habitat is limited within the reserve, it is questionable whether implementation of this alternative would have any measurable effect on this species.

#### 4.2.4.9 Ferruginous Hawk

Alternative B may afford some protection to this species through establishment of the reserve north of St. George. Although ferruginous hawks have been recorded throughout Washington County, it is unknown how important areas within the proposed reserve are for this species. These birds typically nest in open prairie and grassland habitats, but occur at lower elevations in winter and are often observed in agricultural areas. On BLM lands, implementing this alternative could reduce impacts to nesting ferruginous hawks (if they occur) from multiple-use activities, including OHV use and grazing.

#### 4.2.4.10 Western Chuckwalla

Alternative B would provide protection to individuals of this species that are found within the proposed reserve area. Although the distribution and density of chuckwalla within this area are largely unknown, distribution is expected to overlap somewhat with distribution of desert tortoise. Establishment of the reserve would afford protection to this species through access and use restrictions, and enforcement to control unauthorized OHV use, shooting, and collection.

Chuckwallas that may be found in the various take areas would be subject to disturbance, displacement, or direct mortality as a result of potential future development.

#### 4.2.4.11 Gila Monster

This alternative would likely result in the elimination of this species from some of the take areas, including the Santa Clara Bench and Buckskin Hollow, through displacement or direct mortality resulting from development. Establishment of a reserve under this alternative would afford protection to known habitat areas within Zones 2, 3, and 4 of the reserve. Additionally, establishment of plant reserves under this alternative could afford protection to habitat areas outside the reserve as well. Fencing of these areas and imposition of restrictions on use would limit access and reduce impacts to the habitat that would likely result from continued OHV use. Enforcement would help control unauthorized OHV use, mortality caused by illegal shooting, and population declines due to illegal collection.

#### 4.2.4.12 Desert Night Lizard, Glossy Snake, Utah Banded Gecko, Zebra-Tailed Lizard, Lyre Snake, Western Blind Snake, Sidewinder, Patchnose Snake

Implementing Alternative B would benefit at least some of these species through protection of their habitat by limiting access and use, and through enforcement efforts within the proposed desert tortoise and plant reserve areas. Based on the assumption that some or all these species occur in both take and reserve areas and that abundances are not disproportionately greater in take areas, a net beneficial effect would be expected under this alternative. Some potential loss of habitat and individuals in proposed take areas would be offset by protection of habitat and populations in reserve areas.

#### 4.2.4.13 Holmgren Milk-Vetch

If the proposed HCP is implemented, fencing and maintenance of a plant reserve near Red Bluff, in addition to protecting Federally listed plant species, would also afford protection to the primary known population of Holmgren milk-vetch in Washington County. Access and use restrictions imposed and enforcement funded by this alternative would be expected to reduce habitat degradation and/or mortality resulting from OHV use and livestock grazing. However, this species also occurs on Federally held areas that are potentially developable and could be sought in an exchange proposal for State ownership should the HCP be implemented. This scenario would threaten the success of those individuals. It will be the responsibility of USFWS and BLM to assure that exchanges do not adversely impact this species.

#### 4.2.4.14 Gumbo Milk-Vetch

Based on available data, it is unclear whether populations of Gumbo milk-vetch near Washington would fall within the reserve or take areas prescribed by this alternative. If they fall within the proposed desert tortoise reserve, they will be afforded protection through access and use restrictions and enforcement. If they fall within proposed take areas, these populations would

potentially be eliminated by development in these areas. Other known populations of this species fall outside proposed reserve and take areas, and would be largely unaffected by this alternative.

4.2.4.15 Virgin Spinedace, Yellow-Billed Cuckoo, Common Yellowthroat, Yellow-Breasted Chat, Bell's Vireo, Flannelmouth Sucker, Arizona Toad, Lowland Leopard Frog, Northern Leopard Frog, Wet Rock Physa, Virgin River Thistle

As discussed under the No Action Alternative, impacts to these species are related primarily to changes in instream flow in the Virgin and Santa Clara Rivers. As it has been assumed that amount of development of water usage will be equivalent regardless of which alternative will be selected, no additional adverse impacts are anticipated from this alternative. The VRBIRM&RP would still be developed, as discussed under Alternative A.

#### **4.2.5 Water Resources**

Effects of this alternative on water resources over the next 20 years are expected to be the same as those described under Alternative A. Please refer to section 4.1.5 Water Resources for Alternative A.

#### **4.2.6 Visual Resources**

If Alternative B is adopted, change to visual quality would occur only in take areas. Take areas are, for the most part, adjacent to current human population concentrations. Additional development in these areas is not be expected to significantly impact visual quality. The 61,022-acre reserve would contain lands designated as Class II, Class III, and Class IV by BLM. Exemption of the reserve from development would ensure that visual quality would be maintained and preserved in these areas.

#### **4.2.7 Wildlife Resources**

The reserve established under this alternative would reduce adverse impacts on wildlife and wildlife habitat resulting from development and OHV use. Hiking, horseback riding, and camping would be restricted to designated areas or trails, vehicles would be restricted to designated roads on much of the reserve, and hunting would be limited to big game and upland bird species during official seasons within the reserve.

The northern and western portions of reserve Zones 1, 2, and 3 would lie within priority or critical big game habitat, as delineated by BLM's proposed Dixie RMP. The northern boundary of Zone 3 would be adjacent to the Dixie National Forest, providing a large area of contiguous protected lands.

Fencing would be used on the reserve to protect wildlife and wildlife habitat. Tall, stout, fencing would be installed along the perimeter where the reserve would be in closest proximity to existing development, primarily along the southern and western sides. This fencing would

link naturally-occurring barriers to prevent unauthorized entry of humans, pets, feral domestic animals, and released captive desert tortoises, all of which can harm wildlife and/or wildlife habitat. The priority and critical big game habitats, which would be located in the northern and western portions of reserve Zones 1, 2, and 3, would not be affected by fencing, nor any known wildlife movement corridors. Within the reserve, short, half-buried, mesh fencing would be used to prevent desert tortoises from moving onto roads and other potentially harmful infrastructures.

With the decrease in OHV, human, feral animal, grazing, and mining impacts, the habitat value of the reserve lands should increase, especially with law enforcement and fencing to reduce habitat modification resulting from unauthorized land use. Vegetation in zones where domestic grazing would be restricted may be rejuvenated. This should improve habitat conditions for game and non-game bird species. The enhanced growth of vegetation should provide improved forage conditions for grazing species. There should be a decrease in wildlife mortality and displacement due to reduction of multiple-use impacts.

In take areas, wildlife may be significantly affected. If development occurs, wildlife may be displaced and existing habitat would likely be modified. Only part of one of the proposed take areas, #8 with 159 acres, lies within priority habitat for big game as delineated by BLM's proposed Dixie RMP. All other take areas are outside defined big game habitat.

#### **4.3 ALTERNATIVE C: SECTION 10(a) PERMIT BASED ON HCP WITH A SMALLER RESERVE**

##### **4.3.1 Socioeconomics**

Under this alternative, adverse economic impacts are eliminated for private and State lands located in Zones 1 and 2. For Zones 3, 4, and 5, economic impacts are identical to those described in Section 4.2.1 for Alternative B. These lands would be available for development under Alternative C, hence providing more freedom to State and private landowners for development of their lands than Alternative B.

Groesbeck (1995) evaluated each alternative using three scenarios: 1) Retained Annual Long-run Benefits; 2) Lost Annual Long-run Benefits; and 3) Total Lost Construction and Development Values. An additional scenario estimates likely annual construction and development values plus annual additions to demand for goods and services by households in incidental take areas (Likely Annual Development of Take Areas in the Short Run). All monetary data assume base year values and are expressed in millions of dollars (base year = 1996).

**Table 4.3 Economic Evaluation of Alternative C.**

Scenario	1996 MMS* Total Industry Output	Jobs Created	Population Supported	Percent Increase in Constrained Long- run Economy
Retained Annual Long- run Benefits	\$732.83	19,079.55	47,409.00	10.13
Lost Annual Long-run Benefits	-\$732.81	-19,078.93	047,407.00	8.42
Total Lost Construction and Development Values	-\$15,771.88	N/A	N/A	N/A
Likely Annual Development Benefits of Take Areas	\$16.13	289.00	720.00	1.16

\* Millions of dollars (base year=1996)

#### 4.3.1.1 Lost Property Tax Revenues

Assuming the same economic parameters as for the No Action Alternative given in Section 4.1.1.1, property tax losses for developed and undeveloped land scenarios for Alternative C are as follows:

- Acres of Land Converted - 5,689.00
- Revenues Lost (Developed Land) - \$26,340,070.00
- Revenues Lost (Undeveloped Land) - \$1,384,191.00

These results can be viewed as short-run impacts (undeveloped) versus long-run impacts (developed). Further, these results may be somewhat overstated because a small portion of lands in the category "Private Lands" are lands owned by county and municipal governments.

#### 4.3.2 Land Ownership, Use, and Management

##### 4.3.2.1 BLM Lands

Impacts to land ownership, use, and management would be expected to be similar to those under Alternative B, although the amount of BLM land that would be incorporated into the reserve would decrease from 18,698 acres to 17,607 acres for a total decrease of 1,091 acres.

#### 4.3.2.2 State Lands

Approximately 9,145 acres of School Trust land would be exchanged and incorporated into the reserve. Another 3,464 acres would be included in take areas and made available for economic development, 38 percent more than Alternative B.

#### 4.3.2.3 Private Lands

Under this alternative, 5,134 acres of private land would be included within the reserve. The remaining private lands would be available for development and include approximately 11,664 acres, 16 percent more than Alternative B.

Little recreation currently occurs in take areas considered in Alternative C. Should this alternative be adopted, most of the areas considered would be developed by the City or private individuals. Development could include golf courses and other types of recreation, especially in areas surrounding St. George and Hurricane.

Recreation in other parts of Washington County would not be directly affected by this alternative. Certain types of recreation, such as OHV use, could eventually be eliminated on BLM and State lands if they are located in desert tortoise habitat; however, this would not be a direct result of the adoption of Alternative C. As stated under Alternative B, recreational use of State, local and national parks and forests is expected to rise with continued growth in Washington County.

### 4.3.3 Agricultural Resources

#### 4.3.3.1 Rangeland

This alternative would have the same impacts as those described for Alternative B. Although the amount of the reserve is decreased under this alternative, the quality of BLM land apportioned to the reserve remains relatively unchanged.

#### 4.3.3.2 Farmland

Implementing this alternative would have impacts similar to those of Alternative B.

### 4.3.4 Threatened, Endangered, Candidate, and Sensitive Species

This alternative is a modification of Alternative B, with less acreage dedicated as reserve, and more acreage dedicated as take areas. Under this alternative, Zones 1 and 2 (Paiute Tribal Lands to Ivins and Ivins to Highway 18) would be converted from reserve areas to take areas. This would result in a total of 44,504 acres of reserve and 15,094 acres of take. State and private lands in these and other take areas would be subject to take of desert tortoises and other TE&S species present through habitat alteration, displacement of individuals, or mortality

resulting from development. Desert tortoises on BLM lands within Zones 1 and 2 would still be legally protected under the ESA but could continue to be subject to potential habitat degradation resulting from multiple use activities including OHV use, livestock grazing, and other multiple use activities. Under this alternative, enforcement would not be extended to Zones 1 and 2 to control illegal activities such as shooting or dumping. This alternative, like Alternative B, would make funding available for the study and management of TE&S species in Washington County.

Impacts to TE&S species under Alternative C are as follows:

#### 4.3.4.1 Mojave Desert Tortoise

Under this alternative, private and State lands within Zones 1 and 2 identified in Alternative B would be converted from reserve areas to take areas. This will effectively increase acreage of take from 12,264 acres to 15,094 acres, and will reduce acreage dedicated as reserve from 61,022 acres to 44,504 acres. It is estimated that 10,908 acres of low-, 1,348 acres of medium-, and 2,872 acres of high-density desert tortoise habitat currently exists on State and private lands within these take areas. This alternative would allow development on all State and private lands within these areas comprising a total of 15,094 acres out of 55,947 total acres (~27 percent) within Washington County (excluding the Beaver Dam Slope). Estimated take under this alternative, in numbers of desert tortoises, would be 1,709 out of an estimated total of 7,883 desert tortoises (22 percent reduction) within the County (excludes the Beaver Dam Slope). BLM lands within Zones 1 and 2 would not be included in the reserve, but would be subject to ESA section 7 consultation with USFWS regarding acceptable uses.

The DTRP states that conditions for extinction of desert tortoise populations include demographic stochasticity, social dysfunction, and genetic deterioration, which in turn are affected by extrinsic causes of mortality and the area occupied by a population (USFWS 1994a).

Under this alternative, mitigation measures are similar to those of Alternative B, but the amount of habitat which is protected is substantially decreased. The Alternative C reserve would be smaller by approximately 16,518 acres (27 percent) than the reserve proposed under Alternative B. Because of the reserve's smaller size, the relatively contiguous Zone 1 could contain at least 500 fewer tortoises than it would under Alternative B. Smaller populations are typically thought to be more vulnerable to decline because of more pronounced effects of negative demographic trends and stochastic fluctuation (USFWS 1994a). This smaller reserve is contiguous and not fragmented by paved roads; however, review by members of the HCP Technical Advisory Committee determined that this proposed reserve would likely preclude implementation of the DTRP and the long-term survival and recovery of this desert tortoise population.

#### 4.3.4.2 Bald Eagle

Impacts to this alternative would be similar to those described for Alternative B. Elimination of reserve Zones 1 and 2 under Alternative C, and potential development of State and private lands within these zones would likely increase total amount of growth and development near

Ivins, but would not be expected to directly impact bald eagles. Additional growth in this area could increase recreational use of Ivins Reservoir, potentially resulting in some disturbance to wintering bald eagles.

#### 4.3.4.3 Peregrine Falcon

Implementation of this alternative would have similar impacts as those described for Alternative B. Potential nesting habitat on BLM lands in Paradise Canyon and on Red Mountain, however, would continue to be subject to BLM multiple use activities. Although these areas have been proposed as ACECs with OHV and other restrictions in the proposed Dixie RMP, this document has not been finalized. Multiple use management on BLM lands within habitat for Federally listed species is subject to ESA section 7 consultation with USFWS. Potential development of private and State lands within Zones 1 and 2 could impact potential peregrine falcon habitat north of Ivins. No records of nesting falcons exist for this area, with the exception of an eyrie located in Snow Canyon State Park.

#### 4.3.4.4 Woundfin and Virgin River Chub

See discussion under Section 4.2.4.4.

If such consultations are required, they would result in continued protection of these species and no adverse impacts to woundfin and Virgin River chub would result from implementation of this alternative. If instream flow requirements are reduced, elimination of Zones 1 and 2 from the reserve and conversion of State and private lands within these Zones to take areas would make more land available for development in Washington County, potentially impacting woundfin and Virgin River chub populations. Under this scenario, impacts to these species could be greater under this alternative than under Alternative B.

#### 4.3.4.5 Dwarf Bear-Poppy and Siler Pincushion Cactus

Implementation of this alternative would have similar effects as those described for Alternative B. Funding would be available from the proposed HCP for fencing of endangered plant reserves and enforcement of OHV use restrictions on BLM lands. Populations of these species would be expected to benefit as a result of a reduction of unauthorized OHV use in these areas. No adverse impacts would be anticipated.

#### 4.3.4.6 Southwestern Willow Flycatcher

Potential impacts of this alternative to southwestern willow flycatchers would be indirect and similar to those described under Alternatives A and B. The only impacts that might occur would be if the instream flow requirements to the Virgin River are reduced or if riparian habitats are developed (which are not identified under this alternative). Such changes in instream flow could adversely affect riparian vegetation along the Virgin and Santa Clara Rivers. Because there are currently no known nesting records for southwestern willow flycatchers in this area, impacts to this species are speculative. If instream flow requirements remain unchanged, this alternative

would be expected to have no adverse impacts to southwestern willow flycatchers that may be present in these areas.

#### 4.3.4.7 Merriam's Kangaroo Rat

Elimination of Zones 1 and 2 from the reserve under this alternative would reduce the acreage which would be afforded protection by reserve establishment and maintenance. Because distribution and status of Merriam's kangaroo rats are largely unknown at this time, impacts of this reduced reserve acreage are somewhat speculative. Potentially suitable habitat on State and private lands within Zones 1 and 2 could be eliminated as a result of future development of these areas. BLM lands within these Zones would continue to be subject to impacts from multiple use activities.

#### 4.3.4.8 Pygmy Rabbit

Under Alternative C, potential habitat for pygmy rabbits in Zones 1 and 2 would receive less protection than under Alternative B. Although State and private lands described for take under this alternative are unlikely to contain suitable habitat, potentially suitable habitat on BLM lands at the northern ends of these zones would continue to be subject to multiple use impacts such as OHV use and other activities.

#### 4.3.4.9 Ferruginous Hawk

This alternative, through delineation of a smaller reserve, would potentially offer less protection to this species than the larger reserve size proposed under Alternative B. Although their use of desert scrub habitats is probably limited, some suitable habitat may exist in Zones 1 and 2. Because their use of these areas for nesting has not been established, however, determination of impacts is speculative. No adverse impacts to wintering or migrant ferruginous hawks would be expected from development of these areas.

#### 4.3.4.10 Western Chuckwalla

The conversion of Zones 1 and 2 from reserve to take areas under this alternative would likely reduce acreage of chuckwalla habitat protected by fencing, access and use restrictions, and enforcement efforts. Although they are known to occur in these areas, the density or total numbers of chuckwallas that would be impacted by development of State and private lands in these areas is unknown. Chuckwallas on BLM lands in these areas would be less affected, but would continue to be subject to potential impacts resulting from multiple use activities and lack of enforcement. Effects of various multiple use activities on populations of this species are poorly understood at this time.

#### 4.3.4.11 Gila Monster

This alternative would likely result in the elimination of this species from some take areas, including Snow Canyon, Padre Canyon, Paradise Canyon, Santa Clara Bench and Buckskin

Hollow, through displacement or direct mortality resulting from potential development in these areas. While establishment of a reserve under this alternative would afford protection to known habitat areas including Black Gulch, Cottonwood Creek, and Quail Creek, and establishment of plant reserves under this alternative would afford protection to habitat areas near Bloomington and Webb Hill, this alternative would likely cause extirpation of this species in Utah. Fencing areas and imposition of restrictions on use would limit access and reduce impacts to habitat that would likely result from continued OHV use. Enforcement would help control unauthorized OHV use and mortality caused by illegal shooting.

4.3.4.12 Desert Night Lizard, Glossy Snake, Utah Banded Gecko, Zebra-Tailed Lizard, Lyre Snake, Western Blind Snake, Sidewinder

Conversion of Zones 1 and 2 from reserve to take areas would reduce the area of potential habitat for these species that would be protected. This is based on the assumption that habitat for these species overlaps considerably that habitat identified for desert tortoise. BLM lands within these Zones would continue to be subject to some degree of habitat degradation resulting from OHV use, livestock grazing, and other authorized and unauthorized uses. Development of State and private lands within these areas could impact some or all of these species through habitat modification, displacement, or direct mortality.

4.3.4.13 Holmgren Milk-Vetch

Impacts of this alternative are similar to those described under Alternative B. Establishment of a protected plant reserve near Red Bluff would reduce habitat degradation caused by OHV use and livestock grazing and would help preserve the primary known population of this plant species in Washington County.

4.3.4.14 Gumbo Milk-Vetch

Because Zones 1 and 2 of the reserve proposed under Alternative B do not have known populations of Gumbo milk-vetch, impacts under this alternative are similar to those described under Alternative B and depend on whether populations recorded near Washington would be located in reserve or take areas.

4.3.4.15 Virgin Spinedace, Yellow-Billed Cuckoo, Common Yellowthroat, Yellow-Breasted Chat, Bell's Vireo, Flannelmouth Sucker, Arizona Toad, Lowland Leopard Frog, Northern Leopard Frog, Wet Rock Physa, Virgin River Thistle

Impacts to these species would be similar to those described under Alternative B. More lands would be designated as take under this alternative; however, the level of development and hence future water demand is expected to remain the same under all alternatives. The only potential impact would result from a decrease in the instream flow requirements, subject to approval by USFWS.

#### **4.3.5 Water Resources**

Effects of this alternative on water resources are expected to be similar to those described for Alternatives A and B. Please refer to section 4.1.5, Water Resources, under Alternative A.

#### **4.3.6 Visual Resources**

Impacts to visual quality as a result of this alternative are expected to be greater than under Alternative B. The majority of areas that would be available for development are in human population concentrations with low visual sensitivity; however, more visually sensitive areas, such as Padre and Paradise Canyons, could be developed under this alternative, thus potentially compromising their visual quality. The 44,504-acre reserve would consist of designated Class II through Class IV lands that would not be impacted by development. Development adjacent to Snow Canyon State park may obscure the view of the canyon as visitors approach the area. The impact to visual quality would be determined by the ultimate development of the adjacent lands in Padre and Paradise Canyons, in particular.

#### **4.3.7 Wildlife Resources**

Under this alternative, less wildlife habitat would be protected through establishment of a smaller reserve (approximately 27 percent smaller than Alternative B). Fencing would help exclude free-roaming dogs and feral animals from approximately 44,504 acres of wildlife habitat. Areas of priority and critical big game habitats included in the reserve would not be affected by fencing. Impacts of take areas under this alternative to wildlife would be the same as for Alternative B with the exception of an additional 2,830 take acres, some of which lie within designated priority big game habitat.

**CHAPTER 5.0**  
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**APPENDIX A**



## APPENDIX A

### Response to Comments on the Washington County Incidental Take Permit DEIS

The U.S. Fish and Wildlife Service received comment letters from 18 parties, received or postmarked during the public comment period, which ended on August 28, 1995. One additional comment letter was postmarked after the closing date, but it stated no comments. These letters are reprinted below in the order in which letters were received; some commenters submitted more than one letter. Issues were identified in the letters and numbered in their order of appearance. Responses to the comments raised in the letters are presented in the order in which they occur in the letters. Some issues were raised in more than one letter. Where the issue has already been addressed, reference is made to the earlier response.

Many of the comment letters received by the USFWS on the incidental take permit application contained information specific to the HCP. In particular, wording changes and changes related to the proposed action (e.g. reserve boundaries or permitted activities) were suggested. As the HCP is a product of Washington County, comments relevant to the HCP were forwarded to Washington County for consideration in their revision of the HCP for this final document, and Washington County responses are also recorded below. The USFWS response is added only if the response prepared by Washington County affected the analysis contained in this NEPA environmental document.

Letters were received from:

1. Private party
2. Private party
3. Private party
4. Private party
5. Dr. Daniel D. Beck; Central Washington University
6. Private party
7. Mayor Gene VanWagoner; City of Hurricane
8. Private party
9. Laura A. Romin; Utah Department of Transportation
10. Dr. C. Richard Tracy and Eric T. Simandle; University of Nevada, Reno
11. Deputy State Director; U.S. Bureau of Land Management
12. Ronald W. Thompson; Washington County Water Conservancy District
13. Private party
14. Private party
15. Private party
16. David Nuffer; Snow, Nuffer, Engstrom, Drake, Wade, and Smart
17. Yvonne Spilsbury Mendenhall; A.R. Spilsbury Family Enterprises
18. Brad T. Barber; State of Utah, Governor's Office of Planning and Budget (late)



dt: wchcp/repn (comments)

August 14, 1995

Robert D Williams  
U.S. Fish and Wildlife Service  
145 East 1300 South, Suite 404  
Salt Lake City, Utah 84115

Dear Mr. Williams,

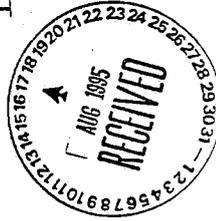
Thank you for the opportunity to comment on the Washington County, Utah Desert Tortoise Incidental Take Permit Applications/Documents.

I would like to make specific reference to the information contained in the Proposed Washington County, Utah, Habitat Conservation Plan, (HCP), Chapter 5 2.3, Education, on page 96. It has come to my attention by way of the Daily Spectrum Newspaper and by the above Chapter of the Proposed HCP that "The preferred site for the Nature Center is Paradise Canyon."

I strongly believe this location would be inconsistent with reserve management objectives and practices. As an important biological corridor in the reserve, Paradise Canyon is narrow, fragile and contains very high densities of tortoises. It is contradictory to work so hard to protect the valuable corridor and then locate an infrastructure that will increase the activity levels in that sensitive area. The impact/use of the available outdoor facility in this small canyon would have its load limits. A restriction of outdoor visitor numbers would ultimately jeopardize the financial success and the quality of the educational experience of the Nature Center. The incompatibility of two different desired activity levels must be resolved.

Respectfully, I would propose that the United States Fish and Wildlife Service consider the need for, and benefits which will be derived from encouraging the Washington County HCP Steering Committee to arrange for a formal feasibility/comparative analysis study on other available sites. One site in particular, Cottonwood Springs site at I-15 and highway @ junction, is located within the reserve and is a viable alternative that fits many of the necessary criteria for a successful Nature Center. This site will not place undue burdens into the more sensitive areas of the reserve and includes excellent opportunities for future expansion.

Sincerely,



6-1

6-2

Responses to Comments

Private party

6.

The HCP put forth by Washington County indicates that their preferred site is in Paradise Canyon. Until such time that a formal Nature Center proposal is put forth, which includes details about the Center, the USFWS is unable to determine potential impacts to desert tortoises and their habitat. The USFWS concurs that increasing human activity levels adjacent to and/or in the reserve would be inconsistent with the objectives of the reserve and inconsistent with desert tortoise recovery. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: Washington County appreciates the concern regarding Paradise Canyon and recognizes the biological importance of it. However, politically the reserve boundaries were only able to be extended westward across Highway 18 through Paradise Canyon and into the mouth of Snow Canyon with the understanding that these additional reserve areas would be available to the public. The HCP Steering Committee attempted to reconcile conflicts between biological needs of the desert tortoise with these political realities. While uses within this area of the reserve are limited (See Zone 2 discussion in Chapter 3 of the HCP), one of the key selling points for this reserve extension was to have the education/nature center in Paradise Canyon. Washington County understands the concerns of the author and others who have expressed concern regarding its placement. However, at this time, Paradise Canyon is a preferred location, and Washington County requests that until a formal proposal for the education/nature center is put forth, that everyone withhold their judgement until it can be objectively evaluated.

6-2.

As currently drafted in the HCP, the USFWS expects Washington County to put forth a formal proposal for the Nature Center in the near future. See response 6-1. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: See response 6-1.



## Responses to Comments

- 1-2. Washington County has not requested incidental take of Mojave desert tortoise for storing water behind City Creek Dam. The HCP recognizes that this existing dam serves as a debris basin, and at times may store water for a short duration following large precipitation events. Permanently storing water behind the dam is not part of Washington County's HCP proposal. For other utility actions, such as water tanks, wells, and powerlines, a utility protocol has been proposed by Washington County to minimize potential adverse impacts to desert tortoises from these actions. Should these activities occur on federal lands in desert tortoise habitat areas, they will be subject to ESA section 7 consultation.
- 1-3. Committee representation was proposed by the permit applicant and not the USFWS. The USFWS has been invited as a member of the HCAC, and that committee is proposed to work by consensus.

1-2

Through out the HCP process concessions have been made to ensure over-development in Washington County which may ultimately prove detrimental to the future of the desert tortoise and the desert ecosystem north of St. George. Even though the HCP states otherwise, it appears, that continued habitat fragmentation will be considered the norm in all reserve zones. For example, concession was made to the City of St. George to permanently store water behind City Creek Dam. Under the HCP, City Creek Dam, which is believed within Zone (3) Core Area, and considered part of "reserves lands" should be subject to the "no incidental take" provision. Undoubtedly there will be incidental take in filling the dam. What does "no incidental take" mean for other projects proposed in reserve zones such as wells, water tanks, and power lines, and any other project the County Commission deems appropriate.

1-3

It is recognized that consumptive or development projects within reserve zones may be subject to Habitat Conservation Advisory Committee (HCAC) and Technical Committee (TC) review. However, it appears that the County Commission has sole veto power over advisory committee recommendations. Believe the HCP is not clear as to FWS role in evaluating the appropriateness of projects within "reserve zones". Believe FWS should have ultimate project approval/disapproval of projects within reserve zones, not the County Commission. Believe the County Commission will be under too much local political pressure to ensure all projects go forward without concern for future consequences to reserve biological integrity.

In addition, it appears, the County Commission has also sole authority for approving committee representation. Granted the HCP designates committee makeup, but there is concern that committee makeup will be biased toward multiple-use (consumptive use) of reserve lands and, again, not necessarily favorable to reserve biological integrity. Believe such a concern is not without foundation, especially where County Commission approval of agency HCAC, agency TC, and environmental representation are concerned. Unfortunately believe the County Commission is tied too closely to the so called "wise use"/"cowboy caucus" movement and is an active participant in an attempt to weaken the ESA.

Believe state and federal agencies will nominate individuals that may not be biologically sensitive to species viewed as of little or no value to society, but nominations will better coincide with the political view of consumptive use. Believe environmental representative may well come from an organization that professes to be a wildlife organization, but is more sympathetic toward the "wise use" view point. Therefore believe, agency HCAC, agency TC, and environmental committee representation should be selected by FWS based on biological qualifications, or an environmental committee representative selected based on environmental commitment, not on politically correct qualifications. Unless committee biologists are removed from County Commission approval, County Commission project approval will remain suspect.

Responses to Comments

As noted earlier, it appears, that fragmentation of desert tortoise habitat was considered appropriate in order to find a compromise solution somewhat acceptable to the County. In an attempt at compromise, the North Washington City Take Area, consisting of over two thousand acres of high density desert tortoise habitat has to be considered a major concession to development. It is recognized that Washington City has considerable development infrastructure in the area. However it is difficult to accept that development consisting of 1,500 to 2,000 homes plus a golf course in an area that is considered, not only excellent desert tortoise habitat, but is apparently within an aquifer supposedly critical to Washington City and St. George long term water planning, is good land use planning.

1-4

1-4. The northern Washington City take area boundary was arrived at by representatives of both Washington City and the Technical Advisory Committee (TAC) for the HCP Steering Committee. It was viewed as a compromise by both sides.

Now to accommodate water development, greater encroachment into Zone 3 Core Area will be of the highest priority for the County Commission at the appropriate time. The potential for water development within Zone 3 1/2 mile desert tortoise corridor, may be further jeopardize the biological integrity of such a narrow corridor. To ensure that water development does not further jeopardize the desert tortoise, HCP advises a water development protocol in non-take areas was developed. However, this protocol apparently is not included as part of the permit application. Believe absence of such a critical document for public review prior to implementation, brings into question FWS oversight responsibility in regard to water projects and as well as other projects within reserve areas.

1-5

1-5. The water development protocol is included as an appendix in the final HCP.  
1-6. Should any portion of Zone 4 be used for desert tortoise translocation, actions will be consistent with the Desert Tortoise Recovery Plan and will undergo TC review. If this is not the case, Zone 4 will not be used for translocation.

The Babylon reserve zone (Zone 4) is proposed as a potential desert tortoise translocation site. The Desert Tortoise...Recovery Plan translocation guidelines recommends translocation sites "surrounded by desert tortoise-proof fence". The Recovery Plan suggests translocation of desert tortoise in unfenced areas is not a viable approach for successful translocation strategy. It appears, Zone 4 is not proposed for fencing. Therefore believe, as with some other recovery efforts, Zone 4 should be considered a cosmetic management strategy. A strategy giving the impression something is done to ensure survival of moved desert tortoise, when chance of survival is at best considered minimal. Therefore it appears reasonable, that Zone 4 should be considered essentially a desert tortoise dumping ground without any expectation of establishing a viable desert tortoise population. As hideous and expensive as fencing is, without a HCP commitment to fencing Zone 4, do not understand how desert tortoise translocation into Zone 4 can be considered a viable desert tortoise management option.

1-6

1-7. Washington County does not propose any public participation in reserve management for those portions of the reserve which are privately held. Federal land management agencies have no jurisdiction over private lands within the reserve until such time that it is designated as an NCA (and only if the NCA legislation enables control of private lands within its boundaries) or until such time these private lands are acquired by the Federal government. In the meantime, activities on these private lands will be regulated by the law enforcement personnel assigned to the reserve as described in Washington County's HCP. Individuals interested in attending and/or participating in HCAC meetings should contact Washington County for inclusion.

It does not appear that the proposed HCP, provides an avenue for public oversight or participation in management of the reserve until appropriate land acquisitions are made. FWS should insist that procedures are included in the final approval of the Incidental Take Permit that allow for public participation in reserve management decisions until reserve lands are turned over to BLM or designated a NCA.

1-7

Finally, the guiding principles for the HCP preparation "Preservation of existing ecological values... foremost objective of this HCP" and "preserving existing biodiversity" and the "principle of reliance on preservation are highly noble and believe achievable

1-8

1-8. To our knowledge, Washington County has made these commitments. The USFWS has committed to remain as active as possible in HCP implementation.

di: wchcp/vepa (comments)

Responses to Comments

1-9. Thank you for your comment.

7/12



Marilet A. Zablan  
U.S. Fish and Wildlife Service  
Ecological Services  
Utah Field Office  
Salt Lake City, UT 84115

Dear Ms. Zablan:

First wish to thank the Service for letter of July 3, 1995 informing of the "Utah Desert Tortoise Incidental Take Permit Application/Documents" being made available for interested parties. I wish to added to the list to receive the document.

It is the belief that the future of Utah's non-consumptive wildlife depends on the success or failure of the Washington County Habitat Conservation Plan. Failure of the plan would mean no future in Utah for federal endangered or threatened species and there would definitely not be a future for State sensitive species.

Would you please note zip code change in the above address.

Very respectfully,

1-9

dt: wchap/nepa (comments) P. 1

7/19

Responses to Comments

TO FWS,

First, please send me a copy of the draft of the "Proposed Habitat Conservation Habitat Plan".

Next, would you please answer the following questions:

- 1) Why are we creating a reserve for the Mojave Desert tortoise in southern Utah when it is not native of the area. (it was introduced by early settlers and boy scouts). 2-1
- 2) Why are we hurrying on with this project when some of the studies have been found in error. (a recent study has found that ravens are a major cause of the turtles deaths and not cattle). 2-2
- 3) Please give me a list of people and agencies that have validated the studies that have been done and are being used in support of this proposal. 2-3

My address is as follows:

Private party

- 2. The issue of whether the desert tortoise is or is not native to the area is discussed within Washington County's proposed HCP. Also see response 11-2.
- 2-1. Washington County has decided to pursue the HCP as a viable means of reconciling conflicts between growth/development and endangered species in Washington County.
- 2-2. A complete list summarizing individual, party, and agency participation in Washington County's HCP process can be found in the EIS.
- 2-3.



dt: wchcp/mepa (comments)

Regarding proposed HCP (Washington County)

Responses to Comments

U.S. FWS)

3. Private party

3-1. Thank you for your review and concurrence with the proposed alternative.

3-2. Washington County has proposed restricting motorized activities within portions of the reserve, and hunting is restricted to the extent allowable by State law.

To set aside land anywhere in this area so that the plants and animals originally living there can live and not be murdered by the development of people is so obviously the right thing to do, that it should never have been questioned. There are plenty of people, and we have already taken all the land we have a right to.

3-1

I hope you will preserve it to the full extent by outlawing anything with a motor to be in the area and allowing no hunting. If it's going to be done do it right.

3-2



sincerely,

dt: wchap / nepa (comments)

Responses to Comments

To whom it may concern,

I wish to give my comments on the HCP to preserve the desert tortoise.

I think this plan is a really good thing. In fact, it may be the only thing to prevent our beautiful desert from becoming one solid subdivision. It will preserve the land and many other creatures in addition to the tortoise.

The outdoor education center is a good idea so long as it is not too large. Off road vehicles should certainly be banned. In fact, I would ban them everywhere if I could. Hiking and horse back riding are good, but I see no reason to allow hunting.

All of the people who worked so hard on this should be congratulated for their efforts.

Sincerely,



4. Private party

4-1. Thank you for your review and concurrence with the proposed alternative.

4-2. The size and extent of the outdoor education center is unknown at this time. In addition to location, the USFWS concurs that size is a serious factor.

4-3. Washington County has proposed that off-road vehicles be banned from the proposed reserve. Hunting is allowed in the reserve according to Utah State law.

4-1

4-2

4-3



dt: wchcp/nepa (comments)

CENTRAL WASHINGTON UNIVERSITY

Department of Biological Science

August 10, 1995

Robert D. Williams  
U.S. Fish and Wildlife Service  
Utah Field Office  
145 East 1300 South, Suite 404  
Salt Lake City, Utah 84115

Dear Mr. Williams,

Thank you for providing me with a copy of the Washington County, Utah Desert Tortoise Incidental Take Permit Application/Documents which outlines the Utah Habitat Conservation Plan for the Desert Tortoise in Washington County. I have reviewed the documents and find them to be a prudent and responsible compromise among some very difficult land use issues. As a former Utah resident and frequent visitor to Washington County, I commend all parties who have been involved in the long and difficult process of preparing the habitat conservation plan.

I have some specific comments in reference to the Proposed Habitat Conservation Plan. My comments are based on several years of field experience in Washington County, and in particular, studies I conducted on Gila monsters and Desert tortoises between 1982 and 1985 in Paradise Canyon and Snow Canyon State Park, and in subsequent follow-up visits over the past decade. This region falls entirely within zone 2 of the Proposed Habitat Conservation Plan.

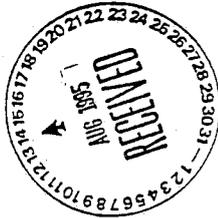
At the time of my studies, zone 2 contained the best habitat for Gila monsters that I could identify in Utah, and very high quality desert tortoise habitat. A decade later, an extremely important and highly significant portion of high tortoise density habitat still occurs within zone 2 as shown in Fig. 1.1 of the Proposed Habitat Conservation Plan document. Although some of the habitat within zone 2 has been altered by development over the past decade, the area still contains excellent tortoise habitat, and it still contains the best remaining Gila monster habitat in Utah.

Maintaining zone 2 as a reserve will have several positive long-term impacts on Washington County. First, it will help to maintain the biological integrity of Snow Canyon State Park, a strong source of pride and beauty for Washington County residents. Second, by including zone 2 in a reserve, Washington County protects other sensitive species in addition to the Desert tortoise, like the Gila monster, that share habitat with tortoises. This may help prevent the future listing of such species and save considerable expense in the years to come. By retaining the remarkable diversity of geology, plants and animals that make Washington County so special, Washington County residents, and the rest of us, can be very proud for generations to come.

Responses to Comments

5. Dr. Daniel D. Beck; Central Washington University

5-1. Thank you for your review and concurrence with the proposed alternative.



dt: wchcp/vepa (comments)

August 14, 1995

Robert D Williams  
U.S. Fish and Wildlife Service  
145 East 1300 South, Suite 404  
Salt Lake City, Utah 84115

Dear Mr Williams,

Thank you for the opportunity to comment on the Washington County, Utah Desert Tortoise Incidental Take Permit Application/Documents.

I would like to make specific reference to the information contained in the Proposed Washington County, Utah, Habitat Conservation Plan, (HCP), Chapter 5.2.3, Education, on page 96. It has come to my attention by way of the Daily Spectrum Newspaper and by the above Chapter of the Proposed HCP that "The preferred site for the Nature Center is Paradise Canyon."

I strongly believe this location would be inconsistent with reserve management objectives and practices. As an important biological corridor in the reserve, Paradise Canyon is narrow, fragile and contains very high densities of tortoises. It is contradictory to work so hard to protect the valuable corridor and then locate an infrastructure that will increase the activity levels in that sensitive area. The impact/use of the available outdoor facility in this small canyon would have its load limits. A restriction of outdoor visitor numbers would ultimately jeopardize the financial success and the quality of the educational experience of the Nature Center. The incompatibility of two different desired activity levels must be resolved.

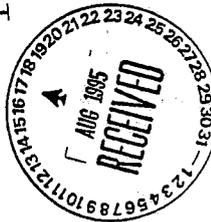
Respectfully, I would propose that the United States Fish and Wildlife Service consider the need for, and benefits which will be derived from encouraging the Washington County HCP Steering Committee to arrange for a formal feasibility/comparative analysis study on other available sites. One site in particular, Cottonwood Springs site at I-15 and highway @ junction, is located within the reserve and is a viable alternative that fits many of the necessary criteria for a successful Nature Center. This site will not place undue burdens into the more sensitive areas of the reserve and includes excellent opportunities for future expansion.

Sincerely,

*Raymond J. Bezzette*

Russell J Bezzette  
P O. Box 668  
LaVerkin, Utah 84745

RB/jb



Responses to Comments

Private party

6.

The HCP put forth by Washington County indicates that their preferred site is in Paradise Canyon. Until such time that a formal Nature Center proposal is put forth, which includes details about the Center, the USFWS is unable to determine potential impacts to desert tortoises and their habitat. The USFWS concurs that increasing human activity levels adjacent to and/or in the reserve would be inconsistent with the objectives of the reserve and inconsistent with desert tortoise recovery. Your comments were forwarded to Washington County for consideration in revising their HCP.

6-1.

Washington County response: Washington County appreciates the concern regarding Paradise Canyon and recognizes the biological importance of it. However, politically the reserve boundaries were only able to be extended westward across Highway 18 through Paradise Canyon and into the mouth of Snow Canyon with the understanding that these additional reserve areas would be available to the public. The HCP Steering Committee attempted to reconcile conflicts between biological needs of the desert tortoise with these political realities. While uses within this area of the reserve are limited (See Zone 2 discussion in Chapter 3 of the HCP), one of the key selling points for this reserve extension was to have the education/nature center in Paradise Canyon. Washington County understands the concerns of the author and others who have expressed concern regarding its placement. However, at this time, Paradise Canyon is a preferred location, and Washington County requests that until a formal proposal for the education/nature center is put forth, that everyone withhold their judgement until it can be objectively evaluated.

6-2.

As currently drafted in the HCP, the USFWS expects Washington County to put forth a formal proposal for the Nature Center in the near future. See response 6-1. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: See response 6-1.

6-1

6-2

at: whcp/nepa (comments)

Responses to Comments

- 6-3. See response 6-1. Your comments were forwarded to Washington County for consideration in revising their HCP.  
Washington County response: See response 6-1.
- 6-4. See response 6-1. Your comments were forwarded to Washington County for consideration in revising their HCP.  
Washington County response: See response 6-1.



Robert I) Williams  
 U.S. Fish and Wildlife Service  
 145 East 1300 South, Suite 404  
 Salt Lake City, Utah 84115

Dear Mr. Williams:

Once again, thank you for the opportunity to comment on the Washington County, Utah Desert Tortoise Habitat Permit Application/Documents.

I would like to make specific reference to the information contained in the Proposed Washington County, Utah, Habitat Conservation Plan, (HCP), Chapter 5.2.3, Education, on page 96. It has come to my attention by way of the Daily Spectrum Newspaper and by the above Chapter of the Proposed HCP that "The preferred site for the Nature Center is Paradise Canyon".

I strongly believe that placing the Nature Center in Paradise Canyon would hamper a primary goal of educational facilities, which is to educate as many people as possible for each and every dollar that is invested into the project. The fragile, narrow corridor of Paradise Canyon will have its visitor load limits.

The Nature Center is essentially a business venture. Function and location are two areas of development that must be thoroughly researched in the planning stage for a successful business.

① Function:

The primary focus of a Nature Center is to provide indoor and outdoor facilities for the life science educational potential. This relates to student educational effort, scientific research, instructional, general public interest purposes, and benefits to wildlife. The quality of the educational experience is largely determined by the site location.

② Location:

The Nature Center should become self-sustaining in the near future. To do this, the project location should be selected by a resolution of needs created from a *predefined* clear definition of objectives. Appropriate site location is critical to the project, for the quality of the educational experience, for future growth, and from a financial standpoint.

I strongly believe a feasibility study with full analysis of function and location should be undertaken considering Paradise Canyon, Cottonwood Springs, and Snow Canyon sites and other alternatives now available. The HCP Education Committee has done some preliminary investigation. To date there has not been a formal study which would also include new locations that are available.

Alternatives, such as Cottonwood Springs site at I-15 and highway 69 junction, the Gahler property at Snow Canyon, I-15 Port of Entry Information Center site, and the Dominguez Escalante property appear to offer workable situations upon which the Nature Center could be developed.

To insure that the Nature Center meets the necessary criteria for success, I would respectively propose that the US Fish and Wildlife Service consider the need for, and the benefits that will be derived from encouraging the Washington County HCP Steering Committee to arrange for a formal feasibility/comparative analysis study on all available sites, prior to location selection.

Sincerely,

6-3

6-4

dt: wchcp/hcpa (Comments)

CITY OF HURRICANE  
58 NORTH 200 EAST  
HURRICANE, UTAH 84737  
(801) 635-2811

Responses to Comments

7. Mayor Gene VanWagoner; City of Hurricane

7-1. Your comments were forwarded to Washington County for consideration in revising their HCP.

August 18, 1995

Robert D. Williams  
U.S. Fish & Wildlife Service  
Utah Field Office  
145 East 1300 South, Suite 404  
Salt Lake City, Utah 84115

Dear Robert,

This letter is being written as the City of Hurricane's comments during the period provided, on the Washington County proposed Habitat Conservation Plan.

The City has been a part of the process to create this plan and as such has been in support of the effort to preserve the endangered and threatened species. The plan basically is acceptable to the City with one exception. We would like to see the boundary moved north about 300 feet along a section that we feel is essential to the City's present and future development. This section would run from the 1/2 section line of section 27 to the 1/2 section line of section 28. The City has had a major road planned along the section line for many years. This road is going to be a vital part of the City is moving traffic around the downtown area and avoiding a complete shut down due to traffic congestion. We already are experiencing the effects of traffic soon. During the process of developing the HCP, the City and property owners within the City brought to the attention of the members of the HCP committee the need to move this boundary north to accommodate this road.

Already existing on the property for this road is a overhead power line used for both transmission and distribution and the Washington County Water Conservancy District's line to Quail Lake. During the construction of these lines, an easement for construction covered a 200 foot strip. This strip was disturbed and so much of this property is no longer in an undeveloped state.

The moving of the boundary would allow the City to pursue the road in a proper alignment, and have enough room to work during construction without encroachment into the habitat. The City has virtually no other corridors on the North in which to run this road. The property owners along the road are in support of the project and are willing to fund it through a Special Improvement



Washington County response: In discussions with the landowners, it appears that there are mixed views on this proposal. Therefore, Washington County has decided not to move the boundary north in Zone 5 as requested, but will consider amendments if they do not reduce the size of the reserve.

P. 10  
dt: wchcp/ncpa (comments)



Mr. Robert Williams  
U.S. Fish and Wildlife Service  
Lincoln Plaza  
145 E. 1300 South, Suite 404  
Salt Lake City, Utah 84115

Dear Mr. Williams:

We would like to comment on the Washington County HCP Draft EIS. While some areas cause us ~~some~~ concern, we feel that this document, on the whole is balanced and attempts to reach suitable compromises fair to all parties.

Our concern lies with the Babylon area. Specifically we wish to make it clear that we support the scientific findings that grazing be allowed in this area. This conclusion is highly appropriate and our conversations with UDWR, BLM and local biologists further substantiate this finding since no live tortoise sightings have occurred in the Babylon area. Additionally, we have not seen any tortoises in the process of running cattle in this area.

8-1

It is our understanding that the USFWS might issue a biological opinion to the USFWS mandating that all grazing permits be removed in DWMAAs, including possibly the Babylon area. We will protest, on the basis of sound science, if indeed this happens. We continue to follow legal developments in the West pertaining to grazing issues.

8-2

Thank you for the opportunity to review the HCP. We appreciate the fact that grazing has been a difficult issue for all involved.

Sincerely,

Responses to Comments

8. Private party

8-1. Washington County has not proposed eliminating grazing from Zone 4. Biological review of grazing will continue through ESA section 7 consultation between BLM and USFWS.

8-2. In some areas, grazing is believed detrimental to desert tortoise. See response 8-1.



# State of Utah

DEPARTMENT OF TRANSPORTATION

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August 24, 1995

Robert D. Williams  
Assistant Field Supervisor  
U.S. Fish and Wildlife Service  
145 East 1300 South, Suite 404  
Salt Lake City, UT 84115

Re: Washington County, Utah, Desert Tortoise Incidental Take Permit Application/Documents

Dear Bob:

UDOT is aware of the concerns regarding the threatened desert tortoise in Washington County. We have worked closely with your office to evaluate impacts to the tortoise associated with installation of a bike path along SR18. Anticipated mitigation for the SR18 bike path is the installation of desert tortoise-proof fencing along both sides of the highway. The impending completion of the Washington County HCP is of interest to UDOT/FHWA due to the alignment of area roads with respect to the proposed Mojave Desert habitat reserve.

As currently presented, the subject documents commit UDOT/FHWA to fencing of SR18 and I-15 as part of the Washington County HCP (5.2.1) and the Implementation Agreement (p. 10, F). UDOT and FHWA were never consulted as to their commitment level in this regard. In particular, section 1.3.6 of the HCP indicates that a subcommittee was established to address fencing issues. UDOT/FHWA were not included on this subcommittee, yet their interests were paramount to decision making.

Certainly, UDOT/FHWA have an obligation to assess their projects and related impacts to the tortoise, as well as current impacts to the tortoise from the roadways. If fencing is an appropriate mitigation for project impacts, then this should be advised through either formal or informal consultation between our agency, FHWA, and the USFWS. Should fencing not be determined appropriate mitigation for transportation projects, has the HCP process considered other funding mechanisms for tortoise fencing in these areas, or a cooperative funding effort by interested parties?

I would suggest modifying the text in the HCP and Implementation Agreement to identify a need for tortoise fencing, however, not commit funding sources at this point. In addition, I recommend



dt: wchcp/rep (comments)

## Responses to Comments

Laura A. Romin; Utah Department of Transportation

UDOT and FHWA are identified in the HCP as parties to erect fencing; however, UDOT and FHWA are not identified as signatory parties to the implementation agreement. The need for desert tortoise protection along Interstate Highway 15 and Utah Highway 18 has been documented by the Service and Utah Division of Wildlife Resources. For over 2 years, the Service has been discussing this need with FHWA and UDOT and intends to address this need through ESA informal and formal section 7 consultation.

The subcommittee was convened temporarily to identify where fencing is needed and what type of fencing is required; the fencing subcommittee was not convened to identify all possible mechanisms for fencing installation. Implementation of this HCP will require cooperation of several entities, and FHWA and UDOT are encouraged to continue their support of fencing identified rights of way.

See response 9-1. Additionally, cost of fencing in many areas of the reserve will be borne by developers adjacent to the reserve. There may be situations where fence cost-sharing by agencies and developers is appropriate, and USFWS encourages creative approaches to funding both project mitigation and desert tortoise protection efforts. As mentioned in the FEIS, cost-sharing agreements with Washington County and other agencies is expected for some actions.

See response 9-1. USFWS agrees that fencing design should be done in consultation with UDOT and FHWA.

9-1

9-2

9-3

Robert D Williams  
August 24, 1995  
Washington County Desert Tortoise Documents  
Page 2 of 2

**Responses to Comments**

9-4. USFWS agrees with this concept if the rights-of-way are suitably fenced for desert tortoise protection.

9-5. USFWS concurs that the HCP and IA must be made consistent on this point. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: Washington County is facilitating contact with appropriate landowners to implement the 300-foot right-of-way. The HCP and the EIS have been revised to indicate the right-of-way will be between 200 and 300 feet.

9-3 that development of fence designs (which, as indicated in 5.2.1 of the HCP, will be reviewed by HCAC and approved by the Washington County Commission) should be done in consultation with UDOT/FHWA engineers and environmental staff

9-4 UDOT/FHWA promote the idea that fenced right-of-ways should be considered essentially removed from tortoise habitat: allowing road maintenance, reconstruction and widening, utility maintenance and installation, and bicycle path construction and maintenance. This has been addressed in the HCP (3.5 and 5.2.1).

9-5 In the HCP (3.5) it states that Highway 18 will be fenced on both sides, enclosing a right-of-way of 200 feet. UDOT/FHWA current plans are to fence a corridor enclosing 300 feet which will allow adequate right-of-way for potential road modifications. The Implementation Agreement (p. 10, F) correctly ensures a 300 foot right-of-way and this should be corrected in the HCP.

We appreciate the opportunity to comment on the subject documents.

Sincerely,



Laura A. Romin  
Wildlife Coordinator

cc: Lynn Zollinger, UDOT  
Jay Devashrayee, UDOT  
Bill Gedris, FHWA

dt: wchcp/mcpa(comments)



C. Richard Tracy & Eric T. Simandle  
Biological Resource Research Center  
Department of Biology / RA 314  
Reno, Nevada 89517-0013  
Voice: (702) 784-4565  
FAX: (702) 784-1369

Responses to Comments

- 10. Dr. C. Richard Tracy and Eric T. Simandle; University of Nevada, Reno  
 10-1. UWFWWS appreciates these comments from a member of the Desert Tortoise Recovery Team. Through proposed monitoring, the value of the reserve in Zones for desert tortoise recovery will be determined and evaluated. Your comments were forwarded to Washington County for consideration in revising their HCP.  
 Washington County response: "Kayenta style" development is now only proposed for 400 acres of Zone 1 and the western portion of Zone 5. Within the Town of Ivins (which is most of the private land in Zone 1), dogs are required to be restrained. The Town of Ivins and Washington County does maintain residential speed limits within their jurisdiction on residential roads for safety reasons, and they believe that these speed limits and their enforcement capabilities are adequate to protect children and desert tortoises.

To: Robert D. Williams, U.S. Fish and Wildlife Service  
 From: C. Richard Tracy and Eric T. Simandle, University of Nevada, Reno  
 Re: Washington County, Utah Incidental Take Permit Application / Documents  
 Date: August 25, 1995

We have reviewed the Washington County, Utah Incidental Take Permit application and documents and prepared the following comments to assist your office and the Washington County HCP Steering Committee in implementing an effective and reasonable habitat conservation plan.

It is apparent that a great deal of effort has gone into the preparation of these documents. It is our hope that the suggestions that we have put forth here will be used constructively and not be regarded as criticism of the plan. Our opinions are based solely on our scientific knowledge of this species and the affected areas.

We agree wholeheartedly with the concept of the HCP and the specific goals and objectives set forth in the HCP documents and are encouraged that the Steering Committee has intended to include the recommendations of the Desert Tortoise Recovery Plan (DTRP). However, we have noted several instances where the management goals are counter-indicated by the objectives and the DTRP.

With respect to the management goals, we believe that the "Kayenta style" developments that are proposed in Zones 1 and 4 can be compatible with desert tortoise populations only with the additional conditions that: 1) pets are required to be restrained at

10-1

all times and 2) adequate speed bumps or other traffic slowing devices are used to reduce the chances of vehicles killing tortoises.

Additionally, permitting hunting in Zones 3 and 4 may detrimentally affect the tortoise population by encouraging vehicular traffic in these regions. This may be especially important during the big game season when tortoises are likely to be still active and obtaining the food necessary to survive their hibernation. Disturbance of tortoises during this critical time period by vehicles or hunters themselves could lessen their chance of surviving hibernation. If any hunting is to be allowed, we suggest that it be limited to upland bird hunting and that vehicular traffic within these zones be controlled by closing most of the unimproved roads in the area.

Permitting grazing in Zone 4 may have also adversely affect the tortoise population and is listed as incompatible with desert tortoise recovery in the DTRP. Recent research has suggested that in times of low food supply grazing can reduce the fecundity of tortoises and thereby lessen the chance of this population recovering. While there may be few tortoises in this area, it appears that the habitat is very similar to the City Creek site which does support high densities of tortoises. Therefore the chances of future increases in tortoise populations in this area may be very good if it is properly managed. Further, at the current stocking rate of approximately 4 cows per square mile, it appears that this area can only support about 28 cows. Insofar as the Endangered Species Act requires that management decisions be made to facilitate the recovery of the desert tortoise the prudent decision here seems obvious; on balance, permitting the grazing of 28 cows is far from a sufficient benefit for the damage that these cows can do to tortoise resources.

Permitting mining activities also could pose a threat to the desert tortoise populations in Zone 4. The DTRP suggests that mining be considered as compatible only on a case-by-case basis under the condition that the cumulative impacts do not significantly impact the desert tortoise habitats or populations. The small size of this zone increases the chances that the impact to the tortoise habitat in this area will be high. Further, the DTRP

Responses to Comments

10-2.

UWFWWS appreciates these comments from a member of the Desert Tortoise Recovery Team. While they are apparently sparse, desert tortoises have been observed in Zone 4 desert habitat. Law enforcement within the reserve will occur year-round. Your comments were forwarded to Washington County for consideration in revising their HCP.

10-2

Washington County response: In Zone 3 of the reserve, all non-improved roads are scheduled to be closed to vehicular traffic, not just during the hunting season. All roads will be left open in Zone 4 as no desert tortoises are known to occur in this part of the reserve. Should desert tortoises be discovered in Zone 4, the HCAC may meet to discuss potential changes in Zone 4 reserve management. However, as Zone 4 is entirely BLM lands, it will be the responsibility of the BLM to enact any such changes.

10-3.

See response 10-2. Your comments were forwarded to Washington County for consideration in revising their HCP.

10-3.

Washington County response: As stated in response 10-2, no desert tortoises are known to occur in Zone 4, and therefore Washington County does not accept that grazing is detrimental to desert tortoises in Zone 4. In addition, as stated in response 10-2 above, Zone 4 is managed exclusively by the BLM, and it is a BLM decision whether or not to continue grazing in Zone 4 now or in the future. However, Washington County and HCAC is expected to participate in this decision process.

10-3

10-4.

See responses 10-1 and 10-2. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: As stated in response 10-3, no desert tortoises are known to occur in Zone 4. Zone 4 is managed exclusively by the BLM, and it is a BLM decision whether or not to continue mining in Zone 4 now or in the future.

10-4

requires that any potential effects on desert tortoise populations are carefully mitigated during the operation and that the land is restored to its pre-disturbance condition. It is our opinion that because none of these conditions are met, and this zone is relatively small, tortoises in this zone would be in harms way if mining activity is allowed.

The geometry of the proposed DWMA needs to be considered carefully. Some of the large private holdings along highway 18 need to be targeted for trade. In particular, the lengthy stretch of private holdings and the planned management of these areas, create a barrier to dispersal of tortoises within the total DWMA. Acquisition of the southernmost section of this private area as a part of the DWMA could be particularly beneficial insofar as it would increase the size of the corridor between the eastern and western portions of the DWMA. Additionally, no traffic including activities should be permitted in this sensitive corridor area. Further, the proposed visitor's center in Paradise Canyon is a particularly destructive idea for this sensitive corridor area. We recommend that the visitor's center (a visitor's center being a particularly good idea for management of interested visitors and tourists as well as the displaced tortoises) definitely should be located south of Interstate 15 to manage traffic and interest in tortoises to areas away from the DWMA.

Lastly, we feel that reductions in vehicular traffic throughout the DWMA are required to protect the species from harm. This is especially the case in areas where there are many unimproved roads crossing portions of the DWMA. The danger here is both from the traffic itself and also from the off-road activity that is stimulated by human access. Destruction of habitat is highly likely under these conditions and we believe that regulations alone will not be able to stop such destruction from occurring. Instead, we encourage a review of the existing roads in the DWMA and the closing of roads that are not essential to approved activities.

10-4

#### Responses to Comments

10-5. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: Washington County assumes that the author is referring to the southern portion of Winchester Hills along Highway 18. There was considerable discussion between the Technical Advisory Committee and the HCP Steering Committee regarding the boundary in the area in question, and the proposed boundary was voted on and unanimously approved by the Steering Committee.

10-5

10-6. See responses 6-1 and 6-2. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: See response 6-1.

10-7. Your comments were forwarded to Washington County for consideration in revising their HCP.

10-6

Washington County response: Washington County agrees in concept with this comment and has proposed to close/gate all unimproved roads in Zones 2, 3, and 5. If additional roads need to be closed, this will be considered by the HCAC.

10-7

**Responses to Comments**

We feel that our comments point to management presented in the HCP that may abate recovery of the desert tortoise and could lead to an unnecessarily lengthy time to delisting. Additionally, we feel that the impacts of these management schemes are not adequately addressed in the Environmental Impact Statement (EIS). Further, we feel that the general comments about traffic through the DWMA should be considered in both modifying the HCP and addressed in any EIS.

The DTRP advises that, because of the small size of this DWMA, that management be intensive and promptly implemented if the population is to be given a reasonable chance of recovery. Therefore, we urge your office and the Washington County Steering Committee to include our recommendations in the final HCP.

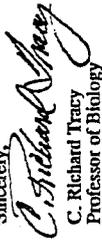
10-8.

Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: Washington County has strived to develop an HCP which protects the desert tortoise to the maximum extent practicable. Sometimes, practicality may result in decisions or compromises which the author may not support 100%. However, Washington County firmly believes that the proposed HCP promotes recovery far better than no HCP, and therefore, the USFWS should issue the permit as written.

10-8

Sincerely,

  
C. Richard Tracy  
Professor of Biology



Eric T. Simandle



United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
Utah State Office  
154 South West, Suite 301  
Salt Lake City, Utah 84111-2103

6840 (UT-932, UT-045)  
August 28, 1995  
FAX received  
August 28, 1995

To: Field Supervisor, U.S. Fish and Wildlife Service  
Utah Field Office  
Lincoln Plaza  
145 East 1300 South, Suite 404  
Salt Lake City, Utah 84115

From: Deputy State Director, Division of Renewable Resources  
Subject: Review of Washington County, Utah, Desert Tortoise Incidental Take Permit Application/Documents.



The Utah Bureau of Land Management (BLM) has reviewed the subject document and prepared several comments for your consideration. BLM remains committed to the Habitat Conservation Plan (HCP) process in Washington County. We are pleased with the progress that has been made thus far. It is our intention to continue to do our part to ensure that this effort continues to move forward toward implementation and improved management of the special status plant and animal species located in the area. We hope that these comments will improve the quality of the document.

General Comments.

- 1. We noticed that there is no discussion regarding compliance with Recovery Plans, Federal Land Use Plans, State and local zoning ordinances, etc. A section in the HCP should discuss this issue. 11-1
- 2. The issue of whether or not the desert tortoise is native to the area is discussed several times in the HCP and the Draft Environmental Impact Statement (DEIS). The issue is essentially moot and the various discussions are redundant. It should be discussed one time and then dropped. 11-2
- 3. There is confusion regarding some of the acreage figures used and whether or not the entire county is part of the HCP. For example, Table ES1 (p.v) and ES2 (p. vi) indicate that there are 34,436 acres (approximately 54 sections) of low density tortoise habitat in Washington County. However, Figure 2.2 (p. 17) shows approximately 134 sections or about 86,000 acres of low density of habitat, including the Beaver Dam Slope area. Is the Slope part of the HCP? The actual extent of the HCP needs to be clarified and acreage figures adjusted accordingly. 11-3
- 4. Several places in the document, including pages 31 and 40 of the proposed HCP and pages 22 and 25 of the DEIS state that "BLM 11-4

dt: wchcp/ncpa (comments)

Responses to Comments

11. Deputy State Director; U.S. Bureau of Land Management

11-1. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: Compliance with Recovery Plans is discussed generally in the HCP, and more specifically in the EIS, as is compliance with other Federal, State, and Local plans and ordinances.

11-2. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: The issue of whether or not the desert tortoise is native to the area was raised as a concern during public scoping meetings and continues to be an issue with Washington County residents (see other comment letters). It is discussed within both the HCP and the EIS to adequately address the public's concerns; however, it had no meaningful impact on the proposed HCP.

11-3. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: The Executive Summary and Sections 1.2 and 1.4 have been revised to clarify the description of the HCP coverage in Washington County. The desert tortoise habitat discussed for reserve and non-reserve within the HCP coincides with the Upper Virgin River Recovery Unit, which does not include the Beaver Dam Slope area. The Beaver Dam Slope area is part of the Northeastern Mojave Recovery Unit and is not included in the HCP planning area.

11-4. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: This has been changed in the HCP.

should be requested to apply for a minerals withdrawal." This statement should be clarified as BLM can request mineral withdrawals only for federal minerals.

11-4

### Responses to Comments

Your comments were forwarded to Washington County for consideration in revising their HCP.

11-5.

### Specific Comments.

#### Habitat Conservation Plan.

1. Page 1. 1.1.1. The Need For an HCP in Washington County. There is a need in this section for a concise discussion of the relationship between The Endangered Species Act and the HCP. There should be a discussion on exactly what "take", "incidental take", Section 10 Permit, etc. mean. These items are mentioned in the DEIS but should be identified at the beginning of the HCP.

2. There is some information in the HCP which is out of date. For example, Table 1.1 lists the Siler pincushion as proposed for down listing to threatened (also see page 9, Section 1.4). This action has already been approved.

3. Page 6. Table 1.3. The membership and affiliation on the steering committee needs to be updated.

4. Page 9. 1.4. Coordination With the Draft Desert Tortoise Recovery Plan (DDTRP). This section and certain other sections need to be updated to reflect implementation of the Final Desert Tortoise Recovery Plan which has replaced the draft plan.

5. Page 16. 2.1.4. Mexican Spotted Owl. This section needs to be updated to reflect the fact that a draft Mexican spotted owl Recovery Plan has been published and work is beginning on a final plan.

6. Page 17. 2.1.6. Woundfin and Virgin River Chub. This section should be updated to include a discussion on the Virgin spinedace and the recently completed Conservation Agreement. Also, has the final Virgin River fishes Recovery Plan been released?

7. Page 27. Part 3.2.2. Private-BLM Land Exchange. Change the beginning of the fourth sentence from "... all of the private landowners..." to "...most of the private land owners within the proposed reserve boundaries have agreed to participate in this acquisition program." Some owners are still evaluating the various options available to them. For example, to our knowledge the owners of the turkey farm have not agreed to sell or exchange. Others may change their mind on whether or not they want to exchange lands.

8. Page 28. 3.3. Description and Management of Reserve Zones. Insert the word "proposed" between the words "The" and "reserve".

9. A summary map depicting the zones in the

Washington County response: Items 1 through 8 have been modified as suggested. Regarding item 9, Figure 3.1 of the HCP depicts the Zones on page 25 of the draft HCP/EIS. Item 10 has been modified as suggested. Washington County recognizes the position of the BLM regarding item 11, and is pursuing special legislation to enact the proposal. Regarding item 12, firefighting has been added to the lists of approved uses for Zones 1, 2, and 5. The HCAC will consider what additional fire fighting restrictions, if any, would be necessary for the reserve. The funding question in item 13 is addressed in the HCP—costs and revenues are expected to increase at a similar rate. Item 14 is modified as suggested.

11-5

proposed reserve, such as the one on page 23 of the DEIS should be inserted here.

10. Part 3.3.1.1.2. Management (of Zone 1). A question exists as to the legality of having the Town of Ivins manage BLM administered federal lands. Therefore, the following should be inserted after the 2nd sentence in this paragraph: "Management of resources on BLM administered public lands not directly related to desert tortoise objectives, including management of wilderness values on Red Mountain will remain with BLM. Prescriptions on public lands must conform to federal laws and regulations." This is to clarify that the Town of Ivins cannot assume administration of other aspects of managing federal lands under present laws and regulations which make specific delegations to the Secretary of the Interior (also see DEIS, page 22, paragraph one).

11. Page 30. Part 3.3.2.2. Management (of Zone 2). BLM has not yet endorsed the proposal to transfer all remaining lands in this zone to the UDNR for management as an extension of the State Park. Until and unless special legislation is enacted into law that provides otherwise, management of public lands within this zone must conform to federal laws and regulations, including management of those portions of the Red Mountain Wilderness Study Area located within the Zone.

12. Page 40 and Page 42. Fire fighting discussion. The HCP notes that fire fighting activities would be allowed in Zones 3 and 4. What would the fire management prescription be in the other three zones? In those Zones where fire fighting would be allowed, should there be restrictions or other specific direction identified?

13. Page 110. 6.5. Funding. There is some question as to how the HCP proposes to keep up with inflation. It may be desirable to depict what different discount rates do to the total budget requirements.

14. Page 137. 7.7.2. Potential Impacts to Dwarf Bear-Claw Poppy. A potential impact that should be identified here is fragmentation and loss of habitat due to commercial and residential development, associated road construction, etc.

### Draft Environmental Impact Statement.

#### General Comments.

1. There is no discussion on compliance with various Recovery Plans, Federal Land Use Plans, State and local plans and other ordinances. This discussion should be a part of the DEIS.

2. The DEIS should include a discussion of (1) benefits resulting from implementation of the HCP, and (2) the value of the desert tortoise and the other listed and candidate plant and animal

11-6. Section 1.7 of the FEIS provides discussion on this topic. See response 11-1.

11-7. This information is already in both the HCP and the DEIS.

species located in the area.

Grazing.

3. The intent of the HCP regarding livestock grazing within the proposed reserve is confusing and needs to be clarified regarding (1) who would actually acquire the permits, and (2) if grazing would be allowed to continue in portions of the reserve.

Language in the Comparison of Alternatives Matrix on page 35 of the DEIS and elsewhere in the document should be amended to make clear that the grazing permits would be acquired by the Washington County HCP Administrator, not BLM (see Table 6.3, page 111 of the HCP). Department of the Interior policy prevents BLM from purchasing its own permits which it has issued to grazing users.

The Comparison of Alternatives Matrix on page 35 also notes that "Four grazing permits would be acquired by BLM on a willing seller/willing buyer basis and grazing would be retired from most of the proposed reserve." (also see Table 5.1, page 99 of the HCP). Under the Environmental Consequences Section (Rangeland 4.2.3.1, page 88), the document states that under the proposed action, "...all current grazing permit holders within the proposed reserve would receive offers to sell their permits according to the terms listed in the HCP". While we believe that offering compensation is a good practice and should be pursued in all cases, the HCP and DEIS does not consistently support this concept. The HCP at 3.3.4.2 (Management of Zone 4, page 41) clearly states that grazing in that zone should be continued (also see DEIS, page 25). The DEIS at 4.2.3.1 (page 88) notes that grazing in Zone 4 will continue to undergo Section 7 review and would not be affected by the proposed action. The inconsistencies between the various statements in the respective documents should be rectified. Neither the HCP nor the DEIS mention grazing prescriptions or restrictions in Zones 1 and 2 which contain portions of three grazing allotments. Since existing grazing use in this area is very light and does not overlap areas of habitat or known tortoise occurrence (elevations are above 4,000 feet), we believe that grazing elimination would be unjustified and inappropriate. Nonetheless, HCP/FWS intentions should be made clear, given the Recovery Plan language that grazing would be eliminated in DWMMAs.

Responses to Comments

11-8. The HCP and EIS have been revised to clarify the grazing status of each Zone and the fact that Washington County, not the BLM, would purchase the grazing permits in Zone 3 on a willing-seller basis. Grazing allotments in Zones 1 and 2 do not include desert tortoise habitat and would stay as is. Grazing would be permitted in Zone 4 (see responses 8-1 and 10-3). USFWS maintains grazing should be removed from all DWMMAs as called for in the Desert Tortoise Recovery Plan, and in that case, removal shall be through ESA section 7 consultation with BLM.

11-9. Washington County's proposal to offer compensation to current grazing permit holders complements eventual BLM removal of grazing within DWMMAs. See response 11-8.

11-10. USFWS concurs that, in addition to the guidance provided in the HCP, criteria should be developed under informal and formal ESA section 7 consultation.

Specific Comments.

1. Page 11, paragraph 2. The DEIS states that "...the HCP's desert tortoise reserve (figure 1.3) encompasses the entire Upper Virgin River DWMA (which coincides with the Upper Virgin River Recovery Unit). Consequently, any reserves established as part of the HCP necessarily becomes the recovery plans DWMA for that area." A total of 22,216 acres of the reserve would provide habitat for wildlife other than the desert tortoise. Much of this additional acreage (such as the portion on top of Red Mountain)

lacks habitat features and climatic conditions necessary for the desert tortoise. BLM believes that the automatic application of special prescriptions for the protection of desert tortoise in such areas is not warranted and suggest that zone managers have discretion as to whether or not the prescriptions are applied. Sound criteria could be developed to guide the use of such discretion.

11-10

### Responses to Comments

11-11. Subsequent discussions with BLM have resulted in the understanding that such a population classification is not consistent with section 10(j) of the ESA. USFWS and BLM are proceeding with appropriate environmental review for this action.

2. Page 27. paragraph 1. The DEIS states that FWS will fund a five-year translocation study. BLM strongly recommends that to minimize and mitigate impacts and to promote full public disclosure, this paragraph be amended to state that if desert tortoises are to be relocated in Washington County outside the HCP reserve that these tortoises be classified as an experimental, non-essential population. This would ensure that areas outside the HCP reserve would continue to be managed under multiple use management and that these uses would not be jeopardized by the presence of new tortoise populations.

11-12.

The change has been made in the FEIS.

11-11

11-13. These are opportunity costs for losing desert tortoises; however, the HCP proposes a reserve where others may prefer development. Therefore, the opportunity cost analysis is a loss of development.

11-13.

11-14. While different build-out scenarios could result in different impacts regarding lost revenues, using the historical patterns was believed to be the best predictor of impacts. Short-run impacts are differentiated from long-run impacts by whether or not the area has been developed as explained in Section 4.1.1.1 of the DEIS.

11-14.

11-15. The change has been made in Section 3.6.3.3 of the FEIS.

11-12

3. Page 28. 2.2.2.5. 2nd Paragraph. The term "worst case scenario" should not be used in RIS analysis. The proper procedure is to analyze the most reasonable foreseeable alternatives and impacts. Further, the term "worst case" calls for a subjective judgement. What is a "worst case scenario" to one group may be a great scenario to another group.

11-15.

The change has been made in Section 3.6.3.3 of the FEIS.

11-16.

The change has been made in the FEIS.

11-13

4. Page 45. 3.3.5. Opportunity Costs. This section discusses only opportunity costs of development. Are there not opportunity costs associated with losing desert tortoises or desert tortoise habitat? A discussion on substitutes for both houses and tortoises would be helpful.

11-17.

Explanation can be found in Sections 3.3.5 and 3.3.5.1 of the FEIS.

5. Page 47. Paragraph 1. "Fully built-out, based on the development pattern currently existing in St. George..." may be a questionable assumption. Different build-out scenarios should be examined. Defining long and short run impacts is essential. How many years is short run?

11-14

6. Page 52. 3.6. Threatened, Endangered, Candidate, and Sensitive Species. A discussion of the Shem milkvetch (*Astragalus eremiticus* var. *ampullarioides*) is missing and should be added to this section.

11-15

7. Page 57. 3.6.4. Woundfin. A discussion regarding the threat from the red shiner should be added to the 2nd paragraph in this section.

11-16

8. Page 76. Table 4.1 (as well as the other two tables). This table is confusing and in need of narrative explanation. Are these annual numbers? If not, how many years does it take to realize a "Total Lost Construction and Development Values" of \$34 billion? Is there a loss of 95,000 people under the No Action Alternative or does it not allow 95,000 people to move into the county?

11-17

Responses to Comments

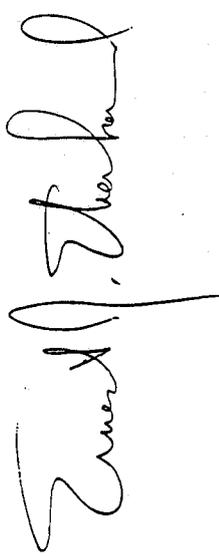
9. Page 78. 4.1.1.4. Threatened....Species. This section should include a discussion of impacts to the Shem milkvetch (*Astragalus eremiticus* var. *ampullarioides*), a species which is currently under pressure from OHV use and residential development proposals. This is one of the most endangered species in the county. This discussion should be carried forward in each of the alternatives.

11-18

11-18. The change has been made in Section 3.6.3.3 of the FEIS.

Summary.

The proposed HCP/DEIS was reviewed by personnel in the BLM Dixie Resource Area and the Utah State Office. If you have any questions regarding any of these comments, please contact Ronald Bolander in the State Office at 801 539-4065. He can provide any additional information that you made require.



Attachment  
Addendum (1 p)

Addendum.

Comments From Minerals Division in the Utah State Office. All of these comments pertain to the Draft EIS.

1. General Comment. The document notes that no mineral lands would be impacted by implementation of the HCP. If this is the case why is there a requirement to withdraw lands from mineral entry? 11-19
2. Page 49. 3.4.2.1. BLM Lands. Paragraph 1. Change 23,000 mining claims to 1,192 mining claims. This is the number currently registered with BLM for Washington County. 11-20
- Change 460,000 acres to 22,800 acres which is the correct number of acres currently under mining claim status. 11-21
3. Page 86. 4.2.2.1. BLM Lands. paragraph 2. There are 3 mining claims located within the proposed reserve in T.41 S. R. 16 W. Section 24. If these claims are valid, they should have the right of access. 11-22

Responses to Comments

- 11-19. It is the intent of the HCP reserve management to minimize impacts to desert tortoise. Mineral withdrawal is consistent with reserve management and the HCP suggests in various zones that mineral claims be withdrawn and access removed.
- 11-20. The change has been made in the FEIS.
- 11-21. The change has been made in the FEIS.
- 11-22. The change has been made in the FEIS.

dt: wchcp/pepa (Comments)



WASHINGTON COUNTY  
Water Conservancy District

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postmarked  
August 28, 1995

August 28, 1995

Robert D. Williams  
U.S. Fish & Wildlife Service  
145 East 1300 South, Suite 404  
Salt Lake City, UT 84115

Dear Mr. Williams:

Comments on the Washington County Desert Tortoise  
Incidental Take Permit Application/Documents are enclosed.

We appreciate the opportunity to comment and are  
willing to continue work with USFWS and Washington County to  
accomplish the objectives of the HCP.

Respectfully,

Ronald W. Thompson

RWT/rm  
Enclosure

August 28, 1995

**WASHINGTON COUNTY WATER CONSERVANCY DISTRICT  
COMMENTS ON DESERT TORTOISE INCIDENTAL TAKE  
PERMIT APPLICATION/DOCUMENTS**

**I. FEDERAL FISH AND WILDLIFE  
PERMIT/APPLICATION**

The application is inconsistent with the HCP and EIS. The HCP in Section 4.3, page 52, states that the incidental take permit is a wide-take permit so take may occur any where in the county outside the reserve. Also, in Section 4.5, page 89, the HCP states "the USFWS has accordingly recognized that the county's take permit is county-wide outside of the proposed reserve. The EIS in Section 2.2.2.2 states the incidental take permit would be a county-wide permit, therefore, take may occur anywhere in the county outside the established reserve. The application appears to apply only to the 12,298 acres of known tortoise habitat and is not a county-wide take application.

12-1

**II. DESERT TORTOISE INCIDENTAL TAKE  
PERMIT APPLICATION/DOCUMENTS.**

**PART II: Proposed Washington County Utah Habitat Conservation Plan.**

Section 1.7, page 11. There is ample circumstantial evidence that the desert tortoise is not native to the St. George area. The statements contained in this section that scientist who have studied the region have argued that the occurrence of the associated species and the diverse age structure of the population make it likely that the desert tortoise have been in this area for centuries is flimsy at best and ill-logical at worst. There are numerous areas where Gila monsters and side-winders occur where desert tortoise do not occur. Also, the historic

12-2

**Responses to Comments**

**12. Ronald W. Thompson, Washington County Water Conservancy District**

**12-1.** Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: The permit application references Section 4.1 of the HCP, which clarifies your concern.

**12-2.** Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response:

The discussion regarding the nativeness of the desert tortoise in the Section 1.7: HCP remains as written.

evidence is that all age classes tortoises were brought into the area. There by, providing the all the classes which occurred on the Beaver Dam slope where the tortoises were transported from.

Section 2.1.1, page 16, states "researchers" agreed that within or adjacent to the populated areas of Washington County, desert tortoise population have declined due to road kills, depredation by dogs and degradation of habitat." There is no research on which to base this statement. Earliest known research work on desert tortoise in this area was done by Woodbury and Hardy and was entirely within the Beaver Dam Slope area. No reference was made to the St. George area by Woodbury Hardy. Changes or declines in population is speculation as no long-term population base has been established. The population may actually have increased or rather than declined. This statement about trends should either be documented or should be dropped from the HCP.

Section 2.1.6, references to the Woundfin and Virgin River chub should make it clear that there no impact whatsoever on these two species as a result of the proposed HCP.

Section 2.1.8, page 21, makes reference to the Bonneville cutthroat trout without noting that this species is not native to Washington County having been introduced in the Ash creek drainage in the mid-1980's.

Section 3.3.4.2, page 41, indicates management of zone 4 would be similar to zone 3 and other areas of the reserve, however, zone 4 north of the Virgin River contains no known tortoises. This zone should not be included in the HCP and if included, management should continue as at present until it is determined to be a translocation site and then management should be worked out accordingly, but should not be prejudged.

Section 3.4.1, page 47, refers to a protocol for water development in non-take areas. This

#### Responses to Comments

Section 2.1.1, p. 16: The statement in the HCP has been modified accordingly.  
Section 2.1.6: The HCP is clear on this point (see Section 7.6.2).  
Section 2.1.8: The proposed change has been incorporated.  
Section 3.3.4.2: The language in the HCP has been changed; however, Zone 4 is still considered to be an important component of the reserve.  
Section 3.4.1: The protocol has been included in the Final permit application/ documents.

protocol is not included within the HCP and is impossible to evaluate without its inclusion. Also, the last sentence indicates this protocol will apply to future Section 7 Consultation for utility projects. Section 7 Consultation is only appropriate where federal lands or funds are involved. This should be made clear.

Section 3.4.2, refers to the need for the HCAC to review flood control projects. It should be made clear what "review" means. Is "review" approve, disapprove or is it simply to review without any additional action. Review should only be necessary in take areas and areas now containing tortoises.

Section 3.5, page 48, refers to a road maintenance protocol which is not available within the documents.

Section 4.3, page 52, indicates the incidental take may occur anywhere in Washington

County outside the reserve. Yet the application for a incidental take permit does not include the entire county only the area where incidental take was identified most likely to occur.

Table 4.2, page 55, Item 6 lumps the Harrisburg/Leeds Babylon area. This lumping is inappropriate since tortoises do not occur in the area east of Leeds and in the Babylon area north of the Virgin River. Areas which are not known to be existing habitat or historic habitat require special treatment and authorization by the Secretary of the Interior to be included. Such authorization if granted is not mentioned within the document.

Section 4.5, page 89, states that current desert tortoise survey protocol requires tortoise surveys in all areas of Washington County below 4,000 feet in elevation. It is not clear what protocol is being referred to here or how it got to be approved. It seems to be very arbitrary. The protocol should be available for public review and included in this document. If the protocol is in fact appropriate and requires surveys of all areas below 4,000 feet what

#### Responses to Comments

Section 3.4.2: The HCAC can not approve or disapprove actions, they can only make recommendations to the Washington County Commission. The HCAC would review proposed flood control projects to evaluate their consistency with the HCP. Formal approval of flood control projects lies with appropriate local, state, or federal agencies, not with the HCAC.

Section 3.5: The protocol has been included in the Final permit application/ documents.

Section 4.3: See response 12-1.  
Table 4.2: "Lumping" was done for convenience of mapping. Desert tortoise distribution is inherently patchy, and other take areas include areas devoid of desert tortoises. The second and third sentences appear to refer to the designation of critical habitat, which is not relevant to the HCP.

Section 4.5: The protocol referenced is the USFWS protocol for desert tortoise surveys, and it is available. Potential habitat has been designated as part of the areas of Washington County requiring survey. The HCP has substantially reduced the survey requirement in Washington County to only areas of potential habitat and designated incidental take.

is the need to designate potential habitat? It serves no purpose if the area must all be surveyed anyway.

Section 5.2.1 Fencing, is very vague as to what type of fence will be constructed making it very difficult to understand what other impacts the fence might cause. Fences can be very destructive to the migration of certain animals and they also are a barrier to windblown material which would collect along the fence and becomes unsightly and a fire hazard. Gates are nice to talk about, but unless they are kept closed they serve no purpose and it is extremely difficult to keep a gate closed where there is much traffic. This is especially true of the Cottonwood road where the plan requires either a gate or fencing. Neither appear to be practical. Before deciding to there needs to be consideration of what the pressure is and the pressure is or the activity being excluded.

Section 5.2.2, page 95, this section anticipates the hiring of two full-time law enforcement agents. One with the BLM and one with the Division of Wildlife Resources. This appears to be gross overkill. It will make the proposed reserve one of the most intensively controlled unoccupied areas anywhere. Two full-time enforcement officers for a sixty thousand acre preserve, unless they are assigned other duties like fence maintenance is a waste of taxpayers money and money which could be better used in other management areas.

Section 5.2.4.1, page 96, calls for a study costing \$750,000 on translocating desert tortoises in Washington County. It is hard to imagine what information is lacking that would require the expenditure of \$750,000. Translocating of tortoises is ongoing in the Las Vegas area and other parts of the desert tortoise range and is no mystery. This information from other areas should be used and the study drastically reduced to around a \$50,000 range. The \$1,000 per month designated to temporarily handle desert tortoises should include ample money to

#### Responses to Comments

Section 5.2.1: The HCP specifies what the objective of fencing is for certain areas. It will be the responsibility of the HCAC to review specific fencing plans to ensure other potentially adverse impacts are minimized. The same is true for areas identified for gating.  
Section 5.2.2: This was the decision of the HCP Steering Committee.  
Section 5.2.4.1: The \$750,000 was an estimate prepared by the USFWS for the cost of the study.

handle research needs.

Section 5.3.3, page 99, allocates \$1,250,000 for monitoring. It would appear that the people who would be employed to do this monitoring could also do the law enforcement and other maintenance efforts, thereby eliminating a significant expenditure of money for law enforcement and maintenance.

Section 5.3.4, on page 99, calls for the acquisition and retirement of four grazing allotments with the statement that grazing will not be permitted until a definitive study of livestock and desert tortoise interrelationships has been completed, which demonstrates that livestock grazing is consistent with reserve management objective. No funds are allocated for this study and it would be impossible to do a study of the interrelationships of tortoise and livestock if there is no livestock. Grazing should be continued at the present level within these four allotments while the study proceeds.

Figure 6.1, page 104, shows an organizational chart which indicates that Washington County commission falls directly under the supervision and administration of the US Fish and Wildlife Service. We doubt if this is what the Washington County Commission had in mind when they agreed to sign on to the HCP.

Section 6.6, page 113, indicates that surveys are required on potential habitat areas, but does not indicate the frequency of these surveys. Is this a one time survey or is this necessary to make a survey everytime someone goes out there and does something. We recommend this be a one time survey. Also this section indicates that tortoise surveys and removals will only be scheduled during certain times of the year and that because biologists may be busy that HCAC may recommend that the county commission establish a fee to cover additional costs of processing and temporary desert tortoise shelter. The two full-time law enforcement

### Responses to Comments

Section 5.3.3: See responses to Sections 5.2.2 and 9.0

Section 5.3.4: This was the decision of the HCP Steering Committee.

Figure 6.1: This has been corrected.

Section 6.6: This is a one-time survey, prior to development only. At this time, it is not anticipated that the two law enforcement personnel will conduct survey and removal of desert tortoises. Placing a time limit on the validity of surveys is believed to be necessary due to changing conditions. This may result in premature and unneeded grading to avoid resurvey; however, this is permitted as long as the conditions of the HCP are followed. The wording regarding the misdemeanor has been corrected to state that landowners are responsible for having their property surveyed by a biologist. The desert tortoise survey protocol is available from Washington County and the USFWS.

individuals should be trained to be able to do surveys and handle tortoisises for relocation. Later this same section indicates that surveys will only be good for 60 and 90 days without indicating which type of area. It should be made clear that this is only in the incidental take areas as defined in this section. Putting a short-time limit on these authorizations is a sure formula to bring about premature and unneeded excessive grading to avoid having to resurvey. Also this section indicates that city/county ordinances will be amended to state the landowner who does not perform surveys will have committed a class B misdemeanor. It is not the landowner who will be performing the survey it is the HCP biologist. If ever included in an ordinance, it should be clarified as to what the intent is. Also this section repeatedly refers to a US Fish and Wildlife Service protocol without any information as to what this protocol is, it should be included within the document and made available to landowners and to the public prior to approval of this plan.

Section 6.7, Incremental Implementation provides for an annual cap of 625 acres. There is no information as to why this cap is applied and there seems to be no justification for it. If the reserve is created in one or two years then the incidental take areas should be immediately available thereafter.

Section 6.8, Plan Amendments provides for amendments after approval by the commission to be submitted to the US Fish and Wildlife Service for approval. The Fish and Wildlife Service will then determine whether a public hearing will then be necessary or whether the amendments are approved or denied. If denied the commission may request an administrative or judicial review of the US Fish and Wildlife Service decision. At present there is no administrative process for review of Fish and Wildlife Service decisions. Fish and Wildlife Service should be required to provide for such an administrative review, if the

### Responses to Comments

Section 6.7: The cap has been removed.  
Section 6.8: The amendment procedure has been revised.

plan calls for it and is approved. This section provides for any party to the HCP to request an amendment if the a new species is listed under the act. This puts the entire HCP in jeopardy everytime a new species is listed. This is a serious flaw in the plan. The listing of a new species can not be used as justification to disrupt the entire HCP plan and process. This requirement should be eliminated from the HCP.

Section 6.9, covers activities anticipated to permitted by the incidental take permit. The list should include water management and conservation projects.

Section 6.10, on page 120, indicates Ivins is the only city which has agreed to sign the implementation agreement. There is no indication of what will happen if the cities do not sign the implementation agreement. It is our understanding, LaVerkin has already indicated that it will not sign.

Section 7.1.2.1, indicates the estimated take would be 1,186 animals. This is incorrect, because most of the animals are intended to be translocated. The actual take will undoubtedly be far fewer than this number.

Section 7.1.2.3, on page 125, indicates the habitat connecting link between the Beaver Dam slope and this upper Virgin River group is unknown. This is incorrect. The dispersal link is well known. These tortoises were carried from the Beaver Dam slope by man into adjacent communities and dispersed out from there.

Section 7.1.2.3, on page 125, refers to the Virgin River providing a barrier between zones 4 and 5. This is true. The Virgin River does limit the northern movement. And in fact, there are no tortoises north of the Virgin River. Zone 4 should not be included in the HCP. The only possible way for gene flow across the Virgin River would be by the tortoises being physically carried across the Virgin River and introduced into the area.

### Responses to Comments

Section 6.9: Water management and conservation have been added.

Section 6.10: This has been clarified in the HCP.

Section 7.1.2.1: The actual number of desert tortoises killed is expected to be far less than 1,186. However, the estimated "take" allowed under the Section 10(a) permit, using the legal definition, is a maximum of 1,186. Any animal cleared and moved by Washington County under this permit would be considered "taken."

Section 7.1.2.3: While many people maintain that many desert tortoises were transported from the Beaver Dam Slope to the Upper Virgin River DWMA, the USFWS and the Desert Tortoise Recovery Team believe that desert tortoises were native to this area prior to their being translocated. Zone 4 is included in the reserve area as its habitat characteristics are considered suitable for desert tortoise, and it may make a good translocation site.

Section 7.1.2.4, on page 129, states, "to date live desert tortoise have not been found in this area and that it violates reserve design criteria because it lacks a target species as well as having a number of inholding." Zone 4 should be deleted for these reasons from the projected reserve. If included, it should be designated an experimental area only and the tortoises translocate there not fall under the restrictions of the Endangered Species Act.

Section 7.5.2, on page 135, notes that the HCP should not affect waterways or riparian habitat. Yet the next section (7.5.3, same page) calls for a comprehensive inventory of distribution of status of the Southwest willow flycatcher. If there are no impact on waterways or riparian habitat and this is where the willow flycatcher is, then a comprehensive inventory is not needed.

Section 7.6.1, on page 136, indicates that sports fishes introduced from Quail Creek Reservoir as well as the invasion of parasites pose a threat to the continued existence of the woundfin. Quail Creek Reservoir has not been the source of the introduction of sports fishes or disease into the river. This entire description of potential affects of Quail Reservoir should be deleted from the document, since the HCP has no affect one way or the other nor does Quail Creek Reservoir have any affect one way or the other on the desert tortoise or other protected species intended to be covered by the plan. This is clearly stated in Section 7.6.2, page 136, where it states it is anticipated there will be no adverse impacts to the population of woundfin and Virgin River chub thus producing no additional threat to the survival of these species. This statement should be left as is and the rest of this section plus Section 7.6.3 should be deleted.

Section 8.2.1, on page 139, with the heading species which may be listed as threatened or endangered within the foreseeable future, lists the Virgin spinedace. This information is out

## Responses to Comments

See response 11-11.

The comprehensive inventory is intended to provide information regarding the status of southwestern willow flycatcher, it is not intended to determine impacts from development. The inventory information could be used in developing projects or actions which could benefit this listed species in Washington County.

Section 7.1.2.4:

Section 7.5.2:

Thank you for your comment; however, the HCP wording has been left as is.

Section 7.6.1:

Status of the Virgin spinedace has been updated. A conservation agreement for the Virgin spinedace was signed by the Utah Division of Wildlife Resources, USFWS, BLM, and the National Park Service. This agreement calls for conservation actions to be implemented for the management of this species. With the signing of this document, the USFWS expects that the resulting proposal to list the Virgin spinedace as a Category 3c species will be published in the near future. Information on the Sherm milk-vetch provided in the HCP has been updated. Regarding the Bonneville cutthroat trout, the description in the HCP does not imply that it is native. And for the lowland leopard frog, all of the available information is provided. The purpose of this section is to provide information on any and all candidate and sensitive species that may occur in Washington County.

Section 8.2.1:

of date as the proposed listing of spinedace has been withdrawn as a result of the Spinedace agreement. Any discussion of the spinedace should note this fact. The life cycle of the Shem Milk-vetch should note for its survival it must have some soil disturbing activity. Creation of a preserve would be detrimental to its survival. The same is true of the Holmgren Milk-vetch. The Bonneville cutthroat trout is not native and the head waters of the Virgin River is not historic habitat for it. Mention of it should either indicate this or it should be deleted from the discussion. The Lowland Leopard frog, should be deleted from the discussion since according to the document nothing is known of its distribution or status in Utah.

Chapter 9.0, entitled "Discussion of Water Impacts on Endangered Fish", is inappropriately included within this HCP. This section notes the desert tortoise is the focus of the HCP and is a terrestrial species and its habitat nexus lack any needs to aquatic species instream flows or pools of water to survive. This discussion if it is to be included in the HCP it should be entitled "Additional Protection Efforts by Washington County to Protect and Enhance Endangered Species."

Section 10.2, on page 172, indicates the "No Development in Tortoise Habitat" alternative would not result in any effective conservation measures in this recovery unit. It should be added that since this is the only mechanism in the endangered species act for protection of endangered species. It is essential to have a cooperative effort (HCP) by local people to effectively protect endangered or threatened species.

Section 10.3, notes the value of the land within the tortoise reserve is approximately \$200,000,000. This is the cost of protecting Desert Tortoise on Washington county and should be used when evaluating the economic costs.

#### Responses to Comments

Chapter 9.0: The Chapter has been left as is.  
Section 10.2: This is clear from the introduction of the HCP.  
Section 10.3: The economic impacts of the alternatives are discussed in detail in the EIS.

### III. ENVIRONMENTAL IMPACT STATEMENTS FOR INCIDENTAL TAKE PERMITS ISSUANCE FOR DESERT TORTOISE WASHINGTON COUNTY, UTAH

#### Responses to Comments

12-3. The term "acres of take" refers to acreage in which incidental take of desert tortoise will be permitted.

12-4. The first page which is unnumbered of this document, indicates 12, 298 acres of take. This is incorrect. 12,298 acres will be excluded from the preserve, however, it does not mean that all of these acres will be impacted by activities contemplated at this time. Take can only be stated in animal numbers.

12-4. See responses 2-1, 11-2, and 12-2.

12-3

12-5. See response 15-8. The issue is, therefore, outside the scope of the FEIS.

12-6. The author, like Washington County, has maintained that there will be no adverse impact to fishes as a result of issuance of the incidental take permit. While this issue of impact continues to be a point of discussion with USFWS, as called for in Chapter 9 of the HCP, USFWS and others are in the process of developing the *Virgin River Basin Integrated Resource Management and Recovery Program*. A Memorandum of Understanding was signed on October 19, 1995, in which parties, including the author, agreed to develop a program within 6 months that will provide for recovery of Virgin River fishes and meet future human water needs. The Management and Recovery Program time frame will not affect implementation of permitted actions under the Washington County HCP but is intended to address water development needs and Virgin River Basin conservation.

12-7. See response 12-3.

12-7.

12-4. The executive summary page "iv", discusses issues eliminated from further analysis among which were whether desert tortoises were native to St. George area. This discussion should not have been eliminated from analysis, had it been included it would have brought some proper perspective to the discussion and allowed meaningful analysis of what is and has happened to this population. Also since atomic fall out is regarded by many scientists as the single most important recent factor in the status of desert tortoise populations in this area, it should have been included. Its exclusion constitutes a major flaw in the analysis making it inadequate and invalid. Major issues to be analyzed, includes as item number 7 "Impacts to the Virgin River Flow". Since the HCP in Section 9, page 169, specifically says that there is no nexus to aquatic species, instream flows or pools of water. Since this has already been clearly established, this should not have been included as a major issue and analyzed in the document. It should have been dropped from discussion along with the other items not included for analysis. The Executive Summary section alternatives including the proposed action, again refers to 12,298 acres of take of desert tortoise habitat and 11,832 acres of potential habitat. This is incorrect, there will not be a take of this many acres. Take as defined would have to be identified as numbers, not acres. If there is to be a discussion of

12-4

12-5

12-6

12-7

take in terms of acres, then there must clearly indicate that it will be years if ever before the area included in a take would ever be impacted and would remain indefinitely available.

This same section on page vi, indicates the total cost of the HCP would be \$11,555,000. The total cost would be far higher than this since it does not include all the proposed fencing required by the client. This cost which has been shifted to the landowners should be estimated and included in a total cost. The executive summary under "Landownership Use and Management", on page vii, indicates major uses of federal lands, but does not include grazing, which should be included.

Also this same section indicates that recreational opportunities are only important because of the scenic beauty of lands adjacent to Zion's National Park. This is an incorrect statement and either should be deleted or qualified to indicate that many recreational opportunities exist, irregardless of Zion National Park. In this same section, there is a discussion of five special recreational management areas on BLM's land within Washington County. Apparently this is a proposal coming from the proposed Dixie Resource Management Plan which is not available to the public for analysis. Since it is not approved or available references to it should not be included within this Environmental Impact Statement. On page xii of the executive summary under agricultural resources it states no farm lands would be impacted by the proposed action or other alternatives, this is not true, as pointed out in the HCP, the county and cities have invested a great deal in infrastructure to develop the area to be included in the desert tortoise reserve. By creating this reserve and eliminating this development in this area, growth has been directed from this area onto the farm lands and has accelerated their elimination from agricultural protection.

These comments cover through page vii of the Executive Summary.

**Responses to Comments**

- 12-8. An incidental take permit does not imply that the permitted amount of take must be accomplished within a certain time frame, but simply states the time frame during which incidental take is permitted. See response 15-9.
- 12-9. Cost of fencing to be borne by entities other than Washington County is included in Table 6.3 of the HCP.
- 12-10. The change has been made in the FEIS.
- 12-11. The change has been made in the FEIS.
- 12-12. The language has been changed to address this situation.
- 12-13. Development of agricultural lands is a function of economics that is at the discretion of the landowner, and not a direct result of the permit issuance.

12-8

12-9

12-10

12-11

12-12

12-13

Table ES-3, on page viii, lists four grazing allotments that could be impacted by the action alternative. This table is incomplete. There are other allotments that would be impacted, particularly in the area north of the Virgin River in Zone 4.

12-14

Responses to Comments

Table ES3 identifies grazing allotments in Zone 3 that Washington County has proposed to purchase. While there are other allotments in Zone 4, Washington County is not currently proposing to purchase those allotments.

12-14.

Water Resources. The HCP specifically notes that there is no impact on water so the discussion of water is unnecessary and misleading since it would lead one to believe that water is effected as one of the alternatives when this is not true. This section should simply state that there is no effect on water and leave it at that.

12-15

Water resources was an issue identified by the public during the scoping process for the DEIS, and therefore must be addressed. See response 12-6.

12-15.

Wildlife Resources, page ix, the EIS notes that riparian areas, primarily along the Virgin and Santa Clara Rivers, provide habitat for a variety of wildlife species. This should include the statement that they riparian areas are not effected by any of the alternatives proposed in the HCP.

12-16.

The paragraph referenced is a discussion of existing environment; conclusions about effects of alternatives are therefore inappropriate.

12-16.

Section 1.2, on page 2, notes the decline of tortoises was due to a number of factors including habitat degradation, mortality from human contact, predation and upper respiratory tract disease. However, it neglects to note that many scientists and researchers feel that atomic fallout from the testing in Southern Nevada was the greatest factor in the decline of the Beaver Dam slope population but had much less effect on the St. George populations which is the basic reason why they are in better condition than the Beaver Dam slope population. Neglecting to include and analyze fallout constitutes a major flaw in the entire analysis and must be corrected or the EIS will be found inadequate.

12-16

See responses 15-8 and 12-5.

12-17.

Section 1.5.1, begins with the statement that the scientific community and long time residents of Washington County disagree over the origin of the desert tortoise in the area. This would lead one to believe that none of the local residents are scientists or researchers. This is not true. During the public hearings many Ph.D's and other people familiar with the

12-17

See responses 2-1, 11-2, and 12-2.

12-18.

12-18

situation from Dixie College and Southern Utah State University testified that the tortoise were not native to the St. George/Hurricane area. This is a very one-sided version of the true situation and should not have been just brushed off. Without this evaluation of where the tortoises came from and how they have thrived in this area since being introduced, the entire analysis comes into question. The fact that associated species such as gila monsters and sidewinders occur here is not necessarily an indication since they occur many places where tortoises do not occur. Also, the diverse age structure is not valid because the local people brought in all age classes from the Beaver Dam slope. Some tortoises were introduced more than 100 years ago, which would have allowed a diverse age structure to be established even if it had not existed. Regardless of the proof of the matter, the EIS should have considered this and analyzed what possible effects this would have had, had they not been native.

12-18

Non-historic range is treated much differently under the ESA than is historic range and would have caused a great deal of difference in the level of protection required. Without this analysis, the EIS is inadequate and unsatisfactory and should be redone.

Section 1.6, Major Issues to be Analyzed, lists impacts to the flow of the Virgin River yet the HCP and EIS makes clear that there is no nexus or impact on the flows in the Virgin River in any alternative. The executive summary under Socio-Economics on page ix and x makes the statement that the alternatives would not alter the way of life for the residents of Washington County and the population would continue to grow and outside social and economic forces would continue to effect the communities with or without the HCP.

12-19

Also, under Alternative B, Water Resources, page xiv, of the Executive Summary notes that any changes in water usage over the next 20 years is considered to be independent of the

12-20

Responses to Comments

12-19. See response 12-6 and 12-15.

12-20. See response 12-6 and 12-15.

actions of any of the alternatives, including Alternative B. This is because water use is a function of population and the population of Washington County is anticipated to increase at the same rate regardless of which alternative is implemented. Given these statements, how can impacts on water flows in the Virgin River be considered a major issue. This should be deleted from the document and there should be no analysis of water except to note there is no nexus or impacts.

12-20

Responses to Comments

12-21. The change has been made in the FEIS.

12-22. See response 12-2 (Table 4.2).

12-23. The description of Zone 4 has been changed in Table 2.2

12-24. See response 1-5. Washington County has proposed public restriction from reserve access from Skyline Drive other than at designated trails. Access to the reserve from other areas along Skyline Drive may be allowed by the zone manager for purposes of desert tortoise reserve management.

Section 1.7.1.2, on page 13, states that the proposed HCP is consistent with the BLM's current management plan, the Virgin River Management Framework Plan (MFP) approved in 1981. This is not true. The 1981 plan only considered tortoises to exist or be threatened on the Beaver Dam slope and did not consider the upper area around St. George as habitat for the tortoise. Also this same section states that if the HCP is approved before the revised RMP goes into effect, then the existing MFP will need to be amended. If the HCP is consistent with the current MFP then there is no necessity to revise it. Obviously, the first statement of consistency is incorrect.

12-21

Table 2.1, Amount of Desert Tortoise Habitat in the Incidental Take Area, lumps Harrisburg, Leeds, and Babylon together. These are not similar areas since the Babylon area and the area east of Leeds does not now contain tortoises. This lumping makes it appear as if there were tortoises in the entire area, which is not true.

12-22

Table 2.2, page 22, Zone 4 indicates 5,191 acres of desert tortoise habitat. Since there are no tortoises in the area it is not yet known whether this is tortoise habitat or not. It should have only been listed as potential habitat.

12-23

Section 2.2.2.3, under Zone 3, on page 25, states that water development should be allowed consistent with HCP Appendix G protocol. There is no Appendix G and the protocol is not

12-24

available for inspection. Also, this same section has as the last item that no general public access would be permitted along Skyline Drive into the reserve except on designated trails. What would be "general public access" and who would be restricted and who would be allowed?

12-24

Responses to Comments

12-25. The FEIS is consistent with the HCP.

12-26. See response 12-6 and 12-15.

12-27. See response 12-6 and 12-15.

12-28. In order to construct fencing, all Federal and State laws protecting cultural resources must be followed.

12-29. The comment has been addressed in the FEIS.

12-25

Under Zone 4, vehicles should be restricted to designated roads only and should also include trails.

Section 2.3, page 35, has a comparison of alternatives matrix which includes water resources. The treatment of water in this table is incorrect. Alternative A states water usage will increase as the population increases. This is obviously a true statement but irrelevant. It should have stated instead no impact would be expected as the EIS is analyzing the HCP alternatives not population growth.

12-26

Section 3.2, page 37, lists resources eliminated from further consideration. Water should also have been eliminated since there is no impacts on water from the various alternatives. Section 3.2.3, Cultural Resources, does not analyze the effect of fencing on cultural resources within the area. This should have been included as fencing will have a major impact on these resources if encountered.

12-27

Section 3.6.4, page 57, indicates that flows from Quail Creek Reservoir maybe contributed to the loss of woundfin and other native fishes. This statement is speculative and unsupported and should not have been included. Flows from Quail Creek Reservoir have been found to be supportive of native fish and enhancing rather than contributing to the loss.

12-28

Also it indicates the introduction of sports fishes from Quail Creek Reservoir as well as the

12-29

Responses to Comments

<p>invasion of parasites pose a threat to the continued existence to the woundfin. Quail Creek Reservoir has not introduced sports fish into the river that were not already there. This too should be deleted from the document.</p>	<p>12-29</p> <p>12-30.</p>	<p>Status of the Virgin spinedace has been updated in the FEIS.</p>
<p>Section 3.6.24, page 62, Virgin Spinedace, again makes no mention of the spinedace agreement making the write up totally out of date and unresponsive to the current situation.</p>	<p>12-30</p>	<p>See response 12-15.</p>
<p>Section 3.7.2, page 66, Groundwater, contains numbers from various documents but does not indicate there is no effect from any of the alternatives on the groundwater resources, giving the impression that some of them would. This should either be noted or any discussion of groundwater deleted from the document.</p>	<p>12-31</p>	<p>See response 12-6 and 12-15.</p>
<p>Section 3.7.4, page 68, water rights, has no relevance to any of the alternatives and should be deleted from the document, along with Section 3.7.7, water development potential.</p>	<p>12-32</p>	<p>The comment has been addressed in the FEIS.</p>
<p>Section 3.7.7.4, instream flow requirements, indicates that the biological opinion issued for the Quail Creek Dam stipulates that either a natural flow or a minimum flow of 86 cfs must be maintained in the Virgin River below the Dam for all months of the year. This is an incorrect statement. What the opinion says is that 86 cfs or natural flow of the river will be maintained below Quail Creek Reservoir to satisfy the water rights at the Washington Fields Diversion. There is no need to include a lengthy discussion of water, water rights, instream flows or riparian areas as they are not affected.</p>	<p>12-33</p>	<p>The change has been made in the FEIS. The change has also been made to the Executive Summary of the FEIS.</p>
<p>Section 4.1.1, page 75, begins with the statement that the no action alternative will not alter the way of life for the residents of Washington County. Population will continue to grow and outside social and economic forces will continue to affect communities. If this</p>	<p>12-34</p>	

Responses to Comments

12-35. ESA section 7 consultation is appropriate for Federal actions, whether or not on Federal land.

12-36. See responses 12-6 and 12-15.

12-37. See response 12-35.

12-38. See responses 12-6 and 12-15.

12-39. See responses 12-6, 12-15, and 12-33.

alternative were adopted present restrictions on habitat alteration would continue to apply in those areas with desert tortoise habitat. It is very frustrating to continue to read this statement, lengthy discussions of water upon which there is no impact and the statements that there is no impact upon agricultural resources, when all through the document it is obvious that there are such impacts. This whole discussion of social economics and water is out of context, misleading, arbitrary, capricious and makes the EIS inadequate.

Section 4.1.4.4, page 80, states under the proposed alternative that increased ground water pumping or other actions that would potentially affect threatened or endangered species would be subject to Section 7 Consultations with the USFWS. It should be noted that Section 7 Consultation is only required and appropriate on federal land.

Section 4.1.5, page 83, again launches into a discussion of water resources without any appropriate need. It notes that over the next 20 years, development will occur at the same rate in the county regardless of whether or not the HCP is implemented and the take areas are made available for development. This section on water resources is not appropriate for this document and should be deleted.

Section 4.2.4.4, page 94, also should note that only on federal land would a Section 7 Consultation be required.

Section 4.2.5, page 96, again refers to water resources, when there is no affect on water resources. It should be deleted from this alternative as well.

Section 4.3.4.4, page 101, indicates that development of additional wells will be subject to Section 7 Consultation with the FWS, this is true only on federal land and there is no need to

include such a statement in the document. It also states, "if instream flow requirements are reduced elimination of zones 1 and 2 from the reserve and conversion of state and private lines within these zones to take areas would make more land available for development in Washington County. The instream requirements has nothing to do with the elimination of zones 1 and 2 from the reserve or the conversion of state and private lands to take areas.

This reference to instream flows requirements is misleading and inappropriate and must be deleted.

Section 4.3.5, Water Resources, page 105, should either be deleted or indicate that there is no effect on water resources from any of the alternatives, including A, B and C.

#### IV. DRAFT IMPLEMENTATION AGREEMENT

Page 1, under "I. Definitions." defines the term biological opinion to mean a biological opinion issued by the Fish and Wildlife Service as a part of Section 7 Consultation, but does not include a draft copy of this biological opinion. It is not possible to analyze the effect without seeing what the biological opinion is going to propose at this point.

Section V.A.1., "Exchanges", refers to the Memorandum of Understanding between the State of Utah and the BLM is found in appendix E of the HCP. The is no appendix E and this memorandum of understanding is not included or available for evaluation.

#### Responses to Comments

12-40. See responses 12-6 and 12-15.

12-41. Your comments were forwarded to Washington County for consideration in revising their HCP.

12-39

Washington County response: The Implementation Committee decided on the wording in the Implementation Agreement. They believed that since the incidental take impact on desert tortoise was forever, then the reserve should exist in perpetuity.

12-40

12-41

Section V.A.C., lists plans to be prepared following permit issuance. Included among these plans in the Washington County Water District Virgin River Habitat Conservation and Management Plan. It should be made clear what affect, preparation or non-preparation of this plan would have on approval/non-approval or implementation of the Plan. Approval of the plan as envisioned would provide additional benefits to various wildlife species, but is not a requirement of any of the alternatives.

Under Section V.F., Fencing, page 10, requires fencing by landowner/developers, but does not specify what type of fence would be required. This is a serious defect in both the plan, environmental assessment and the agreement, since the cost of these fences and the type of construction is very important to the final acceptance of the plan.

Section V.L., page 14, indicates that Fish and Wildlife Service and BLM intend to fulfill their responsibilities, but only if they receive financial resources, which is necessary on their part. It should also indicate what would happen to the plan if they do not receive adequate financial resources. There should be an escape clause for all concerned without destroying the whole utility and momentum of the HCP.

Section V.O., page 15, places an annual cap of 615 acres on release of lands within the take areas, since there is no identified areas of the release cap it should be deleted.

Section V.Q., unforeseen circumstances, on page 16, provides for the county, upon notice, to be relieved of any and all obligations to provide further mitigation or compensation is provided in this agreement. It should in addition specify what credit and how such credit would be allowed for work already completed under the agreement.

Page 20  
August 28, 1995

Section V.S., page 17, Duration of Reserve, refers to the lands placed in the reserve remaining in protective status in perpetuity. The reference to perpetuity should be deleted retaining only the statement that it will be in effect so long as protection is required to meet the requirements of the Endangered Species Act.

12-41

dt: wchcp/raepa (comments)

Responses to Comments

- 13. Private party
- 13-1. USFWS recognizes the need for fire suppression and also supports the Desert Tortoise Recovery Plan recommendation of aerial suppression as the primary method in DWMAs. Your comments were forwarded to Washington County for consideration in revising their HCP.  
Washington County response: This has been corrected.
- 13-2. Your comments were forwarded to Washington County for consideration in revising their HCP.  
Washington County response: These have been corrected.
- 13-3. Your comments were forwarded to Washington County for consideration in revising their HCP.  
Washington County response: A larger scale map has not been included due to cost and copying difficulties. The use of geographic names has been minimized in the Final. Township and Ranges have been added to zone maps.  
Your comments were forwarded to Washington County for consideration in revising their HCP.
- 13-4. Washington County response: The figure depicts only a sampling of utility corridors.

August 28, 1995

Robert D. Williams  
U. S. Fish and Wildlife Service  
Utah Field Office  
145 East 1300 South, Suite 404  
Salt Lake City, Utah 84115



Subj: ES/TE/Habitat Conservation Plan --Washington County, Utah  
Mail Stop 60120

Dear Preparers:

postmarked August 28, 1995

The writer makes the following comments and observations of material presented in Parts I through IV inclusive of the Washington County, Utah, Desert Tortoise Incidental Take Permit Application/Documents.

In Parts II and III "Fire Fighting Should Be Allowed" should be stated under management recommendations for Zones 1 and 2. This may prevent delays in trying to obtain a permit to access the reserved area to fight an ongoing fire.

In the copy of Part II Page 51 Paragraph 2 there is a reference to - "(see footnote on page 25)". No Page 25 was found. Was the footnote placed on Page 23? The copy received does not have a numbered page 24, 25, or 26. It is assumed that Figure 3.1 Proposed Reserve Boundaries should be Page 26.

Geographic names like Buckskin Canyon, Paradise Canyon, Padre Canyon are not listed on any of the enclosed maps. The general area can be determined only by the Zone in which they occur. It is suggested that geographic names used be identified as to location and depicted on a larger scale map.

It would also aid the reader if Township and Ranges were placed on the respective figures illustrating the Zones and Zone Maps.

On Figure 3.7, Page 49 of Part II a water line connects the wells in Snow Canyon to the St. George-Ivins systems. Existing water lines and wells in the Hurricane vicinity are not illustrated on the map.

13-1

13-2

13-3

13-4

Responses to Comments

- 13-5. Your comments were forwarded to Washington County for consideration in revising their HCP.
- Washington County response: This change has been made.
- 13-6. Your comments were forwarded to Washington County for consideration in revising their HCP.

In Part II Page 99 Paragraph 5.3.3 Reserve Monitoring. It is suggested by the first sentence that there are negative population trends in the Washington County area. This writer did not find documentation for this suggestion in Part II or Part III nor in the DTRP. It is recommended the first sentence be changed to read -- Reserve Monitoring will emphasize research aimed at understanding whether the population is increasing or declining and the causal factors for the identified trend. The same change could also be made in Part III Page 27 Paragraph 5 - Monitoring Measures include:.

In Part II Pages 103 through 112 information is developed concerning the Permit Administration. It appears to this writer that the budget proposed will exceed potential funding. For example, Table 6.2 Revenue Projection , indicates a Total Fees Generated as \$9,410,974. It appears that the listed amounts are the actual dollars received in the years illustrated. However, in Table 6.4. Non-discretionary Budget Items the amounts, listed in constant 1994 dollars, show an expenditure of \$9,400,000. Inflated at a rate of 4% per year the amount of revenue required for the HCP will exceed \$13,500,000.

It does not seem likely that a 4% annual raise would suffice to retain an Administrator or Biologist. The \$20,000 per year allocated for Office and Travel appears to be inadequate to cover preparation of required reports and travel cited in the responsibilities of the Administrator and Biologist.

On Page 107 of Part II Paragraph 6.3.2 Quarterly Reports - Surveys Conducted. Align the last work "Survey" to indent line under the word Owner.

Under Blood Work: One option for tortoise disposition is "Euthanized". It is understood that any URTD infected or diseased animal should not be translocated. However, how about using them for research on a possible treatment or to aid in the development of a vaccine to prevent the disease.

On Page 113 of Part II Paragraph 6.6 Incidental Take Process, contains some time line constraints applicable to activities in the take areas. For example, survey protocol and removal are scheduled during active periods for the tortoise. Also the review process and potential re-survey could delay a project for five to six months.

Question: Are the local residents and contractors aware of the time constraints imposed by the HCP?

The last paragraph on Page 113 of Part II is repeated in the sixth paragraph on Page 115 with only the "The" at the end of line four added. Also on Page 115 the first paragraph is repeated as the last paragraph with a minor change in line four of the respective paragraphs. Line four top paragraph "----(landowner) will remove the desert tortoises ---" and line four bottom paragraph reads - " --(landowner) will conduct the removal of desert

Washington County response: Regarding the budget, it is expected that inflation will raise costs and revenue proportionally. Budget reallocations may become necessary to maintain qualified staff; this will be the responsibility of the HCAC. Regarding euthanized desert tortoises, they could become available if the USFWS permitted their use in research. Washington County recognizes that the survey time frames may cause constraints for builders. Washington County urges all contractors and developers to plan in advance, and Washington County will work with them to ensure that delays are minimized. Other corrections noted in this comment have been made. However, the cap has been removed, and the acreages have been corrected.

**Responses to Comments**

In Part II and Part III the proposed reserve land is shown to be 60,969 acres. It does not appear that this total reflects the acreage that will be added under provisions for habitat acquisition, cited in Paragraph 6.7 on Page 116. "For habitat acquisition, an acre of take will be released for every 2,299 acres acquired within the reserve subject to an annual cap of 625 acres." Assuming the cap of 625 acres/year times 20 years equals 12,500 acres times the factor 2,299 acres/acre equals 28,738 acres minus the 12,500 acres released equals 16,238 acres, or an added 25.37 square miles. The total reserve acres at the end of 20 years would be 60,969 plus 16,238 acres for a total of 77,207 acres or 120.64 square miles.

13-6

As an interesting note: The area of 120.64 square miles proposed in the reserve for the tortoise in Washington County is circa 9.67% the size of the State of Rhode Island.

In the DDTRP it is recommended the Upper Virgin Recovery Unit should include 70 to 90 square miles. In the HCP plan the area of over 120 square miles exceeds this recommendation by 150%.

13-7

In the copy received, page 138 in Part II is blank.

13-8

Sincerely,

cc: Ivins Mayor Christopher Blake

13-7. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: This is true.

13-8. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: This has been corrected.

dt:whcp/hepa (comments)



Postmark: 28 Aug. 1995 *MW*

August 28, 1995

US Fish and Wildlife Service  
Attn.: Bob Williams

Dear Sir:

This letter is to let you know that I am opposed to locking up the area between La Verkin and Leeds in Washington County for Tortés habitat, and especially closing this area to motorized travel. Many are the families I know of who use this area for Easter and other recreational outing and have done so for years. I have been in this area many times during my lifetime (50 years) and I have yet to see a Tortés in this area. It is also an area I hunt deer in, and that is what makes me so upset is to think I will no longer be allowed to drive into this area. I am not so much opposed to it being set aside for the worthless Tortés! But I think I still should be allowed to drive into this area on one of the many roads that exist there and have been for a hundred years. Here's hoping you will use a little common sense and allow motor vehicle travel at least on the established roads in the area.

Sincerely,

14-1

Responses to Comments

14. Private party

Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: The area in question appears to be Zone 4, which is currently managed by the BLM. Management Regulations recommended in the HCP for Zone 4 permit hunting and vehicular use of designated roads.

dt: wchop/repn (comments)

Responses to Comments

August 28, 1995

FAX # 801-524-5021

Robert D. Williams  
U.S. Fish & Wildlife Service Field Office  
145 East 1300 South, Suite 404  
Salt Lake City, Utah 84115

Dear Mr. Williams:

We have been reading a copy of the Washington County, Utah Desert Tortoise Repermit Application/ Documents Consisting of Four Parts in One Bound Volume (herein after called "Report") and have the following comments. (This was a hurried reading because we did not know of the availability of the Report nor where to request a copy until August 18th and did not receive it until the 21st)

- 15. Private party
- 15-1. Your comments were forwarded to Washington County for consideration in revising their HCP.  
Washington County response: The acreages and maps were corrected; however, in subsequent discussions, you decided not to include the 20 acres in the reserve.
- 15-2. Your comments were forwarded to Washington County for consideration in revising their HCP.  
Washington County response: Washington County is well aware of the issue with rollback taxes. This will be resolved following permit issuance.
- 15-3. Your comments were forwarded to Washington County for consideration in revising their HCP.  
Washington County response: The land exchange process is with the Federal government and proceeds according to their time frame. Washington County has no control over this process; however, the HCP Administrator will do everything in his power to expedite the process.



- 1. On pages 44-46 of Part II, in the Discussion, Figure 3.6 and Table 3.6, some 20 ± acres we own on the North side of the Virgin River were NOT included in the proposed Reserve (T41S R13W, Section 27, tax #3303-B-NP). It has always been our understanding that this 20 acre parcel would be among the property we would be exchanging for other BLM property which we have previously identified for the in-state exchange. If this 20 acre parcel is not included, it will be left landlocked, and we will be without a legal access. Including this 20 acres will provide for a more biodiverse habitat in the Reserve. 15-1
- 2. A problem not yet addressed by the Report is that of Greenbelt and who will be responsible for the 5 years of rollback taxes due when Reserve property is removed from its present agricultural use. 15-2
- 3. Your Report clearly indicates which of our properties you are assigning to the proposed Reserve (which we are willing to exchange) but does not indicate what we can expect in return, nor how soon the exchanges will be effected. A TIMELY completion date is imperative. In December of 1994, we were told, after a drive of 400 miles to attend a meeting called by the BLM and the HCP for property owners, and being among those who were willing to participate in an in-state exchange, that we could expect our exchange to be completed within 6 to 8 months, especially since Lowe property was "high priority." Within two days of that meeting, we were in the field with BLM representative Ray Mapston touring the ground we would be giving up to the Reserve and the land we expected to exchange for it. The 6 to 8 month time is over and we now are told it will be another 15 to 15-3

Responses to Comments

18 months to two years or more before the exchange occurs. This is NOT a timely solution. Set a deadline and stick to it or release all land for development and disregard the preservation of turtles. Geologic time is no solution even though the Turtles have survived such-- landowners, taxpayers, and voters, and voters did not, but their descendants remember with a vengeance.

15-3

4. Our most pressing concern is with Hurricane City Fathers now attempting to impose a highway along 600 North that cuts across Spilsbury and Lowe property identified as part of the Reserve in Zone 5. The Lowes do not want to do anything that would interfere with our commitment to exchange properties. Your expressed desires are requested in writing immediately.

15-4

5. Rationing land for development to 625 acres per year as indicated in your discussion in INCREMENTAL IMPLEMENTATION (see paragraph 6.7, page 116, part II) is absurd and fraught with potential lawsuits over which properties will be allowed to be developed first. What is the purpose of the HCP if owners in take areas are not allowed to proceed after having to give land for the development of the Reserve? This adds insult to injury.

15-5

6. Mining is mentioned as a proscribed activity for the Reserve, yet you are taking acreage in Zone 5 on which cinders have been mined and/or stolen from the cinder knolls on government as well as private property for years. Has the value of the cinders in these knolls been computed into the exchange?

15-6

7. Fencing in Zone 5 is indicated for the Hurricane area. Who will be responsible for it? Since development of our property is precluded, there will be no developer funds to pay the cost.

15-7

8. No mention is made of "downwind" fallout should atomic testing begin again in Nevada and how it will affect turtle habitat-- not to mention humans. What effect did it have previously, and who cared then?

15-8

9. The proposed permit on take areas is for 20 years. What happens at the end of that time period in the take areas that might yet remain undeveloped, or to the Reserve areas should the turtles be gone or the estimates of turtle population be grossly overstated in the initial studies.

15-9

10. In reading the Report, we perceive the MANY who had input on the biological side and the paucity of consultants regarding the economic side. It seems to us that this whole

15-10

15-4. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: At this time, Washington County recognizes the position of the landowners adjacent to 600 North, and has not moved the reserve boundary. Washington County has added language to the HCP, however, that alterations in the reserve boundary in Zone 5 will be considered as long as there is no reduction in Zone 5 acreage.

15-5. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: The cap on incidental take has been removed.

15-6. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: The cinder mine in Zone 5 is on BLM lands within the reserve. Continuation of mining on BLM lands is up to the BLM, not Washington County. Appraisal instructions for federal land exchanges will dictate how minerals are appraised.

15-7. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: The cost of fencing in the Hurricane area will be borne by developers adjacent to the reserve.

15-8. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: The issue of atomic fallout is outside the scope of the HCP.

15-9. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: When the permit expires, Washington County will have the option to request renewal from the USFWS.

The USFWS recognizes that regional planning such as that under the Washington County HCP can be a frustrating and long process; however, the USFWS maintains that communication with the author was maintained through public meetings and notices. Your comments were forwarded to Washington County for consideration in revising their HCP.

15-10.

**Responses to Comments**

<p>HCP is driven by the economic ramifications of property ownership, plans and expectations, all boiling down to the real estate principle of location, location, location. If Washington County were not such a booming area in the Real Estate markets, if the scenery and climate were not so attractive to potential residents moving into the area, if... if... if all the other reasons the small amount of privately owned property is at a premium in the County, there would be no turtle issue and cattle would continue to graze and property owners to maintain the fences that have protected the turtles for decades, while the owners awaited higher and better uses for their land. With an eye to the future, the Lowes and Spilsburys have made possible the development of homes in the Hurricane area by providing easements for water, sewer, and power, and for jobs by providing land for the Hurricane Industrial Park. Now instead of reaping the benefits of planning we find that our prime subdivision land will house turtles instead of people and that we are "out of the loop" when it comes to communications from the U.S. Fish and Wildlife Service.</p>	<p>15-10</p>	<p>Washington County response: Thank you for your comment.</p> <p>Your comments were forwarded to Washington County for consideration in revising their HCP.</p> <p>Washington County response: Washington County has worked hard to communicate with landowners and apologizes for any oversight that has occurred.</p> <p>The issue of alleged "turtle dumping" is not relevant to the EIS.</p> <p>A list of acronyms has been developed and is included at the beginning of the FEIS.</p> <p>Thank you for your comments.</p>
<p>11. Lack of communication from the beginning has been a problem for land owners such as ourselves who live and work outside the immediate area. In perusal of Chapter 6, p. 11.3 of part III of the Report, which is a list of persons or entities receiving notice of the availability of the draft Environmental Impact Statement, neither the Spilsburys nor Lowes were included and together we own over half the designated Reserve area in Zone 5 in addition to property in the take area (see p. 46 and pp. 82 &amp; 83 of part I).</p>	<p>15-11</p>	
<p>12. There has been a continuing problem of turtle dumping on the Spilsbury and Lowe properties which has artificially increased the turtle population there. The most recent occurrence being within the last two months.</p>	<p>15-12</p>	
<p>13. Future "Reports" would certainly be easier to read if a section is included at the beginning listing all acronyms and what they represent. The proliferation of alphabet soup saves space but is certainly confusing to those who do not use them habitually.</p>	<p>15-13</p>	
<p>We are no "Johnny-come-latelys" to property ownership in the Washington County area, as land designated as habitat has been in the family for several generations. Our feelings are expressed in the attached article written when we learned we owned the world's best turtle hatchery after attending a meeting in which the Service met with the HCP.</p>	<p>15-14</p>	

Respectfully,

# The Billion Dollar Tortoise

WAY down south in Utah's Dixie land is a curious reptile known as the Desert Tortoise. It is quiet, shy, slow of foot and wouldn't hurt anything. It hibernates in the winter and "shades up" in the summer. During the spring months of May and June, it comes out to graze, mate, and propagate. During the hot summer it "holes up" to stay cool. In the fall it comes out again to be courted by those who would "take down America" to make room for the Desert Tortoise. But why? To show future generations a reptile that every body loves and for which some are willing to forego thousands of houses and millions in property tax revenue to protect.

To protect? To protect against what?



Why the Desert Tortoise does better in private than public land may be a mystery. Possibly, the answer is found in the fact that a private landowner controls, patrols, and keeps coyotes and people away from his cattle and his turtles. Another reason is that it is more difficult to trespass on private land than on public land.

To protect against the private property owner who might do something to cause this turtle harm or even death, interestingly enough, the Desert Tortoise Commission flourishes on private property but does not so well on government land that makes up the majority of real estate in Washington County.

Why the Desert Tortoise does better in private than public land may be a mystery. Possibly, the answer is found in the fact that a private landowner controls, patrols, and keeps coyotes and people away from his cattle and his turtles. Another reason is that it is more difficult to trespass on private land than on public land.

There appears to be no solid evidence, the Desert Tortoise is indigenous to Washington County. Many citizens remember, when turtles were purchased at Beaver Dam in Nevada and brought to Utah as pets. Others admit bringing a truckload of turtles to sell in Utah, farmers then dumping the turtles in the south of St. George to get rid of them. Still others claim the chain placed in a hole drilled in the turtle's shell pulled out and let their tortoise escape into the hills. In any event the Desert Tortoise, now resides in Utah and appears puzzled as to why all the fuss is made over the limited space it occupies.

Strangely enough, the space affected is not limited to that occupied by the tortoise.

To artificially limit the supply of building lots for people to accommodate the Desert Tortoise, without putting an equal number of acres of suitable government owned land back into the hands of the private owner is unrealistic and financially unsound. People build houses on private land and virtually all public education is funded through taxes on real property.

To date the average Dixie property owner has paid nothing for the donated Desert Tortoise placed on his land. The Tortoise has flourished under the protective care of those who are now treated as criminals by trespassers who have come upon the land in search of the reptile and found them healthier and in some places greater in number than any place on earth. (The author has the dubious honor of possessing the "finest turtle hatchery in the world.") Still, efforts to trade the turtle hatchery, Virgin River, and La Varkin Creek property for BLM land go unheeded!

There is a solution to the Desert Tortoise issue, but it may not be found in a "committee" made up of people hired whose battle cry might be: "Cattle Free by '93."

A quick fix might come by:

(3) A Federal Judge deciding that all desert tortoise belonging to the owners of land upon which they are located to be enjoyed but not intentionally hurt or destroyed.

(g) All government owned raw land within one-half mile of an incorporated city must be sold to the highest private bidder to reduce the National debt and become part of the great state and county tax base.

A few government personnel and environmental groups appear more interested in endangered species than in half the world's population that go bed hungry at night, more interested in the spotted owl than jobs for taxpayers, more interested in bedding grounds for the Desert Tortoise than bedding places for Utah citizens in Washington County. To paraphrase another thought: You can kill turtles and peepholes as with poison or an ax; it just takes a little more time!

If the public wants turtles, let the farmers and ranchers raise them; they compensate the producer for the reptiles. And please, don't insist they raise coyotes and turtles on the same range: coyotes eat desert tortoise!

come upon private property advances the true owner's interest where property is posted.

(c) Any restriction placed on private property may initiate action of condemnation with a sum to be charged, the rate of 1% per month of appraise value until title legally passes to government entity.

(d) All government owned raw land within one-half mile of an incorporated city must be sold to the highest private bidder to reduce the National debt and become part of the great state and county tax base.

The Desert Tortoise are curious creatures! Slow, shy, with unusual features. The top and bottom are covered with small head, and legs extend like a tank!

Let's take the tortoise like a tank! Designate a committee to thank. Their fate is also in the hands of committee. The emotions I feel are both love and pity.

### Advertisers' Index

80 Cents Co. Agency	14
J.I. Case Co.	11
Dana Wess Com.	11
John Owers & Co.	11
Deebley Fox Ranch	11
Farm Credit	11
Marion Frazier & Sons	11
McIntosh & Adams Corp.	11
Looph Holdings	11
McPherson-Hughes	11
Winn-Dixie Super Market	11
Winn-Dixie Super Market	11

dt: wchcp /nepa (comments)

**SNOW, NUFFER, ENGSTROM, DRAKE,  
WADE & SMART**  
A PROFESSIONAL CORPORATION

STEVEN E. SNOW  
DAVID NUFFER\*  
CHRIS L. ENGSTROM  
LYLE R. DRAKE  
TERRY L. WADE  
RANDALL R. SMART  
JEFFREY N. STADREY\*  
E. SCOTT AVERGAMP  
MICHAEL A. DAY

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MESQUITE OFFICE:  
250 West Mesquite Blvd, No. 1  
P.O. Box 1347  
Mesquite, Nevada 89024  
(702) 346-7347  
FAX: (801) 628-1610

August 24, 1995

Robert D. Williams  
Assistant Field Supervisor  
Fish & Wildlife Service  
145 East 1300 South, Suite 404  
Salt Lake City, UT 84115

Dear Mr. Williams:

I am writing on behalf A.R. Spillsbury Family Enterprises, owner of a substantial portion of land within Section 28, Township 41 South, Range 13 West. The land is located within the city limits of Hurricane. I believe you are very familiar with this property. It is referenced on pages 44, 45 and 46 of the Washington County, Utah Desert Tortoise Incidental Take Permit Application/Documents submitted by Washington County Commission, Washington County, Utah to the U.S. Department of the Interior Fish and Wildlife Service, June 19, 1995 (hereafter "Document").

The owner of the property received no notice of the Document. The notice list in Chapter 6.0 at pages 113-132 fails to include A.R. Spillsbury Family Enterprises or any representative of that entity. Yvonne Mendenhall, a principal in A.R. Spillsbury Family Enterprises, first became aware of the existence of the Document by reading a newspaper article. She requested the Document from Fish and Wildlife and received it on August 17, 1995.



**Responses to Comments**

16. David Nuffer; Snow, Nuffer, Engstrom, Drake, Wade, and Smart

16-1. Following discussions with your client, the comment period was not extended, as their comments were received by the close of the comment period.

VIA FEDERAL EXPRESS

Robert D. Williams  
August 24, 1995  
Page 2

Obviously, this failure to provide adequate notice has substantially impaired Spilsbury's ability to respond to the Document and violates statutory, regulatory, and constitutional requirements. For that reason, at the outset, on behalf of A.R. Spilsbury Family Enterprises, I request an additional 30 days, or until September 27, 1995, to provide written comments in response to the Federal Register Notice.

In addition, I should point out that the references to the Spilsbury property in the Document do not accurately reflect an agreement reached with the Spilsbury Family which provided that the area shown as private/developed on figure 3.6 of the Document was to be outside the critical habitat and reserve areas. This area was to be protected by a conservation easement providing restrictions similar to those listed on page 44 of the Document. However, the area was clearly to be outside the critical habitat and preserve.

Further, you should be aware that the Spilsbury's will provide information including biological data which shows that the requisite elements for critical habitat are not present on this property. Since first being informed of the critical habitat designation, the Spilsburys have raised these concerns.

Finally, I believe you should be aware of the admitted placement of a desert tortoise on the Spilsbury property by Fish and Wildlife personnel. Please see the letter of August 8th and statement of August 16th enclosed. This raises serious questions about government action and intervention with regard to the property, and the validity of any government biological data.

Sincerely,

SNOW, NUFFER, ENGSTROM, DRAKE, WADE & SMART



David Nuiffer

DN/mg  
cc: Senator Robert Bennet  
Senator Orrin Hatch  
Bill Mader, HCP Administrator  
Washington County Commissioners  
SWCA

Nuiffer, David M. Hrcrchtblu1 860501 hcrfw 002495 860501 dnt/mg

### Responses to Comments

- 16-1 Your comments were forwarded to Washington County for consideration in revising their HCP.
- 16-2 Washington County response: The maps and acreages have been corrected.
- 16-3 The issue of designation of critical habitat is not part of the HCP process. If you are interested in proposing revisions to critical habitat boundaries, you may contact the USFWS separately to discuss that process.
- 16-4 The letter you reference is from the Utah Division of Wildlife Resources.



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF WILDLIFE RESOURCES

Michael O. Leavitt  
Governor  
Ted Stewart  
Executive Director  
Robert G. Valentine  
Division Director

Southern Region  
622 North Main Street  
PO Box 606  
Cedar City, Utah 84727-0606  
801-596-2455  
801-596-2457 (fax)

August 8, 1995

Vyon Mindenhall  
A.R. Spillsbury Family Enterprises  
1701 Duneville Street  
Las Vegas, Nevada 89102

Dear Mrs. Mendenhall:

This letter is in response to your request for information regarding the release of a desert tortoise on the Spillsbury property in Hurricane, Utah. District Conservation Officer Gary McKell picked up and released the tortoise in high quality creosote habitat in the vicinity of the Hurricane cinder knolls. After investigation, as per your request, we believe it was released on Spillsbury property. The desert tortoise was a large unmarked male. It was a healthy animal with no external parasites or signs of disease.

Since 1991, the Utah Division of Wildlife Resources (UDWR) has been working with Washington County, other government agencies, and private interests, to reconcile conflicts between economic development and desert tortoise conservation. The objective of this effort has been to develop a Habitat Conservation Plan under Section 10 of the Endangered Species Act.

The Washington County HCP includes the apportionment of desert tortoise habitat into reserve areas and take areas. Under the HCP, take areas will be developed, and reserve areas bordering urban development will be fenced to maintain the viability of tortoise populations. The Washington County HCP is currently in the final stages of review, and is expected to start implementation in early 1996.

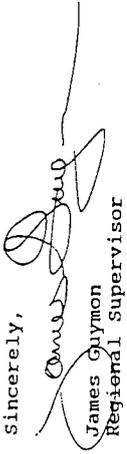
Because fencing of proposed HCP reserves has not been completed, wild desert tortoises occasionally wander into adjacent urban areas. These tortoises are currently being returned to reserve areas. The release site was not selected based on the ownership of the property. Officer McKell was simply returning the individual to quality habitat within the proposed reserve area near the pick-up site.

If you have any questions or need any further information



Please contact UDWR, Southern Regional Office (622 S. Main St.  
Cedar City, UT 84720).

Sincerely,



James Guymon  
Regional Supervisor

cc: Bob Valentine, Randy Radant, Leo Lentsch, Dale Hepworth, Rick  
Fridell, Dennis Kay, Gary McKell

August 16, 1995

Yvonne Meddenhall

In June of this year 1995, I was called on the telephone by Scott Stratton-Hurricane City Police, Stacy Gubler-Hurricane City Animal Control and Gary McKel-Fish and Wildlife, to go and open the Gate West of the Hurricane City Shop on 500 North. Brandon Wright was with me at the time. I was asked to open the gate, which leads to private property which is owned by AR Spillsbury Ent. I lease this property. When I got on site the Officers asked me to open the gate to allow them to release a tortoise and also to dress a deer that was killed on SR 9. I felt very hesitant to open this gate. Once the gate was opened the tortoise was released in the sandy area, North East of the cinder knoll. I needed to go back to work and the Officers stated that they would close the gate. I left at this point.

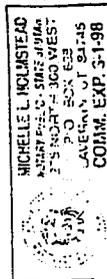
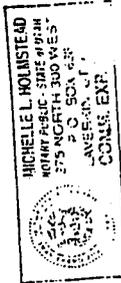
Should you need any further information please feel free to contact me.

Cordially,

Kurtis Wittwer

I was also witness to this

Banking at 8-16-95



*Michelle L. Holmstead*

dt: wchcp/nepa (comments)

August 28, 1995

Robert D. Williams  
Assistant Field Supervisor  
Fish and Wildlife Service  
145 East 1300 South, Suite 404  
Salt Lake City, Utah 84115



FAX received  
August 28, 1995

RE: Washington County Draft Habitat Conservation Plan  
Desert Tortoise  
Sec. 28, T41S, R13W, S.L.B & M.  
Approximately 520 acres privately owned property  
A. R. Spilsbury Family Enterprises

Dear Mr. Williams,

In 1843 George and Fanny Spilsbury left their home land of England to sail across the ocean to a new land, America. They arrived in New Orleans with only \$5.00. Money they had earned on the voyage sewing. They sold all of their clothing in order to pay their fare up the Mississippi. Arriving in Nauvoo, Ill. with only their pots and pans, determination and the skill of a builder. In 1850 they started their pioneer journey which came to an end in Touqerville, Utah, 1868. They had to endure thousands of miles of hardships and sacrifices, including giving birth to 13 children with only 5 surviving the harsh conditions of the wilderness. One of these children George M. Spilsbury had a son Archie P. Spilsbury, who was a rancher like his father. Archie P. Spilsbury died in 1968 and left his estate to his heirs. Archie Rlington Spilsbury was one of these heirs and he formed the A.R. Spilsbury Family Enterprises to help manage the property in his estate. He died in 1990.

This brief history is not meant to bore you but I feel I have a distinct commitment to record the history of my ancestors. In doing so, record the history of ownership of the parcel of land that has been designated as critical habitat for the desert tortoise by the Department of the Interior, Fish and Wildlife Service of the United States of America.

I am not an Attorney, Realtor, Biologist, Engineer, or Economist. I am a mother of 5 children 3 of whom are in college and 2 that soon will be. They are contributing, productive citizens of society. I coach competitive youth soccer, teach children how to play the flute and direct the church choir. I also act as a General Partner for A.R. Spilsbury Family Enterprises. Managing our real property holdings in conjunction with agricultural and developmental use. I tell you this in order to make you understand the burden that has been placed on me in responding to this federal action. Nevertheless, in order to protect my

rights and that of my family. I have made an attempt to become enlightened in this process from the time I was first notified in September of 1993. This was done by correspondence from Milo McCowen of the HCP Steering Committee. Until that time the A.R.Spillsbury's were unaware of any federal actions or proposed actions on our private property. We are private landowners with specific property targeted for use in a designated tortoise reserve. Despite the fact we did not receive proper notice. The A. R. Spillsbury's will attempt to respond to the deadline, as specified in your cover letter I received with the Draft Conservation Plan for Washington County.

The A. R. Spillsbury's private property is addressed in Zone 5 of the Washington County Application /Documents. I received these documents on or about, Aug. 19, 1995. I requested them to be sent to me after reading an article in the newspaper.

I have been involved in numerous and painful public meetings, private meetings, conferences, phone conversations in order to resolve our concerns with our property rights. We have made every effort in cooperating with Washington County in the HCP process. These activities are cataloged in an attachment to this letter. ( Attachment 1B )

I have written several letters to the HCP Steering Committee and also to the Fish and Wildlife Service to try and resolve this issue. ( Attachment 2B )

I had an information packet compiled to outline our position and agreements with the HCP plan and exchange process and submitted this packet to Bill Mader, HCP administrator: Ted Stevenson, Chief of Branch Lands, Bureau of Land Management, Salt Lake, Utah; Jim Crisp, Area Manager, Bureau of Land Management, St. George, Utah; Ann Morgan, Bureau of Land Management offices in Reno, Nevada; Dallen Gardner representing Jim Doyle for the interstate exchange process for Washington County.

Included in this information packet is a description of property along with a brief description of the development that we have planned for the property. (EXHIBIT II) of (Attachment 1A)

A description and map of properties to be included in the reserve consisting of approximately 183 acres including the acreage along the river corridor. Also shown is a 13.11 parcel of land in Section 29 in ownership of the BLM that we would exchange though the instate exchange. ( EXHIBIT III) of ( Attachment 1A)

Responses to Comments

17. Yvonne Spilsbury Mendenhall; A. R. Spilsbury Family Enterprises

Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: The maps and acreages have been corrected.

17-2. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: Washington County appreciates your concern regarding the land exchange process and is working hard to facilitate this process.

(3)

A description and map of BLM property located in Douglas County, Nevada. This is the parcel of land that we have requested be exchanged through the interstate exchange that Mr. Jim Doyle is facilitating for Washington County. (EXHIBIT IV) OF (Attachment IA)

These are our concerns:

1) There are approximately 200 acres of our private property to be included in the reserve according to the proposed HCP plan, Zone 5: Hurricane, Figure 3.6, and Table 3.6. Parcel Information, 40.17 of these acres are to be allowed development in the "Kayenta" style housing development. These 40.17 acres were to be outside of the reserve boundary. In this area development would occur leaving 75% of each acre in a natural state. This would allow for a buffer between the reserve and development.

Approximately 29 acres along the River Corridor were to be included in the reserve boundary, allowing for biodiversity. This would adjust the total acreage of A.R. Spilsbury private property to be in the Zone 5 reserve at approximately 183 acres.

I had a meeting with Mr. Bill Mader on Aug. 24, 1995, and he concurred that the agreement that the A. R. Spilsbury's had made with the HCP, and the information that he had submitted to SMCA was not in agreement with the final document. The document needs to be edited in accordance with our agreement.

2) Exchange process:

The A.R.Spilsbury's have expressed their willingness to exchange our property in Sec. 28, to be included in the reserve for BLM property in Sec. 29, that is adjacent to our property on the West. This is outlined in exhibit (1A).

We have had meetings both on the property and in the BLM offices in St. George. Mr. Bill Mader, and Jim Crisp have concurred that they feel that this would be a viable exchange. We are waiting for FWS approval.

For the balance of our exchange the A. R. Spilsbury's would like to be involved with the interstate exchange that Mr. Jim Doyle is contracted to facilitate. We have had meetings with the BLM, Bill Mader, and Dallen Gardner. Phone conversations and meetings with Jim Doyle to acquaint us with the process and to make our position known and clear. We submitted and prepared an information packet (Exhibit 1A), at the request of these agencies to

17-1

17-2

( 4 )

assure them of our intentions, Feb. 1995.

To my knowledge and pursuant to conversations with the HCP administrator the A.R. Spilsbury's were being represented in the interstate exchange by Jim Doyle and Dallen Gardner.

In a phone conversation with Mr. Gardner on July 27, 1995, I had called for an update on the exchange process when I was informed that our position was not being represented by Mr. Jim Doyle or Dallen Gardner. Mr. Gardner said that our position was not clear and until he received a letter of clarification he would not proceed. Needless to say I was more than confused.

On August 24, 1995, I had a meeting with Mr. Russell Gallian, Washington County Commissioner, and was present when he had a phone conversation with Mr. Gardner. Mr. Gallian informed Mr. Garner that he felt that our position was clear according to the documents that we had presented him and that we were private property owners in Washington County to be represented in that exchange process. He dictated a letter in reference to that conversation and will be sending me a copy. I have not yet received that copy to include in these comments. I am more comfortable with the process after my meeting with Mr. Gallian. He did however request that I should send Mr. Gardner a letter. I intend to do so.

The A. R. Spilsbury's have also been looking for BLM property that has been marked for disposal in Washington County and we have been frustrated with the process. Any desirable land marked for disposal or exchange has already been set aside for State exchange. Jim Crisp of the BLM has had numerous meetings with us and is aware of our desire to find acceptable exchange parcels in State in the event that the interstate exchange is not accepted through Congress. I find that a huge burden has been placed upon us to find property that is a like for like or value for value exchange. It is my hope that when the HCP document is accepted by the Fish and Wildlife Service, that the efforts by the BLM to find suitable property for exchange will escalate.

The A. R. Spilsbury's would like to request that, unless an acceptable exchange can be completed in a period of two (2) years, or the show of due diligence. We would like to have our property deleted from the reserve, or be allowed to develop our private property in the reserve as outlined on page 26 of the Draft Environmental Impact Statement for Zone 5. "Exception given to some private lands in the reserve to be developed for housing. That would have to leave approximately 75 % of the impacted habitat in an unaltered state". The A.R. Spilsbury's would request that action be applied to our private property in

(5)

Responses to Comments

17-3. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: Grazing will be managed similarly to Zone 3 consistent with reserve management practices.

17-4. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: There are to be no additional roads within the reserve in Zone 5.

17-5. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: See response 15-6.

17-6. Your comments were forwarded to Washington County for consideration in revising their HCP.

Washington County response: Utility corridors in Zone 5 are addressed in sections 3.3.5.2 and 3.4.3 of the HCP.

17-2 the preserve in the case of no exchange or purchase. Clear text to this effect needs to be added to the HCP and EIS.

Failure to provide an exchange or purchase private property for fair market value in any absence of any allowable development, constitutes condemnation of property.

17-3 3) 3.4.2.3 Private Lands  
Grazing of private lands. Grazing of cattle of our private land in zone 5 has historically occurred for the last 100 years. This issue needs to be addressed.

17-4 4) 4.3.5 Road Protocol  
Page 48 of the Draft HCP does not address any of the proposed roadways for Zone 5, 600 N. or Virgin River Blvd, these issues were discussed in my prior correspondence. ( Attachment 2B)

17-5 5) Mining  
3.3.5.2 Management. The issue of mining in Zone 5 needs to be addressed. I was informed that there would be no mining of cinders in the reserve boundary. I would like this clarified.

17-6 6) Figure 3.7 Future Utility Corridors  
There is no future utility corridors addressed for Zone 5.

Sincerely,



Wonne Spillsbury Mendenhall  
General Partner  
A.R. Spillsbury Family Ent.  
1701 Dunneville St.  
Las Vegas, Nev.  
(702) 878-6175

Enclosures: Request for extension

CC: Senator Orrin Hatch  
Senator Robert Bennet  
Congressman James Hansen  
Commissioner Russell Gallian  
William Mader  
HCP Administrator

Responses to Comments

17-7. Thank you for your comments.



Aug. 26, 1995

Robert D. Williams  
Assistant Field Supervisor  
Fish and Wildlife Service  
145 East 1300 South, Suite 404  
Salt Lake City, Ut. 84115

Dear Bob,

You may have already received a letter from my legal counsel regarding a request for the 30 day extension together with some of my concerns with the recent HCP proposal. This letter was a product of my meeting with Mr. Nuffer on Aug. 24, 1995, before our phone conversation on Aug. 25, 1995, and meetings I had with Mr. Mader and Mr. Gallian on Aug. 24, 1995. In these meetings many of my concerns with the HCP document and the exchange process were addressed and alleviated.

17-7

Pursuant to our phone conversation Aug. 25, 1995, you agreed to grant me an extension for filling of comments to be postmarked no later than September 8, 1995. I appreciate your consideration in granting the extension to and the opportunity to address my concerns with the Fish and Wildlife Service. I intend to comply with the September 8, 1995 deadline for my comments on the HCP for Washington County, Utah. Please provide me with written confirmation of the extension as soon as possible.

I would also like to make you aware that I realize that the placement of tortoises on my property was executed by a State of Utah Division of Wildlife Resources agent and not the Fish and Wildlife as stated in the letter.

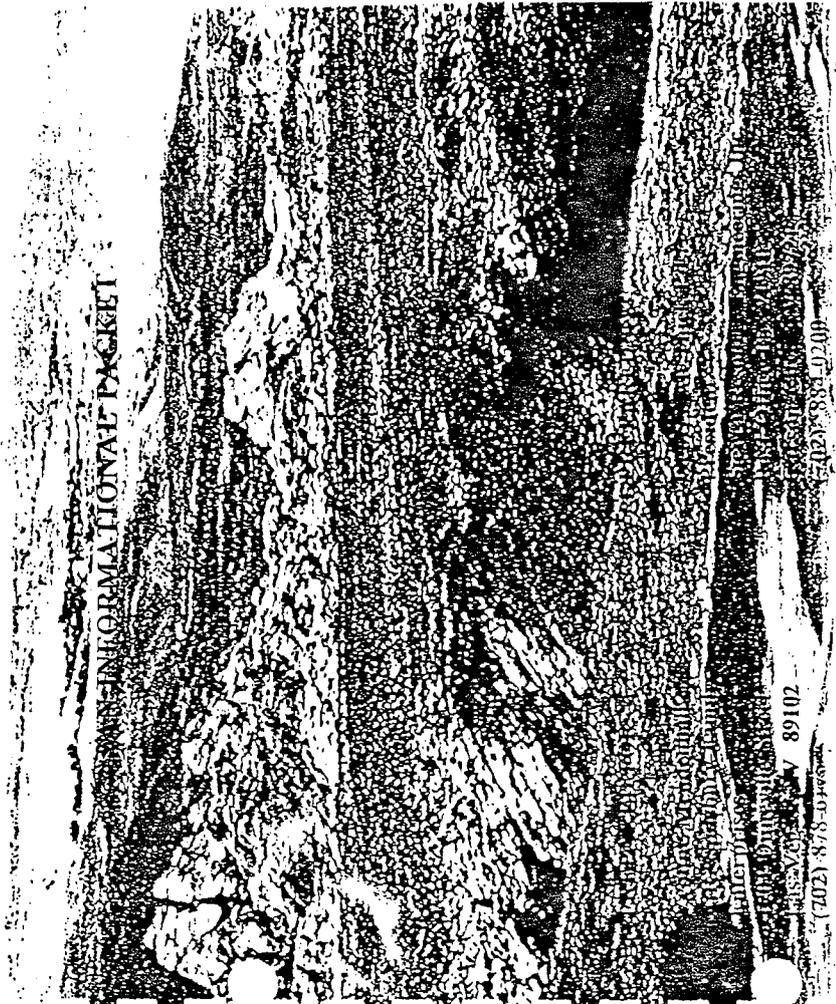
Sincerely,

Wynne Spilsbury Mendenhall  
General Partner  
A. R. Spilsbury Family Ent.  
1701 Duneville. St.  
Las Vegas, Nev. 89102  
(702) 878-6175

*Attachment  
I A*

A.R. SPILSBURY FAMILY ENTERPRISES

HABITAT WITHDRAWAL



INFORMATIONAL PACKET

89102

(702) 878-0465

**A.R. SPILSBURY FAMILY ENTERPRISES**

**HABITAT WITHDRAWAL**

**AN INFORMATIONAL PACKET**

**PREPARED FOR:**

**Vyonne Mendenhall  
A.R. Spilsbury Family  
Enterprises  
1701 Duneville Street  
Las Vegas, NV 89102  
(702) 878-6175  
FAX (702) 878-4874**

**PREPARED BY:**

**George M. Thiel, P.E.  
President  
Sierra Resource Engineering, Inc.  
Post Office Box 21910  
Carson City, NV 89721  
(702) 884-0200  
FAX (702) 884-0233**

## **I N D E X**

- I. Introduction**
- II. Cove Property Development Description**
- III. Selected Alternatives**
- IV. Potential Exchange Property**

## INTRODUCTION

Sierra Resource Engineering, Inc., has been involved with the development of the property for a period of approximately two (2) years. The Engineers have been working on behalf of the A.R. Spilsbury Family Enterprises, Yvonne Mendenhall and Las Vegas Paving Corporation. Involved in their tasks were determining site feasibilities and preparing maps illustrating site constraints with regard to topography, drainage, etc. Through their course of involvement, they identified zoning per the attached Exhibit 1, contiguous to the property. Subsequent to their Feasibility Analysis Desert Tortoise Habitat was depicted illustrating areas subject to withdrawal of lands for habitat usage.

The property is held by the heirs of A.R. Spilsbury and has been under their ownership for a substantial period of time. The Spilsbury family has deep roots within the community and their desire to develop the property in a compatible land use to Hurricane City has been tantamount to the evolution of the designs provided within this document. It is their desire to preserve the historic value of the area as well as progressing to the needs of the future citizens of the community.

## COVE PROPERTY DEVELOPMENT DESCRIPTION

The property involved consists of the majority of Sec. 28, T.415, R.13W, S.L.B. & M. encompassing an area of approximately 560± acres. The existing use is primarily agricultural/grazing with power, the Quail Creek Pipeline, etc., abutting the South edge of the property.

The proposed subdivision consisted of:

- 1.) A Resort Hotel, convention facility;
- 2.) A 2,000± unit subdivision, a planned development with open space amenities, championship golf course, and architectural symbiosis with the community and environment.

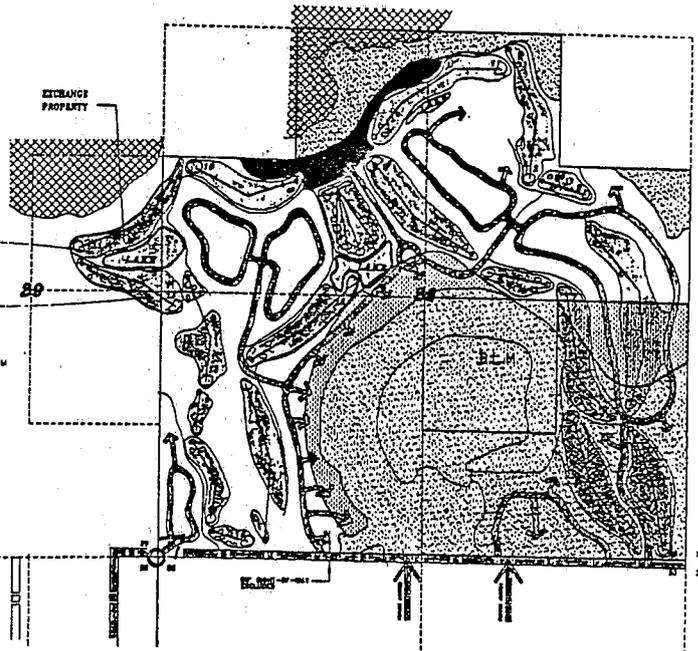
Access is provided via existing roadway infrastructure adjacent to the Industrial Park and proposed extension to 600 North as the proposed main traffic corridor. Access was further delineated in the Master Plan on routes accessing the Southern boundary. Roadways internal to the development were to be completed in a phased manner in compliance with applicable city standards.

Water and Wastewater infrastructure was to be connected to the utilities servicing the City of Hurricane along with electric, telephone, gas and other services associated with the community.

In summary the technical consultants found no site constraint affecting the property that could not be ameliorated through normal and standard engineering practices. Exhibit II, attached, illustrates the findings provided by the design consultants.

**MENDENHALL /  
SPILSBURY PROPERTY  
PROPOSED ALTERNATE  
APPROX. ACREAGE = 188 ACRES**

PORTION OF THE SE 1/4  
PORTION OF THE E 1/2 E 1/2 SW 1/4  
PORTION OF THE S 1/2 S 1/2 SW 1/4 NE 1/4  
PORTION OF THE NE 1/4 SW 1/4 NE 1/4  
PORTION OF THE W 1/2 SW 1/4 NE 1/4  
PORTION OF THE NE 1/4 SW 1/4  
PORTION OF THE NE 1/4 NE 1/4 SW 1/4 NE 1/4  
ALL BEING 188 ACRES MORE OR LESS  
SEC 28 T 41 S R 13 W SL B & W



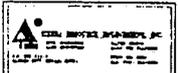
**LEGEND**

	BEING WITH CONTRACTS/PLANS
	BEING WITH ACRES FOR
	TO BE DELETED 200 BARN CONTRACT FOR ACRES
	ADJACENT POINTS
	APPROXIMATE BOUNDARY
	PROPERTY BOUNDARY

SW 1/4 NE 1/4  
13.11 ACRES

NE 1/4 NE 1/4 SW 1/4  
1.01 ACRES

ALL BEING 14.12 ACRES  
MORE OR LESS SEC 28  
T 41 S R 13 W SL B & W



NOTE: BOUNDARY IS APPROXIMATE  
SUBJECT TO SURVEY ON PROPERTY CORNERS

**EXHIBIT II**

## SELECTED ALTERNATIVE

Provided as Exhibit III is the negotiated alternative resolved through discussions with our Biological Consultant, and Bill Mader, Wildlife Biologists for Washington County. His conversations in our presence has involved officials of the Bureau of Land Management and the U.S. Fish and Wildlife Service. The withdrawal area consists of 183± acres all within Section 28, T.41S., R.13W, S.L.B. & M. See Exhibit III. Areas within the depiction illustrate areas for low density, minimum coverage of residential units; as well as areas withdrawn for Desert Tortoise Habitat and areas sensitive to the Virgin River environment. The map provided is an exact description of the property to be withdrawn.

**MENDENHALL /  
SPILSBURY PROPERTY  
PROPOSED ALTERNATE  
APPROX. ACREAGE = 188 ACRES**

PORTION OF THE SE 1/4  
PORTION OF THE S 1/2 S 1/2 SW 1/4  
PORTION OF THE NE 1/4 SW 1/4 NE 1/4  
PORTION OF THE N 1/2 NW 1/4 NE 1/4  
PORTION OF THE NE 1/4 NW 1/4  
PORTION OF THE NE 1/4 NE 1/4 SW 1/4 NW  
ALL BEING 188 ACRES MORE OR LESS  
SEC 28, T 41 S, R 13 W, S.L.B. & W.



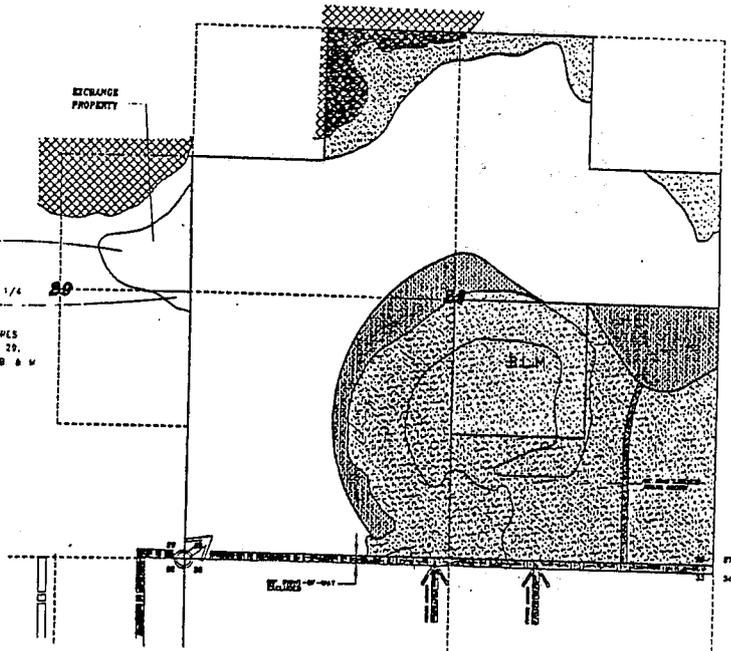
**LEGEND**

	SURVEY AREA
	EXCHANGE PROPERTY
	SURVEY BOUNDARY
	SECTION BOUNDARY
	SURVEY POINT
	SURVEY LINE
	SURVEY CORNER
	SURVEY STATION
	SURVEY MONUMENT
	SURVEY MARKER
	SURVEY BOUNDARY LINE
	SURVEY AREA BOUNDARY
	SURVEY STATION BOUNDARY
	SURVEY MONUMENT BOUNDARY
	SURVEY MARKER BOUNDARY

SW 1/4 NE 1/4  
13.11 ACRES

NE 1/4 NE 1/4 SW 1/4  
1.01 ACRES

ALL BEING 14.12 ACRES  
MORE OR LESS, SEC 28,  
T 41 S, R 13 W, S.L.B. & W.



**A** CONRAD SURVEYING & ENGINEERING, INC.  
1000 N. 10TH ST. SUITE 100  
MENDOTA, WI 53181  
TEL: 414-241-1111  
FAX: 414-241-1112  
WWW.CONRADSURVEYING.COM

NOTE: BOUNDARY IS APPROXIMATE  
SUBJECT TO SURVEY ON PROPERTY CORNERS

**EXHIBIT III**

## POTENTIAL EXCHANGE

Areas of interest for exchange are the 13.12 acres shown in the SW 1/4 NE 1/4, and the NE 1/4, SW 1/4 Section 29, T.41S., R.13W., S.L.B. & M., Exhibit III, and is more particularly described as an island projecting to the west of the Spilsbury Property. The description is referenced on the map.

### **Alternative A**

The family has expressed an interest in the property, Exhibit IV, located in Douglas County, Nevada. Resolution as to determining the interest in the exchange is predicated upon normal due diligence criteria, such as:

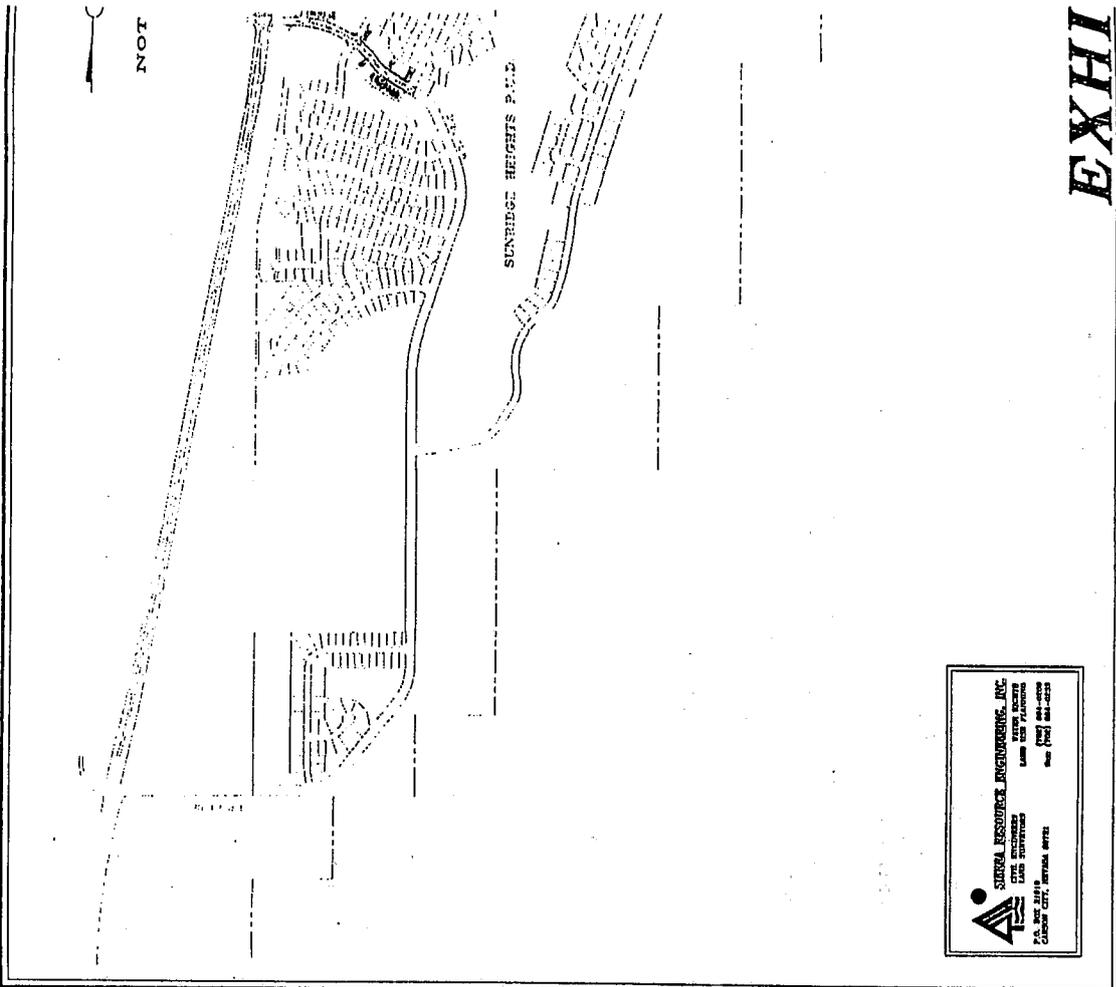
- 1.) Feasibility to enact the exchange.
- 2.) Geographical/Geological constraints.
- 3.) Value.
- 4.) Regulatory Entitlements.
- 5.) Cultural Resources.
- 6.) Environmental Concerns.
- 7.) Infrastructure service capabilities.
- 8.) Administrative approvals.

### **Alternative B**

Predicated upon the base appraisal and review by the family, the family is exploring remuneration for the withdrawal, dependent upon consideration of timing and value.

### **Alternative C**

The family is also exploring the option of an in-state exchange, with similar due diligence considerations respective of Alternative B, listed above.



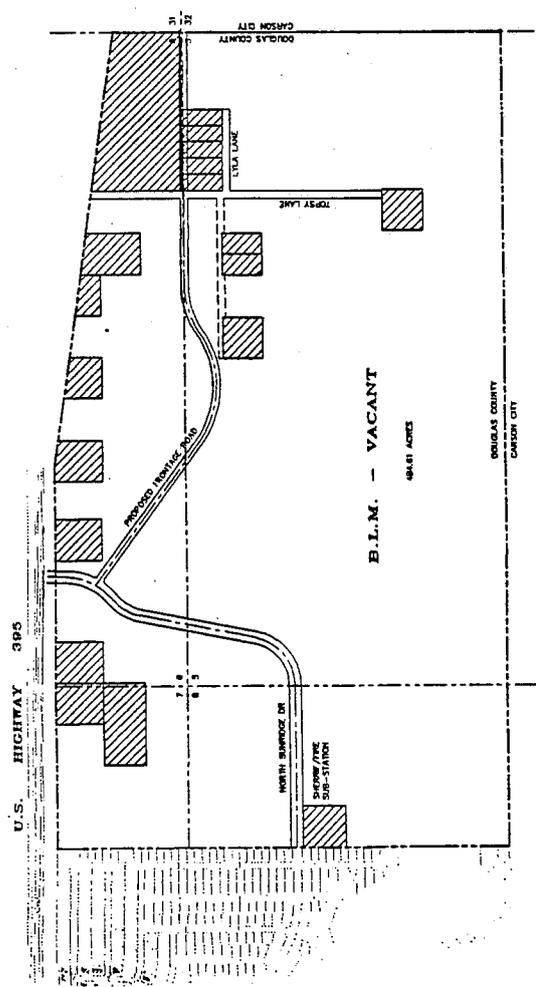
NOT


**SURYA RESOURCE ENGINEERING, INC.**  
 CIVIL ENGINEERS      WATER SPECIALISTS  
 LAND SURVEYORS      LAND USE PLANNERS  
 10000 W. 10th Avenue      Suite 1000      Denver, CO 80202  
 Phone: (303) 426-1234

**EXHI**

BEING A PORTION OF THE E 1/2, E 1/2 OF SEC. 6 AND THE NE 1/4, NE 1/4 OF SEC. 7 AND THE W 1/2 OF SEC. 5 AND THE N 1/2, NW 1/4 OF SEC. 8, T. 14 N., R. 20 E. M.D.B. & M.

SCALE



NOT A PART

**B.L.M. EXHIBIT**

~~REDACTED~~

*Enclosure*

FOR YOUR INFORMATION  
**SNOW, NUFFER, ENGSTROM, DRAKE,  
WADE & SMART**  
A PROFESSIONAL CORPORATION

STEVEN E. SNOW  
DAVID NUFFER\*  
CHRIS L. ENGSTROM  
LYLE R. DRAKE  
TERRY L. WADE\*  
RANDALL R. SMART  
JEFFREY N. STARKLEY\*  
E. SCOTT AWERKAMP  
MICHAELA. DAY  
\* Also Admitted in Arizona  
\* Also Admitted in Nevada

**ATTORNEYS AT LAW**  
90 East 200 North  
P.O. Box 400  
St. George, Utah 84771-0400  
(801) 674-0400  
FAX (801) 628-1610

**OTHER OFFICES:**  
**SALT LAKE CITY OFFICE:**  
341 South Main Street, Suite 201  
Salt Lake City, Utah 84101  
(801) 538-0400  
FAX: (801) 538-0423  
**MESQUITE OFFICE:**  
250 West Mesquite Blvd., No. 1  
P.O. Box 1347  
Mesquite, Nevada 89024  
(702) 346-7347  
FAX: (801) 628-1610

August 24, 1995

Robert D. Williams  
Assistant Field Supervisor  
Fish & Wildlife Service  
145 East 1300 South, Suite 404  
Salt Lake City, UT 84115

**VIA FEDERAL EXPRESS & FACSIMILE**

Dear Mr. Williams:

I am writing on behalf A.R. Spilsbury Family Enterprises, owner of a substantial portion of land within Section 28, Township 41 South, Range 13 West. The land is located within the city limits of Hurricane. I believe you are very familiar with this property. It is referenced on pages 44, 45 and 46 of the Washington County, Utah Desert Tortoise Incidental Take Permit Application/Documents submitted by Washington County Commission, Washington County, Utah to the U.S. Department of the Interior Fish and Wildlife Service, June 19, 1995 (hereafter "Document").

The owner of the property received no notice of the Document. The notice list in Chapter 6.0 at pages 113-132 fails to include A.R. Spilsbury Family Enterprises or any representative of that entity. Yvonne Mendenhall, a principal in A.R. Spilsbury Family Enterprises, first became aware of the existence of the Document by reading a newspaper article. She requested the Document from Fish and Wildlife and received it on August 11, 1995.

*Enclosure*

Robert D. Williams  
August 24, 1995  
Page 2

Obviously, this failure to provide adequate notice has substantially impaired Spilsbury's ability to respond to the Document and violates statutory, regulatory, and constitutional requirements. For that reason, at the outset, on behalf of A.R. Spilsbury Family Enterprises, I request an additional 30 days, or until September 27, 1995, to provide written comments in response to the Federal Register Notice.

In addition, I should point out that the references to the Spilsbury property in the Document do not accurately reflect an agreement reached with the Spilsbury Family which provided that the area shown as private/developed on Figure 3.6 of the Document was to be outside the critical habitat and reserve areas. This area was to be protected by a conservation easement providing restrictions similar to those listed on page 44 of the Document. However, the area was clearly to be outside the critical habitat and preserve.

Further, you should be aware that the Spilsbury's will provide information including biological data which shows that the requisite elements for critical habitat are not present on this property. Since first being informed of the critical habitat designation, the Spilsburys have raised these concerns.

Finally, I believe you should be aware of the admitted placement of a desert tortoise on the Spilsbury property by Fish and Wildlife personnel. Please see the letter of August 8th and statement of August 16th enclosed. This raises serious questions about government action and intervention with regard to the property, and the validity of any government biological data.

Sincerely,

SNOW, NUFFER, ENGSTROM, DRAKE, WADE & SMART



David Nuffer

DN/mg  
cc: Senator Robert Bennett  
Senator Orrin Hatch  
Bill Mader, HCP Administrator  
Washington County Commissioners  
SWCA



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF WILDLIFE RESOURCES

Michael O. Leavitt  
Governor  
Ted Stewart  
Executive Director  
Robert C. Valentine  
Division Director

Southern Region  
622 North Main Street  
PO Box 606  
Cedar City, Utah 84721-0606  
801-566-2455  
801-566-2457 (Fax)

*Enclosure*

August 8, 1995

Vyon. Mindenhall  
A.R. Spilsbury Family Enterprises  
1701 Duneville Street  
Las Vegas, Nevada 89102

Dear Mrs. Mendenhall:

This letter is in response to your request for information regarding the release of a desert tortoise on the Spilsbury property in Hurricane, Utah. District Conservation Officer Gary McKell picked up and released the tortoise in high quality creosote habitat in the vicinity of the Hurricane cinder knolls. After investigation, as per your request, we believe it was released on Spilsbury property. The desert tortoise was a large unmarked male. It was a healthy animal with no external parasites or signs of disease.

Since 1991, the Utah Division of Wildlife Resources (UDWR) has been working with Washington County, other government agencies, and private interests, to reconcile conflicts between economic development and desert tortoise conservation. The objective of this effort has been to develop a Habitat Conservation Plan under Section 10 of the Endangered Species Act.

The Washington County HCP includes the apportionment of desert tortoise habitat into reserve areas and take areas. Under the HCP, take areas will be developed, and reserve areas bordering urban development will be fenced to maintain the viability of tortoise populations. The Washington County HCP is currently in the final stages of review, and is expected to start implementation in early 1996.

Because fencing of proposed HCP reserves has not been completed, wild desert tortoises occasionally wander into adjacent urban areas. These tortoises are currently being returned to reserve areas. The release site was not selected based on the ownership of the property. Officer McKell was simply returning the individual to quality habitat within the proposed reserve area near the pick-up site.

If you have any questions or need any further information



Enclosure

August 16, 1995

Wynonne Meddenhall

In June of this year 1995, I was called on the telephone by Scott Stratton-Hurricane City Police, Stacy Gubler-Hurricane City Animal Control and Gary McKell-Fish and Wildlife, to go and open the Gate West of the Hurricane City Shop on 500 North. Brandon Wright was with me at the time. I was asked to open the gate, which leads to private property which is owned by AR Scallsbury Ent. I lease this property. When I got on site the Officers asked me to open the gate to allow them to release a tortoise and also to dress a deer that was killed on SR 9. I felt very resistant to open this gate. Once the gate was opened the tortoise was released in the sandy area, North East of the cinder knoll. I needed to go back to work and the Officers stated that they would close the gate. I left at this point.

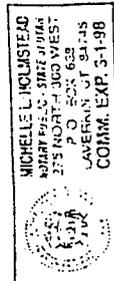
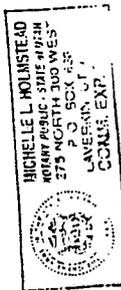
Should you need any further information please feel free to contact me.

Cordisally  


Kurtis Wittmer

I was also address to this

Bank City Lt 8-16-95



## A. R. Spilsbury Family, Enterprise

Itemized list of meetings, phone calls, and written correspondence with the HCP and BLM personnel.

<u>Date</u>	<u>Meetings</u>	<u>Phone Calls</u>	<u>Correspondence</u>
09-09-93	Public Comments		
09-14-93	HCP		
10-07-93	HCP	Marilet A. Zablan, FWS	
10-15-93	HCP		Fax to Milo McCowen Letters
10-25-93	HCP		
10-28-93	HCP		
11-08-93	HCP		
12-06-93	HCP		
12-28-93	HCP		
02-11-94	Milo McCowen	Bob Williams	Fax-Maps
02-24-94	HCP		
02-25-94	BLM		
03-16-94	HCP		
04-05-94	HCP		
04-16-94	HCP		
06-23-94	HCP	Gallen Gardner, Exchange Milo McCowen	
07-01-94	HCP-Bill Mader		
07-21-94	HCP		
07-26-94	HCP-Bill Mader		
07-28-94	HCP-Bill Mader		
09-26-94	HCP	Bill Mader, HCP	
09-27-94	HCP-Bill Mader		
09-28-94	HCP-Bill Mader		
09-29-94	Jim Doyle, Exchange		
09-30-94	HCP	Bob Williams, Bill Mader Conference Call	
10-04-94	HCP-Bill Mader		
10-06-94	HCP		
10-06-94	HCP-Bill Mader		
10-13-94	HCP-Bill Mader		
10-20-94	HCP	Bill Mader, HCP	
10-21-94	HCP-Bill Mader		
10-25-94	HCP-Bill Mader		

Attachment - 1B (cont.)

<u>Date</u>	<u>Meetings</u>	<u>Phone Calls</u>	<u>Correspondence</u>
11-08-94	HCP-Bill Mader		
11-10-94	HCP-Bill Mader	Bill Mader, HCP	
11-16-94		Bill Mader, HCP	
11-17-94			
11-30-94	BLM	Bill Mader, HCP	
12-07-94	BLM		
12-17-94	Trip to Carson City, NV to look at BLM property for exchange	Bill Mader, HCP	
12-28-94		Gallen Gardner, Exchange	
12-29-94		BLM-Nevada	
01-04-95		Bill Mader, HCP	
01-05-95		Jim Doyle, Exchange	
01-27-95		Bill Mader, HCP	
02-02-95	BLM-Ted Stevenson	Bill Mader, HCP	
03-08-95	HCP-Bill Mader		
	BLM-Ted Stevenson, Robert Douglas, Randy Massy, Jim Crisp, Ray Mapston, Bill Mader, HCP		
03-13-95		Gallen Gardner, Exchange	
04-04-95		Bill Mader, HCP	
04-11-95		Bill Mader, HCP	
04-18-95	HCP-Bill Mader, BLM-Jim Crisp	Bill Mader, HCP	
05-03-95		Bill Mader, HCP	
05-17-95	HCP-Bill Mader	Randy Massy, BLM	
	BLM-Jim Crisp		
05-23-95	Gallen Gardner, Exchange		
06-07-95	BLM meeting on Property Sec. 29		
	BLM-Jim Crisp		
	HCP-Bill Mader		
07-05-95		Bill Mader, HCP	
07-06-95	BLM-Bob		
07-26-95		Bill Mader, HCP	
07-28-95		Gallen Gardner, Exchange	
		Jim Crisp, BLM	

Attachment 2 B

FAX FROM VYONNE MENDENHALL

Fax (702) 878-4874 Home phone 878-6175  
Cell. 379-3710

-----PAGES TO FOLLOW  
3

DATE:-----  
Jan. 5, 1995

TO:-----  
Dallen Gardner

To follow is a copy of the map showing the A. R. Spillsbury Family Ent. private property that was to be included in the Tortoise Preserve. The dark cross hatch marks are the property that will be included. The broken hatch marks designate the property that will be developed in a Kayenta style for a buffer zone as we had discussed. The amount of acreage is approximately 203 acres. Section 28 T41S R13W SLBM

The BLM property that we are looking at for exchange is located in the state of Nevada, Douglas County. R20E T14N Sections 5, 6, 7, 8. Acreage of approx. 501 acres. I am also sending you a copy of a BLM Carson City map indicating the property that is described above.

Please note that we are still interested in that little finger of BLM property that is adjacent to our Section 28 indicated on the map which includes our private property included in the preserve.  
Sincerely,  
Vyonne Mendenhall







*A Attachment 2B*

Nov. 1, 1993

Yvonne Spillsbury Mendenhall  
General Partner  
A.R. Spillsbury Family Ent.  
1701 Duneville St.  
Las Vegas, NV. 89102

Milo McCowan  
HCP Stirring Committee Chairman  
472 N. Kolob Rd.  
P.O. Box 790-236  
Virgin, Utah 84779

RE: Upper Virgin River Recovery Unit  
Section 28 T 41 S. R. 13 W. Salt Lake Base and Meridian

To whom it may concern,

Section 28 is a section of land consisting of 640 acres. In this section 520 acres are privately owned. It has been marked for inclusion in the Tortoise Habitat Preserve. This property is located in the Hurricane City limits in Washington County in the State of Utah. It is owned by the A.R. Spillsbury Family Enterprises. It has been in ownership of the family for generations.

According to reports done by SWCA, a consulting firm hired by the HCP, the tortoise density located on our property consists of low to some medium density located primarily on 40 acres in the parcel owned by the BLM consisting of cinders. The biological reports used to produce these maps have not been seen by me personally. I had conversation with the Fish and Wildlife office in Reno on 10-14-93 and the BLM biologist in St. George Utah and apparently no survey has been done by either one of these agencies. I have requested copies of the population survey maps from both Linda Sappington and Ron Vorkian both of the HPC and I have not received them. To our knowledge there is only one tortoise burrow on our property and that is located on the east of the cinder hill. We have personally never seen a tortoise on our property.

Our property located within the preserve is not contiguous with the block of habitat located primarily near the Hurricane area, nor is there a linkage to the St. George area. It is separated by a natural geographical fence, the Virgin River Gorge. The Gorge is several hundred feet deep at this particular point and runs along the north extreme of our property for one half of a mile. We are on the extreme southern parameter of the preserve, south of the Virgin River. The total acreage involved in this (island) of preserve is 1,050 acres. See map A.

Our 520 acres included in this (island) is deficient in several of the attributes necessary for protection of the tortoise, as set forth in the Federal Register 50 CFR part 17. On the direct west is a proposed bonded development of a 18 hole golf course and a 400 unit home division making the species subject to disturbance from his number one predator man and dog. Directly to the south is also home development and a Industrial Park. There is also a proposed Virgin River Boulevard that will be running east and west on the section line between section 28 and 33, to service the golf course community and other development. There is a public school and park including baseball fields on the extreme southeast end of this (island) and a natural geographical barrier, the Virgin River Gorge, on the north that separates this 1050 acres from the larger block habitat on the north of the river of approximately 5,000 acres. See map B.

This proposed preserve does not meet primary constituent elements set forth in the Federal Register. It is not contiguous with the rest of the Habitat. This block is not interconnected by a corridor of linkage containing protected, preferred habitat for the species. It is separated by a Gorge of more than a 100 ft. deep. It also contains roads that have been used for decades, and it is not unaccessible to humans. It has a cinder knoll that has been excavated for cinders and the BLM has been unsuccessful in deterring non-permitted removal for decades. These cinders are being removed by large trucks and tractors. This property also has 80 to 100 acres that are currently under cultivation for agricultural purposes. See map A. and C.

The financial responsibility of acquiring these privately owned lands and the cost of managing and fencing would warrant careful consideration. Do the financial consequences of acquiring this private (island) outweigh the benefits of including it in a public preserve?

The Desert Tortoise population would best be served if a relocation process could be initiated to relocate the tortoise off the private land south of the Virgin River away from the City and human impact to the north side of the river where the property is almost exclusively owned by the BLM and is less accessible to the adverse effects of man.

This plan would allow for growth and development for the city of Hurricane. More protected contiguous habitat for the tortoise and would allow for the private land owner to choose the best use for his land. The taxpayers of this country would also be spared an undo burden of paying for the purchasing of privately owned property management expenses and the high cost of fencing.

We believe that we have a responsibility to preserve and protect the world and its inhabitants. We would not like to see the tortoise hurt or destroyed in any manner.

We would like to solicit the HCP for a clearance survey and also for an incidental take permit.

We would like to retain ownership of our inheritance. This property that has been in our family for generations. Property that our Great, Great, Great Grandfather sacrificed for and pioneered the oceans and the wilderness in hopes for a better life for their posterity. Who made the great southwest what it is today. We would like to have the opportunity to pass on this inheritance to our posterity to give them a sense of who they are and where they came from. There is no dollar value that can compensate us for this. The Government can always print more money but no one is capable of making more land.

We would be willing to compromise with the HCP and the Fish and Wildlife Service and the Department of Interior on the amount of our private property that would be drawn into the preserve as indicated on maps B and C. Although this property does not meet the requirements set forth for critical habitat or preserve, according to the Federal Register 50 CFR Part 17, it might be suited with proper fencing for a translocation site or nature center with total area of more than one square mile. It would draw out our agricultural area and water storage and allow us our one access to that cultivated area along the road that enters that section from the south. Our other access to that area would be in the preserve.

Our family has had an eye towards development of our property when the growth of the area warranted such. We have donated property to the City of Hurricane for Schools and for the Industrial Park. We have donated property for water storage and right of ways for power, sewer, waterlines in a hope that this would initiate growth in this area. Now that this has come to fruition we would like the opportunity to chose the best use for our property. This use may be same use that it has had for generations that of agriculture or a new use that of development.

Any consideration that you might give in this matter would be greatly appreciated.

We have resolved our holdings of this property with Calvin and Mona Lowe. The A.R. Spilsbury Family Ent. is the sole owners of all private property in Sec. 28.

Sincerely,

Yvonne Spilsbury Mendenhall  
General Partner  
A.R. Spilsbury Family Enterprises  
1701 Duneville St.  
Las Vegas, Nevada 89102 (702)-978-4175

*Attachment 2 B*

Oct. 28, 1993

Vyonne Spilsbury Mendenhall  
General Partner  
A.R. Spilsbury Family Ent.  
1701 Duneville St.  
Las Vegas, NV. 89102

Department of Interior  
Fish and Wildlife Service  
Field Supervisor,  
Nevada Field Office  
4600 Kietzke Lane, Building C-125  
Reno, NV. 89502

RE: Upper Virgin River Recovery Unit  
Section 28 T 41 S. R. 13 W. Salt Lake Base and Meridian

To whom it may concern,

Section 28 is a privately owned section of land consisting of 520 acres. It has been marked for inclusion in the Tortoise Habitat Preserve. This property is located in the Hurricane City limits in Washington County in the State of Utah. It is co-owned as tenance-in common by the A.R. Spilsbury Family Enterprises and Calvin and Mona Lowe. It has been in ownership of the family for generations.

According to reports done by SWCA, a consulting firm hired by the HCP, the tortoise density located on our property consists of low to some medium density located primarily on 40 acres in the parcel owned by the BLM consisting of cinders. The biological reports used to produce these maps have not been seen by me personally. I had conversation with the Fish and Wildlife office in Reno on 10-14-93 and the BLM biologist in St. George Utah and apparently no survey has been done by either one of these agencies. I have requested copies of the population survey maps from both Linda Sappington and Ron Vorkian both of the HPC and I have not received them. To our knowledge there is only one tortoise burrow on our property and that is located on the east of the cinder hill. We have personally never seen a tortoise on our property.

Our property located within the preserve is not contiguous with the block of habitat located primarily near the Hurricane area, nor is there a linkage to the St. George area. It is separated by a natural geographical fence, the Virgin River Gorge. The Gorge is several hundred feet deep at this particular point and runs along the north extreme of our property for one half of a mile. We are on the extreme southern parameter of the preserve, south of the Virgin River. The total acreage involved in this (island) of preserve is 1,050 acres. See map A.

Our 520 acres included in this (island) is deficient in several of the attributes necessary for protection of the tortoise, as set forth in the Federal Register 50 CFR part 17. On the direct west is a proposed bonded development of a 18 hole golf course and a 400 unit home division making the species subject to disturbance from his number one predator man and dog. Directly to the south is also home development and a Industrial Park. There is also a proposed Virgin River Boulevard that will be running east and west on the section line between section 29 and 33, to service the golf course community and other development. There is a public school and park including baseball fields on the extreme southeast end of this (island) and a natural geographical barrier, the Virgin River Gorge, on the north that separates this 1050 acres from the larger block habitat on the north of the river of approximately 5,000 acres. See map B.

This proposed preserve does not meet primary constituent elements set forth in the Federal Register. It is not contiguous with the rest of the Habitat. This block is not interconnected by a corridor of linkage containing protected, preferred habitat for the species. It is separated by a Gorge of more than a 100 ft. deep. It also contains roads that have been used for decades, and it is not unaccessible to humans. It has a cinder knoll that has been excavated for cinders and the BLM has been unsuccessful in deterring non-permitted removal for decades. These cinders are being removed by large trucks and tractors. This property also has 80 to 100 acres that are currently under cultivation for agricultural purposes. See map A. and C.

The financial responsibility of acquiring these privately owned lands and the cost of managing and fencing would warrant careful consideration. Do the financial consequences of acquiring this private (island) outweigh the benefits of including it in a public preserve?

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This plan would allow for growth and development for the city of Hurricane. More protected contiguous habitat for the tortoise and would allow for the private land owner to choose the best use for his land. The taxpayers of this country would also be spared an undo burden of paying for the purchasing of privately owned property management expenses and the high cost of fencing.

We believe that we have a responsibility to preserve and protect the world and its inhabitants. We would not like to see the tortoise hurt or destroyed in any manner.

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We would like to retain ownership of our inheritance. This property that has been in our family for generations. Property that our Great, Great, Great Grandfather sacrificed for and pioneered the oceans and the wilderness in hopes for a better life for their posterity. Who made the great southwest what it is today. We would like to have the opportunity to pass on this inheritance to our posterity to give them a sense of who they are and where they came from. There is no dollar value that can compensate us for this. The Government can always print more money but no one is capable of making more land.

We would be willing to compromise with the HCP and the Fish and Wildlife Service and the Department of Interior on the amount of our private property that would be drawn into the preserve as indicated on maps B, and C. Although this property does not meet the requirements set forth for critical habitat or preserve, according to the Federal Register 50 CFR Part 17, it might be suited with proper fencing for a translocation site or nature center with total area of more than one square mile. It would draw out our agricultural area and water storage and allow us our one access to that cultivated area along the road that enters that section from the south. Our other access to that area would be in the preserve.

Our family has had an eye towards development of our property when the growth of the area warranted such. We have donated property to the City of Hurricane for Schools and for the Industrial Park. We have donated property for water storage and right of ways for power, sewer, waterlines in a hope that this would initiate growth in this area. Now that this has come to fruition we would like the opportunity to chose the best use for our property whether it be the same use that it has had for generations that of agriculture or development.

Any consideration that you might give in this matter would be greatly appreciated.

We are in the process of desolving our tenance-in-common holding with our cousins Calvin and Mona Lowe and the A.R. Spillsbury Family Ent. will be the sole owners of private property in Sec. 28.

Sincerely,

Yvonne Spillsbury Mendenhall  
General Partner  
A.R. Spillsbury Family Enterprises  
1701 Duneville St.  
Las Vegas, Nevada 89102 (702)-878-6175

dt: wchcp/nepa (comments)

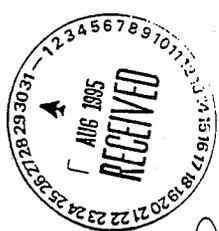
# State of Utah

GOVERNOR'S OFFICE OF PLANNING AND BUDGET  
Resource Development Coordinating Committee

Michael O. Leavitt  
Governor  
Brad T. Barber  
State Planning Coordinator  
Catherine Chubb  
Committee Chairman  
John A. Harja  
Executive Director

116 State Control Building  
Salt Lake City, Utah 84114  
(801) 538 1077  
Fax: (801) 538 1547

August 28, 1995



**LATE**  
postmarked August 29, 1995

Robert Williams  
US Department of the Interior  
Fish and Wildlife Service  
Suite 404 Lincoln Plaza  
145 East 1300 South  
Salt Lake City, Utah 84115

**SUBJECT:** Washington County Desert Tortoise Incidental Take Permit  
Application/Documents  
State Identifier Number: UT950718-020

Dear Mr. Williams:

The Resource Development Coordinating Committee (RDCC), representing the State of Utah, has reviewed this proposal and has no comments at this time.

The Committee appreciates the opportunity to review this proposal. Please direct any other written questions regarding this correspondence to the Utah State Clearinghouse at the above address or call Carolyn Wright at (801) 538-1535 or John Harja at (801) 538-1559.

Sincerely,

Brad T. Barber  
State Planning Coordinator

BTB/ar

### Responses to Comments

- 18. Brad T. Barber; State of Utah, Governor's Office of Planning and Budget (late)
- 18-1. Thank you for your review.

