RESOLUTION OF THE
RESOURCES AND DEVELOPMENT COMMITTEE
OF THE 23RD NAVAJO NATION COUNCIL --- FIRST YEAR, 2015

AN ACTION

RELATING TO RESOURCES AND DEVELOPMENT COMMITTEE, CERTIFYING TSIDI TO'II CHAPTER'S COMMUNITY-BASED LAND USE PLAN

BE IT ENACTED:

SECTION 1. FINDINGS

A. The Resources and Development Committee, pursuant to 26 N.N.C. §2004(D)(2) shall certify community-based land use plans.

B. Pursuant to Committee Resolution TCDA-94-98, the Transportation and Community Development Committee (predecessor to the Resources and Development Committee; CO-45-12) approved the Tsidi To'ii Chapter's Community-Based Land Use Plan in June 2005.

C. Pursuant to 26 N.N.C. §2004(D)(2), the Chapter shall amend the Community-Based Land Use Plan every five years, and such amendment is subject to the certification of the Resources and Development Committee of the Navajo Nation Council.

D. Pursuant to Tsidi To'ii Chapter Resolution No. TT-09-004-14, the Tsidi To'ii Chapter approved the revision of its Community-Based Land Use Plan and requested the Resources and Development Committee certify the revised Community-Based Land Use Plan.

E. The Resources and Development Committee of the Navajo Nation Council finds it in the best interest of the Navajo Nation to certify the Tsidi To'ii Chapter's Community-Based Land Use Plan.

SECTION 2. Certification

A. The Resources and Development Committee of the Navajo Nation Council hereby certifies Tsidi To'ii Chapter's Community-Based Land Use Plan, attached hereto as Exhibit A.

B. Certification of this Community-Based Land Use Plan shall not delineate adjacent chapter boundaries. Any chapter disputes rest solely with the Courts of the Navajo Nation.

CERTIFICATION

I, hereby, certify that the foregoing resolution was duly considered by the Resources and Development Committee of the 23rd Navajo Nation Council at a duly called meeting at Twin Arrows Casino & Resort, Flagstaff, Navajo Nation (Arizona), at which quorum was present and that same was passed by a vote of 3 in favor, 0 opposed, 0 abstain this 26th day of March, 2015.

Benjamin Bennett, Vice-Chairperson
Resources and Development Committee
Of the 23rd Navajo Nation Council

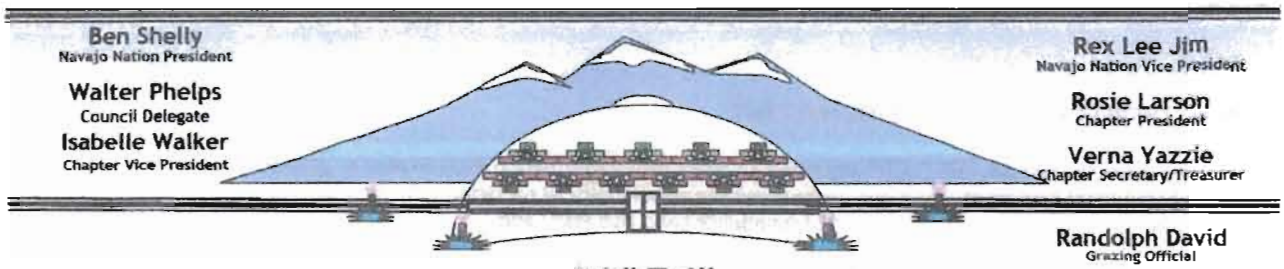
Motion: Honorable Leonard Pete
Second: Honorable Davis Filfred

Tsidi To'ii
CHAPTER

LAND USE PLAN

BIRDSPRINGS, ARIZONA

OCTOBER 2014



RESOLUTION OF THE TSIDI TO'II CHAPTER
WESTERN NAVAJO AGENCY
Resolution No.: TT-09-004-14

APPROVING THE REVISED AND UPDATED TSIDI TO'II CHAPTER LAND USE PLAN AND REQUESTING THE RESOURCE AND DEVELOPMENT COMMITTEE OF THE NAVAJO NATION COUNCIL TO CERTIFY, IN ACCORDANCE WITH THE 5-YEAR REVIEW RECOMMENDATION STATED IN NAVAJO NATION CODE TITLE 26 LOCAL GOVERNANCE ACT; THIS UPDATED AND REVISED PLAN SUPERSEDES THE 2005 VERSION.

WHEREAS:

1. Pursuant to 26 N.N.C., Section 3 (A) The Tsidi To'ii Chapter is duly recognized certified chapter of the Navajo Nation Government, as listed at 11 N.N.C. part 1, Section 10; and,

2. Pursuant to 26 N.N.C., Section 1 (B), Tsidi To'ii Chapter is vested with the authority to review all matters affecting the community to make appropriate corrections when necessary and make recommendations to the Navajo Nation and other local agencies for appropriate actions; and,

3. Pursuant to Resolution No. CAP-34-98, the Navajo Nation Council adopted the Local Governance Act (LGA) under Navajo Nation Code Title 26; and,

4. Pursuant to the LGA, all chapter shall develop and implement a Land Plan and every five years the plan shall be reevaluated and readjusted to meet the needs of the changing community; and,

5. Pursuant to the LGA, the Tsidi To'ii Chapter established a Community Land Use Planning Committee (CLUPC) to oversee all land use planning activities under Resolution No. BO-04-039-00; and,

6. Pursuant to the LGA, the CLUPC led the development of the first Community-Based Land Use Plan in 2005; the Chapter subsequently approved this plan and the Navajo Nation Council - Transportation and Community Development Committee by committee resolution (TCDC-94-98) certified the Community-Based Land Use Plan on June, 2005; and

7. In spring, 2014, Tsidi To'ii Chapter chose to revise and update its 2005 LGA certified Community Land Use Plan to meet the needs of the changing community.

ACKNOWLEDGEMENTS

TSIDI TO'II CHAPTER

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INTRODUCTION

Land use planning is a continuous publicly driven process that guides community development while preserving important natural, cultural, and human resources. Its purpose is to create and maintain an environment that promotes public health, safety and welfare of the community's residents.

This plan emphasizes land uses based on the community's vision, goals and objectives. It is a flexible guide for achieving balanced growth and preserving the unique character of the community. Its goals may not be entirely attainable; however, it is meant to provide a general direction for more detailed decisions and function as a practical working plan.

Under the direction of the Chapter, the Community Land Use Planning Committee (CLUPC) led the revision of this plan over the course of six months. Consulting firm, JJ Clacs & Company, provided technical assistance. Community members were able to participate in every step of the process. Public comments, opinions, and ideas voiced at work sessions, CLUPC meetings, and the public hearing were an integral part of the development process. Much of this plan is written in non-technical language to facilitate its ownership by the community members.

1. COMMUNITY VISION AND GOALS

INTRODUCTION

An important step in developing a future land use plan for the Tsidi To'ii Chapter is to identify the values of the community members, what is important to them. Such visioning and planning are important particularly considering the potential for future growth and development. To this end, community members within the planning area gave their input through public meetings and work sessions.

VISION STATEMENT

Our vision is to be a community with new economic opportunities, sufficient affordable safe housing, a strong livestock and ranching tradition, excellent educational programs as well as providing quality services for all including children, youth adults, elders and veterans. We are looking ahead for all. We want good health and better living standards.

GOALS AND OBJECTIVES

The goals and objectives reflect the specific desires of the Tsidi To'ii Chapter community.

GOAL 1 - LITTLE COLORADO RIVER

GOAL – Ensure sufficient water rights are retained including water uses for agriculture.

Objectives:

a. Protect water rights
b. Determine and project water needs for future agricultural opportunities
c. Ensure water rights are addressed in any new land acquisitions.
d. Develop irrigation system utilizing the Little Colorado River.
e. Promote farming activities.

GOAL 2 HOUSING

GOAL – Provide adequate housing for the community.

Objectives:

a. Provide for neighborhood housing for small (family) clusters of homes (i.e. 22 scattered home sites)
b. Provide for housing subdivisions (i.e. Little Singer teacher housing, N2-Hwy 99 housing)

GOAL 3 – COMMUNITY FACILITIES AND SERVICES

GOAL – Provide adequate community facilities and services responsive to the needs of the community.

Objectives:

a. Strategically plan and develop 30 acre chapter tract
b. Provide a multipurpose building accommodating a youth center, Boys and Girls Club, sports complex and other uses
c. Provide a day care/childcare center, and/or preschool
d. Provide areas for vocational training center, college branch and/or other educational facilities and services
e. Develop a Veterans center within the chapter tract
f. Create the establishment of a HAZMAT team.
g. Provide for a police station, fire station and EMT program.
h. Design, locate and regulate development to avoid or withstand hazards.
i. Study the feasibility of a fallout shelter

GOAL 4 – PRESERVATION AND CONSERVATION

GOAL – Protect, conserve, and preserve the land and water as well as the integrity of cultural and historic resources and our traditional way of life.

Objectives:

a. Develop a plan for water conservation

b. Develop and implement livestock and range management plans
c. Protect and rehabilitate along the Little Colorado River
d. Preserve and protect sacred sites and ceremonial sites.
e. Identify and protect landmarks, historic areas and archeological sites

GOAL 5 - WASTE MANAGEMENT

GOAL – Implement a waste management plan.

Objectives:

a. Conduct feasibility study for land fill
b. Install transfer station or work out a solution with Leupp

GOAL 6 - UTILITIES

GOAL – Extend new utilities lines and upgrade where necessary.

Objectives:

a. Extend water and electric system to homes presently without service (i.e. North side water line and power line projects)
b. Upgrade sewer disposal
c. Explore the option of a sewer lagoon
d. Plan with NTUA and IHS, for adequate wastewater services throughout the community
e.

GOAL 7 – ROADS AND BRIDGES

GOAL – Build an efficient and safe system of roads and bridges.

Objectives:

a. Improve and maintain existing for safety
b. Pave the roads that are used as main roads by community members, especially those that become very muddy and washboard-like (i.e. N71)

GOAL 8 - GROWTH AND DEVELOPMENT

GOAL – Promote growth and sound development.

Objectives:

a. Provide areas for community, public safety and educational

facilities

b. Study options to capitalize on tourism opportunities
c. Support development of a gas station and store
d. Encourage development of scenic and historic sites such as the Little Painted Desert, historic Tsidi To'ii and former Leupp prison site
e. Explore innovative designs of tour packaging such as self- auto tours and scenic bike routes
f. Encourage and support the development of a tourism/cultural center or visitor's center
g. Establish a way to deal with the floodplain

GOAL 9 - LAND OPPORTUNITIES

GOAL – Plan for and capitalize on land opportunities.

Objectives:

a. Identify land area and develop land use plan
b. Winslow Land transfer
c. Turquoise Ranch land

GOAL 10 - RECREATION

GOAL – Develop recreational activities and services that are responsive to the needs and value of the community members, visitors and tourists.

Objectives:

a. Develop recreational facilities for basketball, volleyball, and softball, etc.
b. Establish hiking. biking and walking trails

2. COMMUNITY BACKGROUND

BRIEF HISTORY

Ta'neeszahnii Nez settled in a canyon located in the southwestern portion of what would later become the Navajo Nation. He lived among majestic views and multicolored landscapes covered with sparse vegetation. Nearby the Colorado River flowed gently to the southwest. He would look out onto the west at the sacred San Francisco Peaks and onto the east to the picturesque Painted Desert (Personal Communication with John Slowtalker 2004).

Ta'neeszahnii Nez noticed many birds flocking over a nearby spring. And he believed the place to be Tsidi To'ii (Bird's watering point). Early Navajo Tribal government was centered on clans and clan leaders. It is said that Tsidi to'ii saved the early clans that migrated into the area by providing a place with better grazing area for their large herds. By 1918, the spring water dried up and the birds died of thirst.

In 1927, John Hunter helped form Birdsprings Chapter. During this time, two locations were used for general meetings. One was the home of a local medicine man named Little Singer and the other was the Old Leupp mess hall. In 1955, the Chapter submitted an application of approval to the Tribe. Tribal Vital Records

indicate that Birdsprings was approved in 1963.

The early 1970's mark the beginnings of major community improvements. Birdsprings Pre-school was formed in 1971. In 1976, construction on the Little Singer School began in honor of the famous medicine man and plans were underway to build a community center to memorialize Little Singer.

During the late 1970's, people started to reap the benefits from community improvements. In 1977, Solar Corporation was formed and for the first time Birdsprings witnessed local work programs and gained recognition by being the first to manufacture solar components that allowed for self-sufficient energy in schools and homes.

In 1979, the formation of the Little Colorado River Farm Project began. This project established many wells throughout the community, provided farm equipment for better crops, and afforded income for feedlots. By its completion, the project encompassed several thousand acres of irrigated farm land, feedlots, a slaughterhouse and a local tannery. That same year, the Shandiin Institute was established to provide continuing technical assistance to Birdsprings and other Southwest Indian Tribes.

To further promote, protect and preserve the interest and general welfare including the safety of its community, the Birdsprings Chapter changed its name to the Tsidi To'ii in April 2011 (CAP-13-11).

LOCATION

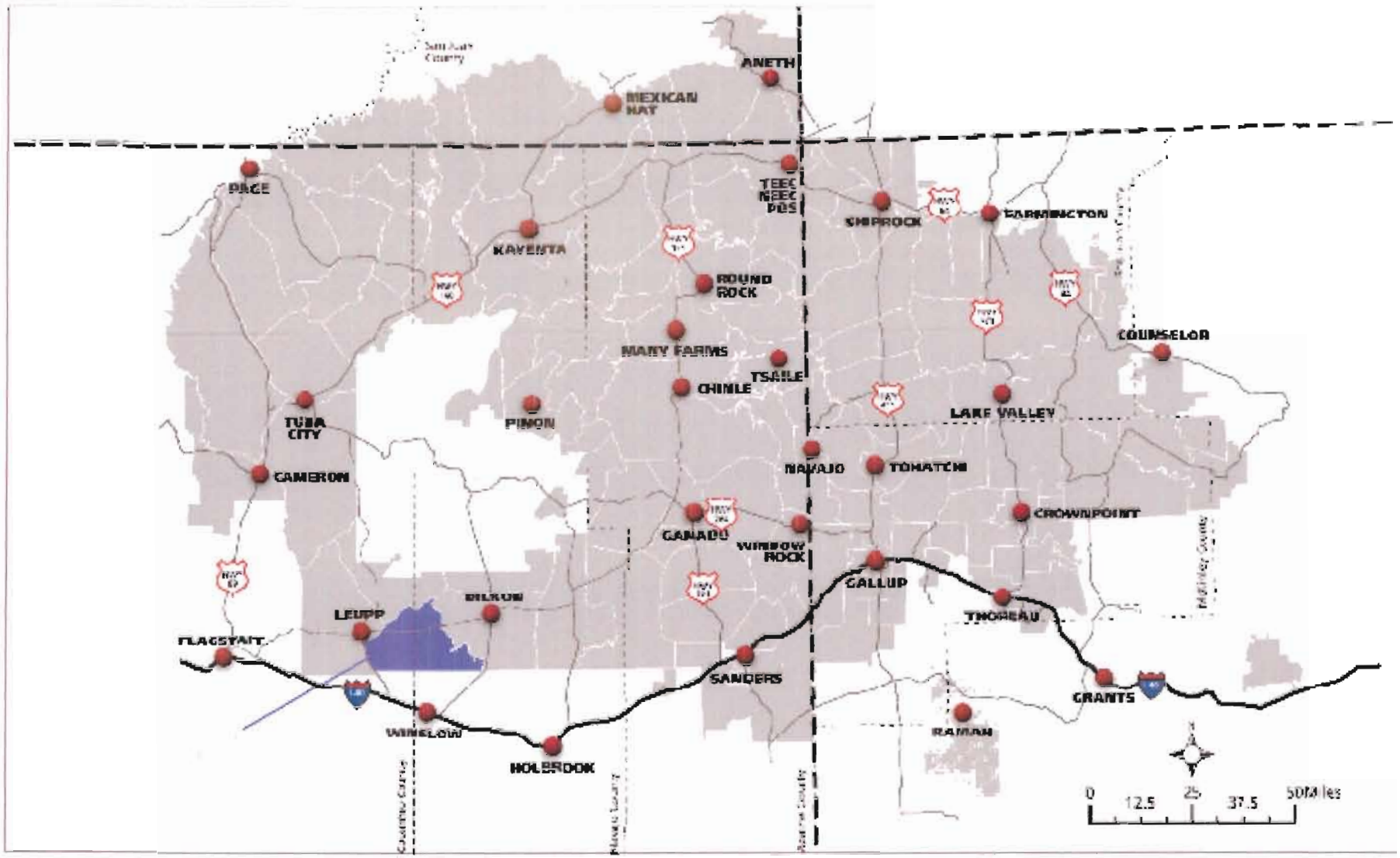
Tsidi to'ii Chapter is located in the southwestern part of the Navajo Nation and in northeastern Arizona (Map 1). Situated in Coconino and Navajo Counties, the Chapter house is located along Navajo Route 15 in northeastern Arizona approximately 15 miles east of Leupp. Winslow is about 20 miles to the south and Dilcon is approximately 25 miles to the east. Tribally, the Chapter is part of the Western Agency and is under the Bureau of Indian Affairs (BIA) within grazing District 5.The Chapter's governing boundaries are bordered by the Leupp, Tolani Lake and Dilcon chapters.

PLANNING AREA AND LAND STATUS

The Chapter members identified the planning area based on the area of land that they use or hold permits for. Because the community members chose the planning area based on areas they currently use or have permits for, it does not completely overlap with the Chapter's "official" boundary (Map 2). The planning area is referred to as the Chapter in this document.

The land within the Chapter is designated as Navajo Tribal Trust Land with approximately five allotments (Map 3). The planning area encompasses portions

of the following United States Geological Survey (USGS) 7.5" quadrangles: Tolani Lake, Montezuma Chair NW, Old Leupp, East of Old Leupp, Birdsprings Wash, Elephant Butte, Tucker Mesa NW, Tucker Mesa NE, Winslow NW, Winslow NE and Standing Horse Mesa.



MAP 1

Location of Tsidi To'ii

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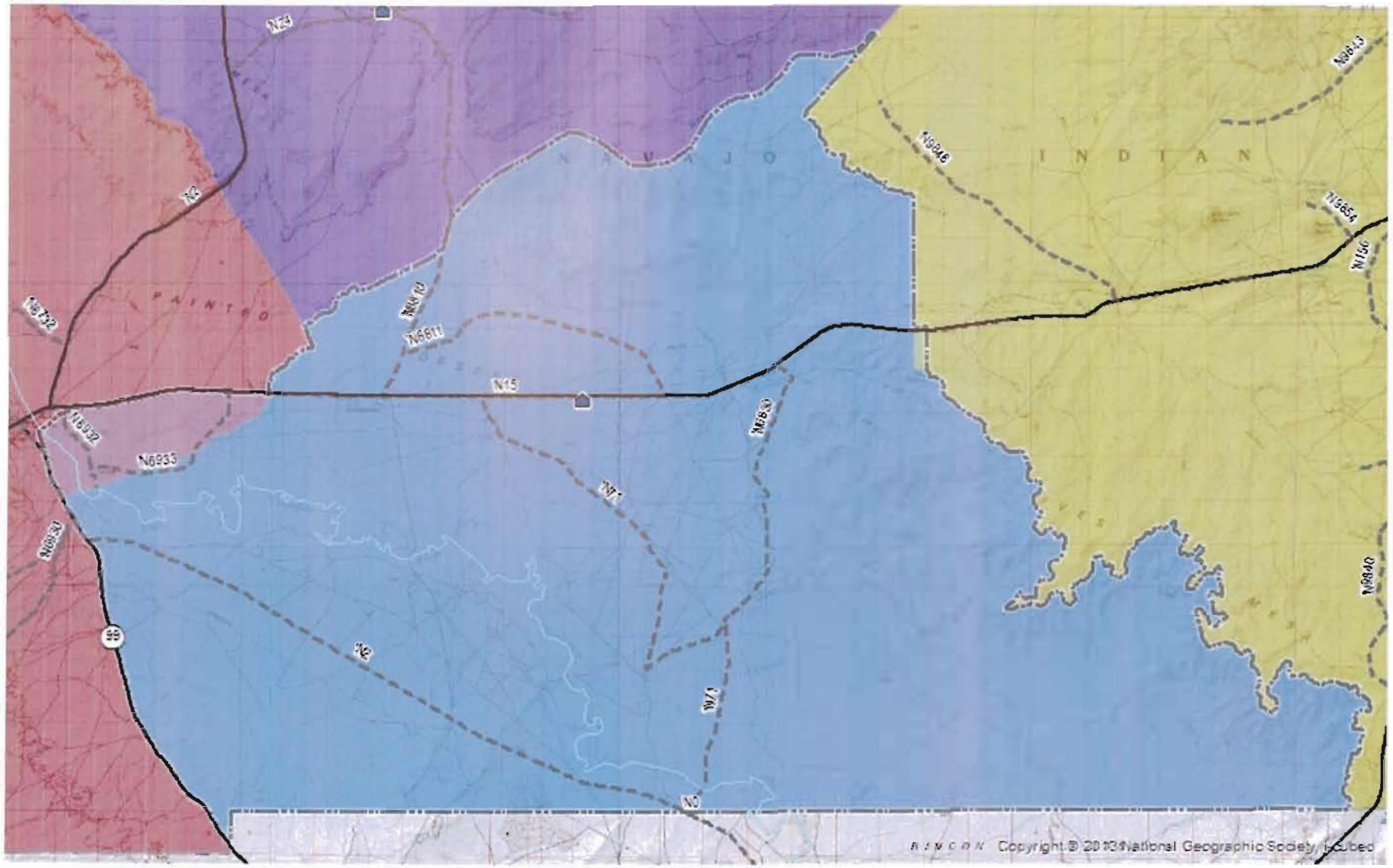
Sources: Navajo Department of Transportation Navajo Land Department



Legend

- Chapter House
- Planning Area
- Little Colorado River
- Navajo Route (paved)
- Navajo Route (unpaved)
- State Highway
- Tsidi Toii
- Dilkon
- Leupp
- Tolani Lake

0 1 2 4 Miles

MAP 2

Planning Area

TSIDI TOII CHAPTER LAND USE PLAN
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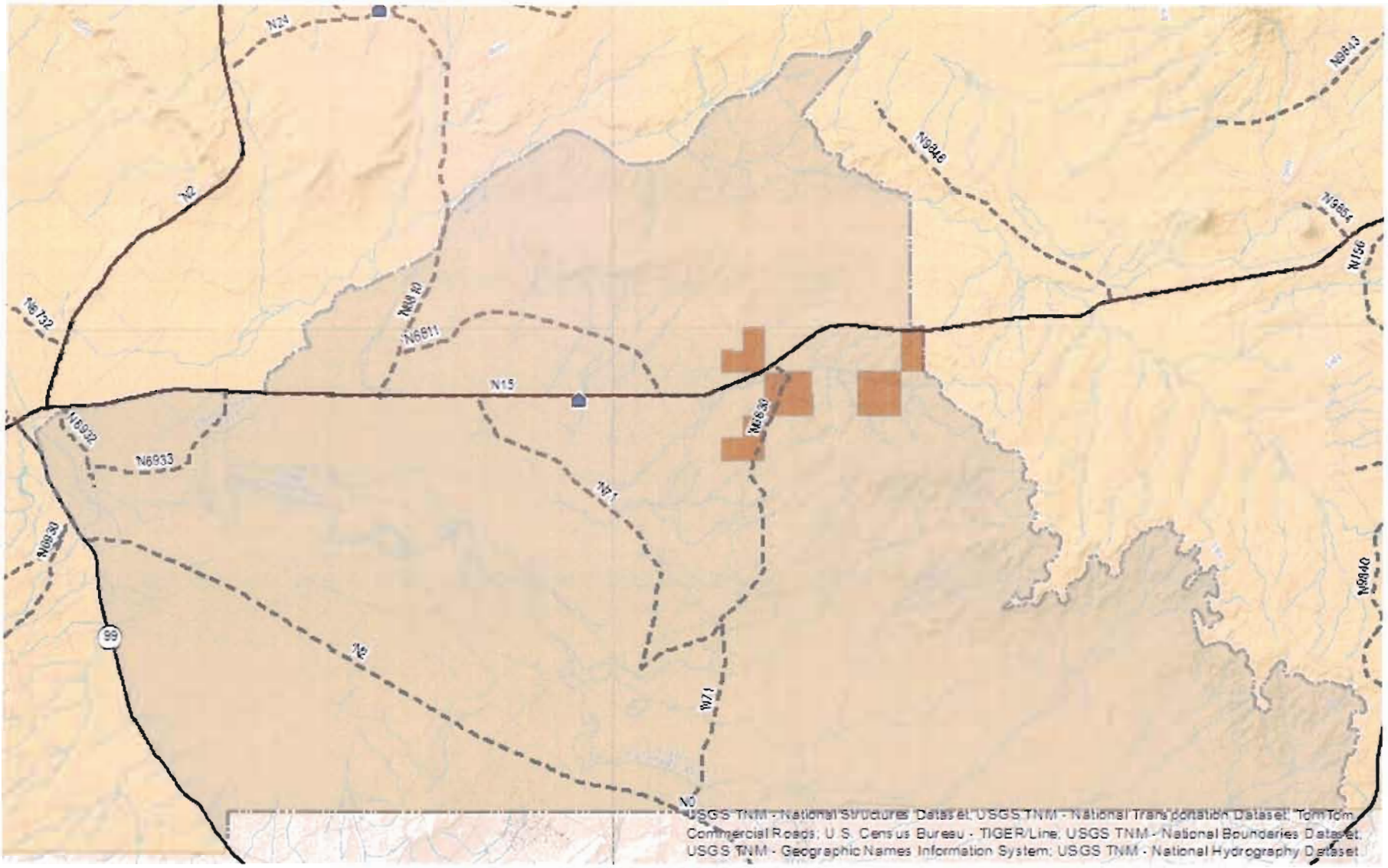
SOURCES: Navajo Land Dept., NDOT



N

Legend

- Chapter House
- Planning Area
- Navajo Route (paved)
- Navajo Route (unpaved)
- State Highway
- Allotment
- Navajo Tribal Trust

0 1 2 4 Miles

MAP 3

Land Status

TSIDI TOII' CHAPTER LAND USE PLAN
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DISCLAIMER: Tsidi Toii' Chapter and/or JJ Clacs & Company shall assume no liability for any errors, omissions, or inaccuracies in the information.

SOURCES: Navajo Land Dept., NDOT

3. NATURAL CONDITIONS

The section includes information on topography, accessibility, slope, ground and surface water, soils, vegetation, culturally significant areas, traditional sensitive areas, and environmentally sensitive areas.

TOPOGRAPHY

The Chapter is situated in the Colorado Plateau region on the open flood plains. The majority of the landscape is sparsely vegetated with broad flat plains and washes. Most of the Chapter land lies at an elevation of about 4,800 feet above sea level. Elevation within the land varies from a low of 4,700 feet on the Little Colorado River to a high of 5,000 feet on Ives Mesa. The Little Colorado River flows from the southeast to the northwest with a large amount of the Chapter within the rivers floodplain. The Painted Desert with its many colored sand dunes lie at the southeast border of the area.

SLOPE

The slope in the area of the Chapter is illustrated in Map 4. The area is relatively flat due to its location in the floodplains of the Little Colorado River. Steeper slopes occur in the Little Painted Desert region on the eastern portion of the Chapter planning area.

GROUND WATER

Tsidi To'ii is in the Little Colorado River Basin where water-bearing rocks consist primarily of sandstone, limestone, and other conglomerate. Several distinct aquifer systems underlie the Little Colorado River Basin; but the C-

aquifer dominates in the area.

Alluvial aquifers underlie many of the washes on the Navajo Nation including the Tsidi To'ii area. The total available volume of these alluvial aquifers has not been evaluated. These aquifers have very limited storage capacity and development potential and are prone to drought. Problems with water quality such as high dissolved solids limit the use. (Navajo Nation Water Resources 2000). Map 5 depicts existing water wells within the Chapter.

The community members strongly expressed the need to protect existing water rights and secure new water rights in any new land acquisitions.

SURFACE WATER

The Chapter is situated in the Little Colorado River Basin within the floodplains of Little Colorado River. Most of the Chapter lies within the Middle Little Colorado River Watershed (Map 6). The far northern part of the Chapter flows into the Jeddito Wash Watershed, A small strip along the northwestern border Chapter boundary flows into the Corn-Oraibi Wash Watershed. Flows from these washes drain to the Little Colorado River. Both washes flow only during periods of heavy rainfall or snow melt and runoff is very sporadic.

Other smaller tributaries of the Little Colorado River drain the C-aquifer; however, the water is lost by evaporation or re-infiltrates before the flow reaches the Little Colorado River. Many of these tributaries are unnamed.

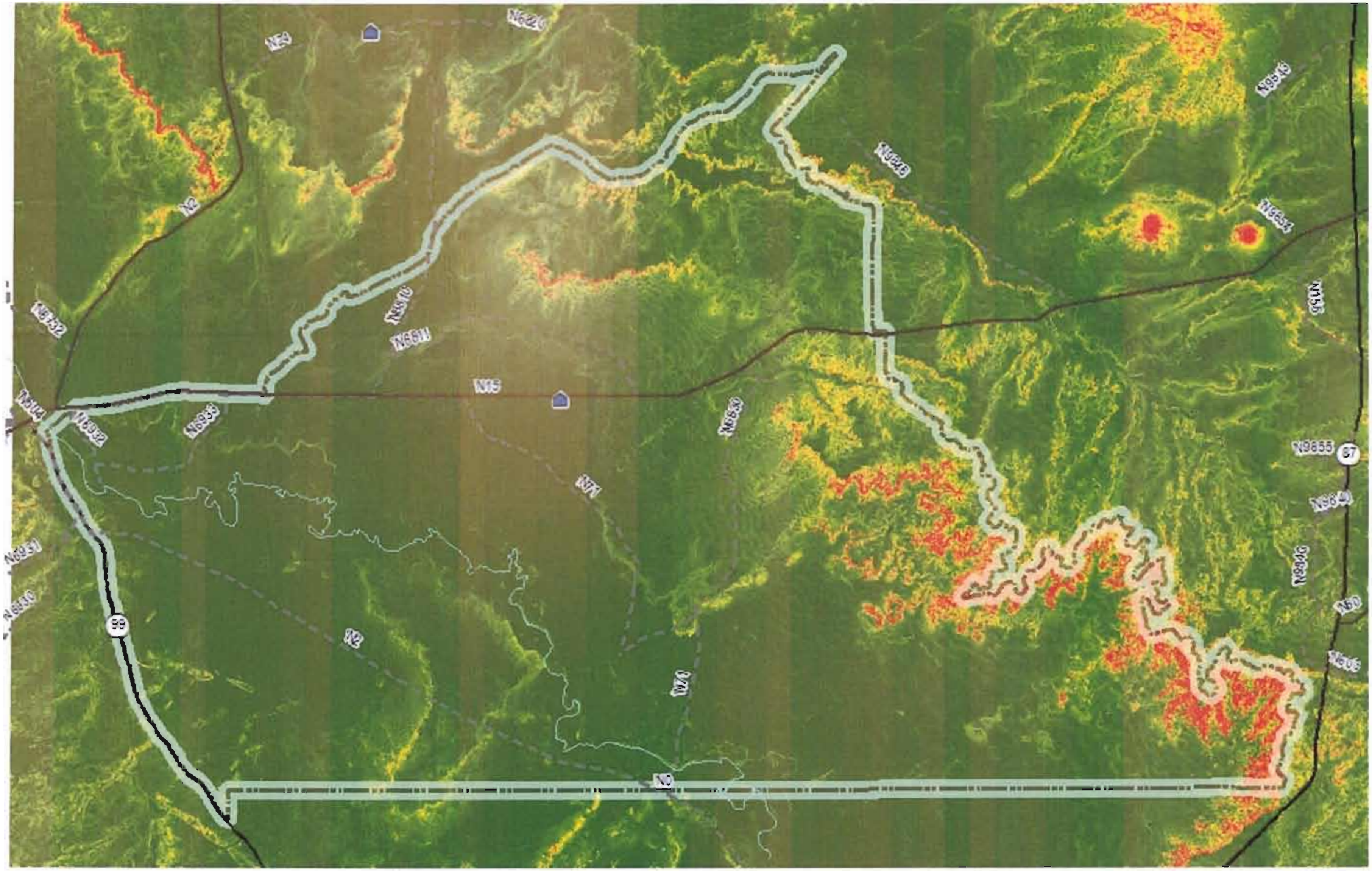
SOIL

General soil descriptions for the planning area are based on a recent survey conducted by the United States Department of Agriculture (USDA), Soil Conservation Service and are only provided for the units contained within the planning area (Table 1). Each map unit on the general soil map is a unique natural landscape (Map 7). Typically, it consists of one or more major soils and some minor associations or inclusions but is named for its major components.

Table 1. Soil Legend	
Map Unit	**Map Unit Name**
6	Claysprings-Huerfano-Tuba complex, 2 to 15 percent slopes
8	Epikom-Leupp complex, 2 to 15 percent slopes
21	Jocity-Joraibi-Navajo-Riverwash complex , 0 to 2 percent slopes
33	Moffat-Monue complex, 1 to 6 percent slopes
35	Navajo-Jocity complex, 1 to 3 percent slopes
38	Persayo-Hanksville complex, 4 to 60 percent slopes
51	Sheppard-Monue complex, 1 to 8 percent slopes
58	Somorent family-Leupp-Bluechief complex, 5 to 60 percent slopes
Source: Soil Survey: Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties	

Soil legend and soil unit descriptions are presented in APPENDIX A. The severity of individual soil limitations for dwellings and small commercial buildings is provided in APPENDIX B. The ratings range from 0.01 (the point at which the soil feature is not a limitation) to 1.00 (the soil feature has the greatest negative impact on the use). The information is not site specific and does not eliminate the need for onsite soil investigation by experienced experts.

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. The soil limitations tables show the degree and kind of soil limitations that affect dwellings and small commercial buildings. Information in these tables are intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.



MAP 4

Slope Analysis

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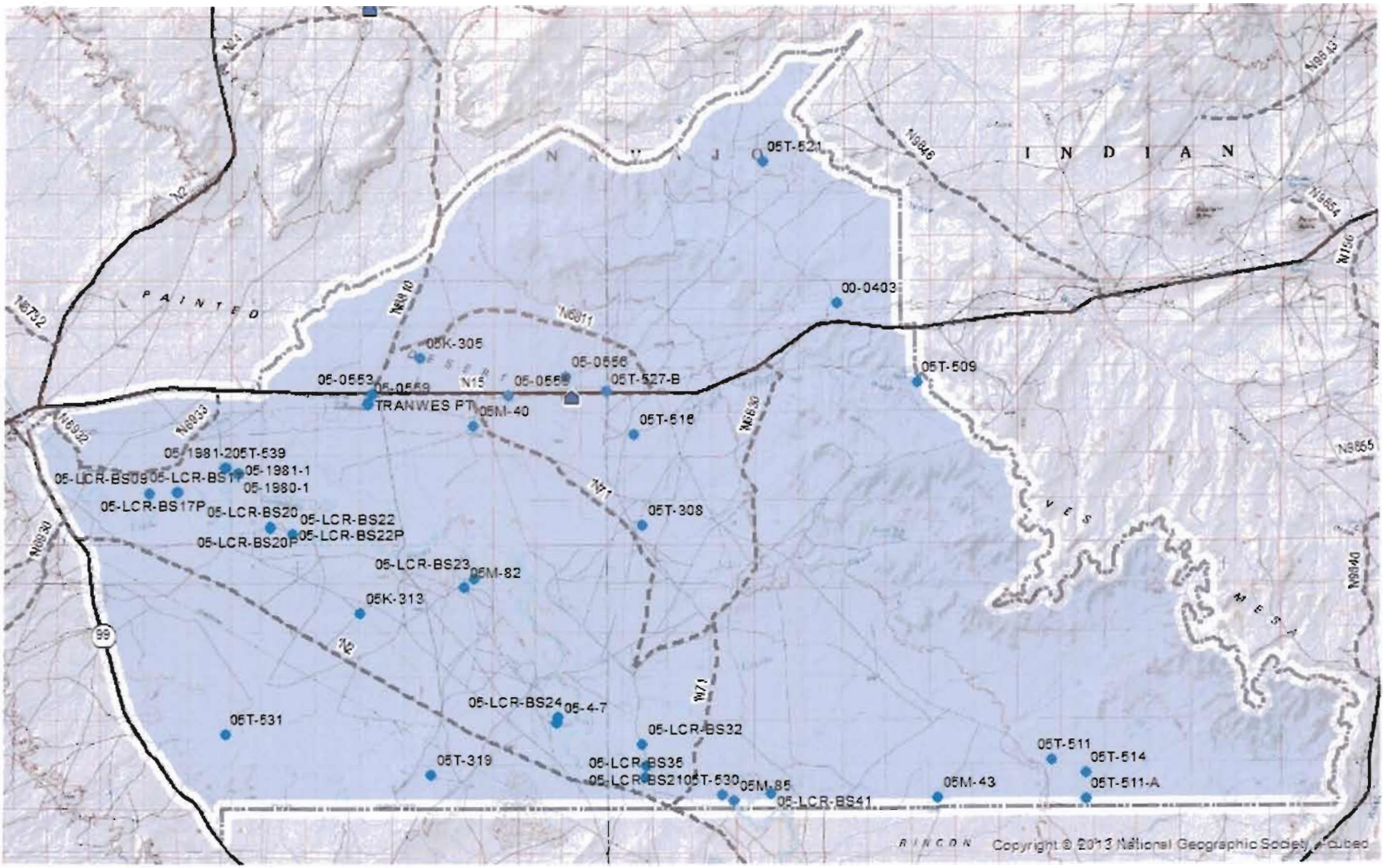
SOURCES: Navajo Land Dept., NDOT

CLAIMER: Tsidi Toii Chapter and/or JJ Clacs & Company shall assume no liability for any errors, omissions, or inaccuracies in the information.



MAP 5

Water Wells

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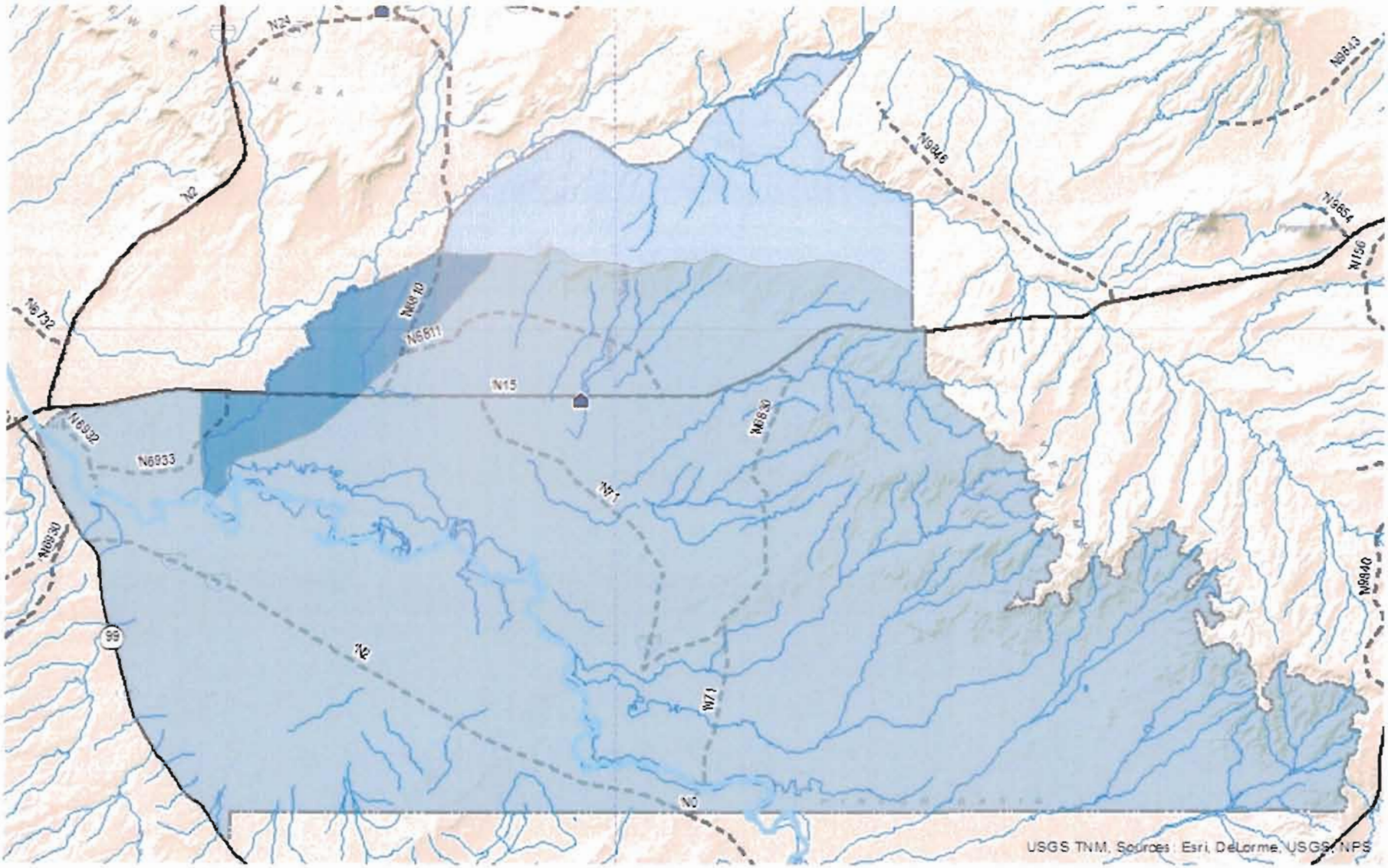
SOURCES: Navajo Land Dept., NDOT



N

0 1 2 4 Miles

Legend

- Chapter House
- Little Colorado River
- Arroyo
- Corn-Oraibi Wash
- Jeddito Wash
- Middle Little Colorado River
- Navajo Route (paved)
- Navajo Route (unpaved)
- State Highway
- Planning Area

MAP 6

Surface Water

TSIDI TOII' CHAPTER LAND USE PLAN
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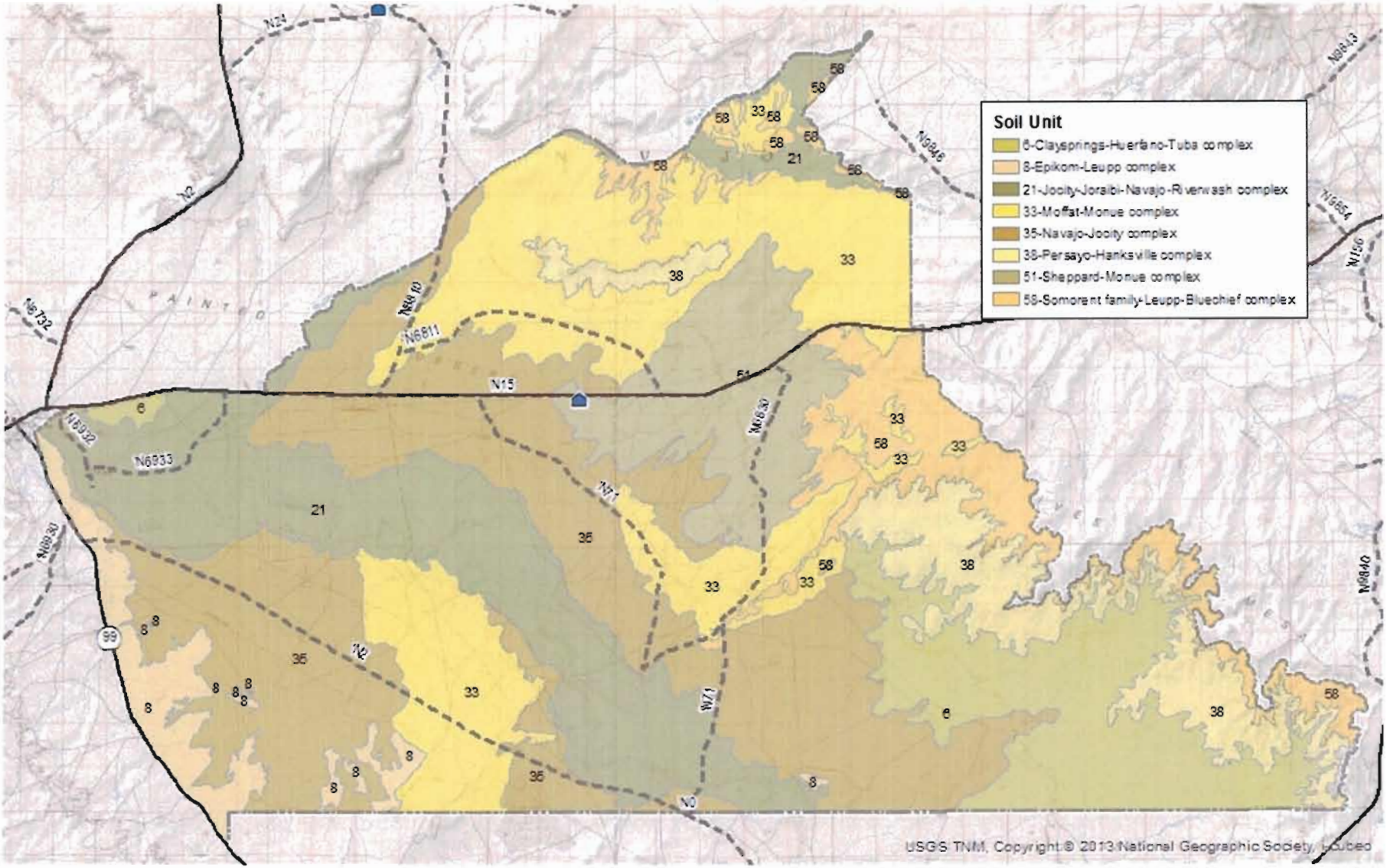
SOURCES: Navajo Land Dept., NDOT



Legend

- Chapter House
- Planning Area
- Navajo Route (paved)
- Navajo Route (unpaved)
- State Highway

N

0 1 2 4 Miles

MAP 7

Soils

TSIDI TOII' CHAPTER LAND USE PLAN
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SOURCES: Navajo Land Dept., NDOT

4. DEMOGRAPHICS, ECONOMIC & HOUSING CHARACTERISTICS

Population growth brings demand for an expanded job base, retail and services business, residential development and essential community services. Changes in the Chapter's population are described below. Data from the SF1 in 2010 and 2000 U.S. Census provided data for population and households. Certain economic and housing data was available from 2008-2012 5-year American Community Survey.

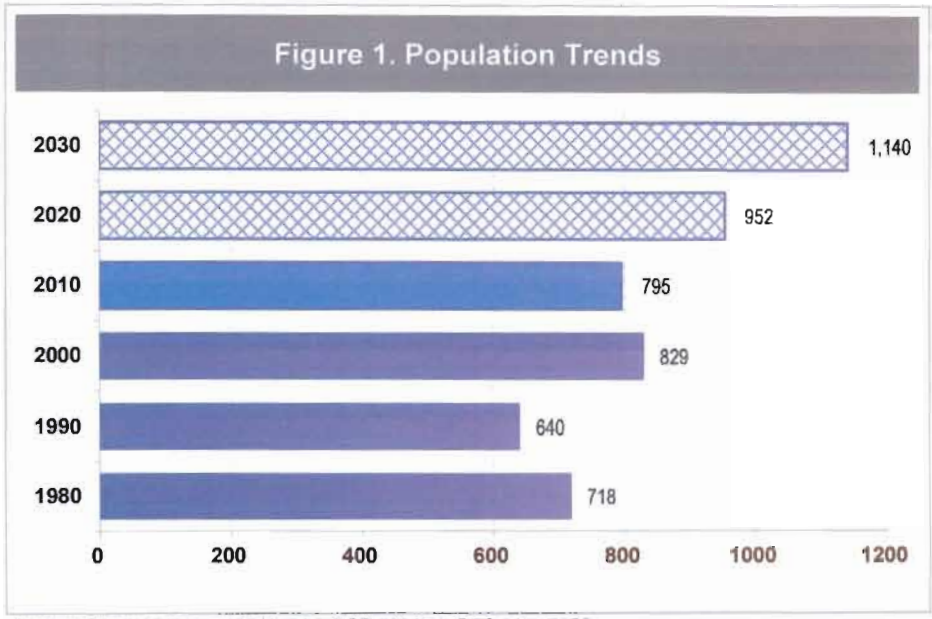
DEMOGRAPHICS

Population Trends and Forecasts

Although, the Chapter's population decreased 4.1 percent from 829 in 2000 to 795 in 2010, it is projected to increase through 2030. This temporary decline may have been partially due to community members not being counted while they were away at work or school.

The same trend occurred from 1980 to 1990, however the reasons for that decrease was attributed to inaccurate census data in 1990 and because many Chapter members may have moved to other areas where they would have blended in as part of a major growth center and enumerated at different chapters. Regardless, the population has grown to almost 800 members in 2010 and is expected to steadily increase (Figure 1). Population projections for 2020

increased to 952 based on a 1.82 percent growth rate recorded by the Navajo Nation Division of Economic Development (2006). At this growth grate projections continue to increase to 1,140 for 2030.



Source: Census 2000 and 2010, SF1; DCD 2004, NNDED 2005-2006.

AGE

Including the male and female populations, the Chapter's median age is 32.3, which is 3.2 years higher than the Navajo Nation, slightly over Coconino County, but lower than Navajo County, State of Arizona and the United States. (Table 2).

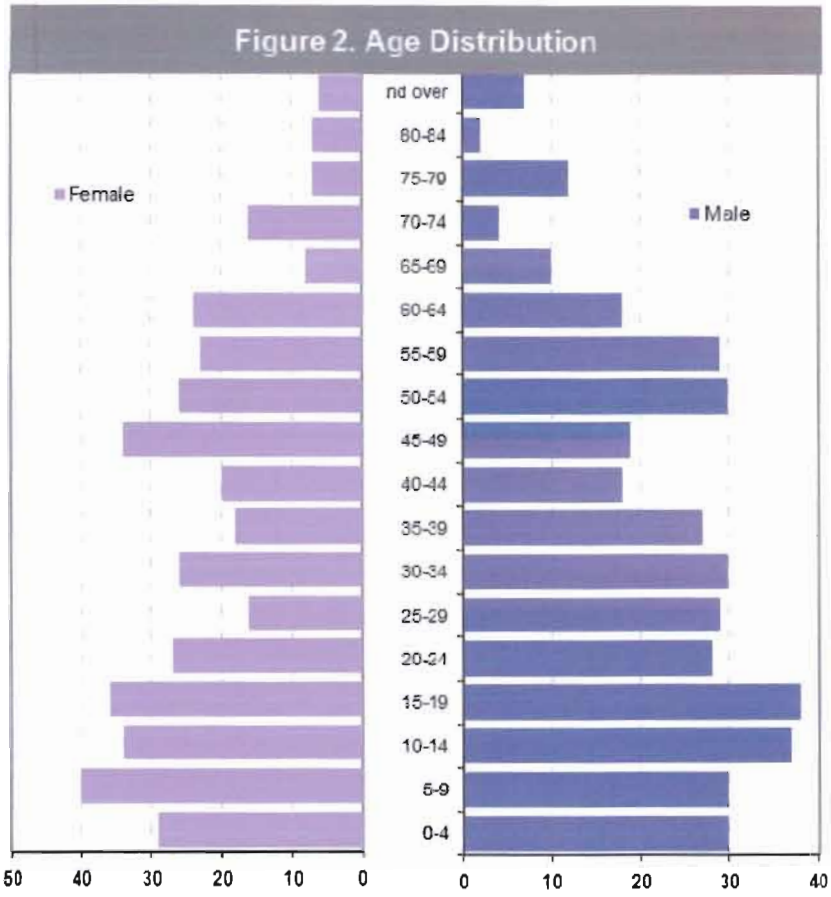
Table 2. Age Characteristics: 2000 & 2010

	2010 School Aged 5-19 (%)	2010 Age 65 or older (%)	2010 Median Age (Years)
United States	20.4	13	37.2
Arizona	21.3	13.8	35.9
Navajo Nation	28.6	9.5	29.1
Tsidi To'ii	27.0	9.9	32.3
Coconino County, AZ	26.8	11.6	31.0
Navajo County, AZ	28.3	10.9	34.7

Source: Census 2000 and 2010, SF1

People 10–19 years of age are the largest sub-population which consists of 18 percent of the membership. The next largest group of members is 50-59 years of age, which accounts for 13 percent of the Chapter's residency. Seniors 60 and older also represent another 13.5 percent of the group followed by young adults

between the age of 20 and 40. The age distribution of females and males follow similar trends. Each exhibit increases between the ages of 10–19 and 50–59 with fairly equal numbers. The figures for age categories 60 and over (Figure 2).



Source: Census 2010, SF1.

HOUSEHOLD SIZE

The average household size for the Chapter is 3.60; the highest among the various geographic regions according to Census 2010 data (Table 3). The next highest is the Navajo Nation at 3.46. The average household size decreases for Coconino and Navajo Counties to 2.69 and 2.95, respectively. Even lower is 2.63 and 2.58, respectively, for Arizona and the United States.

Households by Type

Among the 221 households in the Chapter, 48.4 percent (N=107) of these households have individuals under 18 years. Similarly, among the 221 households, 28.1 percent have individuals 65 years and over.

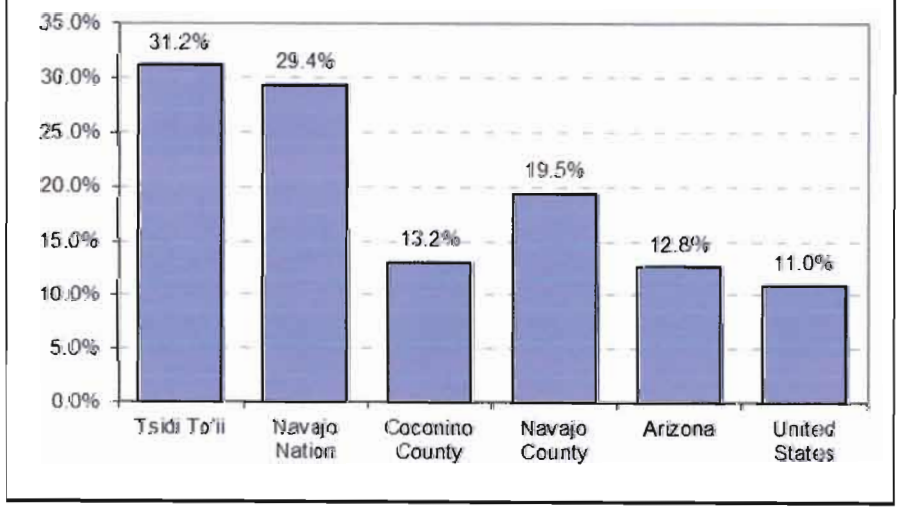
Table 3. Households		
	Households	Average Households Size
United States	116,716,292	2.58
Arizona	2,380,990	2.63
Navajo Nation	49,946	3.46
Coconino County	46,711	2.69
Navajo County	35,658	2.95
Tsidi To'ii Chapter	221	3.60
Source: Census 2010, P17: Average Household Size		

LARGE FAMILIES

Large family households have special housing needs due to the lack of adequately sized and affordably priced homes in the community, which results in overcrowding. Large family households are defined as households with five or more persons. A five-person household would typically need a three-bedroom unit while a seven-person household would need a five to six-bedroom unit.

Within the Chapter, Census 2010 reports large families comprise 31.2 percent of the households (Figure 3). The Chapter's has the highest number of large families with the Navajo Nation very close. Other geographic areas are much lower, ranging from 11 to 19.5 percent.

Figure 3. Large Households



Source: Census 2010, SF1; H13.

ECONOMIC CHARACTERISTICS

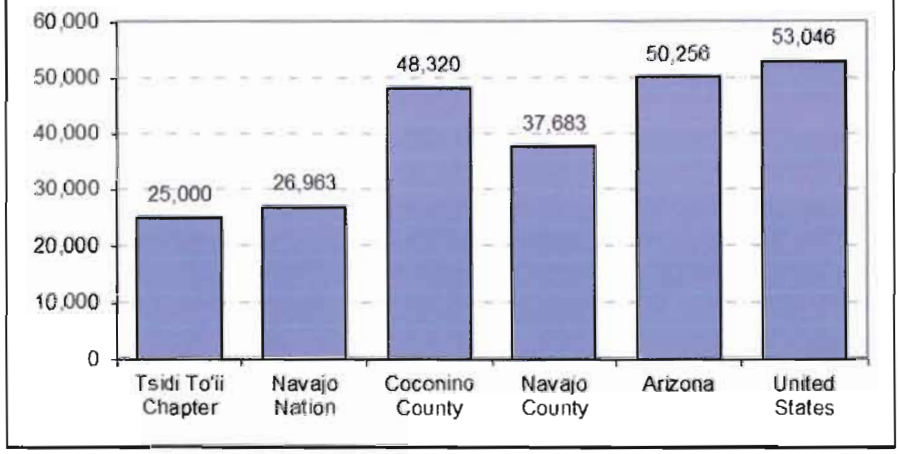
Major Employers

The Singer Day School is the major employer within the Chapter employing approximately 28 employees. The Chapter house and senior center each has three employees. Although Transwestern pipeline employees two people, they are not community members. Most residents work outside of the community. Winslow and Flagstaff are the nearest large towns providing employment opportunities. Nearby communities including Leupp and Dilcon also provide employment to some community members. Major employers throughout these areas include the BIA, Navajo Nation, Indian Health Service (IHS) including Winslow Indian Health Care Center, Navajo Tribal Utility Authority (NTUA), and To Dine Industries and schools in Leupp. The power plant in Joseph City also serve as major regional employer.

Median Income

According to the American Community Survey, the median household income for Chapter residents is $25,000. Compared to other regions, this amount is slightly lower than the Navajo Nation and about 50 percent of the Coconino County's, State of Arizona's and the United States' median income (Figure 4).

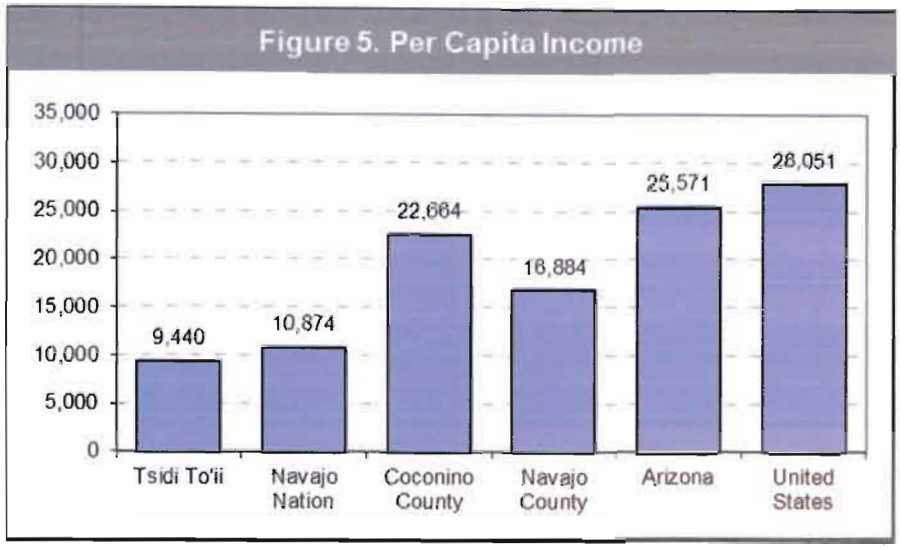
Figure 4. Median Household Income



Source: Census 2008-2012 American Community Survey 5-Year Estimates.

Per Capita Income

The per capita income for the for the Chapter is $9,440, which is slightly lower than the Navajo Nation ($10,847) and much lower than Navajo County ($16,884) as illustrated in Figure 5. The margin continues to significantly increase, (doubling) with the Coconino County, Arizona and United States.



Source: Census 2008-2012 American Community Survey 5-Year Estimates.

Unemployment and Poverty

Unemployment rate on the Navajo Nation has always been high and has steadily been growing. In 2005-2006, the NNDED reported that the unemployment rate for the Navajo Nation was 48.0 percent, much higher than the U.S. Census reported state unemployment rate of 5.0 percent and national unemployment rate of 5.7 percent.

More recently, the 2008-2012 American Community Survey 5-Year Estimates reported a much lower unemployment rate of 24.2 percent for Tsidi To'ii and 20.2 for the Navajo Nation (Table 4). Arizona and United States increased to 9.8 and 9.3 percent, respectively.

Often correlated with high rates of unemployment are high rates of poverty. An estimated 27.7 percent of the total number of families residing in Tsidi To'ii had income in the past 12 months below the poverty level (2008-2012 American Community Survey) as shown in Table 4. Poverty rates are most severe across the broader Navajo Nation Reservation where upwards of 35.2 percent of families are classified as impoverished. Poverty levels are the lowest for Arizona and the United States.

Table 4. Unemployment Rate and Poverty Level		
	Unemployment Rate	Poverty Level
United States	9.3%	10.9%
Arizona	9.8%	12.4%
Navajo Nation	20.2%	35.2%
Tsidi To'ii Chapter	24.2%	27.7%
Coconino County	8.4%	14.4%
Navajo County	17.1%	22.4%
Source: 2008-2012 American Community Survey 5-Year Estimates		

HOUSING CHARACTERISTICS

Housing Count

The number of total housing units within the Chapter decreased from 294 to 266 (-9.5 percent change) as shown in Table 5. The Navajo Nation also showed a drop (-6.9 percent) in housing units. The drop in housing units is possibly due to the census criteria for counting homes. Sheds and shacks used commonly seen on family homesteads on the Navajo Nation were counted as housing units in 2000 while they were excluded in 2010. The counties, state and national areas all showed substantial increases ranging from 13.6 to 29.9 percent.

Table 5. Housing Units			
	2000	2010	Percent Change
United States	115,904,641	131,704,730	13.6%
Arizona	2,189,189	2,844,526	29.9%
Navajo Nation	68,744	63,998	-6.9%
Tsidi To'ii Chapter	294	266	-9.5%
Coconino County	53,443	63,321	18.5%
Navajo County	47,413	56,938	20.1%
Source: Census 2000 and 2010, H1: Housing Units (SF1)			

Housing Type and Median Home Price

The median home values, according to the American Community Survey, for the Chapter and the Navajo Nation are far below all other jurisdictions examined in Table 6. One quarter (25.1 percent) of the housing units are mobile home units in the Chapter. According the areas listed in the table, Navajo County has the next highest percentage of mobile homes at 23.4 percent. Navajo Nation and Coconino County follow with 18.8 and 16.0 percent, respectively.

The trend for the states and the U.S have few mobile homes and considerable higher home values. The median home value significantly increased for Coconino County ($237,200). The Chapter showed the lowest in home value ($55,000). The Chapter's home value is lower than the Navajo Nation and Navajo County.

Table 6. Type of Housing Unit(1) and Median Home Value

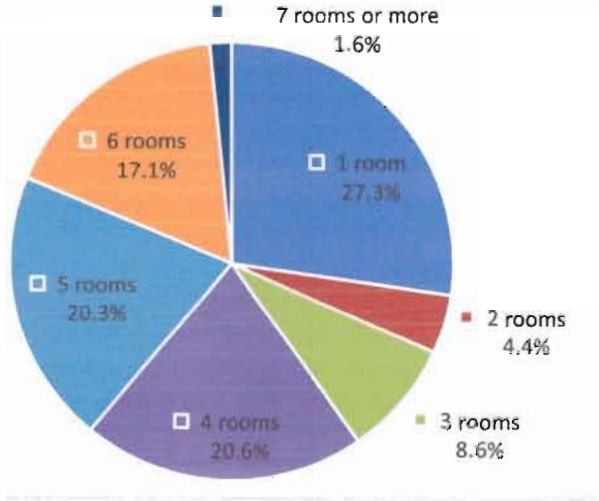
	1-Unit, Detached	Mobile Home Unit	Median Home Value
United States	131,704,730	8,684,414 (6.7%)	$181,400
Arizona	1,794,080 (63.1%)	304,585 (10.7%)	$175,900
Navajo Nation	52,091 (69.6%)	13,096 (18.8%)	$67,900
Tsidi To'ii Chapter	236 (74.9%)	79 (25.1%)	$55,000
Coconino County	38,167 (60.3%)	10,152 (16.0%)	$237,200
Navajo County	38,220 (67.2%)	13,225 (23.4)	$122,000

Source: U.S. Census Bureau, 2008-2012 American Community Survey 5-Year Estimates

(1) A housing unit is a house, an apartment, a mobile home or trailer, a group of rooms, or a single room occupied as separate living quarters, or if vacant, intended for occupancy as separate living quarters.

Figure 6 shows the distribution of the housing units based on number of rooms for Tsidi To'ii Chapter. The majority of the houses within are one-room units followed by homes with either four or five rooms. The homes with six rooms make 17.1 percent of the housing units. The units with seven or more rooms significantly drops to 1.6 percent.

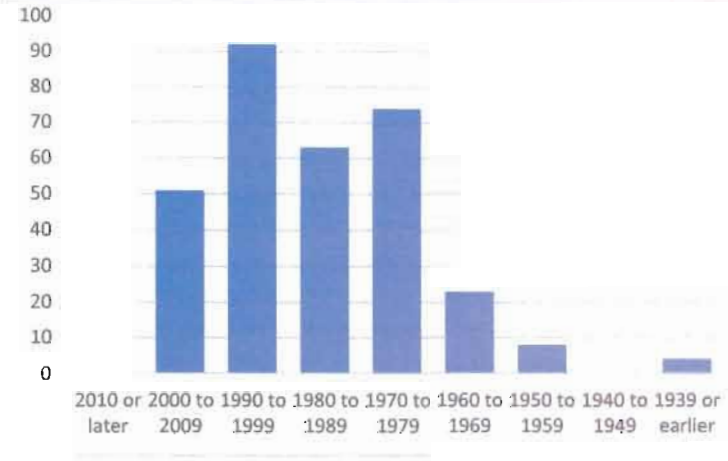
Figure 6. Number of Rooms



Housing Condition

The condition of housing is generally characterized by the age of the homes and the availability of basic facilities, such as plumbing and heating. The majority of houses in the Chapter were built between 1990 to 1999 and some much earlier than that (**Figure 7**). No houses have been built since 2010.

Figure 7. Year Housing Unit Built



Complete plumbing facilities are defined as hot and cold piped water, a bathtub or shower, and a flush toilet. Nearly half (41.1 percent) of the Chapter's homes lack complete plumbing facilities; much higher than all other jurisdictions shown in Table 7. Similarly, one-third (30.6 percent) of the Chapter's homes lack complete kitchen facilities, which is much higher than the other areas listed in the table. Only 10 percent of the housing units in the Chapter have no land line telephone service. The Navajo Nation shows a much higher percentage (26.9 percent) while the counties, state and national rates are significantly lower.

Table 7. Plumbing and Kitchen Facilities and Telephone Service

	Occupied housing units	Lacking complete plumbing facilities	Lacking complete kitchen facilities	No telephone service available
United States	115,226,802	628,104 (0.5%)	1,048,399 (0.9%)	2,879,289 (2.5%)
Arizona	2,357,158	18,258 (0.8%)	22,461 (1.0%)	75,271 (3.2%)
Coconino County	45,718	1,700 (3.7%)	1,511 (3.3%)	1,910 (4.2%)
Navajo County	34,867	2605 (7.5%)	2,062 (5.9%)	2,563 (7.4%)
Navajo Nation	43,425	9,462 (21.8%)	7,767 (17.9%)	11,697 (26.9%)
Tsidi To'ii Chapter	232	96 (41.4%)	71 (30.6%)	24 (10.3%)

Source: U.S. Census Bureau (2000 & 2010)

According to the 2008-2012 American Community Survey 5-Year Estimates, for the Chapter, almost all homes (89.2 percent) rely on wood for heating. Approximately five percent of the units are heated by electric or propane (Table 8).

Table 8. House Heating Fuel

	Propane	Electric	Wood
Tsidi To'ii	5.6%	5.2%	89.2%

5. LAND USE

Establishing the communities existing and future needs is only one step in the land use planning process. Once the needs are identified members must decide where to place new structures. To facilitate this, an inventory of the various property types within the planning area must be conducted. Once again, hands-on community involvement proved successful.

INFRASTRUCTURE

Accessibility

Accessibility is provided by a network of roads including a state highway, county roads Navajo routes and non-system public roads. Many of the non-system public roads extend from the Navajo routes to the outlying scattered residential areas. All of these non-system public roads are unimproved dirt roads in need of improvement and maintenance.

During the work sessions and the goals and objectives public hearing conducted as part of this land use planning project, the community members voiced concern regarding accessibility and the need for improvement and maintenance to all roads. People indicated the roads need to provide all weather access with some areas allowing for pedestrian paths.

Roads

The roads within the Chapter consist of a state highway, Navajo routes and non-

system public roads including old trails (Map 7).This map also shows the proposed road improvements. The state highway is under the jurisdiction of the Arizona Department of Transportation (ADOT).The Navajo routes are part of the Navajo area Bureau of Indian Affairs (BIA) roads system administered by the BIA-Navajo Area Branch of Roads and the Navajo Department of Transportation (NDOT). The non-system roads are not under the jurisdiction of any highway agency (Navajo Nation Transportation Planning Program 1998).

State Highway 99 parallels the western border of the Chapter. It is a two lane paved highway that serves as a primary access road from I-40 to Old Leupp. It is a major highway used by local people as well as tourist and others traveling in the area.

The Navajo routes include Navajo Route 15 (N15), N2, N6810, N6811, N71 and N6830. N15 is a main arterial two-lane paved road extending east and west from Leupp through the Chapter and on to Dilcon. N6810 and N6811 serve the northwestern part of the Chapter. N6810 is a gravel road that connects N15 to Tolani Lake Chapter house. N6811 is a main dirt road that extends north from N15 and ties back into N6810.N2 is another main arterial dirt road running across the southwestern part of the Chapter connecting County Road 7 at the Navajo Reservation boundary to State Highway 99 south of Old Leupp. N71 and N6838 serve the southern part of the Chapter and connect before they cross the Little Colorado River near the southern Chapter boundary.

Many other roads exist within the Chapter and are grouped into the non-system public roads category. These non-system roads extend from the Navajo routes to the outlying scattered residential areas. All of these non-system public roads are unimproved dirt roads in need of improvement and maintenance.

During the work sessions and the public hearing, community members voiced deep concerns regarding accessibility and the need for improvement and maintenance to all roads. People indicated the roads become very muddy and impassable during inclement weather. There are also multiple roads in many areas throughout the Chapter; community members voiced a need to reduce the number of roads and create a roads network that will efficiently serve the community. Another specific request was to realign N6810 so as not to run so close to the residences in the far northwestern part of the Chapter. Another reason to realign the road was to follow an old wagon trail located approximately 200 feet to the west of N6810. Community members say N6810 was supposed to follow this wagon trail, instead the wrong route was provided during construction. The families closest to this route want the road relocated away from their residences, due to dust problems and safety issues. Other requests for road improvements include the far northwestern and northeastern areas of the Chapter. Again, these roads become very muddy during inclement weather. The roads need to provide all weather access with some areas allowing for pedestrian paths.

Utilities

Utilities include electric, water, and sewer in addition to the proposed extensions. NTUA provides electric and water to some areas in the Chapter, while the Transwestern Pipeline Company operates its own water and wastewater services facilities within its 50 acre tract.

Single phase lines extend from Leupp to service customers in the Chapter. For water, NTUA provides water to Tsidi To'ii via a system that serves the town of Leupp and extends to the communities of Tolani Lake, Tsidi To'ii, Ives Mesa and the area north along the road to the Hopi Reservation. Two booster stations and three wells supply water to the users through the system. NTUA maintains a two-cell sewer lagoon located southwest of the NHA housing subdivision next to the Chapter house compound. Septic systems are used where sewer service is not available. Residential septic systems are typically installed by IHS and turned over to the homeowner for maintenance and service. Sanitary services are provided by public and private entities from surrounding towns.

Although two major natural gas transmission lines traverse the Chapter, natural gas is not available to the Chapter. El Paso Natural Gas (EPNG) and Transwestern Pipeline Company have multiple underground high pressure natural gas transmission pipelines paralleling N15.EPNG's facilities are located along the northern side of N15 while Transwestern's facilities are located to the south. Transwestern Pipeline Company also has a compressor station facility approximately 4.5 miles west of the Chapter house. Propane is widely used throughout the Chapter. Propane distributors are available in nearby towns.

At the work sessions, community members strongly expressed a need for power line extensions to both the northern and southern areas of the Chapter. These areas currently do not have any electric service. A power line extension project is currently seeking funding for 37 homes located north of the Chapter house. At the same time, a proposed house-wiring project is awaiting funding. A power line extension proposal was also submitted for community members living in the southeastern area.

Extending water lines to serve all residential areas is also very important to the community. The community members want to ensure that all proposed water line projects in neighboring communities are reviewed to determine if service can be made to the Tsidi To'ii area.

Solar Power

Solar power is provided to approximately 34 homes located north of N15.

Communications

Communications include telephone, radio, television, internet and newspaper. Telephone service through Frontier (Navajo Communications) is available to areas along the south side of N15 from Leupp to Tsidi To'ii. Cellular phone

reception is also available in certain areas. Radio has long been an important form of outside communication. Clear AM radio stations received include KTNN from Window Rock, Arizona and several stations from surrounding areas, including Flagstaff and Winslow. Likewise, clear FM radio stations are received from surrounding areas. Television reception include KNAZ from Flagstaff and several others from Phoenix and Prescott. Satellite television connections are also an option. Newspapers received include the Arizona Daily Sun from Flagstaff, Winslow Mail and Nava-Hopi Observer from Winslow, and the Navajo Times from Window Rock. Internet service is available via modem and satellite connections.

LAND USE CATEGORIES AND PLAN DESCRIPTIONS

The land use categories reflect the goals and objectives and provide guidance for determining appropriate land uses. The following descriptions provide information about each land use element. The land use plan map showing future land uses is presented in Map 8. The map indicates the intended predominate future function, density and characteristic use of land. It does not reflect the intended zoning of individual areas, but rather generalize desired future land uses. The map suggests an overall mix of densities and should not be read as tying individual projects to density designations. To achieve appropriate balance among the goals promoted by the land use plan flexibility in specific decisions is required.

In addition to the planning area, the Chapter identified the possibility of acquiring more land to the south in the Winslow land tract and Turquoise Ranch.

Residential Housing

Residential land use includes scattered housing and subdivisions. Scattered housing sites typically comprise of one acre homesites. Multiple scattered housing sites generally close together make up a cluster. Subdivisions on the other hand, provide a tighter housing arrangement with more houses per acre. Subdivisions include mobile home parks, duplex or multiplex units, town houses and apartments. The subdivisions on the reservation are most likely owned and operated by the BIA,IHS, or NHA.

Existing Residential Housing

Housing in the Chapter includes both scattered housing and subdivisions. Individual residential housing is scattered throughout the area. The majority of the residential housing clusters are located south of N15 and northeast of the Little Colorado River. Several families also live north of N15, along the east side of Highway 99 in the far western portion of the Chapter as well as the area south of the Little Colorado River. There is one subdivision, which is located next the current Chapter house compound.

Proposed Residential Housing

A priority for the land use plan was to identify locations for new housing within

the Chapter. Housing is a priority of the community, with the main concern being that there is adequate, safe housing within the community that is affordable for families to be able to live near each other. Thus the primary emphasis of residential housing would be the cluster of family units, widely spread from other clusters. A secondary emphasis would be housing tracts near the chapter house, N2 and Highway 99 junction, and at the proposed school tract.

Community Facilities

This category designates public land uses, including schools, colleges, libraries, fire stations, police stations, convention centers, museums, governmental offices, utility stations, and hospitals. Community facilities provide a valuable service to the community, offering services to benefit and serve the entire Chapter. Typically, these facilities on the Navajo Nation are public amenities, usually operated and maintained by the Navajo Nation and include places like the Chapter house, which provides a central location for meetings, meals and community gatherings. Other community facilities may include health services facilities, police stations and fire departments. In addition, schools are an important community facility to have within the Chapter, providing children of the community with a suitable and well-located educational facility.

Existing Community Facilities

There are three different areas within the Chapter where community facilities are located. The Chapter house compound comprises 16 acres and is located along N15; this is a central location with access to all community members. There is a senior citizen's center within the Chapter house. Little Singer Community School provides services for children grades kindergarten to 8th and is located just south of the Chapter house along N71. The Old Chapter house compound comprises 10 acres and is located west of the current Chapter house near the Transwestern pipeline tract. The existing building on the old Chapter house compound is used as a storage building.

Proposed Community Facilities

The community desires to provide more facilities and services for the community and to keep these facilities located in a centralized, easily accessible location. The primary areas designated for community facilities near the Chapter house, in the proposed school tract and at the N2-Highway 99 junction. Locating community facilities in these areas are easily accessible.

The community has expressed a desire to expand on the existing facilities and services for the elderly population. The community also plans to expand facilities for the youth population by providing a multipurpose building that would accommodate a youth center, Boys and Girls Club, and sports complex. In addition, the community would like to provide facilities for a day care center and preschool.

COMMERCIAL

The commercial category is established to provide areas in which business may be conducted, goods sold and distributed, and services rendered, and to provide for public activities and other activities which support retail and business functions. These may include such uses as grocery stores, trading posts or even areas for local vendors and artists to sell their wares to tourists. This land use is important to the economic development of the Chapter as it provides places for businesses. Businesses which provide jobs and create an economic base and potential revenue, for the Chapter through sales tax or business leases. Local businesses also let community residents spend money "locally" rather than in communities further away. Commercial land use does not include more industrial business such as heavy manufacturing or mining. Providing areas within the land use plan for commercial development provides the opportunity for new commercial amenities to be introduced into the community.

Existing Commercial Development

Currently, there are no available commercial establishments within the Chapter. Residence travel to nearby towns for goods and services.

Proposed Commercial Development

The community has expressed a desire to encourage economic development adjacent to the Chapter house compound and at the N2-Highway 99 junction. The community would benefit from a visitor's center with an area for local artisans to sell their arts and crafts. The development of retail businesses such as an auto parts store, a laundromat, a grocery store, cafes, fast food establishments, and a gas station are proposed for economic expansion.

INDUSTRIAL

Industrial development is another way to enhance economic development. Industrial development typically facilitates businesses connected with the production, manufacture, or construction of a product or a range of products. Typical industrial development may include mining, manufacturing or warehousing. Industrial land use may also include uses needed for providing public utilities, such as water treatment, power lines or power plants, and other utilities. Industrial development provides jobs for the Chapter and can bring revenue from user fees, sales tax, or other mechanisms.

Existing Industrial Development

There are two industrial developments within the Chapter, the Transwestern and El Paso Natural Gas (EPNG) pipelines. Both pipelines run east to west paralleling N15.Transwestern Compressor Station is located west of the Chapter along N15.

Proposed Industrial Development

The community members have expressed a desire to encourage industrial development that supports sound development of local resources while reducing

the impact on the environment. This can be achieved within the community by allowing for the development of a sand and gravel plant, and by encouraging development of local resources such as a rock quarry.

Recreation

Recreational facilities provide places for play, relaxation and fitness. The areas designated as recreation on this plan are intended to be more structured recreation facilities than those provided by trails in the open space. These facilities may include both indoor and outdoor facilities. Outdoor facilities may include parks, playgrounds, ball fields, rodeo or equestrian facilities, or golf courses ,and may include hiking and biking trails Indoor facilities may include gymnasiums, fitness centers, or a multi-use recreation center which may include several recreational elements.

Existing Recreation

There are no public recreational facilities within the Chapter.

Proposed Recreation

The community members expressed the desire to expand recreational opportunities to be enjoyed by community members and tourists alike. The community has expressed a desire to establish recreational facilities such as a bowling alley, camp ground and RV park. The community has also expressed a desire to establish hiking, biking and walking trails. These trails would run from the Painted Desert to the Little Colorado River.

Open Space

Areas designated as open space are those areas that the community has identified as having special significance, and are areas that should be preserved in their natural state without development. Open space, especially in an area where there is so much existing open space, ensure significant areas are protected and preserved for the future. Well-planned open space enhances quality of life. Types of open space include natural, functional and restored. Natural areas typically are open spaces with natural vegetation or other features that has not been altered by people. Functional open spaces include recreational areas such as parks and ball fields. Restored areas are those areas that have been degraded, but can be restored to a condition that existed sometime in the past. Riparian habitat is one example of a type of habitat that can be restored, creating quality open space.

Existing Open Space

There are no established or officially designated areas for open space in the Chapter.

Proposed Open Space

Because of the natural beauty, the community members recognize the importance of preserving areas of special significance from development. The community members also recognize the potential to attract tourists by offering them the

opportunity to enjoy the mountain and valley scenery this area has to offer. By preserving areas as open space, the community will preserve this valuable resource, while also respecting the natural beauty and importance of the natural land.

The community has expressed a desire to preserve the integrity of cultural and traditional resources, including archaeological and historic sites as well as the traditional ways of life. These include the Painted Desert, the river area, and traditional sensitive areas. It should also be noted that those areas designated as ceremonial or cultural sites should also remain undeveloped and should be offered the same respect and protection as open space sites.

Grazing

The suitability of land for grazing is dependent on various factors, including the amount of annual precipitation, soil conditions, and the degree of slope on the land. The type of vegetation that will grow on the land is also affected by these factors. Land where the degree of slope is steep is suitable for grazing and/or open space. As open space areas, grazing lands possess scenic values except when overgrazed. Areas designated for grazing should remain primarily undeveloped to ensure that grazing rights in these areas are protected. The grazing areas should be regulated by a grazing management plan. Areas designated for grazing should not limit the use of these areas for other non-development related activities like recreation or hunting, however the primary managed land use on this land is grazing.

Traditionally home sites and family clusters of homes are located within a grazing lease area. This type of home site development is compatible with areas designated for grazing.

Existing Grazing

Ranching and sheepherding have been a major occupation and, more importantly, a way of life in the Chapter for many years. A majority of the land in the Chapter are now grazed. Ranching and sheepherding are primary economic activities. They are also customs that date back many years and are well embedded in the community's cultural heritage. Grazing lands exist throughout the Chapter and need to be protected from encroaching developments.

There is currently one range management unit (RMU) 5-505 and two proposed range units. RMU 5-505 is located west of the Chapter house and a fence surrounds the area. The area north of N15 is designated as RMU and has been fenced. The area in the northwestern part of the community is also proposed as a RMU, however funding has not been secured for fencing. The regulations associated with operating a RMU are maintained by BIA. The community feels very strongly about learning these regulations.

Proposed Grazing

The community voiced a desire to renew livestock and farming activities. The community would like to revitalize livestock ownership and incorporate appropriate range and herd management techniques. The community encourages and supports the development of RMUs. A suggestion was to develop a community grazing management plan that includes the regulations associated with operating a RMU and what the Chapter's role is as well as the community member's role.

The community members also expressed a need to provide water for livestock. The Chapter should look into the possibility of accessing the Newberry waterline project in Leupp.

Farming

Farming is another important way of life for some community members, though on a smaller scale than grazing. Land that has been designated for farming should be used for raising crops, either for subsistence or for market. Soils and location are prime factors in determining the suitability of land for farming. Water is also a serious consideration and limits the amount of land capable of being brought into cultivation. Farming land is typically relatively flat with healthy, rich soils, and near a natural or irrigated water source.

Existing Farming

The cultivation of land for crops also has a long history in the Chapter. Crops grown for food or to provide feed for livestock are the major farming enterprises in the area. Today, there is an 80 acre farm in the western portion of the Chapter on the north side of the Little Colorado River. Additionally, there are a few small family farm plots scattered throughout the community.

Proposed Farming

The community members have expressed a desire to revive former successful agricultural activities including the 80 acre tract. An irrigation system utilizing the Little Colorado River is proposed.

The source for farm water has been identified by community members as a concern. The community members strongly voice the possibility of utilizing water from the Little Colorado River to support their efforts in agricultural development.

Culturally Significan Sites

Culturally significant areas include prehistoric and historic sites, as well as traditional cultural objects, structures, locations or natural features. Cultural resource compliance on the Navajo Nation is mandated by the National Environmental Policy Act and by the National Historic Preservation Act (Sections 106 and 110).

The National Environmental Policy Act of 1969 (NEPA) requires environmental impact statements on cultural as well as natural resources affected by proposed

projects. The National Historic Preservation Act of 1966 (NHPA), as amended, is one of the most important pieces of cultural resource legislation passed by Congress (Tucker 2000). This act provides protection and preservation of significant cultural properties.

Other relevant cultural resource legislation includes the Antiquities Act of 1906,the Historic Sites Act of 1935, the Archaeological Resource Protection Act of 1979 (ARPA), the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA),and Executive Order 13007 (Indian Sacred Sites [1996]).

Existing Culturally Significant Sites

Previously surveyed and recorded cultural sites are scattered throughout the Chapter. Some of the sites in the Chapter include the presence of numerous artifact types and/or architecture that may indicate subsurface components might be present. The locations of individual sites are not shown on the land use plan to protect these areas.

Proposed Culturally Significant Sites

Additional existing sites may be uncovered or discovered in the future. As mandated by the National Historic Preservation Act, a cultural resource inventory is required for all proposed development. The cultural resource inventory is conducted to evaluate the potential effect of the proposed development on any significant cultural properties.

Traditionally Sensitive Sites

Traditionally sensitive sites are defined as those areas that have been designated by community members as areas that are either used for ceremonies, or have some traditional significance. These areas may be areas where herbs are gathered, or they may be areas that hold other historic or traditional significance for members of the community. Traditionally sensitive sites are protected under the NHPA, NAGPRA and Executive Order 13007.

Existing Traditionally Sensitive Sites

Traditionally sensitive sites are scattered throughout the Chapter. These types of sites are typically ceremonial sites and herb gathering areas. The region shown on the land use plan map is not likely to be the only area in the Chapter where ceremonies are held and herbs are gathered; however, all traditionally sensitive sites should be respected whether or not they are shown on the land use plan map.

Proposed Traditionally Sensitive Sites

The community voiced a desire to preserve and protect these lands from encroachment by other uses.

Burial Sites

Burial sites are protected under the NHPA, NAGPRA and Executive Order

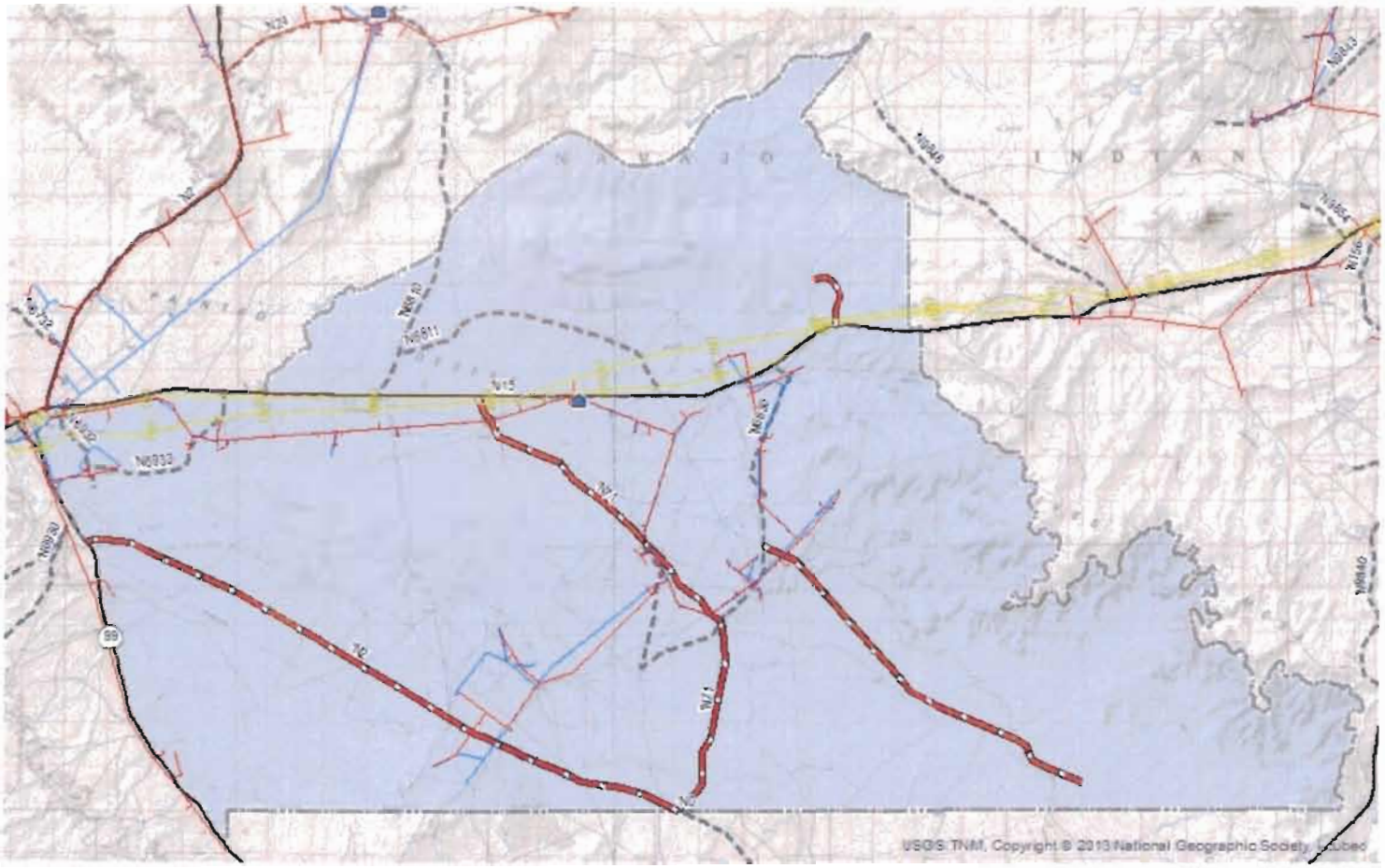
13007.

Existing Burial Sites

There are private burial plots scattered throughout the Chapter. Additionally, many potential unmarked grave sites may be present and should remain undisturbed. The local community members are aware of the locations of these burial sites and have respected them. They are not located on the land use plan map in an attempt to further protect these sites. A community cemetery is located along N8084.

Proposed Burial Sites

One goal of this plan is to establish a community cemetery, however a site was not identified. The community members agreed to identify the location at a later date.

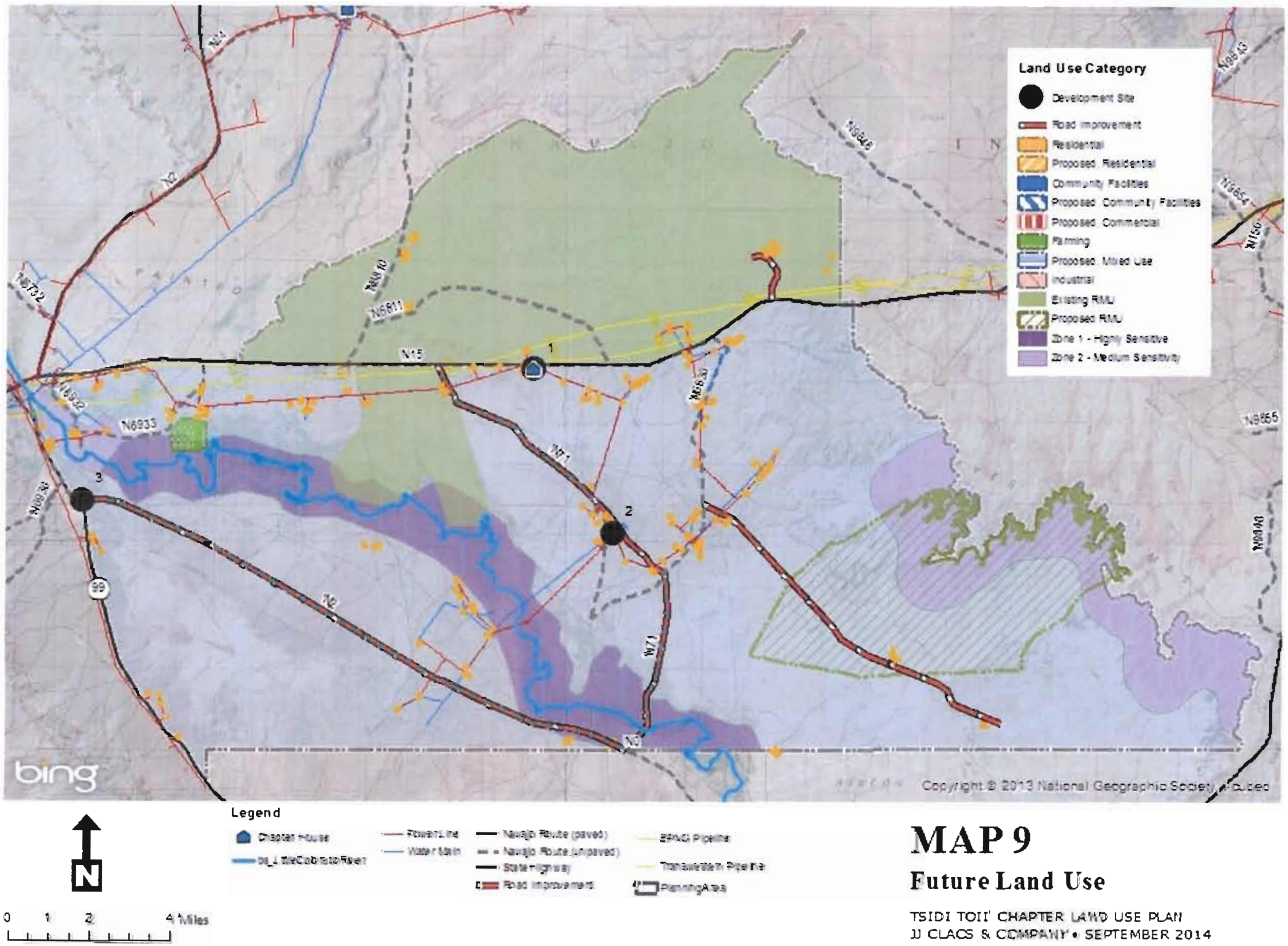


MAP 8

Roads, Utilities & Pipelines

TSIDI TOII' CHAPTER LAND USE PLAN
JJ CLACS & COMPANY • SEPTEMBER 2014

SOURCES: Navajo Land Dept., NDOT



MAP 9

Future Land Use

TSIDI TOII' CHAPTER LAND USE PLAN
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SOURCES: Navajo Land Dept., NDOT

DISCLAIMER: Tsidi Toii' Chapter and/or JJ Clacs & Company shall assume no liability for any errors, omissions, or inaccuracies in the information.

N

0 80 160 320 Feet

Legend

- Planning Area
- Navajo Route (paved)
- Navajo Route (unpaved)
- State Highway
- Power Line
- Water Main
- Sewer
- Existing, Community Facilities
- Existing, Residential
- Proposed, Residential
- Proposed, Community Facilities
- Proposed, Mixed Use

DISCLAIMER: Tsidi Toii' Chapter and/or JJ Claos & Company shall assume no liability for any errors, omissions, or inaccuracies in the information.

MAP 10

Chapter Site Development

TSIDI TOII' CHAPTER LAND USE PLAN
JJ CLAOS & COMPANY • SEPTEMBER 2014

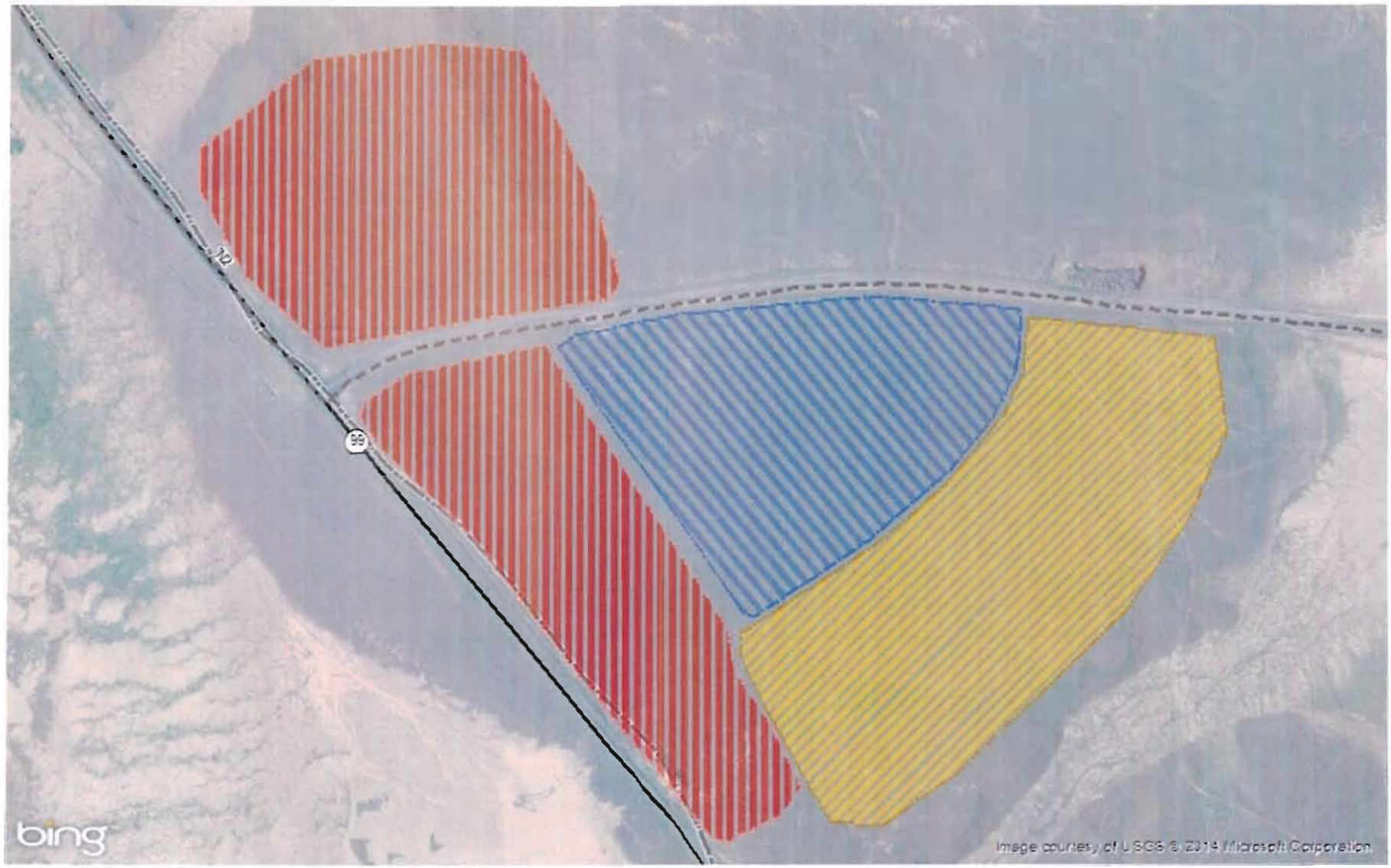
SOURCES: Navajo Land Dept., NDOT

MAP 11

School Site Development

TSIDI TOH' CHAPTER LAND USE PLAN
JJ CLACS & COMPANY • SEPTEMBER 2014

SOURCES: Navajo Land Dept., WDOT



N

0 110 220 440 Feet

Legend

- Planning Area
- Navajo Route (paved)
- Navajo Route (unpaved)
- State Highway
- Power Line
- Water Main
- Sewer
- Proposed, Commercial
- Proposed, Residential
- Proposed, Community Facilities

MAP 12

Highway 99 - N2 Development

TSIDI TOII' CHAPTER LAND USE PLAN
JJ CLACS & COMPANY • SEPTEMBER 2014

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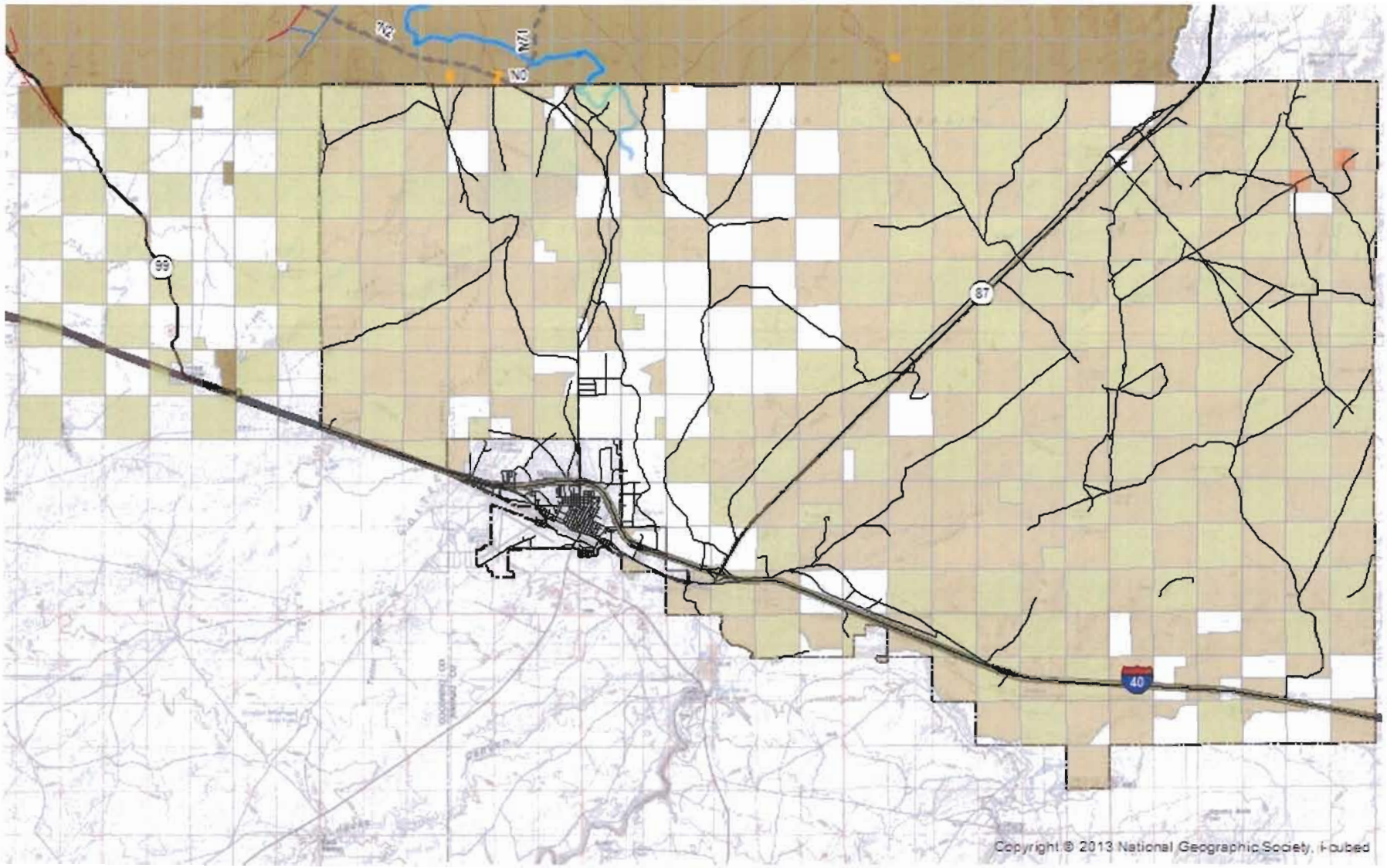
SOURCES: Navajo Land Dept., NDOT



MAP 13

Winslow Tract & Turqoise Ranch

TSIDI TOII' CHAPTER LAND USE PLAN
JJ CLACS & COMPANY • SEPTEMBER 2014

DISCLAIMER: Tsidi Toii' Chapter and/or JJ Clacs & Company shall assume no liability for any errors, omissions, or inaccuracies in the information.

SOURCES: Navajo Land Dept., NDOT

6. CAPITAL IMPROVEMENT

Capital projects are planned for and built over a period of several years. They are important to the implementation of the land use plan.

NAVAJO ICIP

Under the Navajo Nation, the Infrastructure and Capital Improvement Plan (ICIP) is a list of priority projects showing the estimated costs and source of revenue and funding for selected projects over a six year period. Eligible projects pursuant to the Navajo Nation Infrastructure and Capital Improvement Guidelines and Procedures include:

- The construction, renovation(s) repair or expansion of public facilities. i.e., Chapter House, Senior Citizens Centers, Headstart/Preschool buildings, Recreation facilities, Cemetaries, Fire Stations, Solid Waste facilities, Airports, Streets & Lights, Bridges, Warehouses and Storage buildings.
- Major equipment purchases such as road maintenance equipment, farm equipment, fire-fighting equipment, vehicles, school playground equipment, office equipment and furnishings that support new buildings.

- Acquisitions of manufactured buildings, aircraft, land and/or lease of thereof.
- The cost for the development of infrastructure such as electric power line, water line, sewer lagoons, waste water treatment facilities, communication and transportation systems, roads and parking lots, Erosion Control Systems, and Irrigation Systems.
- The installation of bathroom additions and electrical housewiring required as a precedent to planned or current waterline extensions or electrical powerline extensions for the same project.

TSIDI TO'II ICIP

Tsidi To'ii's ICIP Plan 2016-2021 covers projects for Fiscal Year 2015 thru 2019. A project summary is presented in Table 9.

Table 9. Infrastructure Capital Improvement Plan 2016 - 2021

PROJECT SUMMARY

Project Title	Rank	Category	Funding Sources	2016	2017	2018	2019	2020	2021	Total
North Birdsprings Power Line Extension	2015 - 1	Utilities-- Power - Linear	AML CDBG Chapter Land Claims	1,746,362	0	0	0	0	0	1,746,362
Bathroom Additions for North Side Residence	2016 - 2	Housing - Block	CDBG NN CIP General Funds	44,000	43,500	0	0	0	0	87,500
D/C Birdsprings Sewer Lagoon	2017 - 4	Water - Block	IHS NN CIP General Funds	315,000	0	0	0	0	0	315,000
P/D/C/E Birdsprings Multi-purpose Building	2018 - 3	Building-Community	CDBG NN CIP General Funds	635,000	2,500,000	0	0	0	0	3,135,000
Renvotion Chapter House	2019 - 5	Building-Community	AML NN CIP General Funds Chapter CIP Funds	600,000	0	0	0	0	0	600,000
			TOTAL	$3,340,362	$2,543,500	$0	$0	$0	$0	$5,883,862

7. PLAN ADMINISTRATION

PLANNING PROCESS

Several systematic steps used to identify and analyze land uses (Figure 8). The process begins with a Community Participation Plan followed by the establishment of goals and objectives. Each step is briefly described here. More in depth discussions are presented in later sections.

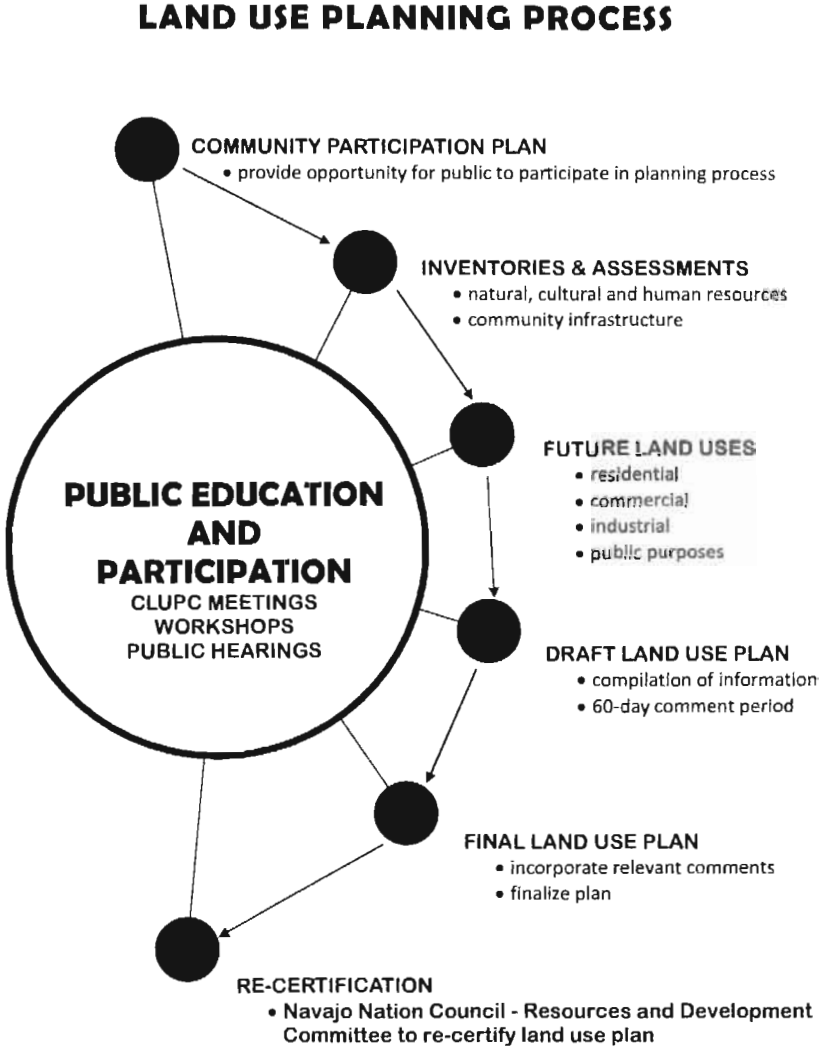


FIGURE 8
PLANNING PROCESS

COMMUNITY PARTICIPATION PLAN

The Community Participation Plan developed by the consultants with input from the CLUPC details the land use planning approach, community education process and schedule of public events for the project. Its purpose is to ensure the community members have every opportunity to participate in the planning process. Community members were given the opportunity to articulate their vision of the future character and form of their community in every step of the process. The CLUPC formally adopted the Community Participation Plan via a committee vote at a CLUPC meeting in May 2014.

COMMUNITY EDUCATION PROCESS

This section delineates the community education process. The CLUPC and consultants conducted public meetings to educate the community on the status of the project at various stages as well as receive feedback about potential development sites, prioritization and the goals and objectives among other things. Three types of public meetings were used. Meetings were opened to the public and local community members were especially encouraged and urged to attend and participate. Below are further descriptions of each type of meeting.

Public Meetings: Public meetings included CLUPC meetings, work sessions and public hearings. Each meeting has a different objective. Meetings were opened to the public and local community members were specifically encouraged to attend and participate.

CLUPC Meetings: The CLUPC meetings were held at a minimum of once per month. The CLUPC conducted and organized these meetings in accordance with its plan of operation. The consultants provided updates and direction for the project each month.

Work Sessions: The consultants facilitated three work sessions during the term of this project. The results of each work session were documented:

- The first work session focused on the determination of the goals and objectives.
- The next work session focused on the identification of proposed housing sites as well as community and public facilities sites and other potential land uses. In essence, the Chapter begin building their own general land use plan. Site visits were also made to select proposed housing locations.
- The last work session focused on the review and prioritization of the sites selected and involved.

Public Hearing: One public hearings was conducted by the CLUPC with the support of the consultants. This public hearing provided the opportunity to obtain views and comments of community members.

SCHEDULE OF PUBLIC EVENTS

The consultants developed a timeline delineating tasks, meeting dates and time periods (Appendix C). The CLUPC meetings were scheduled at a minimum of once per month. The meeting dates were determined at the previous meeting.

METHODS OF NOTIFICATION

Every effort was made to inform community members about the public events. Adequate notification was given before all meetings, work sessions and public hearings. The CLUPC was responsible for the notifications. Methods of notification are discussed below.

Flyers: The consultants designed a community notice flyer to kick off the public outreach program. The flyer contained pertinent information about the project and encourage the public to get involved. The CLUPC then distributed and posted copies of the flyer throughout the community. The central posting place was in the Chapter house on the land use planning bulletin board.

The consultants also designed subsequent flyers for the work sessions and public hearings. These flyers contained pertinent information about the work sessions or public hearings and encouraged the public to get involved. The CLUPC distributed and posted copies of the flyer throughout the community. The central posting place was in the Chapter house on the land use planning bulletin board.

Land Use Planning Bulletin Board: A bulletin board was made specifically for this project and located in the Chapter house. Flyers, goals and objectives, photos, and draft maps were posted on this bulletin board.

Word of Mouth: This method was very informal. Whenever possible, CLUPC members passed the word around about the project and they encouraged community members to attend. While informal, this method of communication was effective. Whenever possible, CLUPC members passed the word around about the project as they encourage community members to attend. Further, CLUPC members tried to bring "buddies" (community members) to the work sessions and public hearings.

PLAN AMENDMENTS AND UPDATES

The land use plan constitutes a land use policy statement that was created based upon public input, needs of the community, existing conditions, man-made and natural constraints and environmentally sensitive lands. Over a period of time, any of these variables are subject to change. Consequently, the land use plan must periodically be reviewed and amended if it is to remain effective.

Amendments to the land use plan should never be allowed to occur in a haphazard manner. Amendments to the land use plan should only occur after careful review of the request, finding of facts in support of the amendment, and holding public hearing(s). The process that guided the adoption of the land use plan should be followed for all amendments, including public hearings, etc. All decisions should be based on the adopted visions, guiding principles, goals and objectives. The term amendment applies to both text and map revisions.

CONSIDERATIONS

The information that should be required before making a decision on an amendment should include, but is not limited to:

- What is the request and who will be impacted (positively and negatively) by the amendment?
- Is the request supported by the recommendations of the land use plan when all visions, goals, objectives, and other policies are evaluated?
- Insure that the amendment is not detrimental to the Chapter as a whole.
- Amendments to the land use plan may be initiated or requested by the Chapter officials, or requested by a community member on a regularly scheduled basis. However, the CLUPC and the Chapter officials may, by an affirmative vote, direct the initiation of a plan amendment process at any time if an opportunity for the Chapter appears to exist.
- Conduct a yearly monitoring review of the land use plan to evaluate:
  - if the land use plan is adequately addressing growth in the community; and,
  - if policies are being implemented ,and development is occurring as directed in the land use elements.

PROCESS FOR AMENDING THE LAND USE PLAN

Requests for amendments should be in writing to the attention of the Chapter and the CLUPC. Each request should be evaluated by the CLUPC and presented to the Chapter at an advertised public hearing. The CLUPC will hear comments from the public on the issue, and then make a recommendation for or against approval of the amendment to the Chapter officials. The amendment request

should be officially adopted or rejected at a duly called Chapter meeting. If the amendment is adopted, a formal amendment shall be added to plan and included with the land use plan document. Upon LGA certification of the land use plan, all amendments require Resources and Development Committee (RDC) approval. Additionally, the land use plan shall be reviewed every five years. To ensure and preserve the integrity of the land use plan that was adopted through significant public input and participation, it is extremely important that this process be followed for each amendment to the land use plan.

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APPENDIX A

SOIL LEGEND AND SOIL UNIT DESCRIPTIONS

Map Unit Legend

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

Map symbol	Map unit name
6	Claysprings-Huerfano-Tuba complex, 2 to 15 percent slopes
8	Epikom-Leupp complex, 2 to 15 percent slopes
21	Jocity-Joraibi-Navajo-Riverwash complex , 0 to 2 percent slopes
33	Moffat-Monue complex, 1 to 6 percent slopes
35	Navajo-Jocity complex, 1 to 3 percent slopes
38	Persayo-Hanksville complex, 4 to 60 percent slopes
51	Sheppard-Monue complex, 1 to 8 percent slopes
58	Somorent family-Leupp-Bluechief complex, 5 to 60 percent slopes

Map Unit Legend

This report shows the map unit symbols and map unit names for the selected area. The map unit symbols correspond to those on associated soil maps for the area.

Map Unit Description (Brief, Tabular)

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

[Absence of an entry indicates that the feature is not a concern or that data were not estimated. Data applies to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation]

6--Claysprings-Huerfano-Tuba complex, 2 to 15 percent slopes

Composition

- Claysprings and similar soils: 40 percent of the unit
- Huerfano and similar soils: 30 percent of the unit
- Tuba and similar soils: 15 percent of the unit

Setting

Landform(s): structural benches
Elevation: 4137 to 5331 feet
Precipitation: 6 to 10 inches
Slope gradient: 4 to 15 percent
Air temperature: 54 to 57 °F
Frost-free period: 150 to 180 days

Characteristics of Claysprings and similar soils

Average total avail. water in top five feet (in.): 0.9
Available water capacity class: Very low
Parent material: residuum weathered from sandstone and shale
Restrictive feature(s): paralithic bedrock at 4 to 22 inches
lithic bedrock at 8 to 22 inches
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Saturated hydraulic conductivity class: Moderately Low
Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 7c
Hydric soil: no
Hydrologic group: D
Runoff class: high
Potential frost action: low

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 2	Clay loam	0.3 to 0.3	#######	0.0 to 2.0	5 to 12
C -- 2 to 6	Clay	0.6 to 0.6	#######	0.0 to 3.0	2 to 5
Cr -- 6 to 10	Bedrock			Null	Null
R -- 10 to 20	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Mudstone Slopes 6-10" p.z.

Map Unit Description (Brief, Tabular)

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

[6 - Claysprings-Huerfano-Tuba complex, 2 to 15 percent slopes]

Characteristics of Huerfano and similar soils

Average total avail. water in top five feet (in.): 3.7
Available water capacity class: Very low
Parent material: alluvium over residuum weathered from sandstone and shale
Restrictive feature(s): paralithic bedrock at 4 to 18 inches
lithic bedrock at 8 to 18 inches
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Saturated hydraulic conductivity class: Moderately Low

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Land capability class, irrigated:
Land capability class, nonirrigated: 7c
Hydric soil: no
Hydrologic group: D
Runoff class: high
Potential frost action: moderate

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A – 0 to 1	Gravelly sandy loam	0.1 to 0.1	7.9 to 9.0	0.0 to 2.0	0 to 4
Btn – 1 to 5	Sandy clay loam	0.6 to 0.7	#######	0.0 to 2.0	13 to 20
Cr – 5 to 17	Bedrock			Null	Null
R – 17 to 27	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Shale Upland 8-10" p.z.

Characteristics of Tuba and similar soils

Average total avail. water in top five feet (in.): 3.3
Available water capacity class: Low
Parent material: eolian sands over residuum weathered from sandstone and shale
Restrictive feature(s): lithic bedrock at 47 to 60 inches
Depth to Water table: none within the soil profile
Drainage class: excessively drained
Flooding hazard: none
Ponding hazard: none
Saturated hydraulic conductivity class: Moderately Low

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Land capability class, irrigated:
Land capability class, nonirrigated: 7c
Hydric soil: no
Hydrologic group: A
Runoff class: low
Potential frost action: low

Map Unit Description (Brief, Tabular)

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

[6 - Claysprings-Huerfano-Tuba complex, 2 to 15 percent slopes]

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
C1 – 0 to 4	Sand	0.2 to 0.3	7.4 to 8.4	0.0 to 2.0	0 to 2
C2 – 4 to 29	Sand	1.3 to 2.0	7.4 to 8.4	0.0 to 2.0	0 to 2
C3 – 29 to 50	Sand	1.0 to 1.7	7.4 to 9.0	0.0 to 2.0	0 to 2
Btknb – 50 to 52	Sandy clay loam	0.3 to 0.4	7.9 to 9.0	0.0 to 2.0	0 to 4
R – 52 to 62	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Sandy Upland 6-10" p.z. Sodic

8--Epikom-Leupp complex, 2 to 15 percent slopes

Composition

- Epikom and similar soils: 50 percent of the unit
- Leupp and similar soils: 35 percent of the unit

Setting

Landform(s): structural benches
Elevation: 4216 to 5430 feet
Precipitation: 6 to 10 inches
Slope gradient: 2 to 15 percent
Air temperature: 54 to 57 °F
Frost-free period: 150 to 180 days

Characteristics of Epikom and similar soils

Average total avail. water in top five feet (in.): 1.3
Available water capacity class: Very low
Parent material: residuum weathered from calcareous sandstone
Restrictive feature(s): lithic bedrock at 16 to 19 inches
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Saturated hydraulic conductivity class: Moderately High
Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 7c
Hydric soil: no
Hydrologic group: D
Runoff class: low
Potential frost action: moderate

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A – 0 to 2	Channery sand	0.1 to 0.1	8.5 to 9.0	0.0 to 2.0	0 to 2
Bw1 – 2 to 6	Channery sandy loam	0.2 to 0.4	8.5 to 9.0	0.0 to 2.0	0 to 2
Bw2 – 6 to 17	Very channery fine sandy loam	0.8 to 1.1	8.5 to 9.0	0.0 to 2.0	0 to 2
R – 17 to 27	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Sandstone/Shale Upland 6-10" p.z.
Range Site - Sandstone Upland 6-10" p.z.

[8 - Epikom-Leupp complex, 2 to 15 percent slopes]

Characteristics of Leupp and similar soils

Average total avail. water in top five feet (in.): 1.1
Available water capacity class: Very low
Parent material: residuum weathered from calcareous sandstone
Restrictive feature(s): lithic bedrock at 4 to 12 inches
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Saturated hydraulic conductivity class: Moderately Low

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Land capability class, irrigated:
Land capability class, nonirrigated: 7c
Hydric soil: no
Hydrologic group: D
Runoff class: medium
Potential frost action: moderate

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 3	Sandy clay loam	0.3 to 0.5	7.9 to 9.0	0.0 to 2.0	0 to 2
C -- 3 to 9	Channery loam	0.6 to 0.8	7.9 to 9.0	0.0 to 2.0	0 to 2
R -- 9 to 19	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Sandstone Upland 6-10" p.z.
Range Site - Sandstone Upland 6-10" p.z.

21--Jocity-Joraibi-Navajo-Riverwash complex , 0 to 2 percent slopes

Composition

- Jocity and similar soils: 40 percent of the unit
- Joraibi and similar soils: 15 percent of the unit
- Navajo and similar soils: 15 percent of the unit
- Riverwash: 10 percent of the unit

Setting

Landform(s): flood plains
Elevation: 4692 to 5100 feet
Precipitation: 6 to 10 inches
Slope gradient: 0 to 2 percent
Air temperature: 54 to 57 °F
Frost-free period: 150 to 180 days

Characteristics of Jocity and similar soils

Average total avail. water in top five feet (in.): 9.8
Available water capacity class: High
Parent material: alluvium derived from sandstone and shale
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Land capability class, irrigated: 3w
Land capability class, nonirrigated: 7w
Hydric soil:
Hydrologic group: C
Runoff class: medium
Potential frost action: moderate

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 5	Stratified clay loam	0.9 to 1.1	7.4 to 8.4	0.0 to 2.0	0 to 2
C1 -- 5 to 31	Stratified silt loam	3.9 to 5.5	7.4 to 8.4	0.0 to 2.0	0 to 2
C2 -- 31 to 42	Stratified silty clay	1.4 to 1.9	7.9 to 9.0	0.0 to 2.0	2 to 4
C3 -- 42 to 58	Loamy fine sand	1.3 to 1.9	7.9 to 9.0	0.0 to 2.0	2 to 4
C4 -- 58 to 65	Stratified sandy clay loam	1.0 to 1.3	7.9 to 8.4	0.0 to 3.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Loamy Wash 8-10" p.z.
Range Site - Loamy Bottom 8-10" p.z.

Characteristics of Joraibi and similar soils

Average total avail. water in top five feet (in.): 5.2
Available water capacity class: Low
Parent material: alluvium derived from sandstone and shale
Restrictive feature(s): abrupt textural change at 33 to 38 inches
Depth to Water table: none within the soil profile
Drainage class: somewhat excessively drained
Flooding hazard: none
Ponding hazard: none

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 7w
Hydric soil:
Hydrologic group: C
Runoff class: high
Potential frost action: low

Saturated hydraulic conductivity class: Moderately Low

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
C1 -- 0 to 5	Fine sandy loam	0.4 to 0.8	7.9 to 9.0	8.0 to 16.0	0 to 2
C2 -- 5 to 27	Stratified loamy fine sand	1.8 to 2.6	7.9 to 9.0	8.0 to 16.0	2 to 4
C3 -- 27 to 36	Stratified loamy sand	0.4 to 0.6	7.9 to 9.0	8.0 to 16.0	0 to 2
2C1 -- 36 to 41	Stratified clay	0.7 to 0.8	7.9 to 9.0	8.0 to 16.0	2 to 4
2C2 -- 41 to 60	Sand	0.9 to 1.5	7.9 to 9.0	8.0 to 16.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Loamy Wash 6-10" p.z. Saline-Sodic

Characteristics of Navajo and similar soils

Average total avail. water in top five feet (in.): 10.2
Available water capacity class: High
Parent material: alluvium derived from sandstone and shale
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 7w
Hydric soil:
Hydrologic group: C
Runoff class: high
Potential frost action: moderate

Saturated hydraulic conductivity class: Moderately Low

Map Unit Description (Brief, Tabular)

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

[21 - Jocity-Joraibi-Navajo-Riverwash complex , 0 to 2 percent slopes]

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A – 0 to 2	Silty clay	0.3 to 0.3	7.9 to 9.0	0.0 to 2.0	0 to 2
Css1 – 2 to 7	Clay	0.7 to 0.8	7.9 to 9.0	0.0 to 2.0	0 to 2
Css2 – 7 to 29	Silty clay	2.9 to 3.7	7.9 to 9.0	0.0 to 2.0	0 to 2
Css3 – 29 to 54	Silty clay loam	4.2 to 5.2	7.9 to 9.0	0.0 to 2.0	0 to 2
C – 54 to 60	Clay loam	1.0 to 1.2	7.9 to 9.0	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Loamy Wash 8-10" p.z. Saline-Sodic

Characteristics of Riverwash

Average total avail. water in top five feet (in.):
Available water capacity class: NA
Parent material: alluvium derived from sandstone and shale
Restrictive feature(s):
Depth to Water table:
Drainage class:
Flooding hazard:
Ponding hazard:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Land capability class, irrigated:
Land capability class, nonirrigated: 8w
Hydric soil:
Hydrologic group:
Runoff class:
Potential frost action:

Saturated hydraulic conductivity class: NA

Ecological class(es):

33--Moffat-Monue complex, 1 to 6 percent slopes

Composition

- Moffat and similar soils: 45 percent of the unit
- Monue and similar soils: 40 percent of the unit

Setting

Landform(s): sand sheets on plateaus
Elevation: 4800 to 5900 feet
Precipitation: 6 to 10 inches
Slope gradient: 1 to 6 percent
Air temperature: 54 to 57 °F
Frost-free period: 150 to 180 days

Characteristics of Moffat and similar soils

Average total avail. water in top five feet (in.): 5.5
Available water capacity class: Low
Parent material: eolian sands
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: somewhat excessively drained
Flooding hazard: none
Ponding hazard: none
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Land capability class, irrigated: 3e
Land capability class, nonirrigated: 7c
Hydric soil:
Hydrologic group: B
Runoff class: low
Potential frost action: moderate

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
C – 0 to 2	Sand	0.2 to 0.2	7.4 to 8.4	0.0 to 2.0	0 to 2
C – 0 to 2	Loamy fine sand	0.2 to 0.2	7.4 to 8.4	0.0 to 2.0	0 to 2
Bk1 – 2 to 10	Fine sandy loam	0.6 to 1.2	7.4 to 8.4	0.0 to 2.0	0 to 2
Bk2 – 10 to 17	Fine sandy loam	0.6 to 1.1	7.4 to 8.4	0.0 to 2.0	0 to 2
Bk3 – 17 to 41	Fine sandy loam	1.9 to 3.6	7.4 to 8.4	0.0 to 2.0	0 to 2
C – 41 to 60	Sand	0.9 to 1.5	7.4 to 8.4	0.0 to 2.0	0 to 2
C – 41 to 60	Loamy fine sand	0.9 to 1.5	7.4 to 8.4	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Sandy Loam Upland 6-10" p.z.

Map Unit Description (Brief, Tabular)

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

[33 - Moffat-Monue complex, 1 to 6 percent slopes]

Characteristics of Monue and similar soils

Average total avail. water in top five feet (in.): 7.2
Available water capacity class: Moderate
Parent material: eolian sands
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: somewhat excessively drained
Flooding hazard: none
Ponding hazard: none

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Land capability class, irrigated: 3e
Land capability class, nonirrigated: 7c
Hydric soil:
Hydrologic group: B
Runoff class: low
Potential frost action: moderate

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A – 0 to 6	Fine sandy loam	0.5 to 0.9	7.9 to 8.4	0.0 to 2.0	0 to 2
Bw – 6 to 26	Fine sandy loam	1.6 to 3.0	7.9 to 8.4	0.0 to 2.0	0 to 2
C – 26 to 60	Fine sandy loam	2.7 to 5.1	7.9 to 9.0	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Sandy Loam Upland 6-10" p.z.

35--Navajo-Jocity complex, 1 to 3 percent slopes

Composition

- Navajo and similar soils: 60 percent of the unit
- Jocity and similar soils: 30 percent of the unit

Setting

Landform(s): playas
Elevation: 4692 to 5085 feet
Precipitation: 6 to 10 inches
Slope gradient: 1 to 3 percent
Air temperature: 54 to 57 °F
Frost-free period: 150 to 180 days

Characteristics of Navajo and similar soils

Average total avail. water in top five feet (in.): 10.0
Available water capacity class: High
Parent material: alluvium derived from sandstone and shale
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 7w
Hydric soil:
Hydrologic group: C
Runoff class: high
Potential frost action: moderate

Saturated hydraulic conductivity class: Moderately Low

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 2	Clay	0.3 to 0.3	7.9 to 9.0	0.0 to 2.0	0 to 4
Cky -- 2 to 7	Silty clay	0.7 to 0.9	7.9 to 9.0	0.0 to 2.0	0 to 2
Ckssy -- 7 to 34	Clay	3.7 to 4.3	7.9 to 9.0	0.0 to 2.0	0 to 2
C'ky -- 34 to 60	Clay loam	4.4 to 5.5	7.9 to 8.4	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Clay Loam Terrace 6-10" p.z. Sodic

Map Unit Description (Brief, Tabular)

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

[35 - Navajo-Jocity complex, 1 to 3 percent slopes]

Characteristics of Jocity and similar soils

Average total avail. water in top five feet (in.): 3.0
Available water capacity class: Moderate
Parent material: alluvium derived from sandstone and shale
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 7w
Hydric soil:
Hydrologic group: C
Runoff class: medium
Potential frost action: moderate

Saturated hydraulic conductivity class: Moderately Low

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 2	Silty clay loam	0.3 to 0.4	7.9 to 9.0	0.0 to 2.0	0 to 4
C -- 2 to 7	Clay	0.7 to 0.8	7.9 to 9.0	0.0 to 2.0	0 to 4
Cky -- 7 to 18	Silty clay loam	1.9 to 2.3	7.9 to 9.0	0.0 to 2.0	0 to 2
C' -- 18 to 23	Silt loam	0.7 to 1.0	7.9 to 9.0	0.0 to 2.0	0 to 2
C'ky -- 23 to 41	Fine sandy loam	1.4 to 2.7	7.9 to 9.0	0.0 to 2.0	0 to 2
C" -- 41 to 60	Loamy fine sand	1.6 to 2.3	7.9 to 9.0	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Loamy Wash 6-10" p.z. Saline-Sodic

38--Persayo-Hanksville complex, 4 to 60 percent slopes

Composition

- Persayo and similar soils: 60 percent of the unit
- Hanksville and similar soils: 30 percent of the unit

Setting

Landform(s): hillslopes
Elevation: 4898 to 6000 feet
Precipitation: 6 to 10 inches
Slope gradient: 15 to 60 percent
Air temperature: 54 to 57 °F
Frost-free period: 150 to 180 days

Characteristics of Persayo and similar soils

Average total avail. water in top five feet (in.): 1.9
Available water capacity class: Very low
Parent material: slope alluvium derived from mudstone over residuum weathered from mudstone
Restrictive feature(s): paralithic bedrock at 8 to 16 inches
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Saturated hydraulic conductivity class: Moderately Low
Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 7c
Hydric soil:
Hydrologic group: D
Runoff class: high
Potential frost action: none

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
C1 – 0 to 3	Silty clay loam	0.5 to 0.7	7.9 to 9.0	0.0 to 2.0	0 to 4
C2 – 3 to 11	Silt loam	1.1 to 1.7	7.9 to 9.0	0.0 to 2.0	0 to 4
Cr – 11 to 21	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Mudstone Slopes 6-10" p.z.

Characteristics of Hanksville and similar soils

Average total avail. water in top five feet (in.): 4.3

Available water capacity class: Low

Parent material: slope alluvium derived from mudstone over residuum weathered from mudstone

Restrictive feature(s): paralithic bedrock at 20 to 31 inches

Depth to Water table: none within the soil profile

Drainage class: well drained

Flooding hazard: none

Ponding hazard: none

Saturated hydraulic conductivity class: Moderately Low

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 7c

Hydric soil:

Hydrologic group: C

Runoff class: high

Potential frost action: low

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
AC -- 0 to 4	Gravelly sandy clay loam	0.5 to 0.6	7.9 to 9.0	0.0 to 2.0	0 to 4
C -- 4 to 29	Channery silty clay loam	3.5 to 4.3	7.9 to 9.0	0.0 to 2.0	0 to 4
Cr -- 29 to 39	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Shale Upland 8-10" p.z.

51--Sheppard-Monue complex, 1 to 8 percent slopes

Composition

- Sheppard and similar soils: 60 percent of the unit
- Monue and similar soils: 30 percent of the unit

Setting

Landform(s): sand sheets on plateaus
Elevation: 4898 to 6000 feet
Precipitation: 6 to 10 inches
Slope gradient: 1 to 8 percent
Air temperature: 54 to 57 °F
Frost-free period: 150 to 180 days

Characteristics of Sheppard and similar soils

Average total avail. water in top five feet (in.): 5.4
Available water capacity class: Low
Parent material: eolian sands
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: excessively drained
Flooding hazard: none
Ponding hazard: none
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 250
Land capability class, irrigated: 3e
Land capability class, nonirrigated: 7c
Hydric soil:
Hydrologic group: A
Runoff class: low
Potential frost action: low

Saturated hydraulic conductivity class: High

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
C1 – 0 to 15	Fine sand	0.7 to 1.2	7.9 to 8.4	0.0 to 2.0	0 to 2
C2 – 15 to 35	Loamy fine sand	1.6 to 2.4	7.9 to 8.4	0.0 to 2.0	0 to 2
C3 – 35 to 60	Loamy fine sand	2.0 to 3.0	7.9 to 8.4	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Sandy Upland 6-10" p.z.

[51 - Sheppard-Monue complex, 1 to 8 percent slopes]

Characteristics of Monue and similar soils

Average total avail. water in top five feet (in.): 4.9
Available water capacity class: Low
Parent material: eolian sands
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: somewhat excessively drained
Flooding hazard: none
Ponding hazard: none

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Land capability class, irrigated: 3e
Land capability class, nonirrigated: 7c
Hydric soil:
Hydrologic group: B
Runoff class: low
Potential frost action: moderate

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
C -- 0 to 4	Sand	0.2 to 0.3	7.9 to 8.4	0.0 to 2.0	0 to 2
C -- 0 to 4	Loamy sand	0.2 to 0.3	7.9 to 8.4	0.0 to 2.0	0 to 2
Bw1 -- 4 to 14	Sandy loam	0.3 to 1.3	7.9 to 8.4	0.0 to 2.0	0 to 2
Bw2 -- 14 to 22	Sandy loam	0.3 to 1.3	7.9 to 8.4	0.0 to 2.0	0 to 2
C -- 22 to 60	Sand	1.3 to 3.0	7.9 to 8.4	0.0 to 2.0	0 to 2
C -- 22 to 60	Loamy sand	1.3 to 3.0	7.9 to 8.4	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Sandy Loam Upland 6-10" p.z.
Range Site - Sandy Loam Upland 6-10" p.z.

58--Somorent family-Leupp-Bluechief complex, 5 to 60 percent slopes

Composition

- Somorent family and similar soils: 35 percent of the unit
- Leupp and similar soils: 30 percent of the unit
- Bluechief and similar soils: 20 percent of the unit

Setting

Landform(s): hills
Elevation: 5298 to 5800 feet
Precipitation: 6 to 10 inches
Slope gradient: 15 to 60 percent
Air temperature: 54 to 57 °F
Frost-free period: 150 to 180 days

Characteristics of Somorent family and similar soils

Average total avail. water in top five feet (in.): 1.5
Available water capacity class: Very low
Parent material: eolian sands over slope alluvium derived from sandstone and shale residuum weathered from sandstone
Restrictive feature(s): paralithic bedrock at 5 to 20 inches
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Saturated hydraulic conductivity class: Moderately Low
Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 7c
Hydric soil: no
Hydrologic group: D
Runoff class: very high
Potential frost action: low

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A – 0 to 3	Clay loam	0.5 to 0.7	7.9 to 8.4	0.0 to 2.0	0 to 4
C – 3 to 8	Clay loam	0.8 to 1.0	7.9 to 9.0	0.0 to 2.0	0 to 13
Cr – 8 to 60	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Mudstone/Sandstone Hills 6-10" p.z.

Map Unit Description (Brief, Tabular)

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

[58 - Somorent family-Leupp-Bluechief complex, 5 to 30 percent slopes]

Characteristics of Leupp and similar soils

Average total avail. water in top five feet (in.): 1.9
Available water capacity class: Very low
Parent material: residuum weathered from sandstone and shale
Restrictive feature(s): lithic bedrock at 5 to 20 inches
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Land capability class, irrigated:
Land capability class, nonirrigated: 7c
Hydric soil: no
Hydrologic group: D
Runoff class: high
Potential frost action: low

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A – 0 to 2	Gravelly clay loam	0.3 to 0.4	7.9 to 8.4	0.0 to 2.0	0 to 2
C1 – 2 to 7	Gravelly clay loam	0.9 to 1.1	7.9 to 8.4	0.0 to 2.0	0 to 2
C2 – 7 to 10	Sandy clay loam	0.5 to 0.6	7.9 to 9.0	0.0 to 2.0	0 to 2
R – 10 to 20	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Sandstone/Shale Upland 6-10" p.z.

Characteristics of Bluechief and similar soils

Average total avail. water in top five feet (in.): 5.5
Available water capacity class: Low
Parent material: eolian sands over slope alluvium derived from sandstone and shale over residuum weathered from sandstone
Restrictive feature(s): lithic bedrock at 20 to 40 inches
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 7c
Hydric soil: no
Hydrologic group: C
Runoff class: medium
Potential frost action: low

Map Unit Description (Brief, Tabular)

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

[58 - Somorent family-Leupp-Bluechief complex, 5 to 60 percent slopes]

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A – 0 to 2	Loam	0.3 to 0.4	7.4 to 7.8	0.0 to 2.0	0 to 2
Bw1 – 2 to 8	Loam	0.8 to 1.1	7.9 to 8.4	0.0 to 2.0	0 to 2
Bw2 – 8 to 18	Loam	1.3 to 1.8	7.4 to 7.8	0.0 to 2.0	0 to 2
Bw3 – 18 to 24	Loam	0.8 to 1.1	7.4 to 7.8	0.0 to 2.0	0 to 2
Bk1 – 24 to 30	Sandy loam	0.5 to 0.8	7.4 to 7.8	0.0 to 2.0	0 to 2
Bk2 – 30 to 38	Loam	1.1 to 1.5	7.4 to 7.8	0.0 to 2.0	0 to 2
R – 38 to 48	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Loamy Upland 6-10" p.z.

APPENDIX B

SOILS FOR DWELLINGS AND SMALL COMMERCIAL BUILDINGS

Dwellings and Small Commercial Buildings

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The columns that identify the rating class and limiting features show no more than five limitations for any given soil. The soil may have additional limitations]

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6:							
Claysprings	40	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
						Slope	0.50
Huerfano	30	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Tuba	15	Not limited		Somewhat limited		Not limited	
				Depth to hard bedrock	0.26		
8:							
Epikom	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Leupp	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
21:							
Jocity	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.90	Shrink-swell	0.33	Shrink-swell	0.90
Joraibi	15	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Navajo	15	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Riverwash	10	Not rated		Not rated		Not rated	
33:							
Moffat	45	Not limited		Not limited		Not limited	
Monue	40	Not limited		Not limited		Not limited	

Dwellings and Small Commercial Buildings

Little Colorado River Area, Arizona, Parts of Coconino and Navajo Counties

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
35:							
Navajo	60	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Jocity	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
38:							
Persayo	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Hanksville	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to soft bedrock	0.54	Shrink-swell	0.50
				Shrink-swell	0.50	Slope	0.13
51:							
Sheppard	60	Not limited		Not limited		Very limited	
						Slope	1.00
Monue	30	Not limited		Not limited		Not limited	
58:							
Somorent family	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Leupp	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.16	Slope	0.16	Depth to hard bedrock	1.00
Bluechief	20	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.01	Depth to hard bedrock	1.00	Slope	0.88
						Depth to hard bedrock	0.01

Dwellings and Small Commercial Buildings

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. This table shows the degree and kind of soil limitations that affect dwellings and small commercial buildings.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

"Dwellings" are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

"Small commercial buildings" are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

APPENDIX C

SCHEDULE FOR UPDATING LAND USE PLAN

Schedule for Updating the Community Land Use Plan

	MONTH					
ACTIVITY	May	Jun	Jul	Aug	Sep	Oct
1. **CLUPC MEETING** – Introduction, review planning process and timeline, and approve Community Participation Plan	05/04/14 10 AM					
2. **CHAPTER PLANNING/REGULAR MEETINGS** –Approve Community Participation Plan	05/04/14 05/18/14					
3. **WORK SESSION** – Review and update planning area, vision and community assessments		06/08/14 10 AM				
4. **WORK SESSION** – Review and update existing and future land uses; mapping		06/08/14 10 AM				
5. **PUBLIC HEARING** – Present Draft Community Land Use Plan (Start of 60-day comment Period)			07/08/14 10 AM			
6. **CLUPC MEETING** – Review comments				08/03/14 10 AM		
7. **CLUPC MEETING** – Close 60-day comment period; review comments & make changes for CLUPC Approval					09/07/14 10 AM	
8. **CHAPTER PLANNING/REGULAR MEETINGS** – Present Community Land Use Plan for Chapter Approval						09/21/14
9. **LAND USE PLAN CERTIFICATION** – Present Community Land Use Plan for LGA Re-certification						TBA