

**RESOLUTION OF THE
RESOURCES AND DEVELOPMENT COMMITTEE
Of the 23rd Navajo Nation Council---Second Year 2016**

AN ACTION

RELATING TO RESOURCES AND DEVELOPMENT; CERTIFYING RAMAH NAVAJO CHAPTER'S COMMUNITY-BASED LAND USE PLAN WHICH HAS REEVALUATED AND READJUSTED RAMAH NAVAJO CHAPTER'S FIRST COMMUNITY-BASED LAND USE PLAN.

BE IT ENACTED:

SECTION ONE. AUTHORITY

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 26 N.N.C. § 2004(D)(2), "Every five years the plan shall be reevaluated and readjusted to meet the needs of the changing community" and such readjustment is subject to the certification of the Resources and Development Committee of the Navajo Nation Council.

SECTION TWO. FINDINGS

A. The Ramah Navajo Chapter's first Community Based Land Use Plan was approved in 2006.

B. Pursuant to Ramah Navajo Resolution No. 061604, attached as Exhibit B, the Ramah Navajo Chapter acknowledged the need to revise and update the Community-Based Land Use Plan that was developed ten years ago to meet the needs of the changing community.

C. The Ramah Navajo Chapter Community-Based Land Use as approved by Ramah Chapter Resolution No. 061604, is attached as Exhibit A.

D. The Resources and Development Committee of the Navajo Nation Council finds it in the best interest of the Navajo Nation to certify the Ramah Navajo Chapter's Community-Based

Land Use Plan which has been reevaluated and readjusted to meet the needs of the changing community.

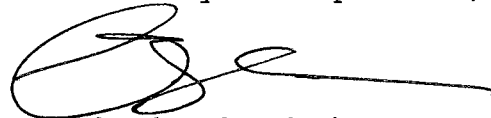
SECTION THREE. APPROVAL

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

B. Certification of this Community-Based 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 Ramah Navajo Chapter, (Navajo Nation) Mountain View, New Mexico, at which quorum was present and that same was passed by a vote of 3 in favor, 0 opposed, 1 abstained this 19th day of September, 2016.



Alton Joe Shepherd, Chairperson
Resources and Development Committee
Of the 23rd Navajo Nation Council

Motion: Honorable Leonard Pete
Second: Honorable Davis Filfred

TL'OHCHÍNÍ DINÉE

RAMAH NAVAJO CHAPTER

also recognized as the
RAMAH BAND OF THE NAVAJO TRIBE



LAND USE PLAN

JUNE 2016

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- Appendix A: Community Participation Plan
- Appendix B: Plan Amendment and Update Process
- Appendix C: Soil Report - Map Unit Description
- Appendix D: Soil Report - Dwellings and Small Commercial Buildings

FORWARD

Ramah Navajos have always had a deeply rooted connection to the land and a strong commitment to work together to make things happen that are in the best interests of the community. The strength of this connection is true even today as shown here in this foreword wherein the heartfelt words of Mr. Joseph K. Martine are eloquently spoken.



My Nali (paternal grandfather), Hostine Martine, at age 15, was among those who returned from Fort Summer. He returned to Fort Wingate, while others went on to Fort Defiance. After a holding period at Fort Wingate, my grandfather and his people were allowed to journey home. They were hopeful and looking forward to returning to their homeland. Since time immemorial, home was the entire region from Fort Wingate—all the way down to and beyond Apache Creek.

Upon their release from Fort Wingate, with a shovel, hoe and other small tools, they moved out. Southeast of McGaffey, where the road comes through the rocky area, there is a pointed rock,

Tse Bitah, Timberlake upon the ridge. Wild onions were scattered, and they had a distinct odor. There was a lot of wildlife for beef. They said "we will stay here for a year before we go on." They were to move back to Ramah, but they stayed in the area. This is the place originally named Onion—the place by Timberlake. Our people were too tired to move on. They were tired.

After a year or so, they moved on to what is Ramah Village today. A small dam was made with a shovel. Navajos lived in this area. Water was continuously flowing. It was beautiful. Then there were those traveling to California by wagon pulled by cattle for the gold rush. One of the traveling families made camp there, perhaps because they were tired too. They ended up staying there. Everyone lived by each other, afraid of each other, for several years.

Then railroad land, papers were to be put into place. Allotments were being issued. It was said that "60 miles, each way, to the south and to the north" was reserved for Navajo according to "Washington." Unfortunately, many Ramah Navajos were not aware of the land allotments.

Around 1903 my father went to Albuquerque Indian School. He returned in 1905. Everything was gone. His mother was frail . . . there were no more sheep. Devastation. So he did not return to school. My father met a French man. He had a trading post, and he was the one that informed my father and helped Navajos apply for allotments. They tried to fill out applications for those he knew. Papers were submitted. Some were never completely processed. The last time, there were few applications. He made applications for my father, his sister, and brother. And then it closed, and many applications were never approved. Our people were cheated out of the land.

We have always lived in this area, on this land. We are from this land. Our umbilical cords are here. Our roots are here. This is our place.

- Joseph K. Martine, 2015

ACKNOWLEDGEMENTS

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JJ Clacs & Company • Fort Wingate, New Mexico



1. INTRODUCTION

BACKGROUND

Ramah Navajo Chapter (hereafter interchangeably referred to as Ramah Navajo or the Chapter) is one of 110 chapters of the Navajo Nation. Through an Act of Congress, the Chapter is formerly recognized as the Ramah Band of the Navajo Tribe and have lands deeded in their name. It is the only chapter with its own Bureau of Indian Affairs (BIA) agency. In essence, Ramah Navajo is a semiautonomous political entity. Its distinctive history, unique traditions, and geographical separation from the rest of the Navajo Nation sets it apart governmentally, in leadership, and self-determination.

The Ramah Navajo People and their leaders have always displayed tremendous courage and resolve to take care of themselves and not wait for others to help them. This self-determination led to the Indian Self-Determination and Education Assistance Act of 1975 and placed Ramah Navajo at the national forefront of self-determination, self-sufficiency, and self-governance. Their accomplishments have benefited the local community, other chapters, the Navajo Nation, and moreover, all tribal communities across the United States.

This land use plan is a key component to Ramah Navajos' self-determination and local governance. Thus, the people of Ramah Navajo have come together (via a Community Participation Plan presented in APPENDIX A) to revise and update their land use plan, from their own hearts and in their own words.

In the following pages, this land use plan articulates Ramah Navajo's approach to stewardship and growth management. It includes a vision for the future, goals and objectives, existing conditions, and land use designations along with implementation strategies necessary to bring this plan to reality. This land use plan, provided in more detail below, provides a flexible framework for achieving balanced growth and preserving the unique character of Ramah Navajo.

With this Land Use Plan, Ramah Navajo intends to improve its decision making, allow its community to excel and flourish, and enable leaders to lead towards a more prosperous future, and improve the strength and sovereignty of Ramah Navajo as well as the Navajo Nation.

PURPOSE

This Land Use Plan is an important self-determination and local governance document intended to serve as the basis for subsequent land use decisions and regulations within Ramah Navajo. Its purpose is to reaffirm Ramah Navajo's strong ties to the land, assist in the preservation of the heritage, culture, and way of life of the Ramah Band of the Navajo, and to aid in the stewardship of its ecological, natural, and scenic resources. It is a document that strongly re-affirms Ramah Navajo's connection to the land while serving as a guide for balanced growth and preserving the character of Ramah Navajo for future generations.

This Land Use Plan does not diminish, relinquish, extinguish or surrender Ramah Navajo Chapter's independent sovereign authority. Ramah Navajo Chapter expressly retains all rights and privileges that it holds and exercises within its jurisdiction, specifically, land held in trust for the Ramah Band of the Navajo Tribe, Ramah Navajo Chapter lands and any future land acquisitions.

AUTHORIZATION

NAVAJO NATION LOCAL GOVERNANCE ACT (LGA)

Title 26 Navajo Nation Local Governance Act provides authorization to the chapters to develop a community-based land use plan. Land use planning has been an option for Navajo Nation chapters since the LGA passed into law in 1998. If Chapters choose to administer land within their community, a Land Use Plan must be developed and implemented, pursuant to the law, and updated every five years.

The purpose of the LGA is to recognize governance at the local level. Through this Act, the Navajo Nation Council delegates its authority, with respect to local matters consistent with Navajo law including custom and tradition, to the individual Chapters. The LGA compels Chapters to govern with responsibility and accountability to the community members.

Chapters wanting to administer land, pursuant to LGA, are required to develop a Land Use Plan based upon results of a community assessment. Chapters who complete a Land Use Plan

must then receive certification from the Navajo Nation Council Resources and Development Committee. Once certified, Ramah Navajo moves closer to administering their own land pursuant to the LGA.

In accordance with LGA, Ramah Navajo previously approved and passed the following resolutions to meet the requirements towards local administration of land:

- pursuant to §2004(C)(1), Ramah Navajo Chapter approved and passed a resolution stating the Chapter's desire to develop and implement a Community Land Use Plan;
- pursuant to §2004(C)(1), Ramah Navajo Chapter approved and passed a resolution establishing the Community Land Use Planning Committee to approve the processes for planning and to oversee planning activities;
- pursuant to Transportation and Community Development Committee (predecessor to the Resources and Development Committee) certified Ramah Navajo's 2003 Community-Based Land Use Plan; and
- pursuant to Ramah Navajo Chapter Resolution No. 081306, Ramah Navajo Chapter renamed the Community Land Use Planning Committee to Community Land Use Planning Commission.

Indian Self-Determination and Education Assistance Act

In 1975, congress enacted Indian Self-Determination and Education Assistance Act, Public Law 93-638, in order to achieve "maximum Indian participation in the direction of educational as well as other Federal services to Indian communities so as to render such services more responsive to the needs and desires of those communities." 25 U. S. C. §450a(a). To that end, the Act permits "an orderly transition from the Federal domination of programs for, and services to, Indians to effective and meaningful participation by the Indian people in the planning, conduct, and administration of those programs and services." 25 U. S. C. §450a(b).

In accordance with this policy, Ramah Navajo is committed to the development of a strong and stable local government, capable of land use planning, administering quality programs and developing the local economy.

EFFECTIVE DATE

This revised and updated Land Use Plan (2016) supersedes previous land use plans and shall be effective upon adoption by the Ramah Navajo Chapter and subsequent certification by the Resources and Development Committee of the Navajo Nation Council pursuant to Title 26 Navajo Nation Code LGA.

- Ramah Navjao Chapter resolution adopting this 2016 Land Use Plan is inserted at the beginning of this document.
- The process to make future ammendments and updates are presented in APPENDIX B.



2. HISTORY, LEADERSHIP & SELF-DETERMINATION

HISTORICAL OVERVIEW

Since time immemorial, the Ramah Band of the Navajo Tribe known as Tl'ohchini Dine'e, "People of the Place of Wild Onions" have occupied Northwestern New Mexico prior to the coming of the Spanish explorers and white settlers. Ramah Navajo farmed, hunted and herded livestock in the entire northwest region before settling in the Zuni Mountains and as far south as Reserve and Apache Creek, New Mexico. They interacted with nearby Pueblos, Spanish settlers, and other tribes in a shifting



pattern of alliances and reprisals long before Hweeldi "The Long Walk of 1864."

According to oral history, Tl'ochini gets its name from the wild onions that grew by a spring in Zuni Mountains. This place was originally called Onions. The stream from where it flowed was referred to as Spring that Flows from the Mountain (Young 1949). The men of Ramah Navajo traveled to the Zuni Mountains to hunt and gather food for their families, and they returned with stories of the beauty and abundance of wildlife, wood, and plants. On following trips, the men took their families to the place of the wild onions and remained there (Landgraf 1954). Some families also migrated from the McGaffey area.

Tree-ring dates from the area lend scientific support to the Ramah Navajo's oral history. By analyzing the concentric rings in cross-sections of preserved tree fragments, archaeologists can determine when some logs were harvested. Based on this method, 49 timbers from hogans, sweat houses, and sheep corrals have yielded dates from 1543 to 1925, suggesting that Navajos were established in the area as early as the late 1500's until they were taken to Ft. Sumner (Blanchard 1971).

The infamous roundup of the Navajos by the United States Army in 1863 and subsequent captivity until their release in 1868 was traumatic. During this period, some Navajos escaped and returned home or took refuge among the Apache groups. Some avoided capture at the time when the tribe was rounded up. Even though the Treaty of 1868 provided for a reservation with distinct boundaries, some of these escapees were afraid of the soldiers and reluctant to move onto the reservation. Others felt that the treaty reservation was not big enough. Consequently, some Navajo People such as the Ramah Band of Navajos remained outside the reservation. Further, the treaty stipulated that all Navajos were to live within the reservation boundaries. Those individuals who took up residence on public lands were looked upon as squatters. As such, they could be dispossessed by the white settlers coming in after them. When the Enabling Act of 1866 was passed, many Navajos were living on railroad land from which they could be removed (Hastiin Biyo' Lani Yee Biye' n.d.).



The cabin a man lived on this land have lived here all their lives. In several all cases, the land has been in their families for several generations.

Mormon missionaries reached the Ramah Navajo in 1876 (Telling 1953). They eventually set up a colony near the Navajos and named it Cebolla. The Cebolla settlement lasted until 1880 when a smallpox epidemic forced abandonment (Landgraf 1954). A new band of Mormons prepared to pick a town site and build anew; they arrived in 1882, selected an area just south of Cebolla, and essentially pushed out the Navajos. They built a church, houses, and a larger dam. The area was originally named Navajo and later Ramah



(Landgraf 1954). With the Long Walk experience still very fresh on their minds, the Navajos did not resist the Mormon's encroachment. Instead, they retreated and resettled in nearby areas to the south.

In the years following, the small Ramah Band of Navajos raised sheep. Cultivation increased from tiny plots to scattered fields over the whole Ramah area. Waves of more non-Indian settlers ensued, in part, under the encouragement of the federal policy for homesteading. Unfortunately, the Navajo use and occupancy of the land was not legally recognized, and the non-Indian settlers assumed control and eventual legal ownership. Nevertheless, there was still plenty of open range in the Ramah area, and most Ramah Band of Navajos retreated again. But a few continued to live in the midst of the new settlers, predominately Mormons. The retreat caused frustration among the Ramah Band of Navajo Indians, and over the years the Ramah Mormons never succeeded to any degree in overcoming the passive Navajo animus (Kluckon 1954 and Landgraf 1954).

In 1887, Congress passed the General Allotment Act, also known as the Dawes Act, which was created to "civilize" Native Americans by teaching them to be farmers. In order to accomplish this, Congress wanted to establish private ownership of Indian land by dividing reservations, which were collectively owned, and giving each family their own plot of land. In addition to this, by forcing the Native Americans onto small plots of land, Western developers and settlers could purchase the remaining land. The Dawes Act required that the Indian lands be surveyed and each family be given an allotment of between 80 and 160 acres, while unmarried adults received between 40 to 80 acres; the remaining land was to be sold. Congress hoped that the Dawes Act would break up Indian tribes and encourage individual enterprise while reducing the cost of Indian administration and providing prime land to be sold to white settlers. The Dawes Act proved to be disastrous for Native Americans; over the next decades they lived under policies that outlawed their traditional way of life but failed to provide the necessary resources to support their businesses and families. Dividing reservations into smaller parcels of land led to significant reduction of Indian-owned land (<http://www.victoriana.com/history/native-americans.html>).

Through the efforts of an English trader who befriended the Navajos in the early 1900s, the authority of the Dawes Act was invoked. The Indian Service administration was called in to make allotments of public domain in the Ramah area to the Navajos. Much of the remaining public domain was to the south of the Ramah village, mostly malpais and lava, not good for grazing and agriculture. Nevertheless, the Navajos moved south to



Two windmills provide water for the people who live here since there are no utilities in their houses. Water is stored in barrels like these below



this area. Most Ramah Navajo families were allotted individual 160-acre plots, thereby gaining a small land base.

The recipient of the allotment was given a trust patent that would expire at the end of 25 years. At the end of that time, he would receive full title to the land, unless the US president saw fit to extend the trust period. Since then, the trust period on Indian allotments has been extended annually by Executive Orders, up to and including the present. An individual "allottee" could apply for a patent to the land at the expiration of the trust period and receive it if he could obtain a certificate of competency. Additionally, allotment agents were sent out to protect the rights of Indians living off-reservation areas. The agent provided assistance filing allotment claims on the public domain. However, these allotments were interspersed among areas belonging to other private owners, and among sections of the public lands. This checker-boarding of Indian allotments has caused a great deal of confusion. Additionally, the passing of the Enabling Act of 1866 enhanced this checker-boarding effect by giving some railroad companies public land in alternating sections extending 40 miles on either side of the railroad track. This act was later amended to grant an additional 10 miles on both sides of the track to compensate the railroads for losses sustained as a result of settlers in the area (Hastiin Biyo' Lani Yee Biye' n.d.). Later in 1941, through the Taylor Grazing Act, the federal government withdrew the few areas left of public domain in the area. This control sharply curtailed non-Navajo use of public domain, and the exterior boundaries of the new satellite reservation began to take shape (Landgraf 1954).

Over these many years, it has taken great courage, sustained effort, and leadership to affect the positive changes that have occurred for the Ramah Navajo. Certainly within the United States there was much unrest and significant concerns over Civil Rights in general, yet had it not been for the leaders within the Ramah Navajo community, the Indian Self-Determination and Education Assistance Act of 1975 would likely not have been enacted. The Indian Self-Determination and Education Assistance Act of 1975 authorized the Secretary of the Interior, the Secretary of Health, Education, and Welfare, and some other government agencies to enter into contracts with, and make grants directly to, federally recognized Indian tribes. (P.L. 93-638).

Previously, for some thirty years, the U.S. government had made efforts to terminate policies regarding the Indian communities and sever treaty relationships and obligations to Indian tribes. Yet, American Indian activism over a fifteen year period including substantial grassroots political participation, including the work of the leaders of the Ramah Navajo, positive change occurred.



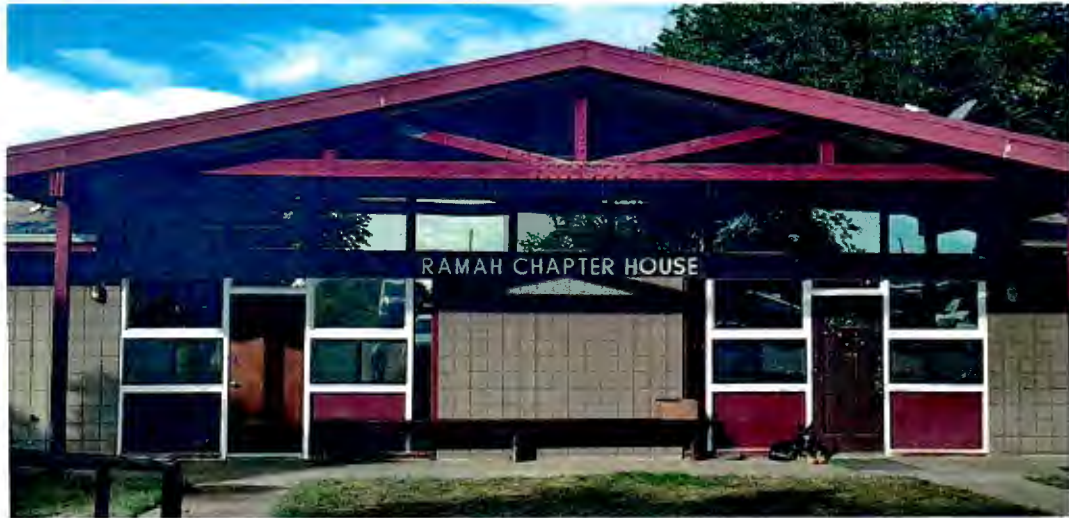
Some Navajos have raised their own food as they "use" the land and stand the record high to the "fence" over the branches to protect their whole. The photograph of "fence" shows the "fence" which was built to be "fence" the land.



LAND HELD IN TRUST FOR THE RAMAH BAND OF THE NAVAJO TRIBE

According to oral and written history, the Ramah Navajo People have always lived in this region and it is documented that they lived in this area when they assisted the Zuni Indians' defense against Coronado in 1540. Centuries later, after their long trek back from being held in captivity at Fort Sumner in 1868, the Ramah Navajos tried to acquire their land back. However, their initial efforts were vain endeavors. Finally, as part of their drive for self-determination, the Ramah Navajo People acquired title to certain sections of their aboriginal homeland in the 1980s. A brief chronological list of major events leading to the transfer of title to the Ramah Band of Navajo Tribe is presented in **TABLE 1.**

TABLE 1. CHRONOLOGICAL EVENTS FOR TRANSFER OF TITLE TO THE RAMAH BAND OF THE NAVAJO TRIBE	
YEAR	EVENT
1934	Senate Bill 2531 was introduced to create a land base for the Ramah Band of Navajos; unfortunately, the bill did not pass the Senate
1930's	Non-Indian ranchers and settlers petitioned the federal government to have the land opened up for sale
1942	New Mexico and Arizona land companies began selling land, some leased by the Ramah Band of Navajos
1944	Ramah Band of Navajos turned to the the United Pueblo Agency of the Bureau of Indian Affairs to find a way to secure land for the Band. On August 28, 1944, the Picuris Pueblo purchased 26,726.28 acres (Section 25, 27, 29, 31, 33 & 35) and the Pojoaque Pueblo purchased 28,886.16 acres (Section 1 to 23 including T8N.R14W Twps. 7 & 8, R15W) for the Ramah Band of Navajos at \$2.00/acre from the New Mexico and Arizona Land Company (total acres 55,612.44 acres). Ramah Band of Navajos leased the land from the Pueblos for the equivalent of 4 percent interest on the money used to purchase the land.
1951	The Navajo Tribe purchased the land from Picuris and Pojoaque Pueblos for the use and benefit of the Ramah Band of Navajos
1980	Public Law 96-333 (1980) declared title of 13,385 acres of Federal lands to be held by the U.S. in trust for the Ramah Band of the Navajo Tribe
1983	Public Law 97-434 (1983) declared title of 4,807 acres of Federal lands to be held by the U.S. in trust for the Ramah Band of the Navajo Tribe Land titles from these two public laws, included township 7 north, range 15 west, New Mexico principal meridian: sections 7,19, and 31. Township 7 north, range 16 west, New Mexico principal meridian: sections 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33 and 35.
After 1983	Additional land of approximately 1,600 acres were purchased.
Source: Ramah Navajo Chapter Comments on the Proposed Navajo Rangeland Improvements Act of 2014; June 27, 2014.	



ESTABLISHMENT OF RAMAH NAVAJO CHAPTER

The Ramah Navajo Chapter was established in 1955 (Resolution No. CJ-20-55 signed by Scott Preston for Tribal Chairman Paul Jones) with the Navajo Tribal Council and the BIA of the U.S. Department of the Interior, Office of Management Services.

Pursuant to Ramah Navajo Chapter Resolution No. RNC-0185118, signed by Frank E. Paul, President; Dennis Martine, Vice President; David Jose, Secretary/Treasurer; in 1985, the Ramah Navajo Chapter with authorization from the Navajo Nation successfully contracted several programs through the P.L. 93-638 Indian Self-Determination and Education Assistance Act (ISDA) including Natural Resources/Agriculture, Forestry, Law Enforcement/Detention, Real Estate Services, Transportation, Facilities Management, and Water Rights and Community Planning programs. Ramah Navajo School Board, Inc., an arm of the Ramah Navajo Chapter contracted many of the education programs, Housing Improvement Program (HIP), Community Services and many of the Indian Health Services. The Ramah Band of the Navajo Tribe has successfully been contracting these programs for over 40 years in which a government-to-government relationship has evolved and is recognized by the federal government as such.

Ramah Navajo Chapter is the only Chapter under the Albuquerque BIA Southwest Regional Office and was never under the Navajo Regional Office. Historically, the Ramah Navajo Chapter has been recognized by the BIA as a "tribal governing body" for purposes of grant and contract programs administered by the BIA and Indian Health Services.

While Ramah Navajo Chapter has achieved great accomplishments, times continued to be a challenge for the Ramah Navajo as it did not receive the services as the main Navajo Nation received. Indeed, Mr. Chavez P. Coho, prominent former leader, and Mr. David Jose, current Chapter President, describe the situation similarly:

Because of the geographical isolation from the main reservation, Ramah Navajo is left out of or inadequately served by any governmentally provided programs and services. it did not matter which federal or tribal agency had "jurisdiction" over the Ramah Navajos – the result was always the same: near-total neglect and utter failure to deliver needed services to the Ramah

Navajo community. – Chavez P. Coho (1970's)

Ramah Navajo has been left out of funding from the greater Navajo. Ramah Navajo had to file a lawsuit against the government that resulted in the Land Claims Trust Fund being established. This Fund benefits all Navajo chapters and while Ramah has benefited, in some ways, it has been pushed away. We must not allow this important Fund to fail in its benefits to the Ramah Navajo Chapter and the younger leadership needs to understand the history of how we struggled to even get here. If the struggles and history are forgotten, it would not be good for the Ramah Navajo People. – David Jose, (2015)

PROMINENT RAMAH NAVAJO LEADERS

Over the years Ramah Navajo has had the greatest good fortune to have strong, decisive, and visionary leaders singularly dedicated to the survival, well-being, and ultimate growth of the chapter's people. Prominent leaders, old and new, have led a united, organized community and displayed admirable bravery and solidarity.

Early leaders whose selfless and generous contributions shaped the chapter include Many Beads, Kay Chee Martine, Patricio Coho, Hastiin Silao, Ralph Garcia from the Rocky Ridge area, Ora (Raphael's father), Jose Martine from Unit 1, Chatto from the Sunset area, Frank Jesuse from the Mountain View area, and Bidahghah (son of Manybead).

Billy Coho, 1940s; Charley (Chala') Tso, 1950's; and John Martinez, 1952; were instrumental in representing Ramah Navajo community while serving on the Navajo Tribal Council. The Navajo Tribal Council began in 1936 with 74 council members and by 1980, the council delegates reached 88 before being reduced to 24 in 2010. **TABLE 2** shows the Council Delegate representing Ramah Navajo after its certification in 1955.

Upon chapter certification, Chavez P. Coho was the longest serving Council Delegate. He served six terms from 1955 to 1975. He was also cofounder and later President of the Ramah Navajo School Board, Inc. His historical contribution led to building, and inspiring others to build, the sustainable, thriving community that exists today as attested to by Jan Crull, Assistant to the (Ramah Navajo Chapter) President, in his letter to the Honorable Harold Runnels, Congressman – 20th District, New Mexico, dated August 13, 1979 (U.S. Government Printing Office 1980):

...my mentor, Mr. Chavez P. Coho, the man whose vision and insight has made the Ramah Navajo Reservation into what it is today and the man responsible for creating the first Native American controlled school..."

TABLE 2. RAMAH NAVAJO CHAPTER NAVAJO NATION COUNCIL DELEGATES	
YEAR	COUNCIL DELEGATE
1955–1978 (six terms)	Chavez P. Coho
1979–1986 (two terms)	Jerry Pino, Sr.
1987–1992 (two terms)	Nelson V. Thompson
1996	Leo L. Pino
2000	Bennie Cohoe
2002–2006 (two terms)	Cecil F. Eriacho
2010	George Apachito (Alamo)
2014	Norman M. Begay (Tohajalee)

Ramah Navajo leaders displayed exceptional leadership against exceptional odds in their move to establish local services and resources for their people, asserting their independence from the 'jurisdiction' and control of the Navajo Tribe and of the Bureau of Indian Affairs. Thus, Ramah Navajo has exercised the Indian Self-Determination to the highest degree that impacts almost every Indian tribe in the county and resulted in a strong partnership with the BIA-Ramah Navajo Agency in meeting the needs of the Ramah Navajo people.

In 1979 and 1980, under the leadership of Frank E. Paul, Vice-Chairman, Navajo Tribe; Bennie Coho, President, Ramah Navajo Chapter; Chimeco Eriacho, Vice-President, Ramah Navajo Chapter; Jerry Pino, Sr., Council Delegate, Navajo Tribal Council; and Nancy R. Martine-Alonzo, interpreter, lands were deeded to be held in trust for the Ramah Band of the Navajo Tribe.

Ramah Navajo elected its first chapter officials upon certification in 1955. Later in 1963, the Chapter created the land board. Since certification, Chapter members have served as President, Vice-President, Secretary/Treasurer. **TABLE 3** lists the chapter officials.

TABLE 3. RAMAH NAVAJO CHAPTER OFFICIALS				
YEAR	PRESIDENT	VICE-PRESIDENT	SECRETARY/TREASURER	LAND BOARD
1955	Lee Pino	Juan Martine	Bertha Lorenzo	-
1959	Lee Pino	Juan Martine	Bertha Lorenzo	-
1963	McDaniel Eraicho	Vicenti Cohoe	Elsie Biggs	
1963	McDaniel Eraicho	Vicenti Cohoe	Elsie Biggs	
1967	Lee Pino	Dorothy E. Antonio	Sadie Pino	Roy Chee
1968	Juan Martine	Dorothy E. Antonio	Martha Henio	
1971	Dempsey J. Pino	Leo L. Pino	Frank E. Paul	Curley K. Biggs
1975	Dempsey J. Pino	Wilcox Martinez	Nancy R. Martine-Alonzo	Bennie Coho
1979	Bennie Coho	Chimeco Eriacho Chavez P. Coho	Nancy R. Martine-Alonzo	David Jose
1983	Frank E. Paul	Dennis Martine	David Jose	
1987	Martha Garcia	Rolland Ellsworth	Clara C. Begay-Chicharello	Cecelia S. Ensrude
1992	Curley K. Biggs	Rolland Ellsworth	Darnell J. Maria	Cecelia S. Ensrude
1996	Martha H. Garcia	Rodger Martinez	Darnell J. Maria	Dennis Martine
2000	Leo L. Pino	Darnell J. Maria	Beverly J. Coho	Dennis Martine
2004	Leo L. Pino	Martha H. Garcia	Dixie M. Begay	Roy Martine
2008	Roger Martinez	Frank E. Paul	Dixie M. Begay	Roy Martine
2013	Harry B. Yazzie	Cecil F. Eriacho	Nancy R. Martine-Alonzo	Leo L. Pino
2015	David Jose	Cecil F. Eriacho	Nancy R. Martine-Alonzo	Leo L. Pino
Source: Navajo Election Office & Ramah Navajo Community Members				



DAVID JOSE
CHAPTER PRESIDENT



CECIL F. ERIACHO
CHAPTER
VICE-PRESIDENT



NANCY MARTINE-ELANZO
CHAPTER SECRETARY/
TREASURER

The current chapter officials are David Jose, President; Cecil F. Eriacho, Vice-President; Nancy Martine-Alonzo, Secretary/Treasurer; and Leo L. Pino, Land Board. President Jose also played a key role in the fight for self-determination by providing written testimony as a community member for the congressional hearings in the 1970s. While serving as Council Delegate, Mr. Eriacho helped guide Ramah Navajo in the certification of its first land use plan in 2003 as well as the purchase of Bond Ranch. Ms. Martine-Alonzo served as the interpreter during the crucial senate hearings as well as other governmental activities. Mr. Leo L. Pino also served on the Navajo Tribal Council from 1996 to 2010 during the enactment of the *Navajo Nation Local Governance Act*.

GOVERNANCE & SELF-DETERMINATION

"We did something that the BIA couldn't do for 100 years, but when we got incorporated, we did it in 10 years." - Chavez P. Coho.

Before the Chapter was certified, Ramah Navajo was never sanctioned under the BIA's Eastern Navajo Agency in Crownpoint, NM; however, the Navajo Nation sometimes placed the Ramah Navajo under that agency in the late 1920's. In 1934, six separate Navajo agencies were merged into one "Navajo Service" with headquarters in Window Rock, AZ. The Ramah Band felt neglected by this central reorganization. This tenuous relationship created feelings of unhappiness and neglect, which prompted Ramah Navajo people to petition for transfer of their jurisdiction.

In July, 1941, a delegation of Ramah Navajo led by Charlie Coho had a meeting with the General Superintendent of United Pueblo Agency, and in March, 1942, the Ramah Band were placed under the jurisdiction of the United Pueblo Agency, which eventually resulted in their being assigned to various agencies for federal services. At one time, Ramah was under the Zuni Agency. Eventually, the Ramah Navajo community got its own BIA agency.

While the Navajo Nation and other Navajo chapters are served by the Bureau's Navajo Area Office, Ramah Navajo is the only chapter of the Navajo Nation with its own BIA Agency. Because the Ramah Navajo Chapter operates as a local governing tribal body and because it is the only chapter of the Navajo Nation with the Southwest Regional Office, a government-to-government relationship has evolved over time between the Ramah Navajo Chapter and the BIA that is unique to this one Navajo community.

Pursuant to Resolution No. ACJN-125-89 of the Advisory Committee of the Navajo Tribal Council, the Ramah Navajo Chapter is recognized as a government entity of the Navajo Nation eligible to contract with the federal government for funds in order to operate various programs within Ramah Navajo. Specific and direct funding, from the federal government and for the Ramah Navajo Chapter, began in 1963 and has evolved into a contracting relationship under the authority of Public Law 93-638. The Ramah Navajo Chapter Office of Grants and Contracts was established to serve and support the Ramah Navajo Chapter's Public Law 638 programs. Further, the Ramah Navajo Chapter bears exclusive responsibility, with no assistance from the Navajo Nation, for providing educational, health, or social and community services for the Ramah Navajo people. (RNSB Archives & Records, 2003).

INDIAN SELF-DETERMINATION

Prior to 1942, there were no continuous local educational facilities for the Ramah Navajo people. In 1943, community members in Mountain View, NM, constructed a day school, which provided one teacher for the first through the third grade. After the third grade, the students were sent to off-reservation boarding schools in Albuquerque, Wingate, Inter-Mountain, Riverside, and other areas. Although plans to enlarge the day school facility had been made, the non-Indian residents in the village of Ramah requested that a dormitory be built in Ramah. Despite a very strong opposition by the Ramah Navajo community, the BIA built the dormitory in 1955. This dormitory replaced the day school in Mountain View. For the next thirteen years the Ramah Navajo community students attended the Ramah village public school. In 1968, the school in the village of Ramah was condemned and closed. Ramah Navajo parents were again forced to send their children to Zuni, Fence Lake, Quemado, Gallup, Grants, Albuquerque, Santa Fe, or Fort Wingate for school. Others were sent to BIA schools in Utah, California, Arizona, and Oklahoma. Thus, not only were they denied any voice in the education of their own children, they were denied the right of seeing their children who went away to boarding school for months at a time. Ramah Navajo community leader, Chavez P. Coho worked with the Navajo Nation's Dinébéiiná Náhiilna be Aghá diit'ahii (DNA) legal services to address this lack of educational system within the Ramah Navajo community. On August 5, 1968, the Navajo Legal Service Program filed a lawsuit against the Gallup McKinley Schools district to keep the school open on behalf of the Ramah Navajo community. This lawsuit was known as Ben Jose v. Gallup-McKinley County School District. The Plaintiffs were Isabelle Jose, Kee Yazzie Maria and Janie Pino.



Further, when faced with this obstacle, the Ramah Navajo formed the Ramah Navajo School Board, Inc., a non-profit corporation. Under the leadership of Chavez P. Coho, the Ramah Navajo people organized a community-wide meeting. The Ramah Navajo established the Ramah Navajo School Board, Inc. at its chapter meeting on February 6, 1970, and elected a Board of Trustees. This motion was made by Ms. Rose Henio and was seconded by Mr. Leo Narrcisso Martine with 44 in favor and zero opposed. The newly established school board members were Mr. Juan Martine, President; Bertha Lorenzo, Vice-President; Bessie Begay, Secretary; Chavez P. Coho, Member; and Sam Martinez, member. No one else stood up for the Ramah Navajos in this fight for its own school. Neither the Navajo Nation, nor any Council committee or division. This effort was achieved alone by the community and set a stage for Indian self-determination efforts. On February 10, 1970, Ramah Navajo School Board, Inc. was incorporated in the State of New Mexico as a private, not-for-profit, corporation to provide education, job training, health, and social services for the Ramah Navajo people.

On April 21, 1970, the Board members made a trip to Washington, D.C. on April 22, 1970, the Commissioner of Indian Affairs, Mr. Louis Bruce, and the Ramah Navajo School Board, Inc. signed the Indian Education Program School Contract, which resembled an Indian Peace-treaty signing ceremony. On June 6, 1970, \$15,000 was received from Edward Elliot Foundation in New York for development of a summer program. After days of negotiations, they received a

Congressional appropriation to start Ramah Navajo High School at the old public school in Ramah, which was previously closed. Classes were held in army surplus tents until the school was renovated.



In 1974, a new high school, elementary, and gymnasium were completed in Pine Hill, New Mexico (20 miles southeast of the Ramah village). A kindergarten building was completed in 1976, and the library/media center was built in 1980. In 1989 a new middle school and multipurpose building were constructed, and staff housing units were completed in 1995.

The Ramah Navajo School Board, Inc. has been operating for more than 40 years and has paved the way for others by being the first Indian community to have an Indian-controlled contract school in the United States. It now encompasses numerous programs and facilities: early childhood programs, such as the Birth-to-Five program; the Family and Education Program (FACE); the Day Care Center; the Head start program; a football and track stadium; a school farm with a fairground and rodeo arena; and the Pine Hill Health Center. Additionally, its facilities at Pine Hill accommodate



almost 600 students from the head start program through the 12th grade. Radio station KTDB-FM 89.7 signed on the air on April 24, 1972. As the first Indian-controlled radio station in the country and a National Public Radio affiliate, KTDB provides a vital communication link with tribal members. It features a wide variety of informational and cultural programming.

The accomplishments of the Ramah Navajo community continue to serve as a model for self-determination for tribes throughout the United States, including other Navajo communities (RNSB Archives & Records, 2003; Hubbard 2001).



3. OUR HOMELAND

Today, our homeland is one of three noncontiguous satellite communities of the Navajo Nation. Navajo interests are interspersed with non-Navajo lands resulting in a highly checker-boarded area with eight different land titles.

Ramah Navajo Chapter's unique geographical separation from the main Navajo Reservation has created an independent history from that of the other Navajo lands. In the years from 1868 through the 1960s, Ramah Navajo acted independently of the Navajo Nation.

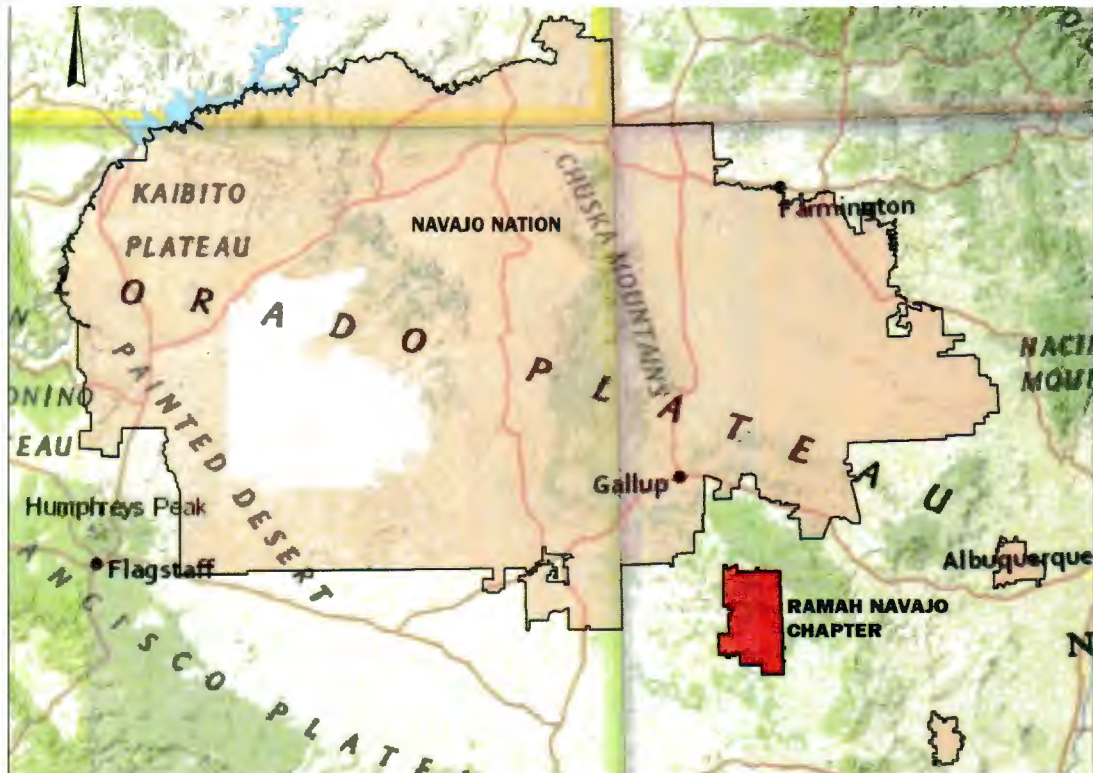
Although the Ramah Band of Navajo had lived on their lands for centuries up to the 1970s, their rights to them had not been fully secured under United States law since a transfer by the U.S. government had not occurred. Ramah Navajos were not eligible for services and benefits provided by the governmental agencies and departments to federally recognized tribes on trust lands.

In 1980, congress enacted Public Law 96-333, securing land for the Ramah Band of the Navajo Tribe. Later in 1988, an amendment, Public Law 97-434, declared mineral rights underlying the lands to the Ramah Navajos.

LOCATION

The Ramah Navajo Indian Reservation is a non-contiguous section of the Navajo Nation lying in parts of west-central Cibola and southern McKinley counties in New Mexico, just east and southeast of the Zuni Indian Reservation and south of the Ramah village (**MAP 1**).

Zuni Pueblo is about 30 miles to the west, Grants is 50 miles to the northeast and Gallup is approximately 45 miles to the north.



MAP 1: LOCATION OF RAMAH NAVAJO CHAPTER

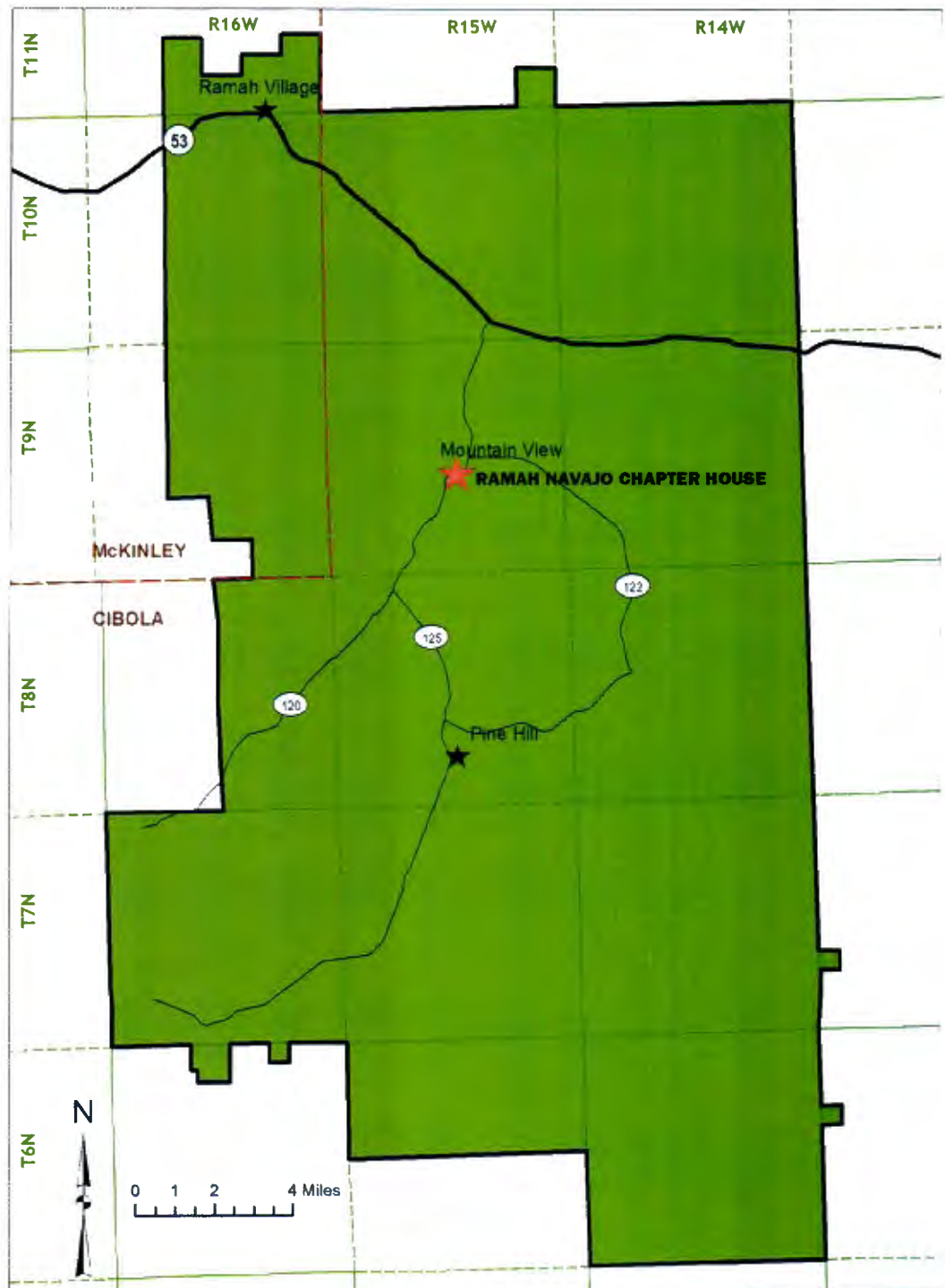
PLANNING AREA

The planning area (**MAP 2**), approximately 18 miles from east to west and 30 miles from north to south, encompasses various land ownerships. This Land Use Plan only applies to lands under Ramah Navajo's jurisdiction.

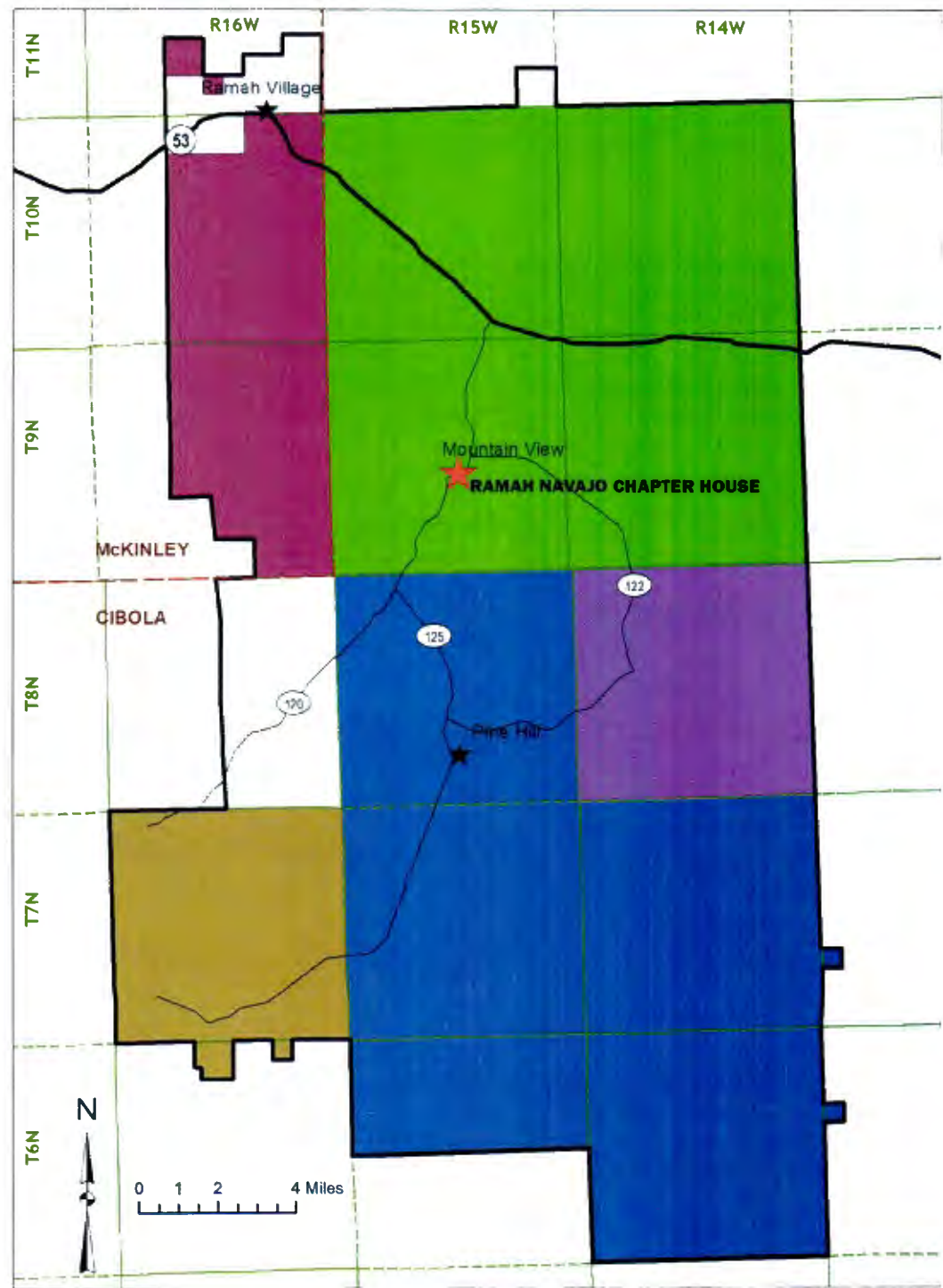
The planning area was initially surveyed between 1881 and 1885, comprising Townships 7, 8, 9, and 10 with the upper and lower halves respectively of Townships 6 and 11; Ranges 14, 15 and 16 West. The total area thus defined covers over 504 square miles.

The majority of the community lies in Cibola County. A small portion in northwest part of the planning area is located in McKinley County.

Ramah Navajo is further subdivided in five (5) units (**MAP 3**). The units help the chapter manage its resources.



MAP 2: PLANNING AREA OF RAMAH NAVAJO CHAPTER



MAP 3: RANGE UNITS OF RAMAH NAVAJO CHAPTER

LAND STATUS

Within the planning area, land status is complicated and heavily checkered. The area includes Individual Indian Land Allotments, Navajo Tribal Trust land, Navajo Tribal Fee land, Ramah Band of the Navajo Tribe Trust land, Ramah Navajo Chapter Fee land, Ramah Navajo School Board (RNSB) Fee land, Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), State of New Mexico land, public domain land, and privately owned land **(MAP 4)**.



The Individual Indian Allotment lands are interspersed throughout the community with other categories of land ownership. The first individual Indian Land Allotment was made in 1890 under the Dawes Act of 1887 (Kluckhohn 1966 and Navajo Parks and Recreation 1971). No others were made until 1908. Most of the Navajos in the community received their 160 acre plots between 1920 and 1940 (Kluckhohn 1966, and Landgraf 1954). The sum of the individual Indian allotments is approximately 47,482 acres.

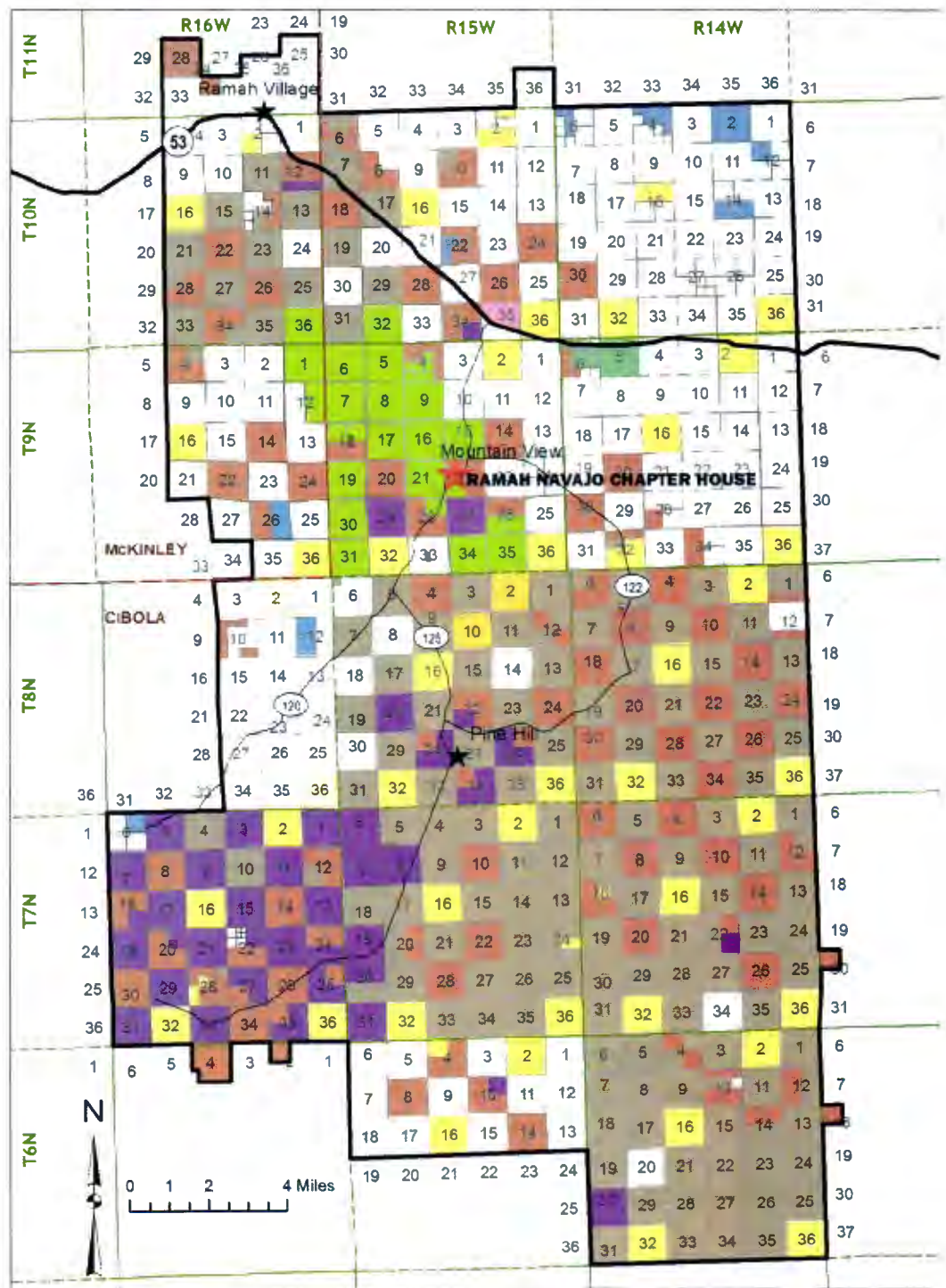
Navajo Tribal Trust land in Ramah Navajo is not part of the Navajo reservation, as originally drawn, by the treaty of 1868. Arrangements were made in 1944 with the United Pueblo Agency. Pojoaque Pueblo purchased 28,886.16 acres and Picuris Pueblo purchased 26,726.28 acres for a total of 55,612.44 at \$2.00 per acre from the New Mexico and Arizona Land Company. The land was leased by the Pueblos to Ramah Band at eight cents per acre until arrangements were made for the Navajo Tribe to purchase the land for the sole purpose and use by the Ramah Band of the Navajo Tribe. Over the years, more land was purchased and through a series of Executive Orders the Navajo Tribal Trust land in Ramah Navajo has expanded to include 81,162 acres.

The enactment of Public Law 96-333 in 1980 declared certain lands shall be held in trust by the United States for the Ramah Band of Navajo Tribe. Twenty-one sections of land in Township 7 make up the original Ramah Band land. Over time, Public Law 97-434 added 4,807 acres. Title to more land was transferred to this status and today make up 18,192 acres of Ramah Band of the Navajo Tribe Trust land.

Navajo Tribal Fee land is land purchased in the mid-eighties by the Navajo Tribe not yet transferred to tribal trust land. The tribal fee land includes approximately 720 acres of the Nicoll Ranch spread in the middle of the community just south of the Chapter house.

Recent land purchases by the Navajo Nation include Bond Ranch, 10,400 acres in 2012; White Land, 640 acres in 2014; and, Individual Indian Allotment land, 160 acres in 2015.

Federal Fee land includes the Cibola National Forest, El Morro National Monument and the El Malpais National Monument. State and public domain lands are interspersed throughout the community. Finally, a few individually and collectively owned land are designated as private land.



MAP 4: LAND STATUS OF RAMAH NAVAJO CHAPTER



4. RAMAH NAVAJO PEOPLE

Over the years and centuries, Ramah Navajos have endured Spanish conquest, encroachment of Mexican settlers, colonization of missionaries, arrival of traders, and the establishment of the federal government, states or even surrounding communities. Through it all, they remain a distinct band with a unique history, culture and land base. They are the Ramah Band of the Navajo Tribe.

Ramah Navajo Chapter states its population is approximately 3,500 and 900 Ramah Navajo families. The population figure is greater than the recently released 2010 Census count because many community members live off the reservation, returning on weekends, for special occasions, and at other times. There are no official counts thus Census 2010 statistics are presented here.

Demographic factors, such as the relationships between age, household composition, and income certainly affect current and future demands for housing, educational and community facilities, and community support programs.

POPULATION TRENDS AND FORECASTS

It is hard to account for every person while many people live outside the community for work, yet, they maintain residence in Ramah Navajo. The Ramah Navajo community members still believe and estimate the population to be over 3,500.

According to Census 2010, the population of Ramah Navajo was 1,400. The population of Ramah Navajo was 1,163 in 1980 and decreased slightly to 1,144 in 1990 (Rodgers 1997). In 2000, the population dramatically grew to 1,676 and showed another decrease to 1,400 in 2010 (**FIGURE 1**). This fluctuation in population could be attributable to natural changes and more importantly to challenges in conducting an accurate census count. Population projections for 2020 increased to 1,677 based on a 1.82 percent growth rate recorded by the Navajo Nation Division of Economic Development (2006). At this growth rate, projections continue to increase to 2,008 for 2030.

FIGURE 1. RAMAH NAVAJO POPULATION



AGE

Age composition is an important factor in determining demand for types of housing, health care, and community facilities.

In 2010, Ramah Navajo and the Navajo Nation have the youngest population with a median age of 29.6 and 29.1 years, respectively, of all jurisdictions shown in **TABLE 4**. Ramah Navajo and the Navajo Nation also have the highest percentage of persons under the age of 18. The percent of the population over 65 years of age is lowest on the Navajo Nation and McKinley County (9.5 percent) but Ramah Navajo is just as low with 10.7 percent. The state of New Mexico has the highest senior population (13.2 percent).

The median age for Ramah Navajo, as with the greater Navajo Nation, is generally much lower than the other geographic areas presented in the table. The median age for Ramah Navajo and the greater Navajo Nation are respectively 29.6 and 29.1 years. McKinley County's median age is one year higher than that of Ramah Navajo, while the county of Cibola is seven years higher. The median age difference climbs slightly higher at the state and national level.

TABLE 4. AGE CHARACTERISTICS: 2000 AND 2010												
	TOTAL POPULATION (PERSONS)		UNDER 5 YEARS (%)		5- 18 YEARS (%)		18-64 YEARS (%)		65 YEARS & OVER (%)		MEDIAN AGE (YEARS)	
	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010
United States	281,421,906	308,745,538	6.8	6.5	18.9	17.5	61.9	62.9	12.4	13.0	35.3	37.2
New Mexico	1,819,046	2,059,179	7.2	7.0	20.8	18.1	60.4	61.6	11.7	13.2	34.6	36.7
Navajo Nation	180,462	173,667	9.6	8.7	31.4	24.6	52.0	57.1	6.9	9.5	24.0	29.1
Ramah Navajo	1,676	1,400	9.7	8.0	32.5	23.9	51.3	57.4	6.5	10.7	24.6	29.6
McKinley County	74,798	71,492	9.1	8.6	28.8	22.7	55.1	59.2	6.9	9.5	26.9	30.7
Cibola County	25,595	27,213	7.9	7.0	22.7	18.2	58.7	62.1	10.7	12.8	33.1	36.6



AGE DISTRIBUTION

Children under the age of 15 represent the largest sub-population in Ramah Navajo. A dramatic decrease in ages mid-teens to young adults reflects a population attending school or seeking employment outside the Chapter boundaries. This decline is followed by a gradual increase in population through age 40. The population of elders is among the lowest in Ramah Navajo. In general, the ratio of males to females is approximately equal throughout all age ranges. **FIGURE 2.**

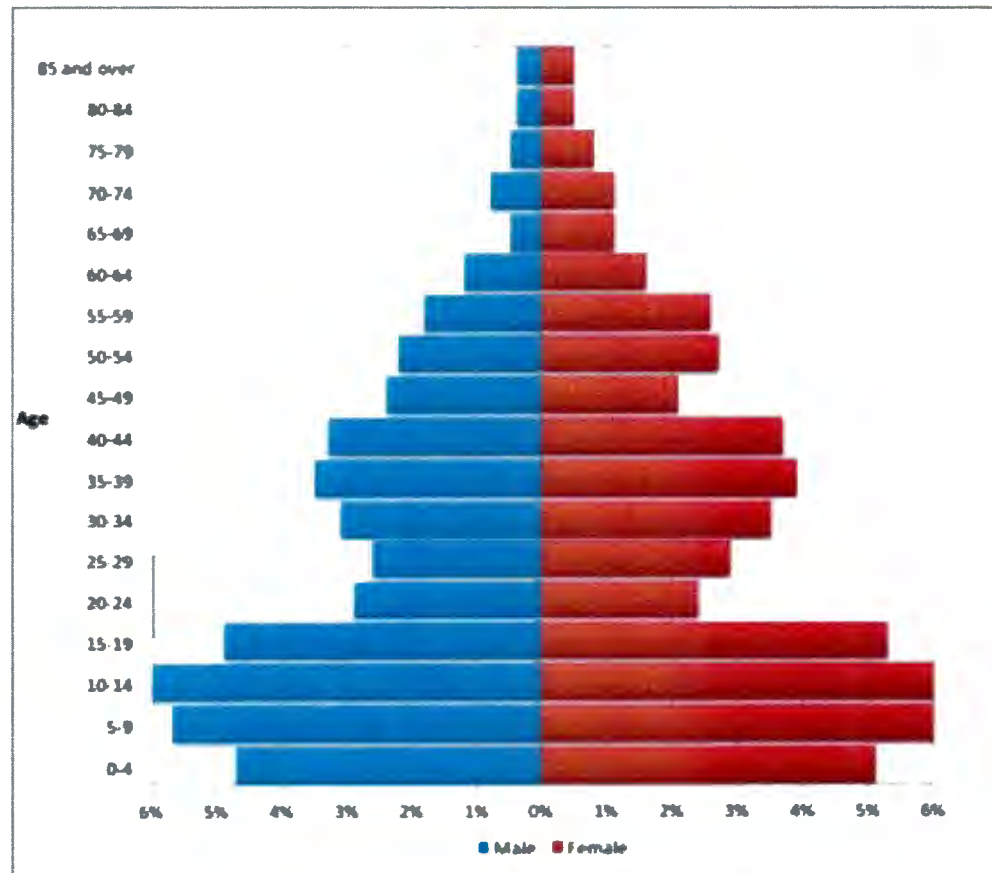


FIGURE 2. RAMAH NAVAJO AGE DISTRIBUTION

HOUSEHOLD SIZE

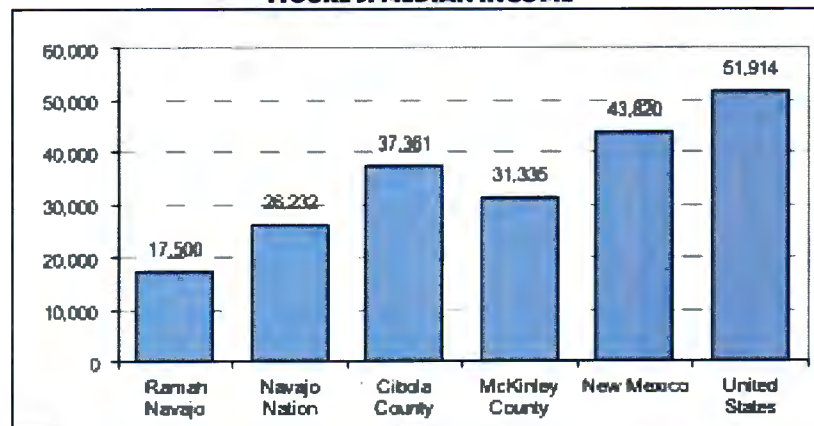
In general, Ramah Navajo and the Navajo Nation follow the same trend in household size where there are fewer smaller-sized households and a greater number of larger-sized households as compared to the other geographical areas. New Mexico and the United States show the percentages are nearly the same and their trends are directly opposite of Ramah Navajo and Navajo Nation; more smaller-sized households and significantly fewer larger-sized households. It can be noted that all regions represented coalesce at approximately 4-person households representing 15 percent of the total households.

TABLE 5. HOUSEHOLDS (CENSUS 2010)		
	HOUSEHOLDS	AVERAGE HOUSEHOLD SIZE
United States	116,716,292	2.58
New Mexico	791,395	2.55
Navajo Nation	49,946	3.46
Cibola County	8,860	2.79
McKinley County	21,968	3.22
Ramah Navajo Chapter	453	3.09
SOURCE: XXX		

MEDIUM INCOME

The median annual income for residents of Ramah Navajo was \$17,500 in 2010. Figure 2 compares the median income for the Chapter to the Navajo Nation, Cibola and McKinley Counties, New Mexico, and the United States. The Chapter ranks the lowest.

FIGURE 3. MEDIAN INCOME



PER CAPITA INCOME

In 1999, the Navajo Nation Division of Economic Development (NNDED) reported a per capita income of \$6,217 for the Navajo Nation. From 1990 to 1999, the per capita income grew by nearly 25 percent (Choudhary, 2001). According to census 2010 data, the per capita income for Ramah Navajo is \$8,833, which is the lowest of all regions illustrated in **FIGURE 3**. The margin continues to increase with the Navajo Nation, counties, state and national levels.

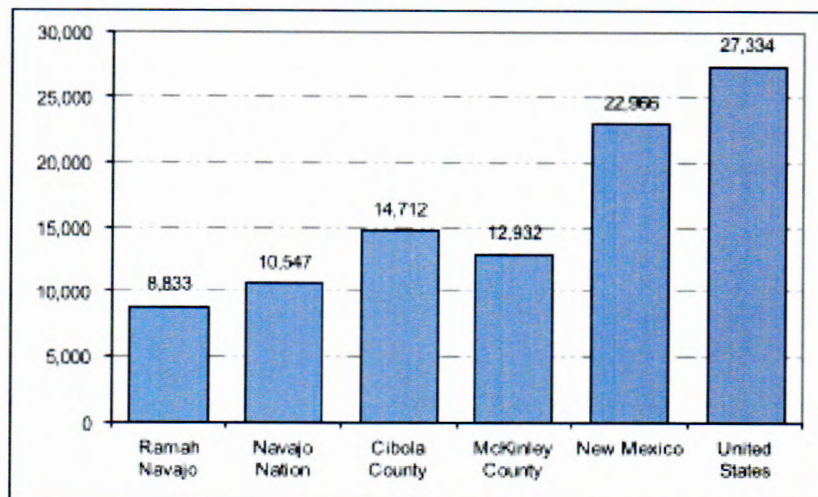


FIGURE 4. PER CAPITA INCOME



5. HERITAGE, TRADITIONS & CULTURAL RESOURCES

Ramah Navajo People still adhere to their cultural, social and traditional values, the same tenacious values that have made the Ramah Band of Navajo Tribe unique and fascinating throughout its history. For countless generations, the Ramah Navajo culture has emphasized a respect for and an understanding of the harmonious, balanced, and sacred interdependence of all elements of life on the Earth. Honoring its unique and enduring values, Ramah Navajos, today, adhere to a philosophy of investments in its people, resources, infrastructure and the environment.



HERITAGE, TRADITIONS AND CUSTOMS

Ramah Navajos certainly hold inherent rights under the U.S. Constitution, treaties, Supreme Court Decisions, Presidential Executive Orders, and Acts of Congress. Notwithstanding these rights, the unique cultural beliefs, customs and traditions are equally an integral component of land use decision-making.

ARTISANS AND CRAFTS PEOPLE

For example, the Ramah Navajo are famed for generations as meticulous silversmiths and weavers. Further, they have maintained the core traditions while also translating their traditional skills into detail-oriented talents demanded by industry. Paintings, woven baskets, and sculpture reflect the highly creative and artistic people that created them. These works also show a depth that again reflects the richness of the Navajo Ramah culture.



NATURAL RESOURCES

Dating back for generations, the Ramah Navajo have a cherished tradition of understanding the environment and making use of what it has to offer. For example, pinon picking is a traditional seasonal event wherein members must know which trees in certain regions are ready to offer their bounty. The Ramah Navajo also enjoy the tradition of picking yucca bananas, wild berries, chi chin and dikeh.

HUNTING

Similarly, hunting small local game has always been a part of Ramah Navajo lives. To supplement their food supplies, Ramah Navajos hunt squirrel, elk, deer, antelope, prairie dog, porcupine, turkey, rabbit, and quail. Historically and now, hunters use bows, traps made of local woods, boomerangs and slingshots to bring home the bounty. Today, hunting is especially popular in the areas south of the Cerro Alto.



LIVESTOCK, RANCHING, FARMING

Livestock, primarily raising sheep and cattle, has been a way of life for Ramah Navajos for many generations. While the community cherishes the support of livestock and ranching, the grazing and farm lands also have inherent aesthetic appeal offering beautiful vistas. Any loss of agricultural land and the farming/ranching tradition can lead to loss of character, identity, and a way of life within a striking area.

GRAZING

The majority of the planning area is dedicated to grazing although grazing livestock was already ongoing as the BIA issued the first permits for sheep, goats, horses and cows in the 1930s. Currently the Division of Natural Resources is the custodian of the permitting process, and the Community is divided into five range units with a varying number of permits. Consistent with 25 CFR, permits are issued in two-year intervals but typically are renewed in perpetuity. Permits cannot be sold but they can be transferred from one estate to another as inheritance.



ENDURING INTO FUTURE

Ramah Navajo have customs that date back many years that are well embedded in the community's cultural heritage. In addition to embracing and using customs still valid over the years, the traditional history of Ramah Navajo is one with a strong emphasis on adapting to trends within modern day America. Such a dual approach will continue to perpetuate the enduring Ramah Navajo into the future.



CULTURALLY SIGNIFICANT SITES

Among others, historic and cultural resources can be archaeological sites, historic buildings, districts or traditional cultural places and objects. The National Environmental Policy Act of 1969 (NEPA) and the National Historic Preservation Act of 1966 (NHPA), as amended, are the leading preservation laws for defining a resource and whether it is eligible for inclusion in the National Historic Register. The NHPA mandates a cultural resources inventory whenever a federal undertaking is

implemented. The purpose of an inventory is to identify, document and evaluate the significance of all resources within the area of potential effect. Depending on the type of resources, significance can be more difficult to demonstrate and agree upon. The final determination is usually left up to the Tribal or State Historic Preservation Office in consultation with the lead agency. This process may also be implemented under the umbrella of an environmental impact statement or assessment required by NEPA. Other laws that govern cultural resource management include the Antiquities Act of 1906, the Historic Sites Act of 1935, The Archaeological Resource Protection Act of 1979, The Native American Graves Protection and Repatriation Act of 1990, and Executive Order 13007 (Indian Sacred Sites [1996]).

Previously surveyed and recorded cultural sites are scattered throughout the community. The sites in Ramah Navajo include the presence of numerous material types or important tool types or surface artifacts that appear to indicate a substantial subsurface component. The sites are not shown on the land use plan to protect these areas.



TRADITIONALLY SENSITIVE SITES

Traditionally sensitive sites are defined as those areas that have been designated by community members as places used for ceremonies, or are associated with ceremonies. 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.

Traditionally sensitive sites are scattered throughout Ramah Navajo. All traditionally sensitive sites should be respected equally.

Those areas that have been determined to have special traditional significance to community members including volcanic peaks in El Malpais to the southeast and Salt Lake to the southwest and other sites. The El Malpais National Monument preserves 114,277 acres of which the Navajo People continue to use for gathering herbs and medicines, paying respect and renewing ties (El Malpais National Monument 2003).



6. NATURAL ENVIRONMENT

The natural environment plays a critical role in sustaining the Ramah Navajo community as it faces increasing demands of population and economic growth. The terrain, hillsides, forest, ridges, ponds, malpais, wildlife habitat and other natural resources form the surrounding landscape of Ramah Navajo. Conservation and protection of its natural resources are essential to the sustainability of future generations.

TOPOGRAPHY

Ramah Navajo is situated on the southwestern slopes of the Zuni Mountains within the Colorado Plateau province. The altitude ranges from 6,400 feet in the southwest to 8,000 feet in the northeast. The area is characterized by buttes, mesas interspersed with high valleys and canyons. Most of the central and southeast portions of Ramah Navajo are covered by old lava beds and basaltic outcrops (Navajo Parks and Recreation 1971).

Cibola National Forest in the northeastern corner extends out along the Zuni Mountains. The Ramah Reservoir located north of Ramah Village is the only lake in the area but it is actually located off the reservation. There are many other artificial lakes interspersed throughout the area.



Sandstone ridges mark the area. A group of sharp outthrust cliffs form the El Morro Inscription Rock landmark. Most of the central and southeast portions of the area are covered by old lava beds and basaltic outcrops. The lava flows that lie under much of the surface are bared throughout as scattered Malpais districts.

The Continental Divide skirts the southeastern side of the planning area. East of the Continental Divide is a prominent landmark, Cerro Alto.

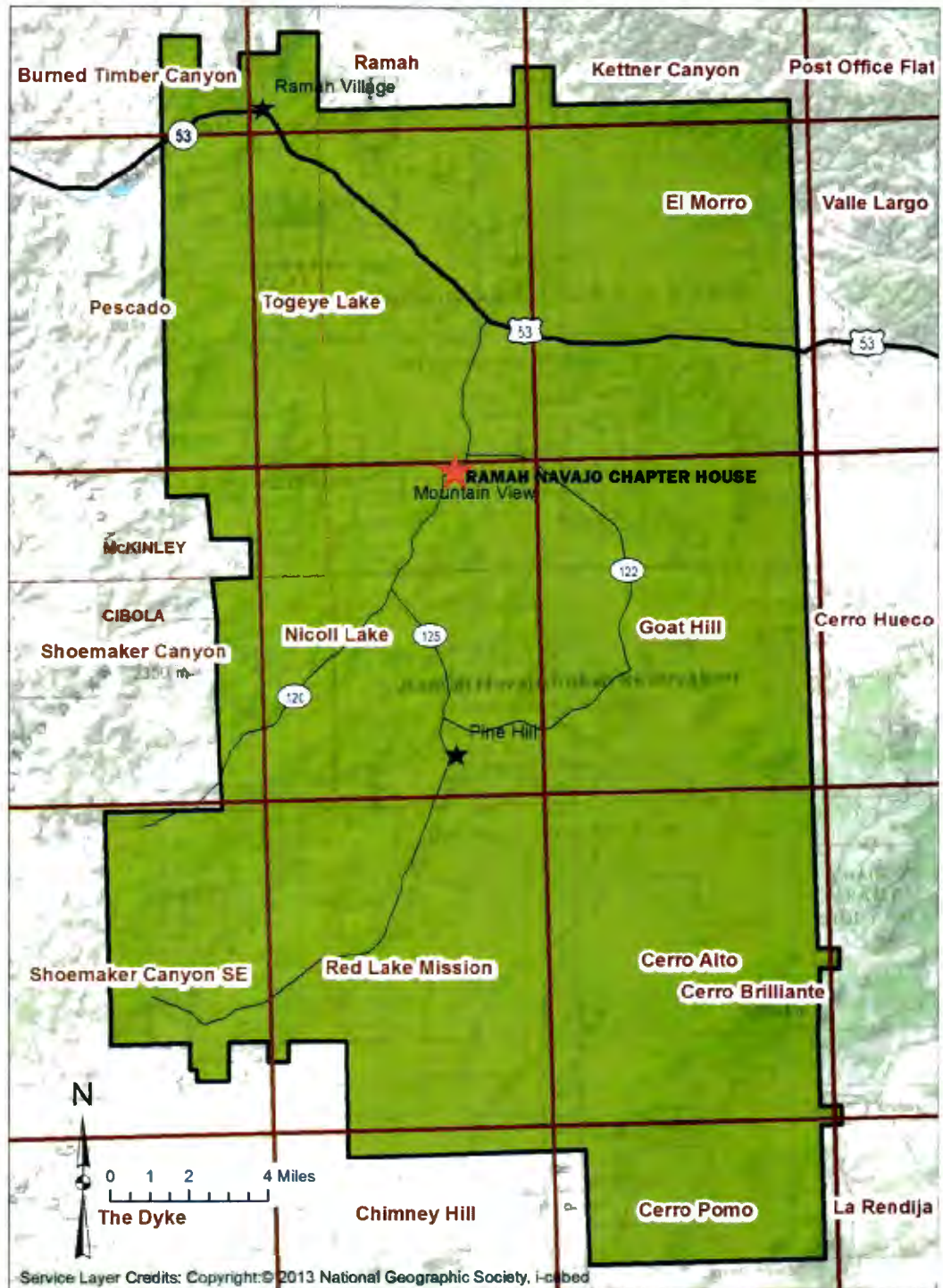
Two drainage systems run westward. One passes outward at the northwest corner. This drainage is dammed at Blackrock, a few miles east of Zuni Pueblo and then flows toward the southwest into the Little Colorado River. The other, smaller, local drainage leaves the area at the southwest corner and also empties into the Little Colorado River. (Landgraf 1954).

The planning area covers portions of the following United States Geological Survey (USGS) 7.5' quadrangles: Timber Canyon; Ramah; Kettner Canyon; Pescado; Togeye Lake; El Morro; Shoemaker Canyon; Nicoll Lake; Goat Hill; Shoemaker Canyon SE; Red Lake Mission; Cerro Alto; Chimney Hill; and Cerro Pomo (**MAP 5**).

SIGNIFICANT LANDMARKS

Ramah Navajo recognizes and identifies the significant landmarks located near or within the planning area (**TABLE 6**).

TABLE 6. SIGNIFICANT LANDMARKS	
Name	Location
Black Mountain	Unit 3
Na a shoi toi	Unit 1
Goat Hill	Unit 3
Bi ghaa be' a kid'ii	Unit 3
Horseshoe Canyon	Unit 4
Cedar Bluff	Unit 2
Nakai' ses yainii'	Unit 2
El Morro	Unit 2
Tse Kooh	Unit 2
Mountain View	Unit 2

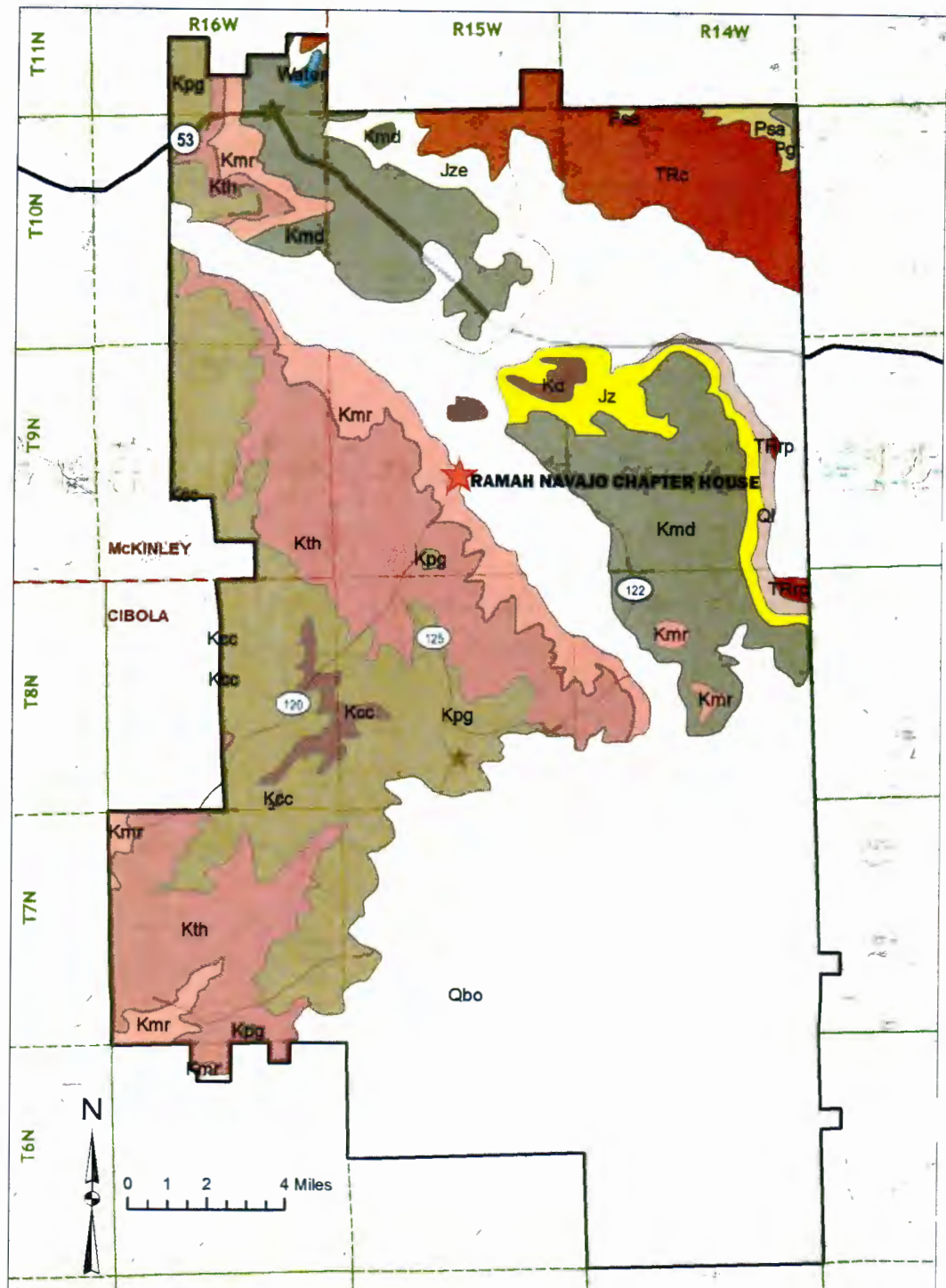


MAP 3: TOPOGRAPHIC

GEOLOGY

The planning area holds several general geological entities (**MAP 6**), and the map symbols and geologic formations are presented in **TABLE 7**.

TABLE 7. GEOLOGIC FORMATION			
MAP UNIT	FORMATION NAME	PRIMARY LITHOLOGY	DESCRIPTION
Jz	Zuni Sandstone	sandstone	Zuni Sandstone (Calloviaian) — Consists of undivided equivalents of Summerville Fm & Bluff Sandstone; restricted to Zuni Basin area
Jze	Zuni and Entrada Sandstones, undivided	sandstone	Zuni and Entrada Sandstones, undivided
Kcc	Crevasse Canyon Formation	shale	Crevasse Canyon Fm (Santonian to Coniacian) — Coal-bearing units are Dilco & Gibson Coal Members; other members are Bartlett Barren, Dalton Sandstone, & Borrego Pass Sandstone (or Lentil)
Kd	Dakota Sandstone	sandstone	Dakota Sandstone (Cenomanian) — Includes Oak Canyon, Cubero, and Paguate Tongues; includes Clay Mesa Tongue of Mancos Shale
Kdm	Intertongued Mancos Shale & Dakota Sandstone of W-Central New Mexico	shale intertongued and sandstone	Intertongued Mancos Shale and Dakota Sandstone of west-central New Mexico (Cenomanian)
Kmr	Rio Salado Tongue of the Mancos Shale	shale	Rio Salado Tongue of the Mancos Shale (Turonian)
Kpg	Pescado Tongue of the Mancos Shale and Gallup Sandstone	shale	Pescado Tongue of the Mancos Shale and Gallup Sandstone (Turonian) — In Zuni Basin only; Pescado is chronostratigraphic equivalent of Juana Lopez Member of Mancos Shale
Kth	Tres Hermanos Formation	sandstone	Tres Hermanos Formation (Turonian) — Formerly designated as lower Gallup Sandstone in the Zuni
TRc	Chinle Group	mudstone	Chinle Group (Upper Triassic) — Map unit includes Moenkopi Formation (Middle Triassic) at base in many areas
TRrp	Rock Point Formation of Chinle Group	sandstone	Rock Point Formation of Chinle Group (Upper Triassic) — May locally include Wingate Sandstone (Triassic)
Ql	Landslide deposits and colluvium	landslide deposits	Landslide deposits and colluvium (Holocene to Pleistocene) — Landslide deposits on western flanks of Socorro Mountains not shown for clarity
Qbo	Basaltic to andesitic lava flows	volcanic	Basaltic to andesitic lava flows (middle to lower Pleistocene) — Includes vent deposits
Source: New Mexico Bureau of Geology & Mineral Resources; http://maps.nmt.edu/#			



MAP 6: GEOLOGY

SOILS

The planning area lies within the U.S. Department of Agriculture, Natural Resources Conservation Service Soils Report Number NM692 entitled Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties accessed from the Soil Survey Geographic (SSURGO) database. According to Soils Report NM692, slopes and soil types in the planning area vary. 31 different soil units are present ranging from fine sand, clay loam to rock outcrops, and some formations have slopes up to 55 percent (TABLE 8).

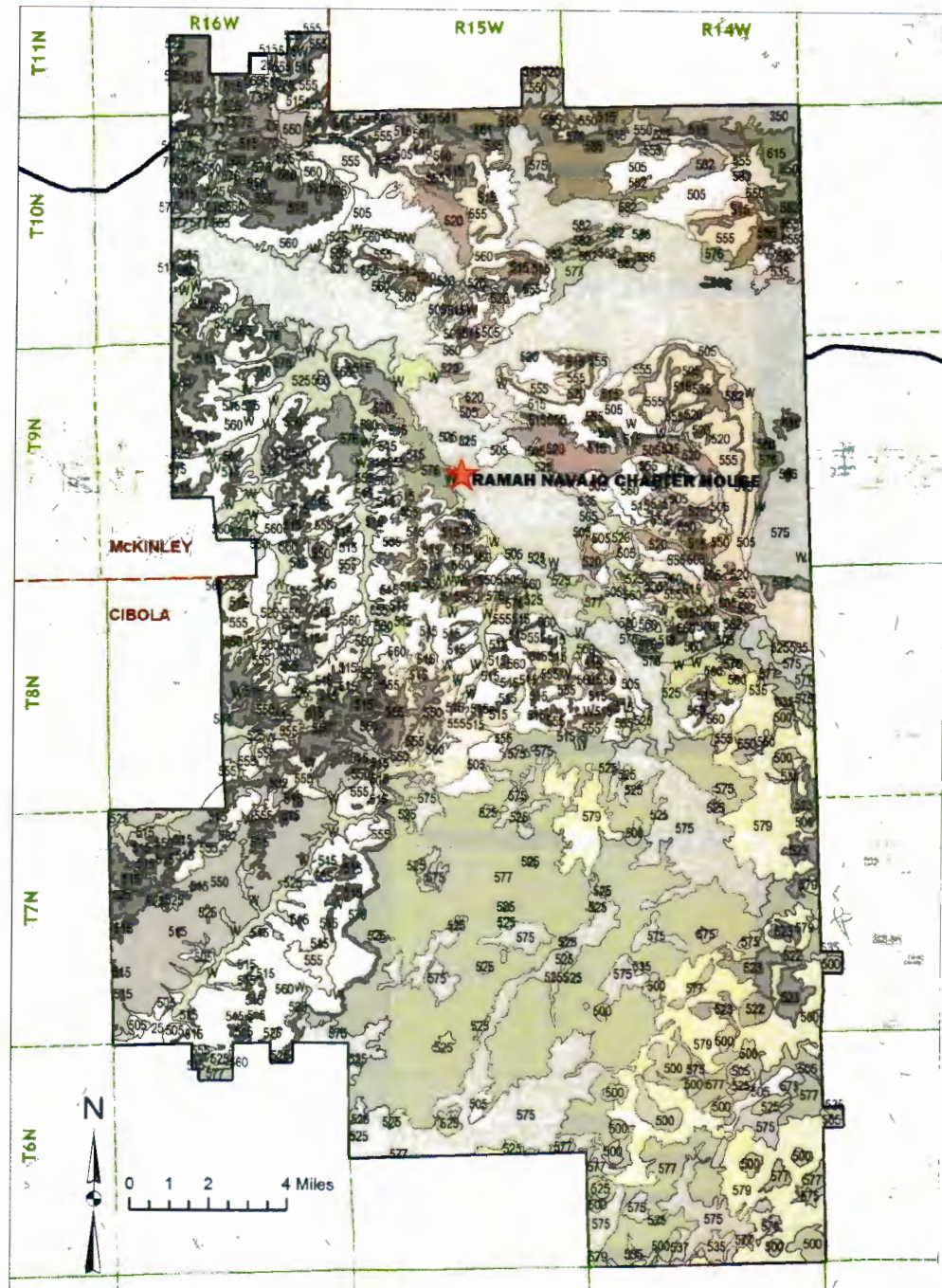
A corresponding soils map is presented in MAP 7. The soils map shows the majority of the flat area consisting of Penistaja-Tintero complex (205) with patches of Mido loamy fine sand (353). Soils along the unnamed arroyo extending southeast to Northwest consist Zia sandy loam (352). Soil reports generated from the SSURGO data are included in Appendix B. The Map Unit Description report describes the eleven different soil units.

Soil descriptions are presented in APPENDIX C - Map Unit Description - Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties. Additional tables indicating the severity of individual soil limitations are provided in APPENDIX D - Dwellings and Small Commercial Buildings. 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

TABLE 8. SOILS

MAP UNIT	SOIL	PERCENT SLOPES
25	Hickman-Catman complex	1 to 6
70	Catman clay loam	1 to 3
72	Catman variant clay loam	1 to 3
73	Catman sandy clay loam	1 to 3
75	Hickman sandy clay loam	1 to 3
210	Bond-Penistaja-Rock outcrop complex	2 to 15
350	Rock outcrop-Stout complex	3 to 15
500	Timhus-Bandera association	20 to 50
505	Flugle-Goesling loamy fine sands	1 to 8
515	Rock outcrop-Vessilla-Mion complex	3 to 55
520	Celacy-Atarque complex	1 to 10
522	Bandera association	15 to 45
523	Charo-Raton complex	1 to 10
525	Catman-Silkie association	1 to 10
535	Millpaw loam	0 to 5
537	Millpaw-Loarc complex	0 to 10
550	Nogal-Galestina sandy loams	1 to 10
555	Pinitos-Ribera sandy loams	1 to 10
560	Flugle-Teco association	1 to 8
561	Flugle-Quintana complex	2 to 15
570	Torreón-Rock outcrop-Cabezón complex	15 to 45
575	Teco-Atarque association	1 to 8
576	Teco sandy loam	2 to 5
577	Cabezón-Montecito-Rock outcrop association	1 to 10
579	Cabezón-Cantina complex	1 to 7
582	Kenray fine sand	3 to 15
585	Moncha silt loam	2 to 10
586	Venadito-Teco association	0 to 10
615	Trag-Techado-Rock outcrop complex	3 to 55
W	Water	

Source: Map Unit Description (Brief, Tabular); Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties



MAP 7: SOILS

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.



ECOLOGICAL SITES

According to the Natural Resources Conservation Service in the National Range and Pasture Handbook (2003), an ecological site is a "...distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation.

Within the planning area, there are 11 ecological sites associated with different types of soils as presented in **TABLE 9**. Each ecological site has distinctive vegetative regimes and soil types. Elevation, moisture, slope, and soil conditions play varying roles in their unique composition. Overviews of these ecological sites as provided by USDA NRCS are:

TABLE 9
GEOLOGIC FORMATION WITHIN PLANNING AREA

MAP UNIT SYMBOL	MAP UNIT NAME	PERCENT COMPOSITION	COMPONENT NAME	ECOLOGICAL CLASS (RANGELAND SITE)
25	Hickman-Catman Complex, 1 to 6 percent slopes	45 40	Hickman Catman	Bottomland Clayey Bottomland
70	Catman Clay Loam, 1 to 3 percent slopes	85	Catman	Clayey Bottomland
72	Catman variant clay loam, 1 to 3 percent slopes	85	Catman, variant	Salt Meadow
73	Catman sandy clay loam, 1 to 3 percent slopes	85	Catman	Clayey Bottomland
75	Hickman sandy clay loam, 1 to 3 percent slopes	85	Hickman	Bottomland
210	Bond-Penistaja-Rock outcrop complex, 2 to 15 percent slopes	45 25 20	Bond Penistaja Rock outcrop	Shallow Sandstone Loamy
350	Rock outcrop-Stout complex, 3 to 15 percent slopes	60 25	Rock outcrop Stout	Mountain Grassland
500	Timhus-Bandera association, 20 to 50 percent slopes	45 40	Timhus Bandera	Cinder Cinder
505	Flugle-Goesling loamy fine sands, 1 to 8 percent slopes	55 25	Flugle Goesling	Loamy Loamy
515	Rock outcrop- Vessilla-Mion complex, 3 to 55 percent slopes	45 20 20	Rock outcrop Mion Vessilla	Shallow Savanna Savanna
520	Celacy-Atarque complex, 1 to 10 percent slopes	55 30	Celacy Atarque	Savanna Shallow Sandstone
522	Bandera association, 15 to 45 percent slopes	50 30	Bandera Bandera	Cinder Cinder
523	Charo-Raton complex, 1 to 10 percent slopes	45 40	Charo Raton	Cinder Hills Mountain Malpais
525	Catman-Silkie association, 1 to 10 percent slopes	45 40	Catman Silkie	Clayey Bottomland Clayey
535	Millpaw loam, 0 to 5 percent slopes	85	Millpaw	Loamy
537	Millpaw-Loarc complex, 0 to 10 percent slopes	50 35	Millpaw Loarc	Loamy Loamy
550	Nogal-Galestina sandy loams, 1 to 10 percent slopes	45 35	Nogal Galestina	Savanna Loamy
555	Pinitos-Ribera sandy loams, 1 to 10 percent slopes	50 30	Pinitos Ribera	Forestland Site - Juniperus monosperma-Pinus edulis/ Fallugia Savanna

560	Flugle-Teco association, 1 to 8 percent slopes	50 30	Flugle Teco	Loamy Clayey
561	Flugle-Quintana complex, 2 to 15 percent slopes	45 35	Flugle Quintana	Loamy Loamy
570	Torreon-Rock outcrop- Cabezon complex, 15 to 45 percent slopes	55 25 15	Torreon Rock Outcrop Cabezon	Loamy Shallow Savanna
575	Teco-Atarque association, 1 to 8 percent slopes	60 25	Teco Atarque	Clayey Malpais
576	Teco sandy loam, 2 to 5 percent slopes	80	Teco	Clayey
577	Cabezon-Montecito-Rock outcrop association, 1 to 10 percent slopes	35 30 20	Cabezon Montecito Rock outcrop	Shallow Savanna Clayey
579	Cabezon-Cantina complex, 1 to 7 percent slopes	45 40	Cabezon Cantina	Shallow Savanna Loamy Savanna
582	Kenray fine sand, 3 to 15 percent slopes	80	Kenray	Deep Sand
585	Moncha silt loam, 2 to 10 percent slopes	85	Moncha	Clayey
586	Venadito-Teco association, 0 to 10 percent slopes	60 25	Venadito Teco	Clayey Bottomland Clayey
615	Trag-Techado-Rock outcrop complex, 3 to 55 percent slopes	35 30 20	Trag Techado Rock outcrop	Mountain Grassland Shallow Savanna
W	Water	100	Water	

Source: Map Unit Description (Brief, Tabular):
Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

BOTTOMLAND- R035XA118NM**Overview**

This site occurs on floodplains or stream terraces on valley floors. It occurs as a distinct unit or as part of a mosaic with Clayey Bottomland sites. The historic plant community of the Bottomland site is a highly productive grassland characterized by both warm and cool season grasses, scattered shrubs, and forbs. Alkali sacaton is the dominant grass species with western wheatgrass occurring as the subdominant. Fourwing saltbush and rabbitbrush are common shrubs. Decreased available soil moisture due to changes in hydrology can cause a transition to a less productive Dry Grassland State. Continued loss of grass cover, soil surface sealing, or continuous disturbance may result in a state with extensive areas of bare ground (Bare State). Loss of grass cover and decreased soil moisture can increase competition by shrubs, facilitating shrub encroachment and result in a Shrub-Dominated state.

Habitat for Wildlife

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, coyote, black-tailed jackrabbit, Botta's pocket gopher, sparrow hawk, mourning dove, chipping sparrow, western spadefoot, leopard lizard, and prairie rattlesnake.

CLAYEY BOTTOMLAND - R035XA119NM**Overview**

This site occurs on swales, depressions, and flood plains on valley floors. It occurs as a distinct unit or as part of a mosaic with Bottomland sites. The historic plant community of the Clayey Bottomland site is a productive grassland characterized by both warm and cool season grasses, scattered shrubs, and forbs. Western wheatgrass is the dominant grass species. Fourwing saltbush and rabbitbrush are the more common shrubs. Decreased available soil moisture due to blocked or redirected flow of run-on water, loss of grass cover, or gullying can cause a transition to a less productive Dry Grassland State. Continued loss of grass cover and soil surface sealing may result in a state with extensive areas of bare ground. Alternatively, loss of grass cover and soil drying can decrease competition by grasses, facilitating shrub encroachment and result in a Shrub-Dominated state.

Habitat for Wildlife

This site provides habitats that support a resident animal community that is characterized by pronghorn antelope, coyote, black-tailed jackrabbit, Betta's pocket gopher, sparrow hawk, mourning dove, chipping sparrow, Western spadefoot toad, leopard lizard, and prairie rattlesnake. The chestnut-collared longspur winters on this site and the common raven and prairie falcon hunt over it.

CINDER - R035XA117NM**Overview**

This site occurs on cinder cones, hills, and plateaus. It occurs as a distinct unit or as part of a complex with Gravelly sites. The historic plant community of the Cinder site is a grassland characterized by both warm and cool season perennial bunchgrasses, scattered shrubs and forbs, and occasionally a few trees. Blue grama is the dominant grass. Widely scattered patches of wolfberry, Apache plume, and fourwing saltbush are common. A few scattered piñon and juniper may also occur on this site. This site is susceptible to encroachment of rabbitbrush. Rabbitbrush may increase on this site in response to fire, overgrazing, and decreased resource

competition.

Habitat for Wildlife

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, coyote, blacktailed jackrabbit, Merriam's kangaroo rat, whitethroated woodrat, silky pocket mouse, sparrow hawk, chipping sparrow, mourning dove, leopard lizard, shorthorned lizard, and prairie rattlesnake. The chestnut-collared longspur winters on this site, and the common raven and prairie falcon hunt over it.

CLAYEY - R035XA128NM

Overview

This site occurs on flood plains, valley sides, sideslopes of hills and mesa tops. It is associated with Loamy, Clayey Bottomland, and Malpais sites. It occurs as a distinct unit adjacent to or as part of a mosaic with these sites. The historic plant community of the Clayey site is a grassland characterized by both warm and cool season grasses, scattered shrubs, and forbs. The clayey site is dominated by alkali sacaton and western wheatgrass. Fourwing saltbush and winterfat are common shrubs. Forbs can occur in high relative abundance in years with above average rainfall. Decreased available soil moisture due to blocked or redirected flow of run-on water, loss of grass cover, and gulying can cause a transition to a less productive Dry Grassland State. Continued loss of grass cover and soil surface sealing may result in a state with extensive areas of bare ground. Loss of grass cover and decreased soil moisture can decrease competition by grasses, facilitating shrub encroachment and result in a Shrub Dominated state.

Habitat for Wildlife

Not Available.

CLAYEY BOTTOMLAND – R035XA119NM

Overview

This site occurs on swales, depressions, and flood plains on valley floors. It occurs as a distinct unit or as part of a mosaic with Bottomland sites. The historic plant community of the Clayey Bottomland site is a productive grassland characterized by both warm and cool season grasses, scattered shrubs, and forbs. Western wheatgrass is the dominant grass species. Fourwing saltbush and rabbitbrush are the more common shrubs. Decreased available soil moisture due to blocked or redirected flow of run-on water, loss of grass cover, or gulying can cause a transition to a less productive Dry Grassland State. Continued loss of grass cover and soil surface sealing may result in a state with extensive areas of bare ground. Alternatively, loss of grass cover and soil drying can decrease competition by grasses, facilitating shrub encroachment and result in a Shrub Dominated state.

Habitat for Wildlife

Not Available.

LOAMY - R035XA112NM

Overview

Approximately 75% of the vegetation produced on this site is suitable for grazing or browsing by domestic livestock and wildlife. Grazing distribution is generally not a problem if adequate waterings are properly located. However, continuous grazing leads to a repetitive, selective

grazing of the most desirable species, which reduces their vigor and productivity. The result is a deterioration of the potential plant community. This deterioration is indicated by a decrease in western wheatgrass, muttongrass, prairie junegrass, spike muhly, winterfat, and fourwing saltbush. Species that increase include blue grama, galleta, mat muhly, ring muhly, rabbitbrush, big sagebrush, and broom snakeweed. The pinyon and/or juniper may also increase to give the appearance of a pinyon/juniper woodland with little herbaceous understory present. This site is most stable against forces of erosion when the equilibrium between the grasses and trees is maintained.

Habitat for Wildlife

This site provides habitat which support a resident animal community that is characterized by pronghorn antelope, black-tailed jackrabbit, badger, Gunnison's prairie dog, banner-tailed kangaroo rat, Botta's pocket gopher, silky pocket mouse, burrowing owl, mourning dove, chipping sparrow, western spadefoot toad, leopard lizard, short-horned lizard, and prairie rattlesnake.

The chestnut-collared longspur winters on this site, and the common raven and prairie falcon hunt over it.

MALPAIS - R035XA109NM

Overview

The Malpais site occurs on basalt-capped mesa tops, low hills and ridges, and on old lava flows. The soils are shallow over basalt and often cobbly or stony. This site is often associated with Loamy sites. The Loamy site can occur as low valleys dissecting the hills, ridges and old lava flows, or Loamy sites may occur with Malpais sites, as pockets of deeper soils on mesa tops. This is predominantly a grassland site characterized by a mixture of warm and cool season grasses, scattered shrubs, and a few trees. Blue grama and sideoats grama are the dominant grasses. Woody species may include winterfat, fourwing saltbush, piñon, and juniper. This site appears to be highly resistant to state change, as no alternate states were identified during our inventory. This resistance may be due in part to the high volume of rock fragments that occur on the soil surface, strong argillic horizons, and a shallow depth to bedrock. The cobbles and stones on the soil surface may help to protect the site from accelerated erosion and limit grazing accessibility by protecting grass bases. Argillic horizons and basalt bedrock can help to keep water perched and available, favoring shallow-rooted grasses.

Habitat for Wildlife

This site provides habitat which can support a resident animal community characterized by mule deer, rock squirrel, brush mouse, Stephen's woodrat, gray fox, bobcat, scaled quail, ladderbacked woodpecker, scrub jay, common bushtit, rock wren, brown towhee, rufous-crowned sparrow, chipping sparrow, ash-throated flycatcher, short-horned lizard, collared lizard, Eastern fence lizard, tree lizard, red-spotted toad, and black-tailed rattlesnake.

MOUNTAIN GRASSLAND - R035XH002NM

Overview

This is a grassland site dominated by cool-season grasses. Scattered pinyon pine, juniper, oaks and ponderosa pines occur on this site. Grasses make up the majority of the vegetation. A variety of forbs are conspicuous when in bloom. Small amounts of shrubs are widely scattered throughout the site. Tree canopy does not exceed 10 percent and averages 5 percent or less.

Other grasses that could appear on this site include: pine dropseed, threeawn spp., muhlenbergia spp., western wheatgrass and brome spp. Other shrubs and forbs that could appear on this site include: pingue, sageworts and gray horsebrush.

Approximately 85 percent of the annual yield are from species that furnish forage for grazing animals. This site is suitable for grazing during the late spring, summer and early fall. The length of the grazing season varies with elevation. At lower elevation, the grazing season can be extended from May 1st to October 15th. At higher elevations the grazing season is normally June 1st to September 15th. The site can be used by all classes of livestock; however, it is better suited for steers or sheep due to the short grazing season. To reduce spot grazing and overgrazing of the flatter slopes, herding of livestock is needed, especially when grazing sheep. Continuous grazing during the entire season will cause the more desirable species, such as Arizona fescue, mountain muhly, prairie junegrass and oatgrass to decrease. Species most likely to invade this site or increase from trace amounts are Kentucky bluegrass, sleepygrass and low-vigor blue grama. Other plants of generally low grazing value, such as ring muhly, threeawn spp., fringed sagebrush, cudweed sagewort, pingue and rabbitbrush will increase. To maintain or improve the healthy well-balanced

Plant community, grazing needs to be delayed until the soils are firm after winter snows and when plants have had an opportunity to make good growth. Rapid growth of plants in the spring may temporarily deplete food reserves. Delaying grazing until the plants have had an opportunity to restore these food supplies is advisable. A system of deferred grazing, which varies the time of grazing and rest in a pasture during successive years, is needed to maximize forage production and to maintain a healthy well-balanced plant community. Grazing pressure from domestic livestock needs to be reduced during the spring and fall to reduce the competition that the livestock will have with the elk in competing for forage during this period of time.

Habitat for Wildlife

This site provides habitats which support a resident animal community that is characterized by mule deer, elk, Merriam's turkey, bobcat, mourning dove, band-tailed pigeon and prairie rattlesnake.

SALT MEADOW - R035XA100NM

Overview

This site occurs on floodplains adjacent to streams and rivers, and is occasionally flooded for brief periods during the summer. Along the outer edges, this site may intergrade with Salty Bottomland, Clayey Bottomland, or Bottomland sites. The soils are deep, salt-affected, and somewhat poorly drained with a seasonal (April through September) high water table. The reference plant community is a grassland characterized by salt tolerant species such as inland saltgrass and alkali sacaton. Saltgrass is typically the dominant grass on areas that have a high salt content, fine textured soils, and a shallow water table. Alkali sacaton may dominate on soils with lower salt concentrations or where the water table occurs at a greater depth. Overgrazing, soil sealing, soil compaction, or increases in salinity are thought to initiate the transition to the Inland Saltgrass-dominated State. Overgrazing reduces the competitive influence of the more palatable grasses, promotes soil sealing by reducing plant cover and organic matter, and increasing the amount of bare ground. Inland saltgrass possesses the ability to break through compacted soils and survive under conditions of extreme salinity. On areas with high salt concentrations, flooding may help flush salts from the system, provided the site has adequate drainage. Seeding may be

necessary to reestablish the more palatable grasses. The introduction of saltcedar propagules may be all that is necessary for saltcedar to establish and dominate some areas. On those areas with a water table less than 4 feet, saltcedar typically occurs as scattered shrub-like trees. On those areas where the water table is deeper (5 to 20 feet) saltcedar may completely dominate in dense stands. Disturbance such as fire, heavy grazing, and drought may encourage saltcedar establishment by reducing the competitive influence of native vegetation. Changes in the timing, intensity, and frequency of flooding may also favor saltcedar establishment. Saltcedar control is costly and may require a combination of control methods and the return of natural flooding regimes.

Habitat for Wildlife

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, coyote, striped skunk, black-tailed jackrabbit, Botta's pocket gopher, deer mouse, banner-tailed kangaroo rat, killdeer, house finch, western spadefoot toad, short-horned lizard and leopard frog. When seasonal shallow ponds occur, these sites are utilized by breeding amphibians, waterfowl and blackbirds.

SAVANNA - R035XG127NM

Overview

This site is characterized by scattered large tree-type pinyon and/or juniper with open grass stands in between. Understory grasses are dominated by blue grama, western wheatgrass, Indian ricegrass, and sand dropseed. Pinyon ricegrass and pine dropseed may also be found, usually beneath the trees and at the higher elevation ranges of the site. Winterfat and some forbs may occur in significant amounts. Broom snakeweed is most common in certain good rainfall years and when the understory plant community deteriorates from its potential. Reproduction of pinyon pine and juniper is normally very slow and, historically, may have been controlled by natural fire. Tree canopy of the natural potential plant community averages approximately 25 percent. In exceptional cases, a few more or less even-aged ponderosa pines may occur on this site naturally. Reproduction of this species is ordinarily even less evident than that of pinyon or juniper, and no more than 1 or 2 percent of the understory is likely to be made up of pine seedlings, even in the absence of livestock grazing.

Habitat for Wildlife

This site provides habitat that supports a resident animal community characterized by kit fox, badger, desert cottontail, spotted ground squirrel, Ord's kangaroo rat, white-throated woodrat, Botta's pocket gopher, plains pocket mouse, northern grasshopper mouse, ferruginous hawk, mourning dove, meadowlark, plains spadefoot toad, eastern fence lizard, plateau whiptail, shorthorned lizard, and prairie rattlesnake. Pronghorn antelope use the site peripherally but seldom reside on it. Common raven and prairie falcon hunt over the site, and Swainson's hawk nest here. Woodland wildlife species such as mule deer, gray fox, rock squirrel, harlequin quail, pinyon jay, scrub jay, chipping sparrow, and Cassin's kingbird also use the site, and in instances where pinyon and juniper have increased substantially, may become site characteristic. Elk may also use the site.

SHALLOW SANDSTONE - R035XG121NM

Overview

This site occurs on summits of mesas, hills, and ridges, and dipslopes of cuestas. Loamy and

Savannah Ecological Sites often occur as areas of deeper soils interspersed or adjacent to the Shallow Sandstone site. This is a moderately productive site characterized by a mixture of warm- and cool-season grasses, shrubs, and scattered trees. Sideoats grama, blue grama, galleta, little bluestem, Indian ricegrass, and New Mexico feathergrass are characteristic grasses. Bigelow sagebrush and fourwing saltbush are shrubs common to this site, while pinyon pine and juniper species characterize the tree aspect. Climate change, loss of grass cover and the associated decrease in resource competition by grasses are believed to facilitate the encroachment of woody species and may initiate the transition to the Pinyon-juniper State. A decrease in fire frequency may also facilitate this transition. Brush control, in conjunction with prescribed grazing, is necessary to remove the competitive advantage of shrubs and trees and reestablish grass dominance.

Habitat for Wildlife

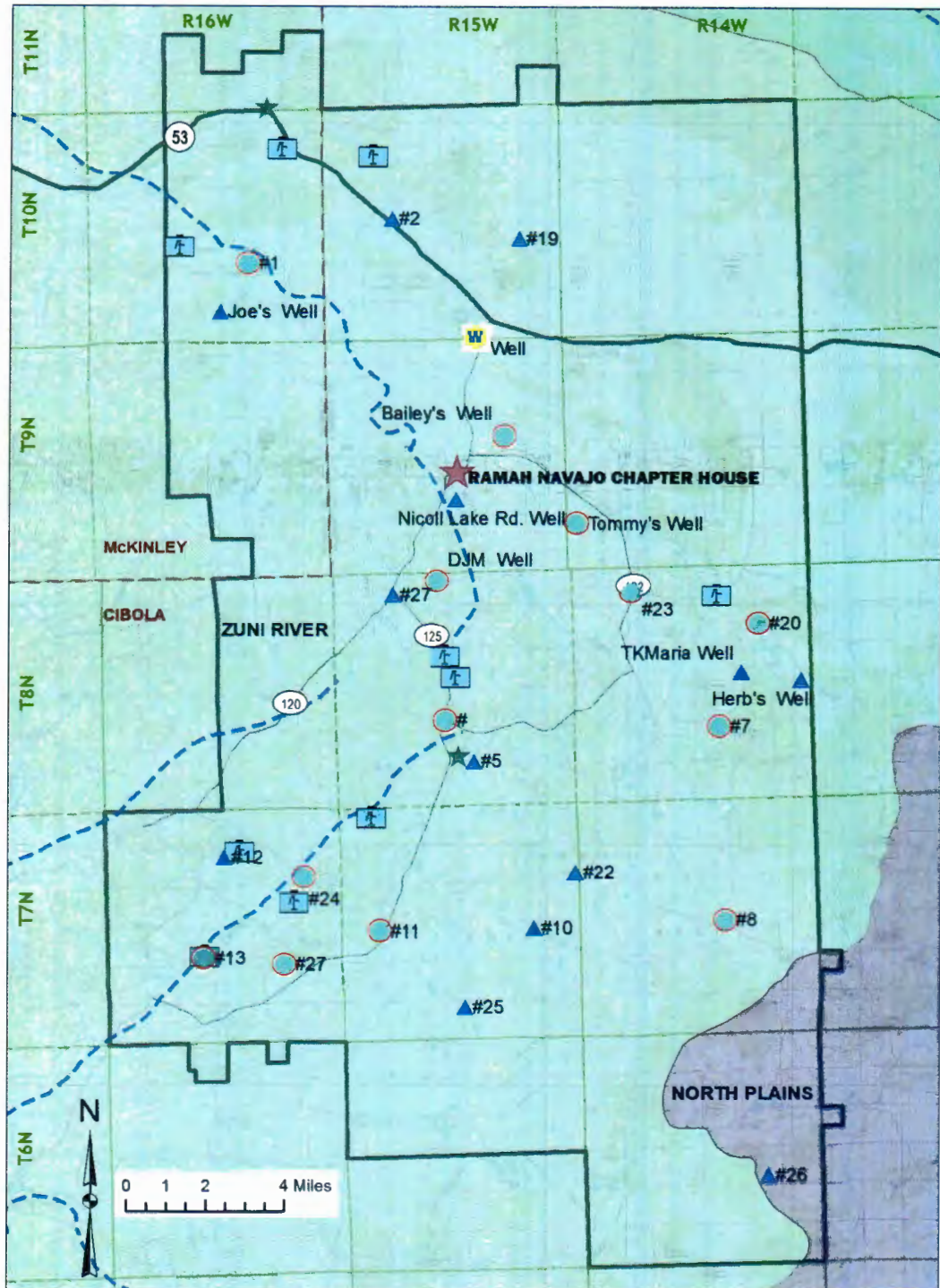
This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, coyote, blacktailed ackrabbit, white-throated woodrat, pinyon mouse, sparrow hawk, Cassin's kingbird, chipping sparrow, common raven, plains spadefoot toad, leopard lizard, plateau whiptail, desert shorthorned lizard, and prairie rattlesnake. Mourning dove nest on the site and the golden eagle and prairie falcon hunt over it.

MAJOR SURFACE WATER AND GROUNDWATER SOURCES

Surface water and water wells are depicted on **MAP 8**.

Surface water is extremely limited. Most streams within the planning area are ephemeral and intermittent water courses. The principal surface water drainage is the Zuni River Basin which drains into the Little Colorado River in Arizona. A small portion in the southeast corner of the planning area drains into North Plains Basin, which ultimately discharges to the Rio Grande in Cibola County. Surface waters are typically used for agriculture and stock watering.

The principal aquifers are the Gallup Sandstone and Dakota-Westwater within the Gallup Basin. Most groundwater in the Gallup Basin is stored in deep, confined bedrock aquifers. Except for the relatively small outcrop areas, these aquifers generally have low storage coefficients, and this leads to large and extensive drawdown effects when wells are pumped. The aquifers in the northern part of the Gallup Basin are in the San Juan geologic basin. The sequence of aquifers in the southern portion of the basin is somewhat different, where river-deposited alluvium found along the main drainage channels above the bedrock can, when saturated, provide local supplies of groundwater. Because much of the groundwater is confined, any precipitation must fall on the outcrop of the geologic unit and then travel downgradient to the saturated aquifer level (NWNMCOG, 1998) for recharge to occur; therefore, groundwater recharge from precipitation is minimal near well fields. Waters wells including nine artisan water wells and 27 active water wells. The artisan wells were inventoried by a community member for this land use plan. Only location and photos were collected. The active water are shown by their water use type. Of the active wells, one is used for domestic purposes and 13 for livestock use. The remaining 13 are for domestic and livestock uses.



MAP 8: SURFACE WATER & WATER WELLS



7. EXISTING STRUCTURES & BUILT ENVIRONMENT

Existing structures and built environment refers to aspects of the community which are man-made or modified, including housing, roads, utilities, community facilities, businesses, as compared with the natural environment. All of these elements impact land use patterns.

ROADS

The Road System within the Ramah Navajo Bands jurisdiction is currently composed of approximately 29 paved miles and 451 miles



of gravel surfaced or maintained earthen roadway routes (**MAP 9**).

There are two bridges within the Ramah Navajo Bands jurisdiction. The main regional roadway passing along the northern tier of the Ramah Navajo Band Lands is NM 53. The main arterial and backbone of the Chapters road system is BIA 125, a north/south route which is paved its entire length. The second most important roadway is BIA 122. BIA 122 surfacing is part pavement, part chip seal and part aggregate base course. There are numerous other routes within the Ramah Navajo Band lands and jurisdiction.



The Ramah Navajo Department of Transportation (RNDOT) management areas are subdivided in five (5) transportation system elements aligned with the units. Ramah Navajo Chapter through the Office of Grants and Contracts and the RNDOT performs leadership functions for the Chapter's road system that include, planning, design, construction, operations and maintenance. Ramah Navajo's Long Range Transportation Plan is a living document and is updated periodically to adapt and incorporate transportation system needs and revisions. The road system strip maps maintained by RNDOT provide information and location of roads and road connectivity.



UTILITIES

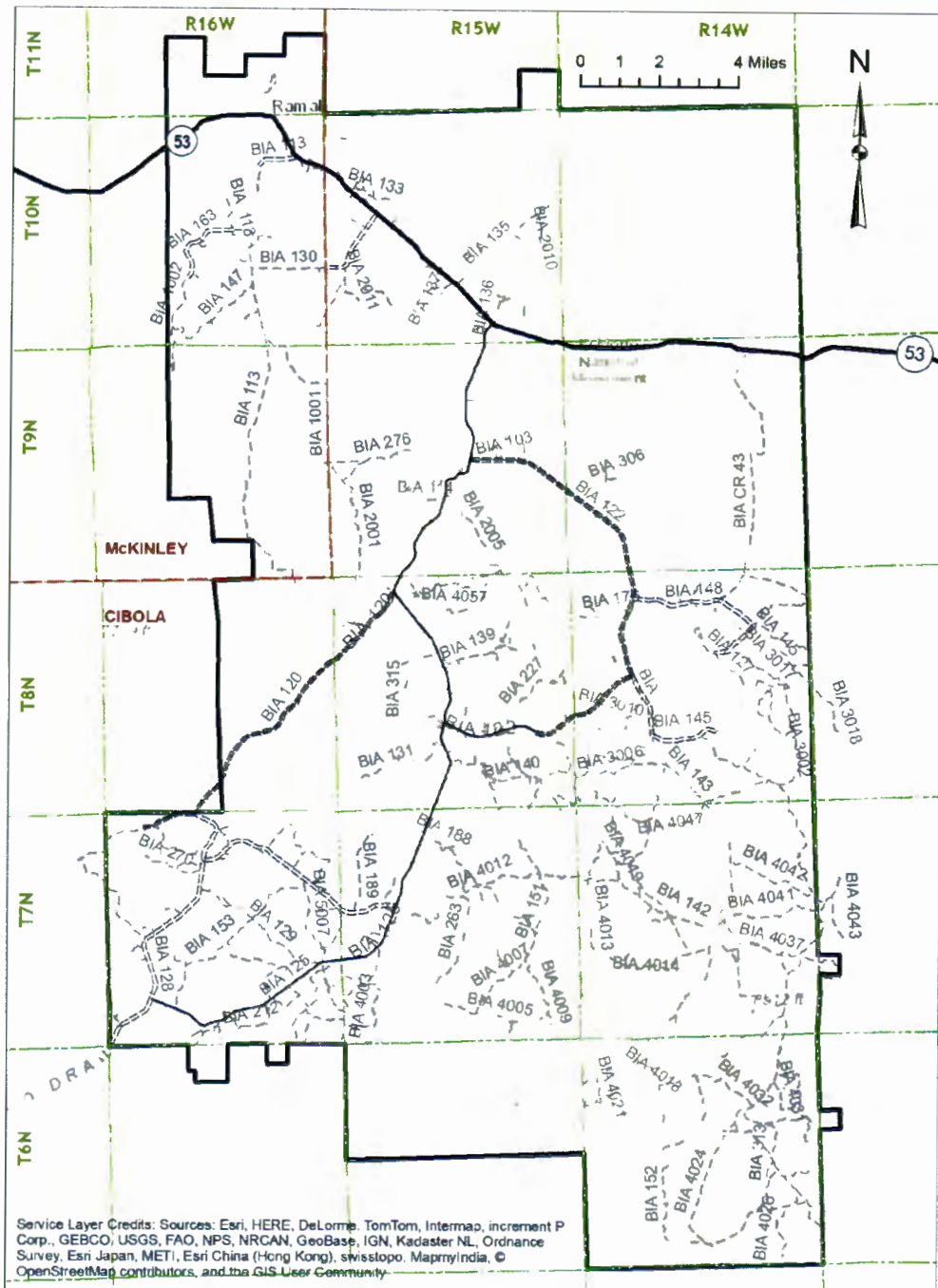
Utilities include electric, water, sewer. **MAP 10** shows the power lines and water lines throughout Ramah Navajo.

ELECTRIC

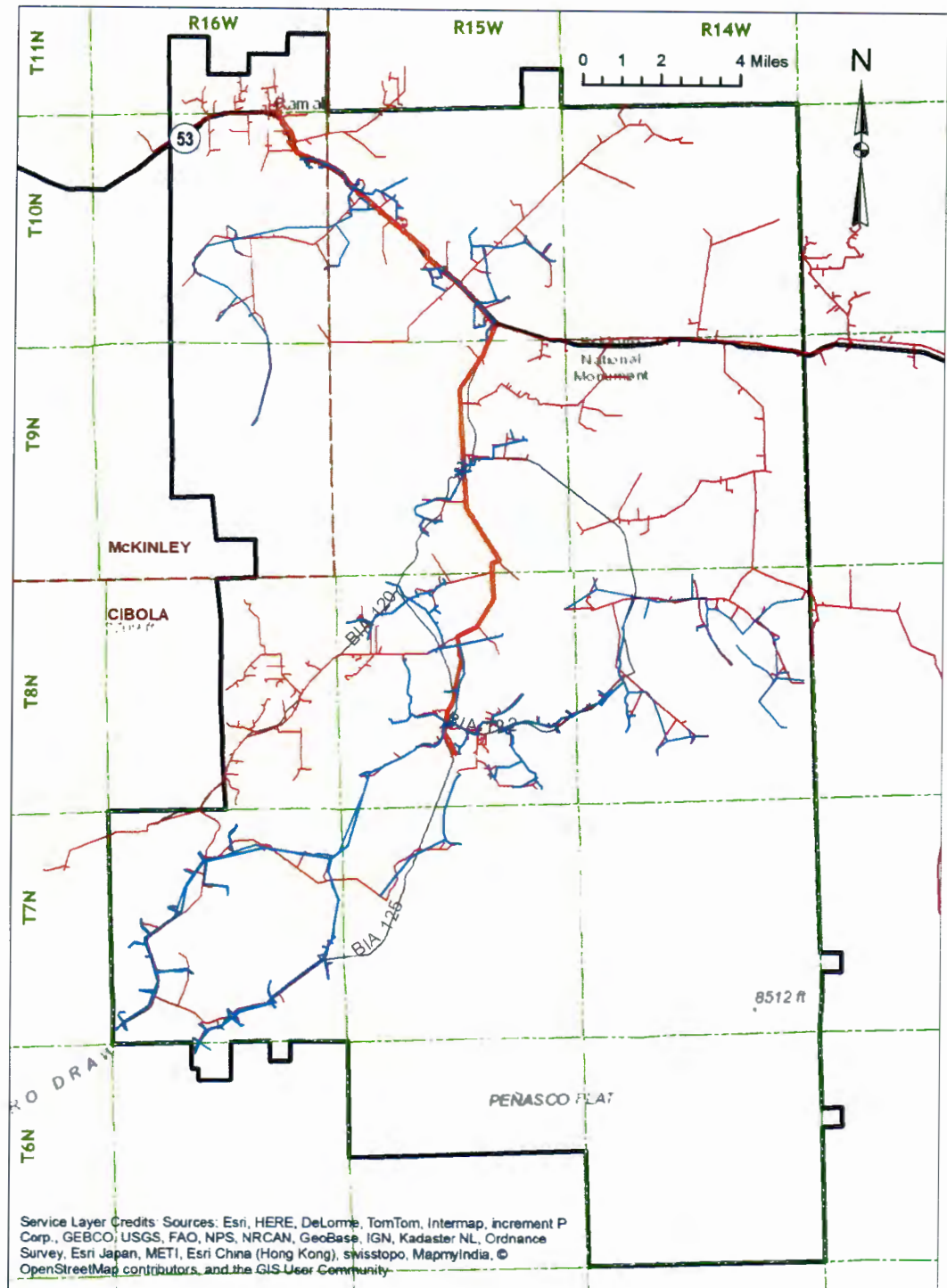
Continental Divide Electric Cooperative (CDEC) provides electric service to some areas of Ramah Navajo. A three phase power line enters the community along NM 53 from the northwest. The line extends south into Mountain View and on to Pine Hill. Single phase power lines branching from this three phase line serves the community along its route.

WATER

Ramah Navajo Utility Authority (RNUA) provides water services to some parts of the community through the Pine Hill, Mountain View, Sunset Valley and Ramah Rural/Rock Point water systems. The following information was compiled in a Regional Water Supply Study for Ramah Navajo by



MAP 9: ROADS



MAP 10: UTILITIES

Souder, Miller & Associates in 1999.

- The Pine Hill water system is located at the Pine Hill community. It has a 500,000 gallon water storage tank, 13.8 miles of water main, and one active water supply well that produces approximately 78 gpm. The existing 500,000 gallon storage tank is estimated to have sufficient storage to supply approximately 714 households. Currently, there are approximately 162 connections on the Pine Hill water system.
- The Mountain View water system is located at the Mountain View community. It has a 54,000 gallon water storage tank, 4.9 miles of water main, and one active water supply well that produces approximately 15 gpm. The existing 54,000 gallon storage tank is estimated to have sufficient storage to supply approximately 77 households. Currently, there are approximately 32 connections on the Mountain View water system.
- The Sunset Valley water system is located approximately one mile southeast of the Ramah village along NM 53. It has a 148,000 gallon water storage tank, 6.3 miles of water main, and one active water supply well that produces approximately 27 gpm. The existing 148,000 gallon storage tank is estimated to have sufficient storage to supply approximately 200 households. Currently, there are approximately 68 connections on the Sunset Valley water system.
- The Ramah Rural/Rocky Point water system is located immediately northwest of the intersection of NM 53 and BIA Route 125. It has a 36,000 gallon water storage tank, 10.2 miles of water main, and one active water supply well that produces approximately 11 gpm. The existing 36,000 gallon storage tank is estimated to have sufficient storage to supply approximately 51 households. Currently, there are approximately 41 connections on the Sunset Valley water system.



SEWER

RNUA also operates a three cell lagoon that serves the NHA housing subdivision, Pine Hill School complex, and the trading post. A lagoon also exists in Mountain View, however it is pending activation at this time. The rest of the community use septic systems.

PROPANE

Natural gas service is not available; however, propane distributors are available in nearby towns.

HOUSING

Residential homes are located throughout the community predominately grouped in small family clusters. Some are located near well maintained roads and utilities; others are more isolated. Subdivisions have more planning associated with them and are located in two primary community center areas: Sunset and Pine Hill as depicted on **MAP 11** along with three other community center areas. The Sunset housing subdivision is located along New Mexico State Route 53. The Pine Hill area located along BIA Route 125 in the southwestern part of the community has two subdivisions; the Ramah Navajo School Board, Inc. staff housing and the NHA housing; a Ramah Navajo School Board, Inc. mobile home park; NHA townhouses; and NAHASDA elderly duplex units. **(TABLE 10)** lists these housing developments areas.



TABLE 10.
EXISTING HOUSING DEVELOPMENTS

HOUSING	LOCATION	# OF UNITS	ACRES	LAND STATUS
Sunset Housing	East of NM 53	30	120	Navajo Tribal Trust
RNSB Staff Housing	Pine Hill	60	120	Ramah Band of Navajo Tribe Trust
RNSB Mobile Home Park	Pine Hill	20	120	Ramah Band of Navajo Tribe Trust
NHA Housing	Pine Hill	140	50	Navajo Tribal Trust
NHA Townhouses	Pine Hill	15	15	Navajo Tribal Trust
NAHASDA Elderly Unit	Pine Hill	10	20	Navajo Tribal Trust

Source: Ramah Navajo Chapter

COMMERCIAL



The Pinehill Shopping Center is located in the Pine Hill Community and is owned by Navajo Nation Shopping Centers, Inc., a tribal enterprise of the Navajo Nation. It was completed in December 1993 and sits on a seven acre commercial tract—12,000 square feet. An additional 11,544 square feet are set aside for future development. The development of the Shopping Center has served as a tremendous economic boost to the local community providing much needed basic goods and services that are now more

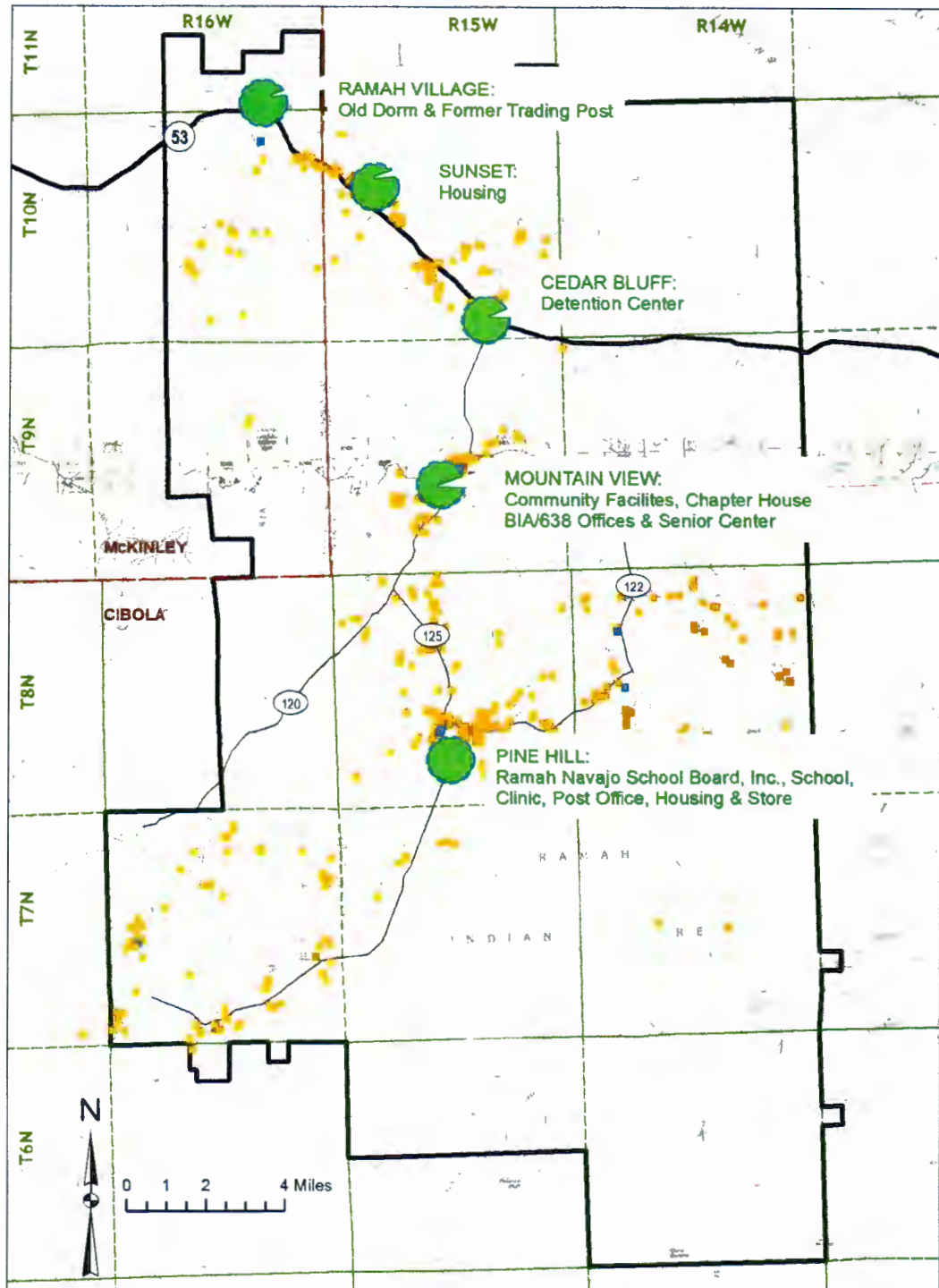
easily accessible. As a result, the community can shop locally, without traveling to major border towns, thus preventing leakage of the Navajo dollar. (<http://nnsinc.com/node/56>)



COMMUNITY FACILITIES

Existing community facilities are located in four general geographical areas. **(MAP 11)** These areas are Mountain View, Pine Hill, Cedar Bluff and Ramah Village.

- **Mountain View:** This area consists of 7.83 acres and lies in Section 22, Township 9 North, Range 15 West. BIA Route 125 bisects the tract. Originally, this land was part of an allotment owned by the late Frank Eriacho. Mr. Eracho and his wife Rosie Jesus Eriacho, by gift deed, conveyed the land to the BIA for school purposes in 1942. The site was home to the Ramah Day school until 1955 when the building became the headquarters for the tribal police, courtroom and meeting place for general community activities. Since the land was no longer used for school purposes but it was a recognized center for Ramah Navajo, the BIA transferred the tract to the Ramah Band of Navajo Indians in 1964. (Commissioner of Indian Affairs 1964). The present land status is Ramah Band of Navajo trust land. The tract consists of facilities that provide community services to Ramah Navajo. Existing facilities include those used by the Navajo Nation, the Ramah Navajo Chapter Office of Grants and Contracts 638 Program, RNSB, Inc. and the BIA (TABLE 8). The senior citizen program, census office and tribal courts are part of the Navajo Nation programs. BIA has a regional agency office and a forestry department at this location, as well.
- **Nicoll Ranch:** This area comprises six acres and is located along BIA Route 125; south of the Mountain View compound. The land was private land purchased by the Navajo Nation. The current land status is Navajo Tribal Fee land. This area is utilized for wild-land fire suppression and a wood field yard.
- **Pine Hill School Campus:** This area is located along the east side of BIA Route 125 in range unit four; this is a central location to the south part of the



MAP 11: EXISTING FACILITIES

community with easy access to all community members. The area comprises 120 acres and is designated as Ramah Band of Navajo Indian land. The RNSB, Inc. through the 638 Indian Self-Determination Act has facilities to provide community service particularly in education and health care. The Pine Hill elementary serves first through eighth grade. The Pine Hill high school including the farming plot serves grades ninth through twelfth. The adult education offers GED and continuing education. The preschool and headstart serve the very young. The FACE program offers family and child education programs. The health clinic and wellness and fitness center provide community wellness and health care. Support programs include campus security, facilities management and the KTDB Radio FM 89.7.

- **Pine Hill:** This area is located along the east and northeastern boundary of the Pine Hill school campus. The area comprises 125 acres and is designated as Ramah Band of Navajo Indians Trust land. The Ramah Navajo Chapter, supported through the Ramah Navajo Chapter Office of Grants and Contracts 638 Program established the Ramah Navajo Utility Authority (RNA), Boys & Girls Club and an NHA office (**TABLE 11**).
- **Cedar Bluff:** The Detention Facility is located on 15 acres of Ramah Band Trust Land, one half mile south of Highway 53 on BIA Route 125.
- **Ramah Village:** This area is located at the northern boundary of the community. There is 30 acres designated as Ramah Band of Navajo Indians trust land with a dorm.

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 include; a rodeo area is located within the Pine Hill School Campus. Basketball courts and playground areas can be found at the NHA housing area in Pine Hill. There is a picnic area within the NHA town house area. Although El Morro National Monument is not owned or operated by Ramah Navajo; it provides an interesting recreational facility and attracts visitors to the area.

FARMING

Although on a smaller scale than grazing, farming is another important way of life for community members. Farming has a long history in Ramah Navajo. Crops grown for food or to provide feed for livestock are the major farming enterprises in the area. Crops of the community include squash, corn, melons, and alfalfa. Presently all farms use rain, runoff water or hauled water as the source for farm water.



HISTORIC SITES

The Ramah Trading Post was established in the early 1900s by German Traders, Bob and Giles Master who came from England. In 1954, the BIA Dormitory was built in Ramah village for Navajo students to attend the Ramah Public School.

BURIAL SITES

There are several small burial sites scattered throughout Ramah Navajo. Several of these have been located on the land use plan map, but there are many that were not specifically located. There are many burial sites in the areas designated for grazing and all of these should remain undisturbed. The local community members are aware of the locations of these burial sites and





8. FUTURE OUTLOOK AND DIRECTION

As the world changes all around us, we must look ahead and plan for what's to come. Our vision, goals, and objectives prepare us for the next five years and beyond. Together, they create a roadmap for us to grow and flourish.

VISION AND VALUES

OUR VISION

Preservation and protection of our homeland, heritage, and people are the keys to self-determination and self-governance as we honor the teachings of our forefathers and live in harmony with a healthy environment, flourishing community, and a vibrant economy.

OUR VALUES

Our values guide our decisions.

OUR VALUES

Our values help us guide and help us make wise decisions.

LAND: Cherish and hold our land sacred

LANGUAGE: Our voice, our strength

LEADERSHIP: Courage and bravery to stand for Ramah Navajo and advocate for a better future

HONOR: Honor the teachings of our forefathers

SOVEREIGNTY: Exercise our self-determination

TRADITIONS: Respect our Navajo traditional values, culture, heritage and family

SENSE OF BEING: Maintain our identity and our way of life

STEWARDSHIP: Ensure that our natural resources and open space are preserved before us, beneath, above and all around us

HOZHO NAGHISH: Beauty & well-being in a four directions

GROWTH: Prosperity and longevity

PRIORITIES AND GOALS AND OBJECTIVES

Ramah Navajo is committed to self-determination, self-governance and to the well-being of our people. Fundamental to this commitment are our ongoing priorities. Goals and objectives, which guide our land use planning priorities/initiatives, have been developed from the hearts and words of our people. The goals represent the big picture while objectives are more specific, quantifiable steps.

PRIORITY I: MAINTAINING AND IMPROVING ROADS

A. Roads

Goal: Safe, efficient and well-maintained roads system coordinated with land uses.

Objectives:

- Work with the Ramah Navajo Department of Transportation (RNDOT) to ensure road needs identified in land use planning sessions are incorporated in the Chapter's Long Range Transportation Plan
- Use sound land use and transportation relationships to develop roads that meet the needs of existing and developing areas
- Design roads to handle two-way traffic, all types of weather and that will withstand time
- Ensure culverts are sufficiently and properly sized to handle floods
- Improve and maintain all-weather roads to existing homes
- Access/utilize Navajo Fuel Excise Tax funds
- Coordinate with tribal, state, county and federal funding sources
- Implement rural addressing and 911

PRIORITY 2: EXTENDING WATER LINES AND POWER LINES

A. Water and Power Lines

Goal: Adequate and reliable water and power lines that meet current and future community needs.

Objectives:

- Work with the Ramah Navajo Utility Authority (RNA) to ensure water line needs are addressed
- Coordinate with Continental Divide Electric for power line extensions
- Develop a master plan for water and electric line extensions to current homes and considerations for future development areas
- Extend water lines to all houses/public facilities
- Extend electric lines to all houses/public facilities

PRIORITY 3: RESPECTING GRAZING, AGRICULTURE AND USING NATURAL RESOURCES WISELY

A. Rangeland

Goal: Healthy rangeland that supports livestock grazing and wildlife habitat and to understand the importance of rangeland resources to the local economy and quality of life.

- Work with Ramah Navajo Natural Resources to achieve this goal

Objectives:

- Establish a system of grazing through a multi-year management program
- Protect the rangeland ecosystem, create a balance range and other uses and manage the range so as to protect habitat for a variety of plant and animal species
- Establish conservation area for wildlife habitat
- Regenerate rangelands, prevent overgrazing and provide for the preservation of natural foods and medicines
- Manage rangelands so as to protect and conserve water resources that flow through and under the rangeland areas
- Promote and improve the cattle/livestock industry through education and responsible chapter farm/livestock management policies and practices
- Improve the condition and productivity of the Ramah Navajo rangelands, improve forage quality, improve wildlife habitat and water quality, and reduce erosion
- Preserve and protect natural resources (e.g. Malpai area; forest and woodlands, water sources, etc.)

B. Agricultural Resources

Goal: Thriving family farm plots and ranches to productive agriculture that sustain our way of life or maximize employment and return on investment

Objectives:

- Restore/re-establish agricultural lands to productive use in coordination with sound water management
- Increase the variety and yield of crops and livestock while involving community members in agricultural programs and enterprises
- Establish the Chapter in a leadership position with respect to agricultural enterprises and marketing of agricultural products
- Establish an effective farm management and veterinarian program to assist both individual and Chapter-owned agricultural enterprises
- Establish a strong farm management assistance program
- Explore an agriculture enterprise with large-scale feedlot operations and end-product processing and packaging facilities
- Reopen school farm
- Support 4-H and other training programs
- Utilize dry farming techniques
- Encourage use of native seeds and crops (i.e. potatoes and bean farms)

C. Forest and Woodlands

Goal: Preservation of the forest and woodlands.

Objectives:

- Educate community on wise forest and woodlands management
- Protect forest/woodlands vital to cultural inheritance and traditional way-of-life
- Establish internal forest/woodlands harvesting policies/processes (i.e. no wet-logging)
- Integrate/coordinate with other natural resource management and land use activities
- Institute ordinances for pinion pickers

D. Water Resources

Goal: Conservation and protection of the watershed, surface water, and groundwater resources.

Objectives:

- Protect and maintain integrity of water resources
- Conserve natural drainage channels for the purpose of protecting water quality, groundwater recharges, watershed and water bodies
- Develop watershed management practices in the community
- Coordinate with other water resource planning, management and land

use resources/activities

- Promote sound water management and conservation practices
- Drill enough deep water wells for sufficient water supply to all Units
- Ensure clean and safe water for human, livestock, and wildlife consumption
- Conduct public education in all aspects of water resources
- Conduct water study and integrate into the land use plan
- Explore gray-water for watering alfalfa, etc.
- Support/advocate for extension of Navajo-Gallup Water pipeline (San Juan River water) to Ramah Navajo

PRIORITY 4: BUILDING SUFFICIENT QUALITY HOUSING

A. Housing

Goal: Adequate, safe and quality homes.

Objectives:

- Develop and/or support educational training programs for house maintenance, home ownership, and house building trades and professions.
- Ensure houses are built with good infrastructure
- Ensure hogans remain a part of the homestead
- Explore innovate Hogan designs for housing
- Identify areas for new housing in balance with livestock/agricultural goals
- Support scattered housing with family clusters in mind
- Encourage energy-efficient homes with a range of architectural designs and building techniques
- Adapt existing homes for the elderly so they can remain there
- Create opportunities for community members to make additions/improvements to their existing home
- Advocate for a group home and nursing home
- Integrate plans developed by housing providers (i.e. school, RNSB, NHA, chapter)

PRIORITY 5: STIMULATING BUSINESS/TOURISM

A. Economic Development

Goal: Sustainable economic development supporting local resources while reducing the impact on the environment.

Objectives:

- Develop an economic development plan/strategy

- Establish an economic development and/or business committee
- Plan, attract, develop and promote commercial and industrial development through business friendly policies/laws and availability of commercial and industrial sites/facilities
- Explore opportunities for old Trading Post
- Identify/designate land/areas for commercial/industrial purposes (i.e. café, restaurant, auto repair shop, motel, hardware store, RV park, bed & breakfast, fast food, car wash, laundromat, etc.)
- Encourage entrepreneurship within the community through public education (i.e. workshops, competition, profitability, incubator; partnerships with educational institutions; collaborate/utilize the SBA, etc.)
- Seek businesses that capitalize on any competitive advantages, job creation, and are compatible/desired by the community
- Ensure designated commercial/industrial locations are appropriate/marketable and adequate infrastructure exists or can be developed
- Capitalize on Ramah Navajo culture

B. Tourism and Eco-Tourism

Goal: Thriving tourism and eco-tourism in-balance with preservation, environmental principles and Ramah Navajo values.

Objectives:

- Capitalize on recreational and tourism opportunities
- Integrate renewable use and values
- Become knowledgeable of the competitive and profitability industry
- Identify potential areas for recreation and tourism
- Concentrate on recreational and tourism opportunities that generate revenue and/or usage potential
- Develop/improve and manage appropriate facilities
- Evaluate any impacts to the environment
- Improve tourism access to outdoor activities (camping, hiking, fishing pond)
- Capitalize on existing tourist loop (Grants-El Malpai, Ice Caves, El Morro, Ramah, Zuni)
- Establish trail, tours and events (i.e. biking, hiking, walking, running, horseback riding, and balloon fiesta)
- Develop a strong marketing and advertising strategy (include advertising in magazines, billboards, social media, radio and TV)

C. Agribusiness

Goal: Thriving agribusiness in-balance with preservation, environmental principles and Ramah Navajo values.

Objectives:

- Identify/designate land/areas for agricultural business purposes (i.e. livestock auction/agricultural center, feed store, etc.)
- Explore opportunity for an in-door arena
- Improve rodeo grounds at RNSB school compound
- Seek another location for a new larger rodeo arena
- Designate areas for community agricultural plots/green houses
- Relocate and rebuild hay barn by livestock training facility with modernized scale
- Incorporate livestock breeding program

**PRIORITY 6: ENHANCING ESSENTIAL AND BENEFICIAL
COMMUNITY FACILITIES**

A. Community Facilities and Services

Goal: Orderly, efficient, cost effective community facilities and services that support a livable, healthy, attractive, and safe community.

Objectives:

- Designate areas for community services (i.e. offices for consolidated local government, library, computer center, new chapter house, cultural center, museum, youth center, fine arts center, community college and community cemetery, senior center, multi-purpose center, court house)
- Designate areas for health services (i.e. medical facilities, wellness center, dialysis center, elderly home health care, etc.)
- Designate areas for recreation (i.e. fishing pond, park, ball fields, basketball and tennis courts, youth center, spa, pool, shooting range and golf course)
- Provide facilities to support public safety and welfare (i.e. correctional facility, rehab services, youth counseling services-substance abuse, public safety - fire station)
- Establish an ALERT team
- Develop an emergency response plan
- Establish a 911 system
- Establish a Veterans Memorial Park and Veterans Office

B. Infrastructure

Goal: Reliable and adequate infrastructure.

Objectives:

- Improve/expand sanitation facilities
- Develop telecommunications
- Develop airstrip and/or helipad for public use

- Establish a public transportation system
- Devise a system to deal with illegal trash dumping
- Explore renewable energy

PRIORITY 7: FOSTERING LOCAL GOVERNANCE

A. Local Governance

Goal: Local decision-making and planning.

Objectives:

- Obtain LGA certification
- Expand contract services
- Develop and implement local ordinances (i.e. taxes; zoning; etc.)
- Research land ownership
- Hold regular public meetings
- Ensure everyone has an opportunity to participate
- Ensure community input is accurately reflected
- Ensure grazing permit holders are informed and included
- Coordinate all land use decision-making with the CLUPC
- Incorporate other existing plans (i.e. transportation plan, 1980 land use plan, cultural resources plan, utilities 5/10-year plan, etc.)
- Provide outreach to neighbors and newcomers
- Teach young kids about local government
- Grow RNUA, RNDOT and Housing Program
- Expand RNUA to include other utilities and renewable energy
- Establish Ramah Navajo as a recognized tribe

PRIORITY 8: PRESERVING AND CULTIVATING TRADITIONAL AND CULTURAL RESOURCES

A. Traditional, Cultural and Historic Resources

Goal: Protection and preservation of traditional, cultural and historic resources that enriches the sense of place and understanding of the Ramah Navajos.

Objectives:

- Inventory and protect traditional, cultural and historic resources to provide adequate protection of these resources (i.e. sweat houses, Salt Lake from mine, herb gathering areas, archaeological sites)
- Consider traditional, cultural and historic resources in planning and development of facilities and areas
- Encourage the preservation, rehabilitation, restoration, and/or reconstruction, as appropriate, of structures or elements related to these resources

- Create a history book of Ramah Navajo and develop a curriculum and/or class
- Continue and support age-old traditions and customs (i.e. puberty ceremony, baby's first laugh party, hide tanning, hunting, hogan, basketmaking, carving etc)

PRIORITY 9: ACQUIRING AND CONSOLIDATING LAND**A. Land Acquisition**

Goal: Administration of all land within the planning area

Objectives:

- Acquire land to reduce/eliminate the 'checkerboard' status
- Convert or transfer Navajo Tribal Trust land and land acquired under the Land Buy Back Program to Land held in Trust for the Ramah Band of the Navajo Tribe
- Transfer Land acquired by the Navajo Nation under the Land Buy Back Program to Ramah Band Land
- Survey lands
- Correct section lines and fencing
- Acquire adjacent lands
- Establish fund account for land acquisitions

B. Bond Ranch

Goal: Orderly prudent development for in coordination with other community initiatives and development options insuring the end result will be of the greatest benefit to Ramah Navajo.

Objectives:

- Develop Sesion 21 as a mixed used area including community facilities, residential and recreation.

PRIORITY 10: CONTROLLING AND PREVENTING EROSION**A. Erosion Control and Drainage**

Goal: Control and/or prevent erosion.

Objectives:

- Conduct and implement an erosion control study
- Discourage making all kinds of roads
- Implement ordinances
- Provide public education and training on erosion control and proper drainage techniques
- Ban use of motorized vehicles (cars, trucks, ATVs) for herding sheep, cattle or horses etc.



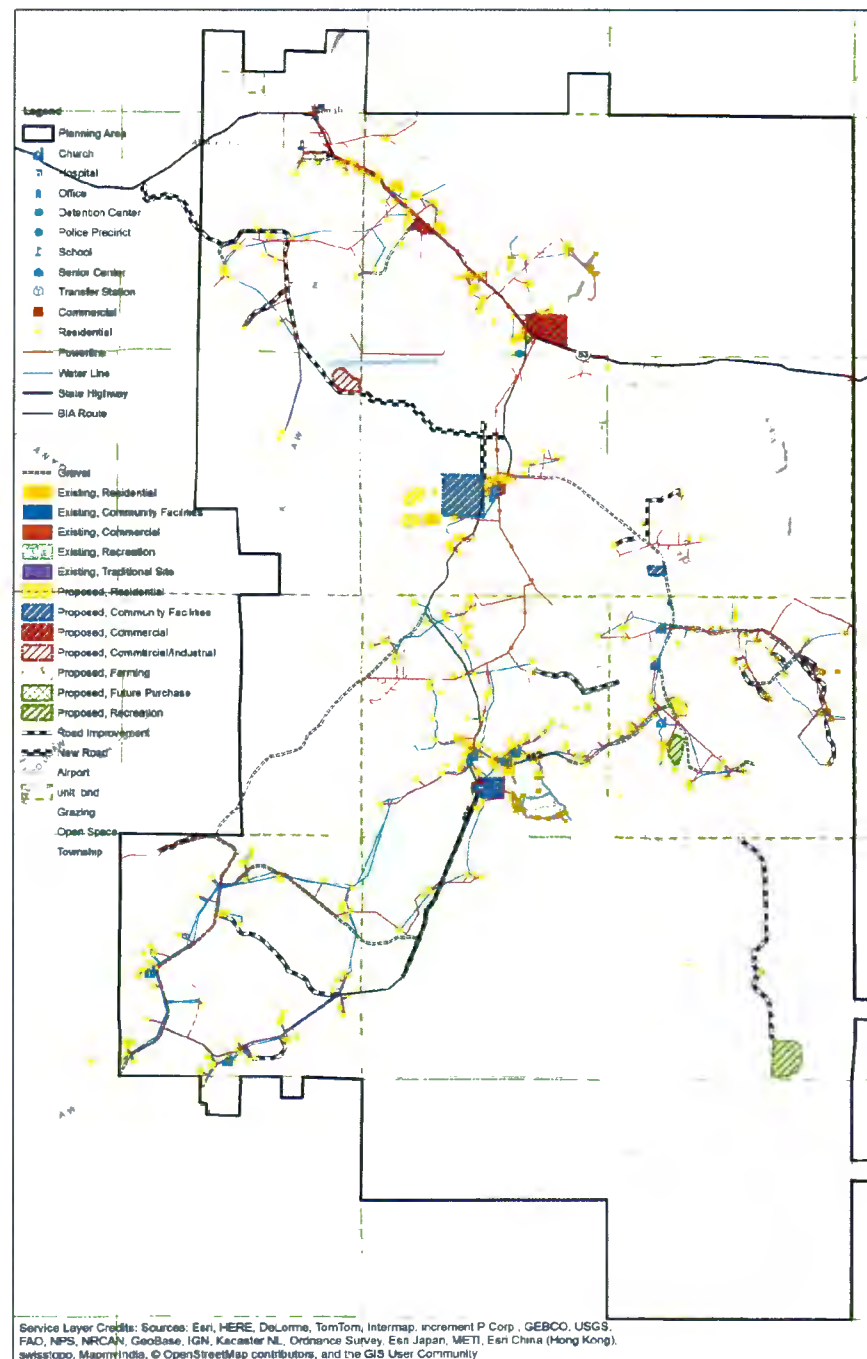
LAND USE FRAMEWORK

This section and the subsequent Unit (1 through 5) sections establish a land use framework for future land stewardship and development in Ramah Navajo's planning area over the next 5 years and beyond. This framework includes the types of places and land use patterns Ramah Navajo would like to foster and encourage in each of those areas.

MAP 12 shows Land Use, both existing and proposed, for the entire planning area. Individual Unit Land Use maps are presented in subsequent sections pertaining to each Unit.

The land use categories reflect the goals and objectives developed by community members and provide guidance for determining appropriate land uses. Further, these land use plan maps indicate the intended predominate future function, density and characteristic use of land. They do not reflect the intended zoning of individual areas, but rather generally desired future land uses. The maps suggest 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.

Ultimately, these land use plans guide future development decisions, infrastructure improvements, land acquisitions, capital expenditures, public and private investments, and land stewardship within Ramah Navajo.



MAP 12: LAND USE PLAN

UNIT 1 LAND USE

OVERVIEW

Unit 1 is one of five Units in Ramah Navajo Chapter. Located in the northwest corner of the planning area as shown in **FIGURE 5** and is the only Unit within McKinley County. Unit 1 encompasses 28,363 acres, however only 52.7 percent is under Chapter/Navajo jurisdiction.

Ramah Village is located on the northern of Unit 1. Highway 53 crosses through Ramah Village.

LAND BASE

The land base is complex and popularly referred to as 'checkerboard' because the lands are intermingled with ownership either tribal, state, federal, Indian allotments, or private.

The land status map (**MAP 13**) shows the ownership or management status of the land within Unit 1. The acreages are as follows and corresponding percentages are indicated directly on the map:

- Allotments – 6,520 acres
- Navajo Tribal Trust – 6,321 acres
- Ramah Band of the Navajo Tribe – 160 acres
- Navajo Fee/Bond Ranch - 1,920 acres
- BLM - 320 acres
- State - 2,080 acres
- Private - 11,042 acres

LAND USE

The land use plan map (**MAP 14**) shows existing and future land uses as well as the needs and desires of the community members. The following descriptions provide more information.

Existing Land Use

- Residential: Homes are scattered throughout the Unit.
- Commercial: Ramah Navajo recently purchased the Ramah Navajo Trading Post (old trading post) located along Highway 53 in Ramah.
- Community Facilities: Off Ramah Navajo. ---- New elementary school is currently under construction.

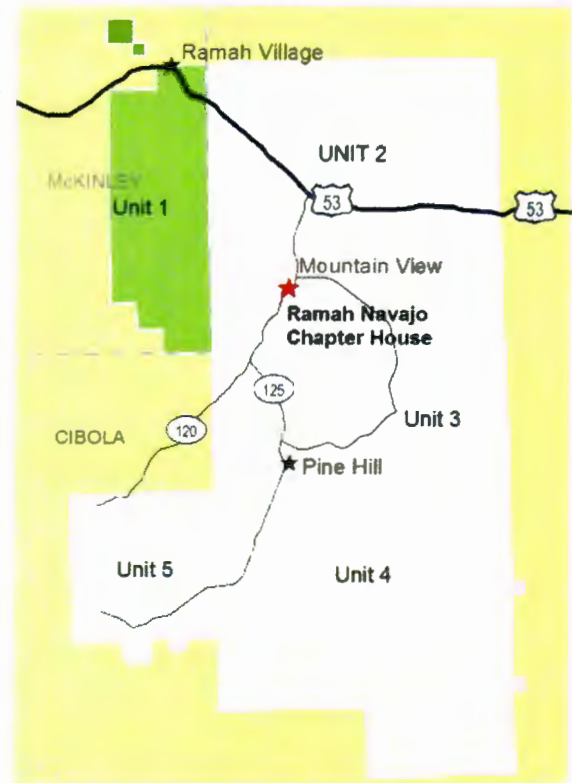


FIGURE 5. UNIT 1 LOCATION

- Transportation: One major access road and residential roads.
- Windmills: One (1) windmill west of Dog Lake.
- Grazing: Ranching, sheepherding and livestock grazing.

Future Land Use

The future land use plan for Unit I include:

- Residential: proposed residential site near the public school facilities **(MAP 15)**
- Commercial: re-opening the recently purchased Ramah Trading Post
- Community Facility: develop a training/education center on the former BIA dormitory site in the village of Ramah **(MAP 16)**.

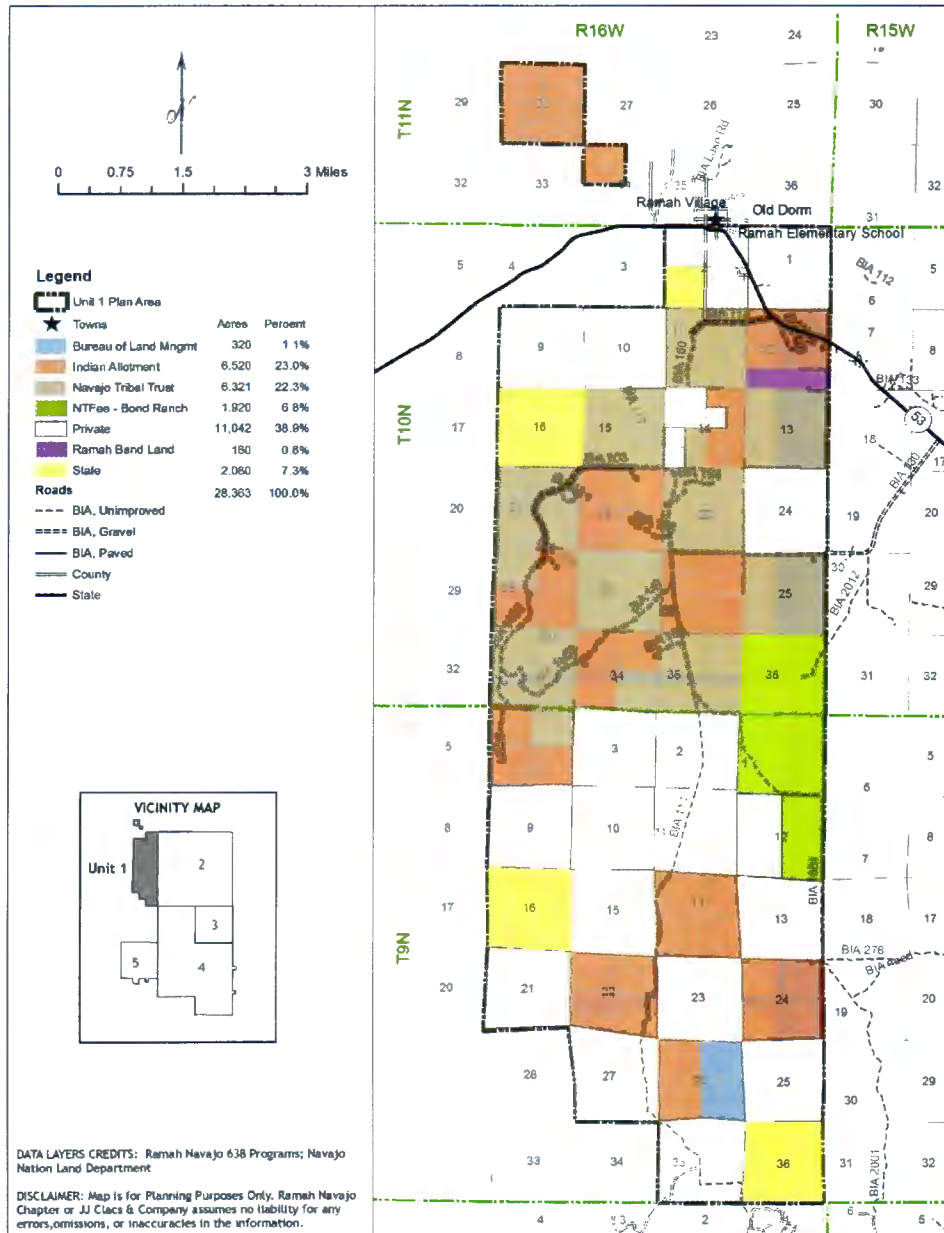
The site details are indicated in **TABLE 11**.

TABLE 11. PROPOSED DEVELOPMENT IN UNIT I		
PROPERTY	ACRES	POTENTIAL LAND USE
Proposed Residential	approximately 20	Housing
Ramah Trading Post	3.5	Commercial
Former BIA Dormitory	17.5	Community Facility

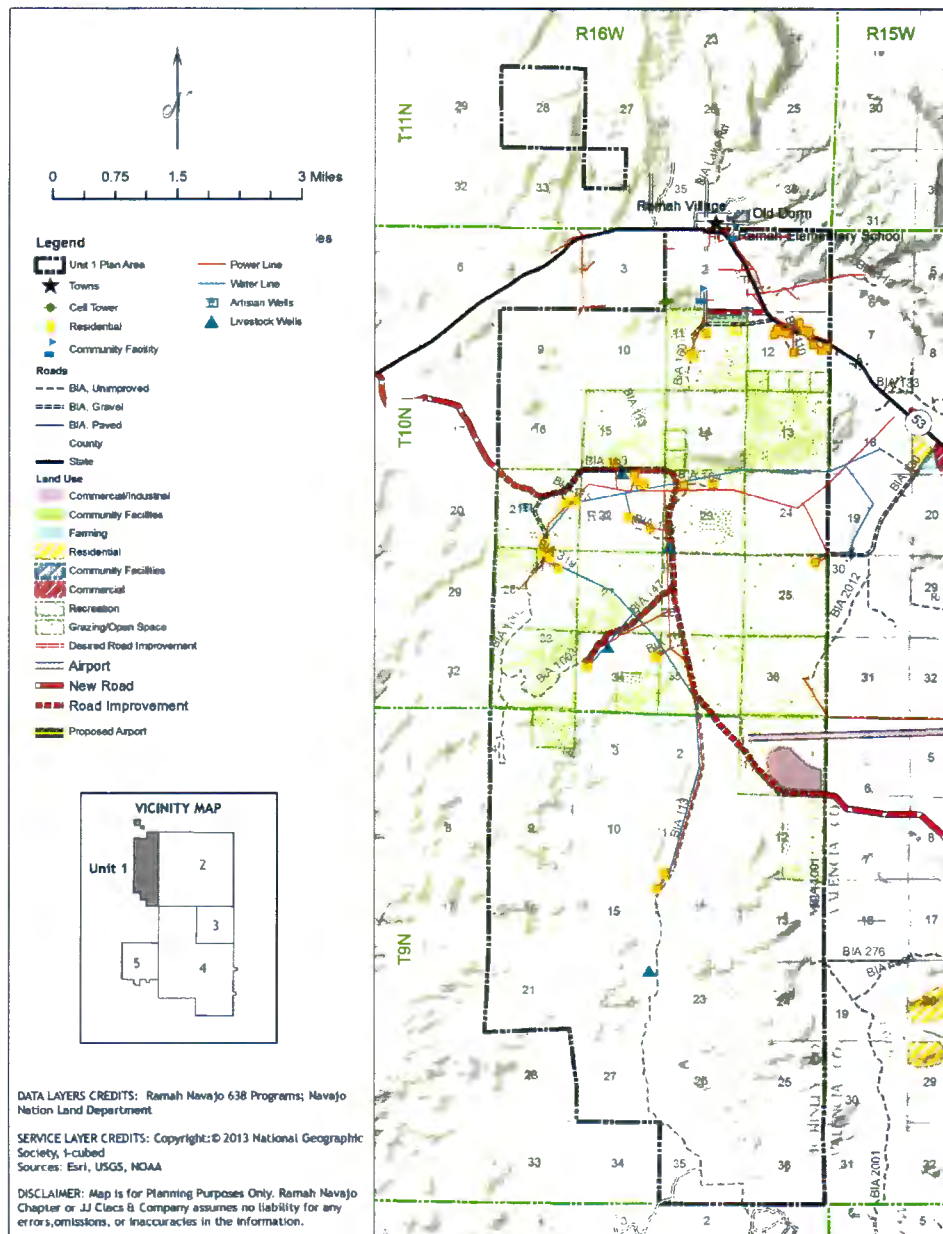
NEEDS AND DESIRES

The Unit I community needs and desires include:

- Waterline extensions
- Improve Road 147 to provide all weather access
- Powerline extensions
- New roads to provide better access particularly for proposed developments
- Solar power for windmills



MAP 13: UNIT 1 LAND STATUS



MAP 14: UNIT 1 LAND USE PLAN



MAP 15: UNIT 1 PROPOSED RESIDENTIAL DEVELOPMENT



MAP 16: UNIT 1 TRADING POST AND OLD BIA DORM SITES

UNIT 2 LAND USE

OVERVIEW

Unit 2 is one of five Units in the Ramah Navajo Chapter. Unit 2 is located in the far northeast corner of the planning area as shown in **FIGURE 6**. The unit is square approximately 12 miles by 12 miles and within Cibola County. Unit 2 encompasses 92,528 acres, however only 29.4 percent is under Chapter/Navajo jurisdiction.

Sunset Village is located along the east side of Highway 53. Highway 53 crosses the Unit in northwest to east direction.

LAND BASE

The land base is complex and popularly referred to as 'checkerboard' because the lands are intermingled with ownership either tribal, state, federal, Indian allotments, or private.

The land status map (**MAP 17**) shows the ownership or management status of the land within Unit 1. The acreages are as follows and corresponding percentages are indicated directly on the map:

- Indian Allotments – 10,760 acres
- Navajo Tribal Trust – 3,764 acres
- Ramah Band of the Navajo Tribe: Fee – 1,280 acres
- Ramah Band of the Navajo Tribe: Trust – 160 acres
- Navajo Fee/Nicoll Ranch - 1,920 acres
- Navajo Fee/Bond Ranch - 8,909 acres
- RNSB - 407 acres
- National Park Service - 960 acres
- BLM - 1,759 acres
- State - 7,519 acres
- Private - 55,090 acres

LAND USE

The land use plan map (**MAP 18**) shows existing and future land uses as well as the needs and desires of the community members. The following descriptions provide more information.

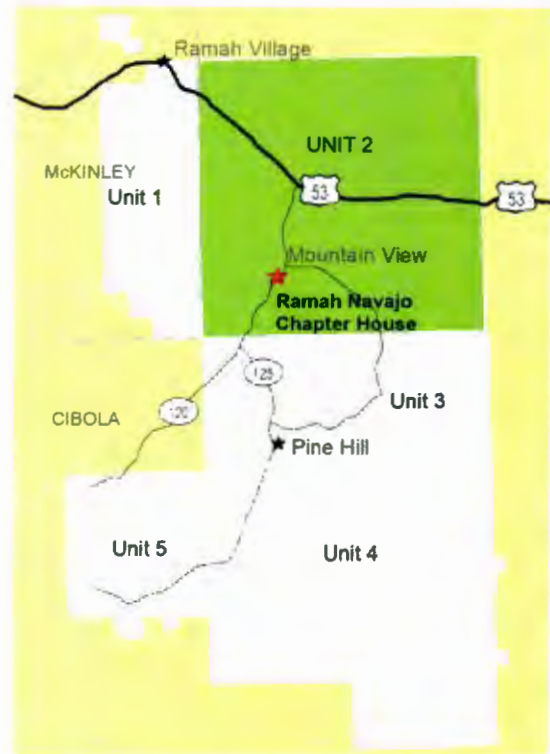


FIGURE 6. UNIT 2 LOCATION

Existing Land Use

- Residential: Homes are primarily located in the western half of Unit 2. Navajo Housing Authority has subdivisions at Sunset Villiage. Pine Meadows, a housing subdivision, located in the southeast quandrant is not within Ramah Navajo's jurisdiction.
- Community Facilities: Mountain View located in the southwest quadrant, is home to Ramah Navajo's tribal offices. Nicoll Ranch has warehouses and other uses. Pine Hill include many community facilities including schools, health care, post office, and other services. Cedar Bluff area also has a new detention center.
- Tourism: Nearby Attractions: El Morro National Monument, Incription Rock
- Commercial: Cedar Bluff Development is located at the junction 53 and BIA 125
- Nearby Businesses: Lewis Trading Post located along Highway 53 near Sunset housing, Ramah Villiage to the north and Candy Kitchen in the southwest has
- Grazing: Ranching and sheepherding and livestock grazing. There are approximately ___ grazing permits.
- Oso Vista Ranch project. Broadband internet will be on top of ridge.
- Wells and Windmills: 4 wells and 1 windmills

Future Land Uses

Future land use plans for Unit 2 include:

- Community Development & Grazing: Bond Ranch site (**MAP 19**) including a proposed airport facility (**MAP 22**)
- Mixed Use: Section 21 Development (**MAP 20**) with a Conceptual Plan (**MAP 21**)
- Commercial Development: Cedar Bluff site (**MAP 23**)
- Residential: Dog Lake development site (**MAP 24**) with a conceptual plan (**MAP 25**)
- Community Development: a community cemetery is proposed for the Brownville site (**MAP 26**).

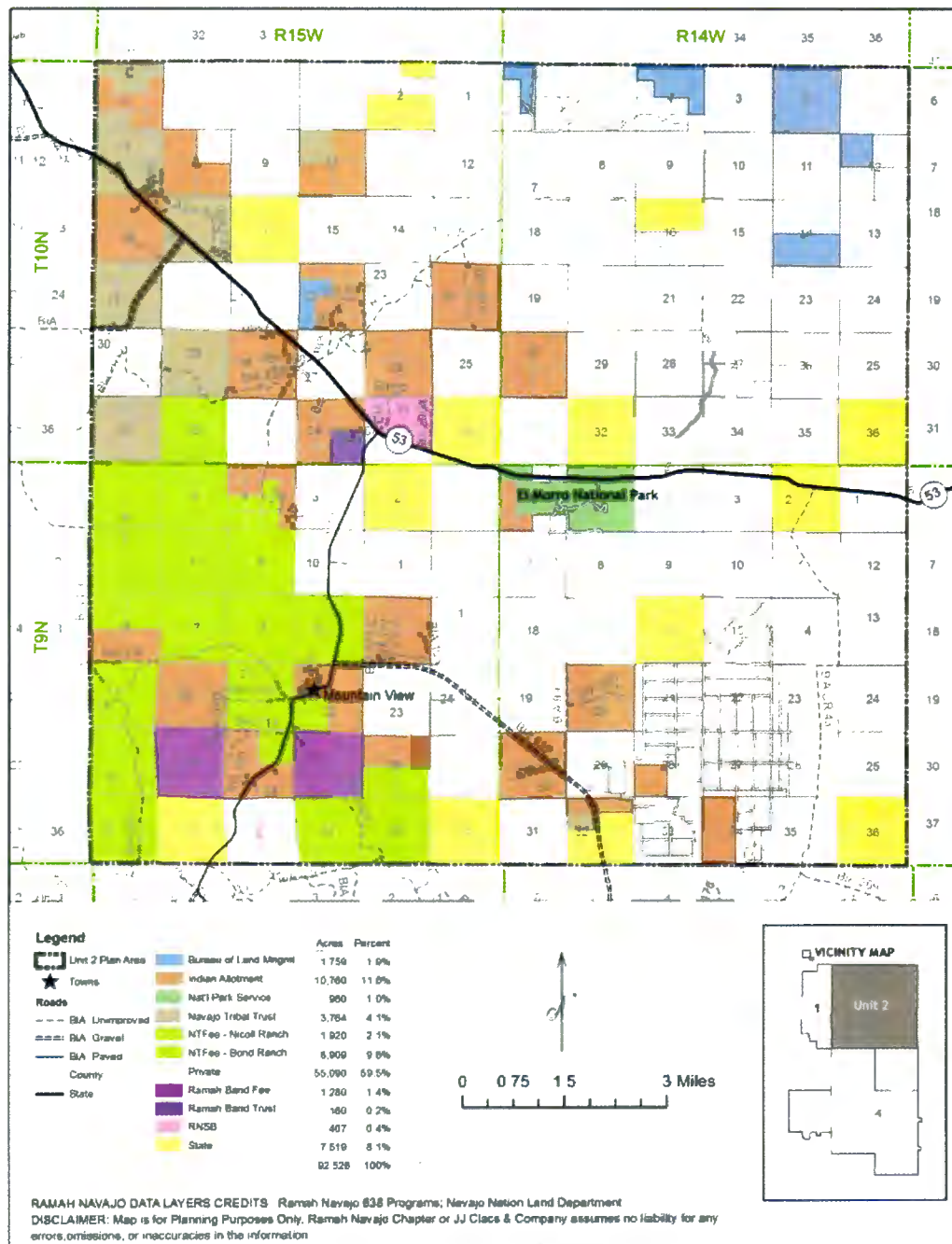
The site details are indicated in **TABLE 12**.

TABLE 12.		
PROPOSED DEVELOPMENT IN UNIT 2		
PROPERTY	ACRES	POTENTIAL LAND USE
Bond Ranch	16.25 sections	Community/grazing
Section 21 Area	160	Mixed Use
Cedar Bluff	400	Commercial
Dog Lake	xx	Residential
Brownville	xx	Community

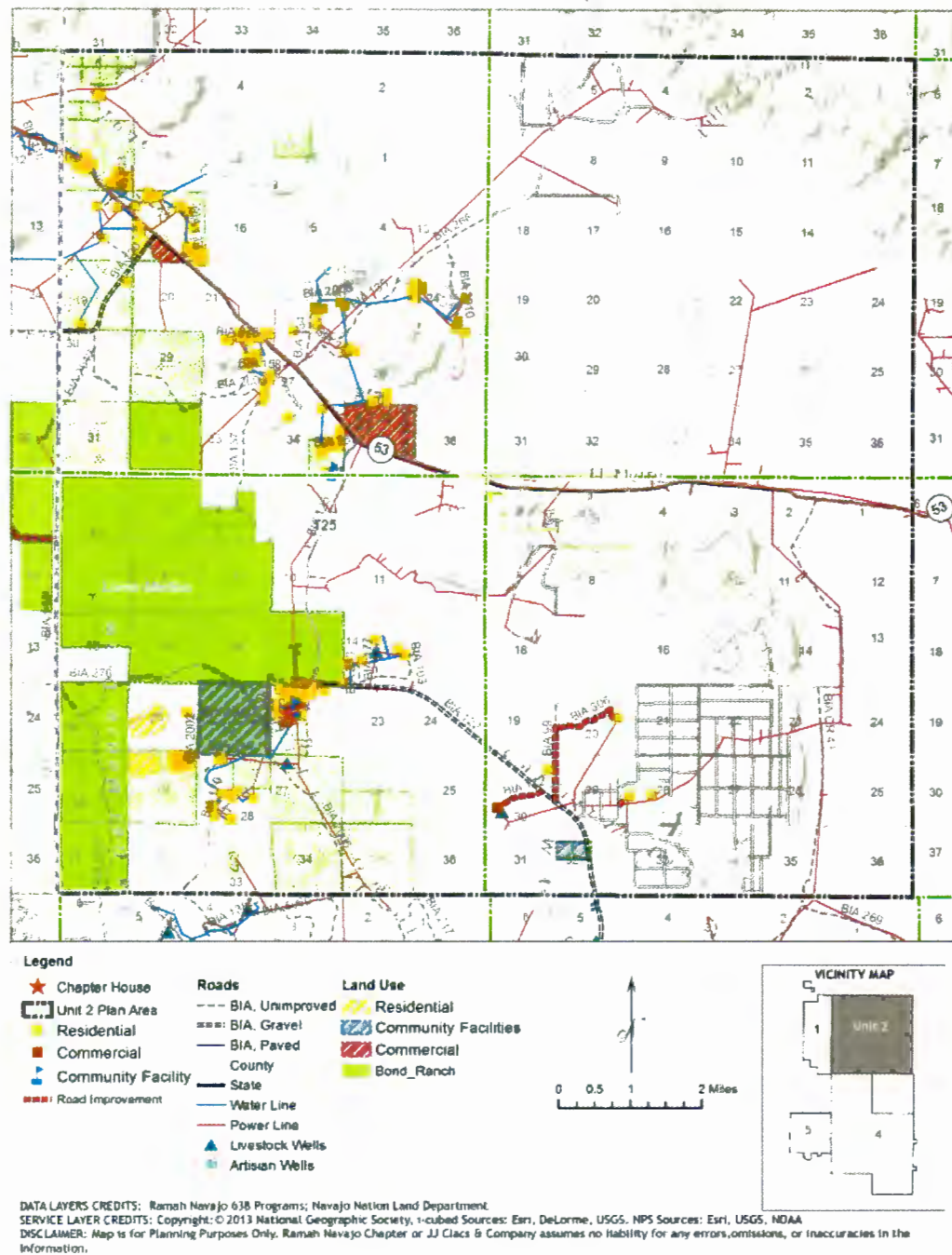
NEEDS AND DESIRES

The Unit 2 community needs and desires include:

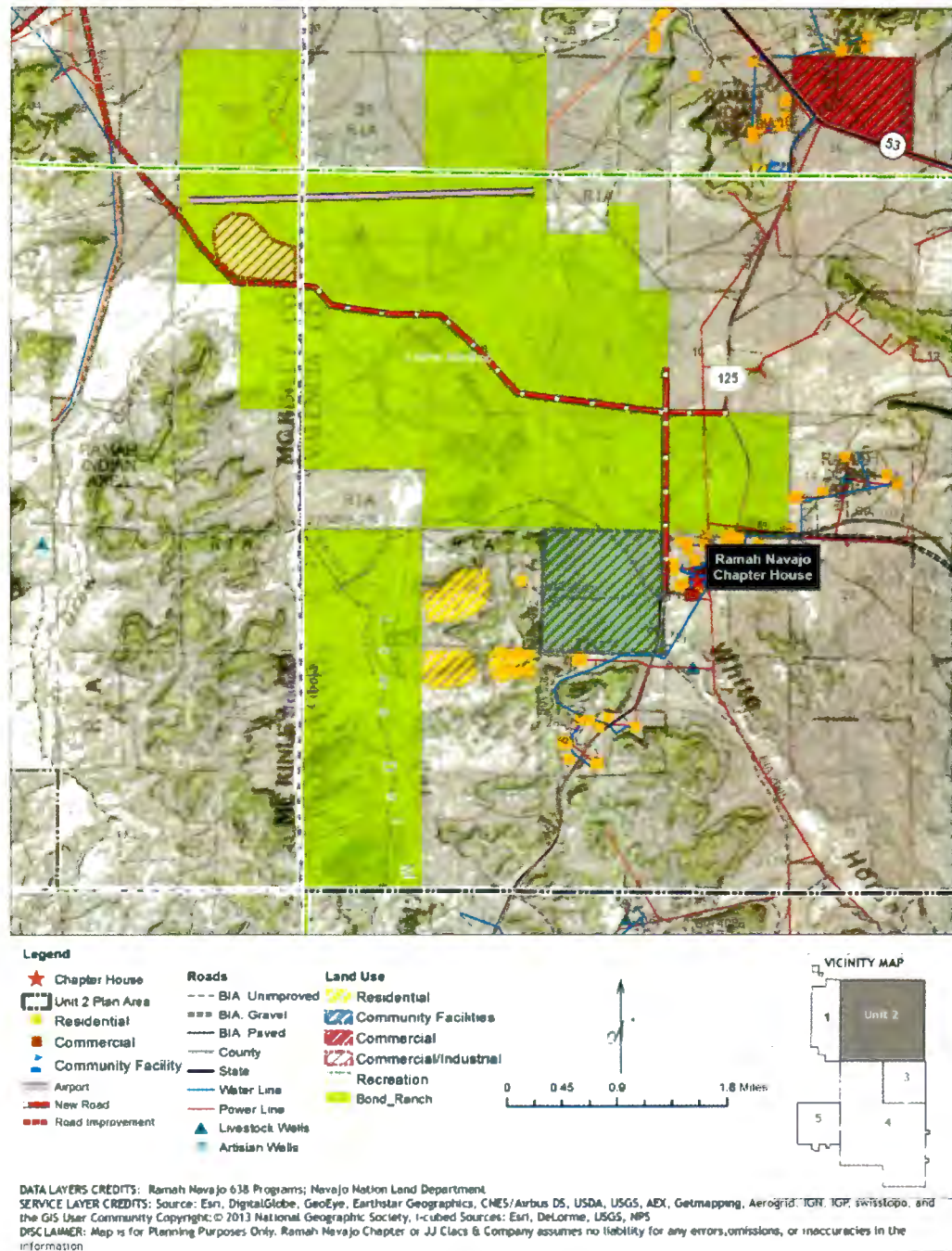
- Gravel Roads
 - Need roads improved to all homes for safety and accessibility reasons
 - Develop new roads because private lands have been fenced
- Solar power for windmills
- Purchase private lands that are for sale and create businesses for economic development
- Extend fiber optic to family homes located along the state highway
- Develop economic development on the Cedar Bluff land purchase
- A deep well is needed by the new detention center location for community members living towards Units 1 & 2
- Build staff housing next to the new detention center
- Sewer/waste water upgrades: renew the sewer lines at Mountain View and rebuild the lift station
- Complete the Natural Resources Training Center
- Plan and design for the Bond Ranch development site



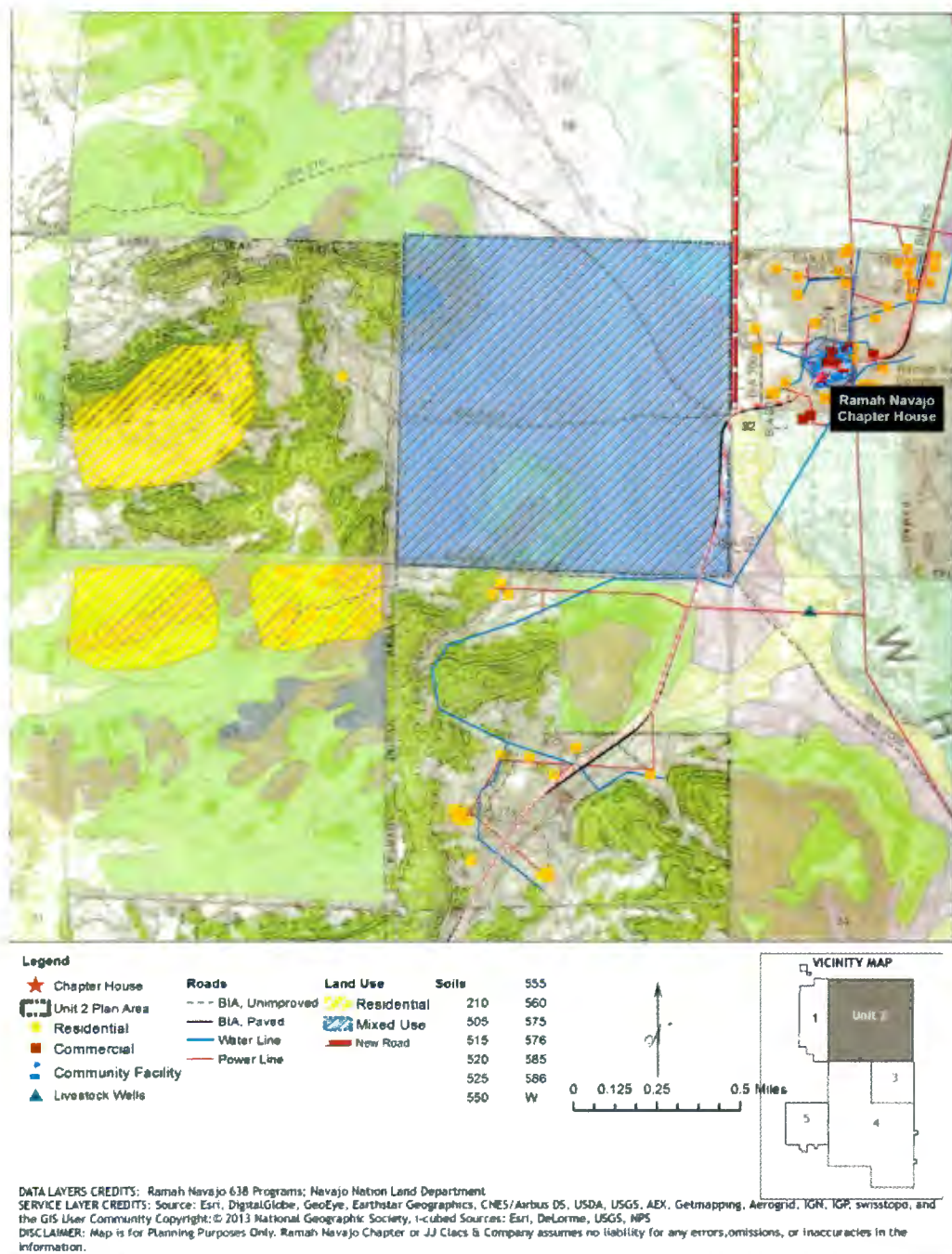
MAP 17 - UNIT 2 LAND STATUS



MAP 18 - UNIT 2 LAND USE PLAN

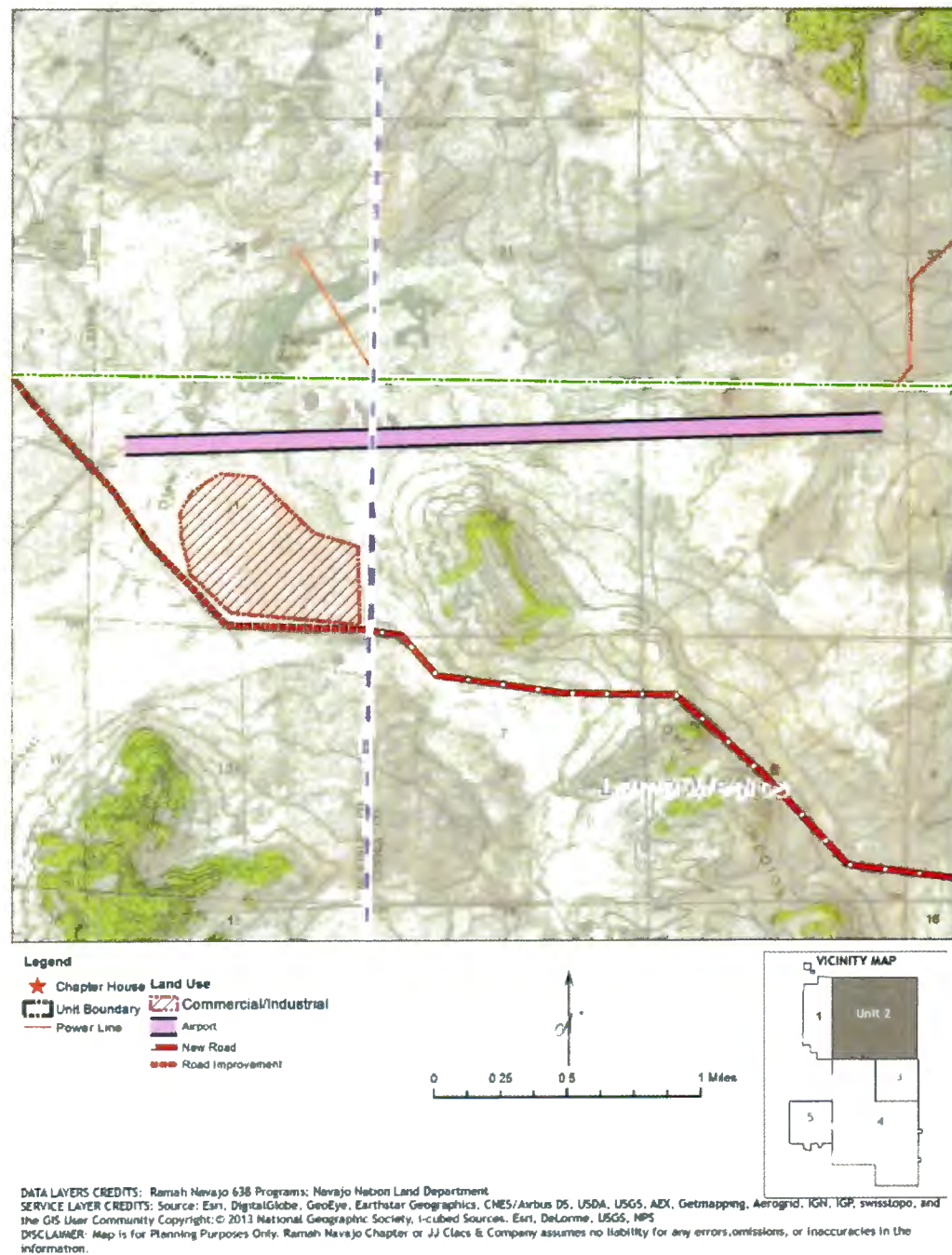


MAP 19: BOND RANCH



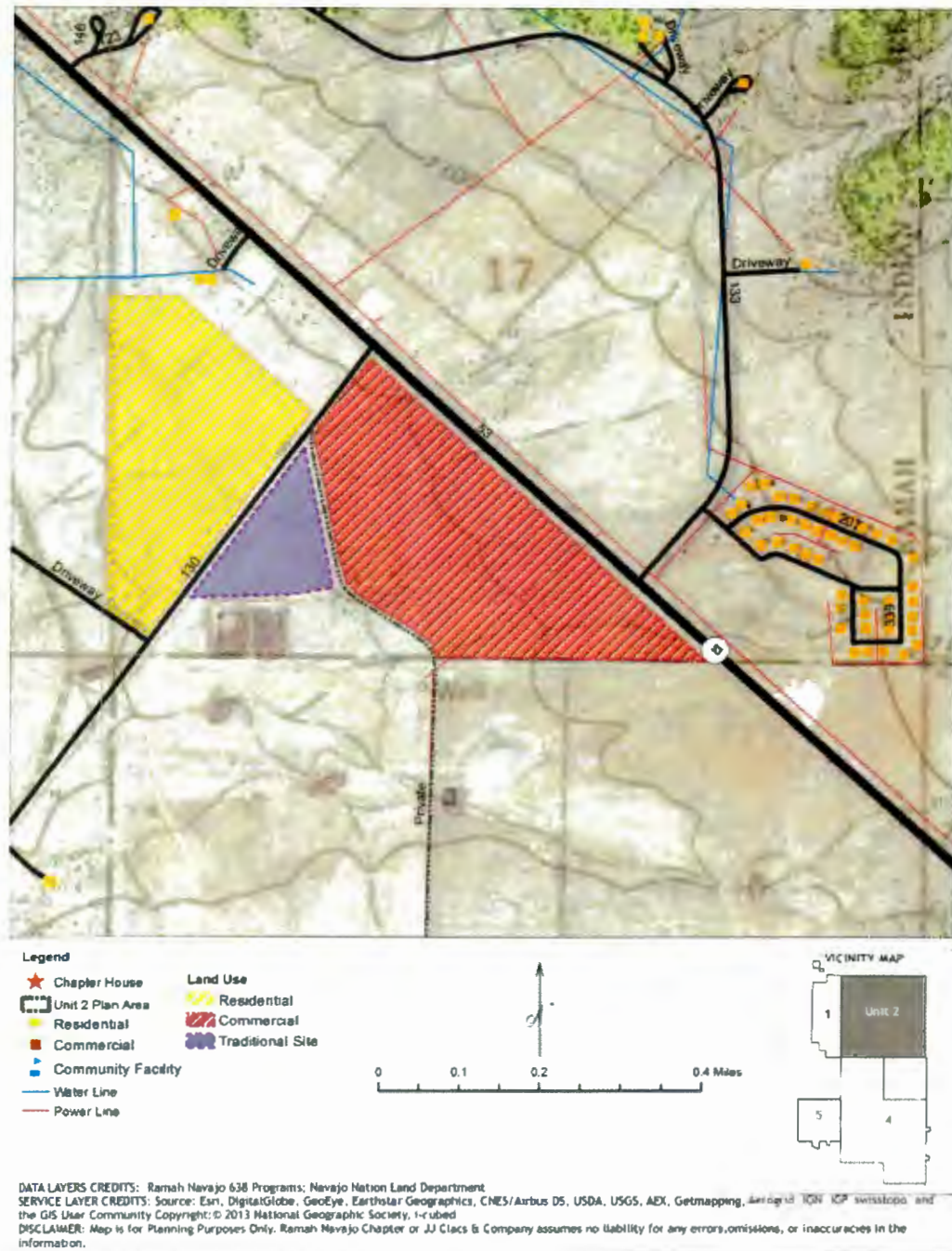
MAP 20: UNIT 2 SECTION 21 DEVELOPMENT

MAP 21: UNIT 2 SECTION 21 CONCEPT

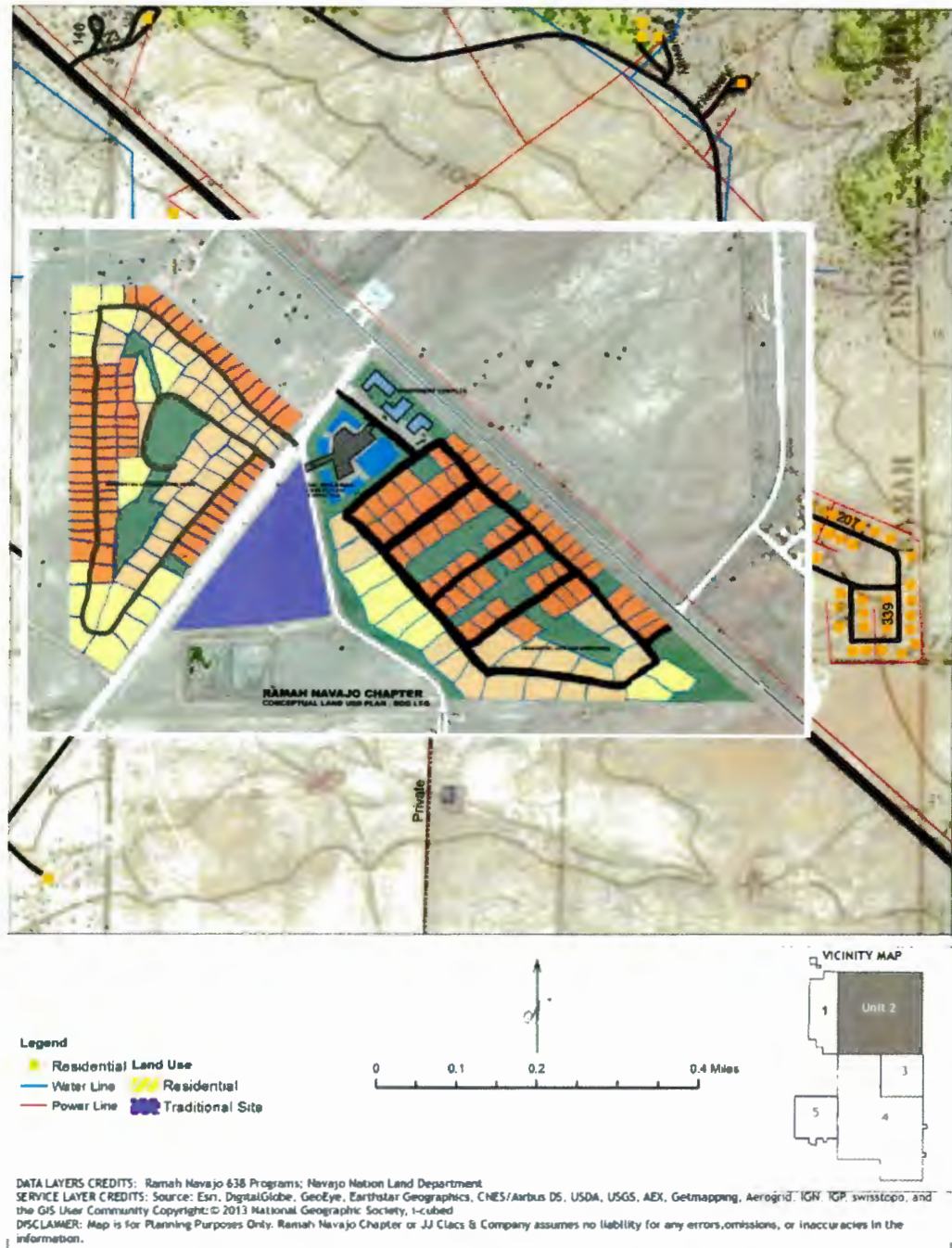


MAP 22: UNIT 2 BOND RANCH AIRPORT DEVELOPMENT

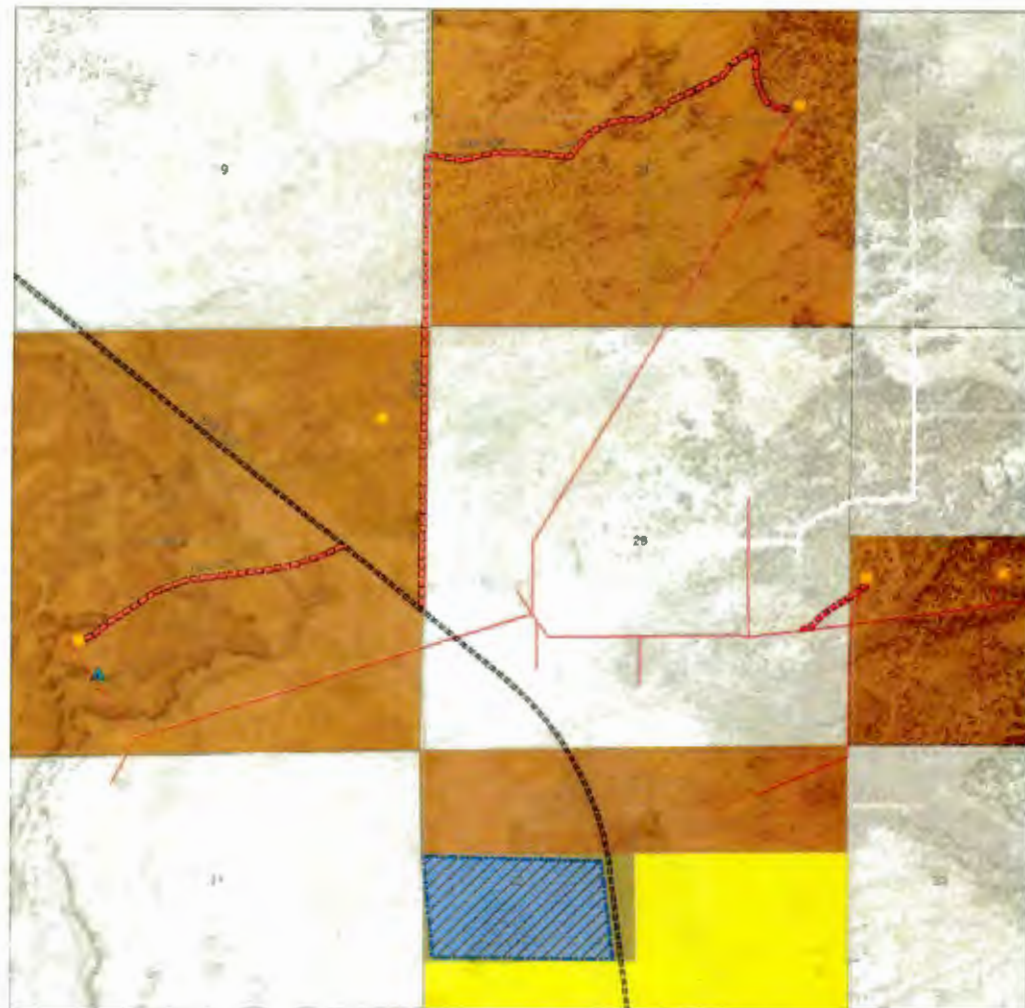




MAP 24: UNIT 2 DOG LAKE DEVELOPMENT

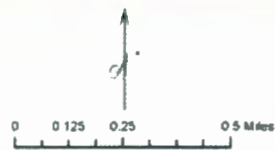


MAP 25: UNIT 2 DOG LAKE DEVELOPMENT CONCEPT



Legend

■ Residential	Roads	Land Use
— Power Line	--- BIA, Unimproved	■ Community Facilities
▲ Livestock Wells	--- BIA, Gravel	--- Road Improvement
	--- BIA, Paved	



DATA LAYERS CREDITS: Ramah Navajo GIS Programs; Navajo Nation Land Department
SERVICE LAYER CREDITS: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
DISCLAIMER: Map is for Planning Purposes Only. Ramah Navajo Chapter or JJ Clacs & Company assumes no liability for any errors, omissions, or inaccuracies in the map.

MAP 26: UNIT 2 BROWNVILLE

UNIT 3 LAND USE

OVERVIEW

Unit 3 is one of five Units in the Ramah Navajo Chapter. Unit 3 is located along the eastern edge of the planning area as shown in **FIGURE 7**. The unit is square approximately 6 miles by 6 miles and within Cibola County. Unit 3 encompasses 23,304 acres, of which 85.6 percent is under Chapter/Navajo jurisdiction.

BIA Route 122 crosses the northwest corner of the Unit.

LAND BASE

The land base is complex and popularly referred to as 'checkerboard' because the lands are intermingled with ownership either tribal, state, federal, Indian allotments, or private.

The land status map (**MAP 27**) shows the ownership or management status of the land within in Unit 3. The acreage is as follows with the percentage indicated on the map:

- Indian Allotments – 8,433 acres
- Navajo Tribal Trust – 11,513 acres
- State - 2,878 acres
- Private - 480 acres



FIGURE 7. UNIT 3 LOCATION

LAND USE

The land use plan map (**MAP 28**) shows existing and future land uses as well as the needs and desires of the community members. The following descriptions provide more information.

Existing Land Use

- Residential: Homes are scattered throughout the Unit.
- Significant Landform: Goat Hill – Named after a herd of goat that used to climb the hill.
- Tourism: Nearby Attractions: Continental Divide is to the east. Black mountain and Rock Point are major landforms.
- Windmills: 4 windmills.
- GRAZING: Ranching, sheepherding and livestock grazing. There are approximately ____ grazing permits.
- Infrastructure: Power and water lines is 2, 4 and 6 in.

Future Land Use

Future land use plans for Unit 3 include:

- Residential & Recreational: Ozark Lake and Residential Development (**MAP 29.**

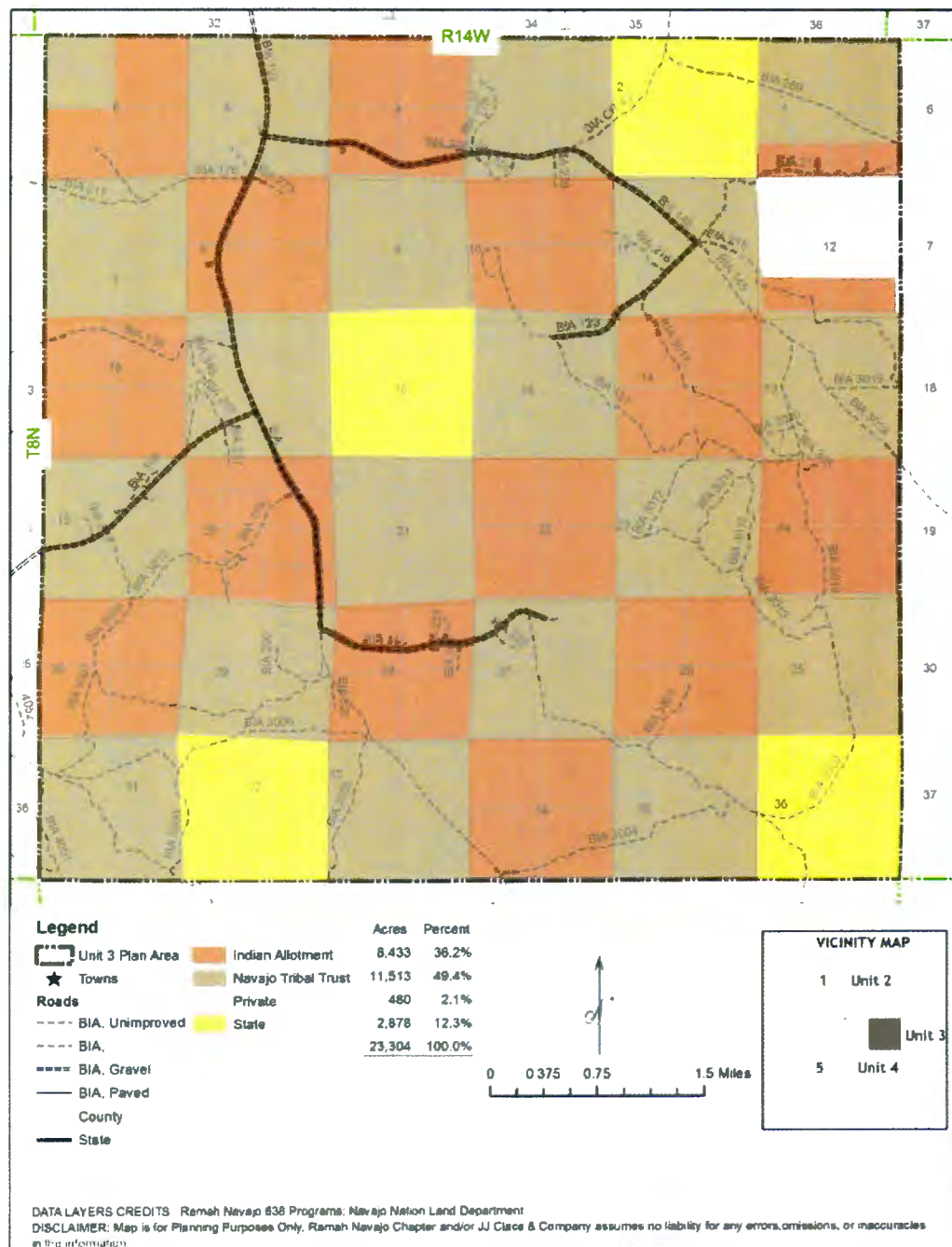
The site details are indicated in **TABLE 13.**

TABLE 13.		
PROPOSED DEVELOPMENT IN UNIT 3		
PROPERTY	ACRES	POTENTIAL LAND USE
Ozark Lake	xx	Residential & Recreational
Ozark Lake	xx	Residential

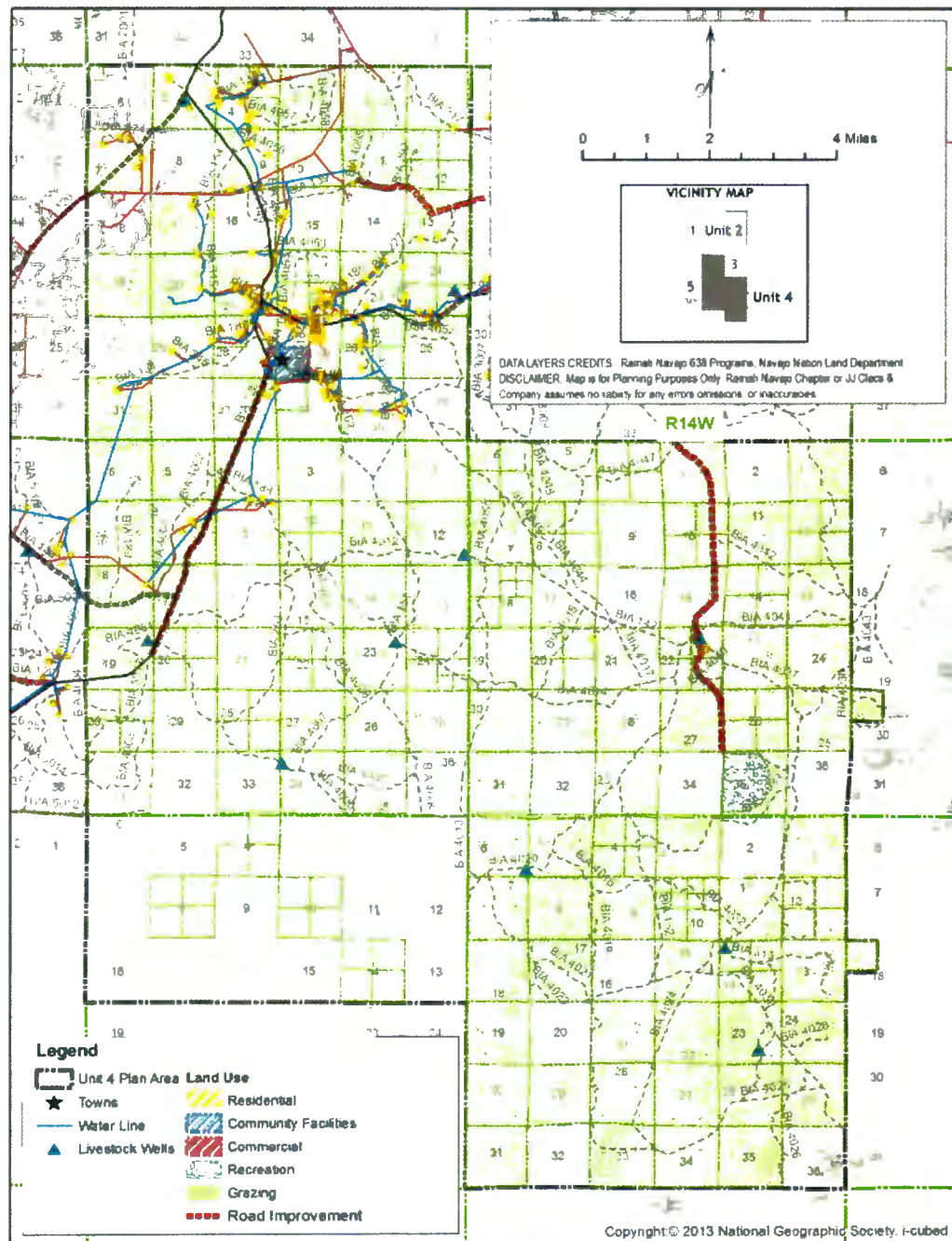
NEEDS AND DESIRES

The community needs and desires include:

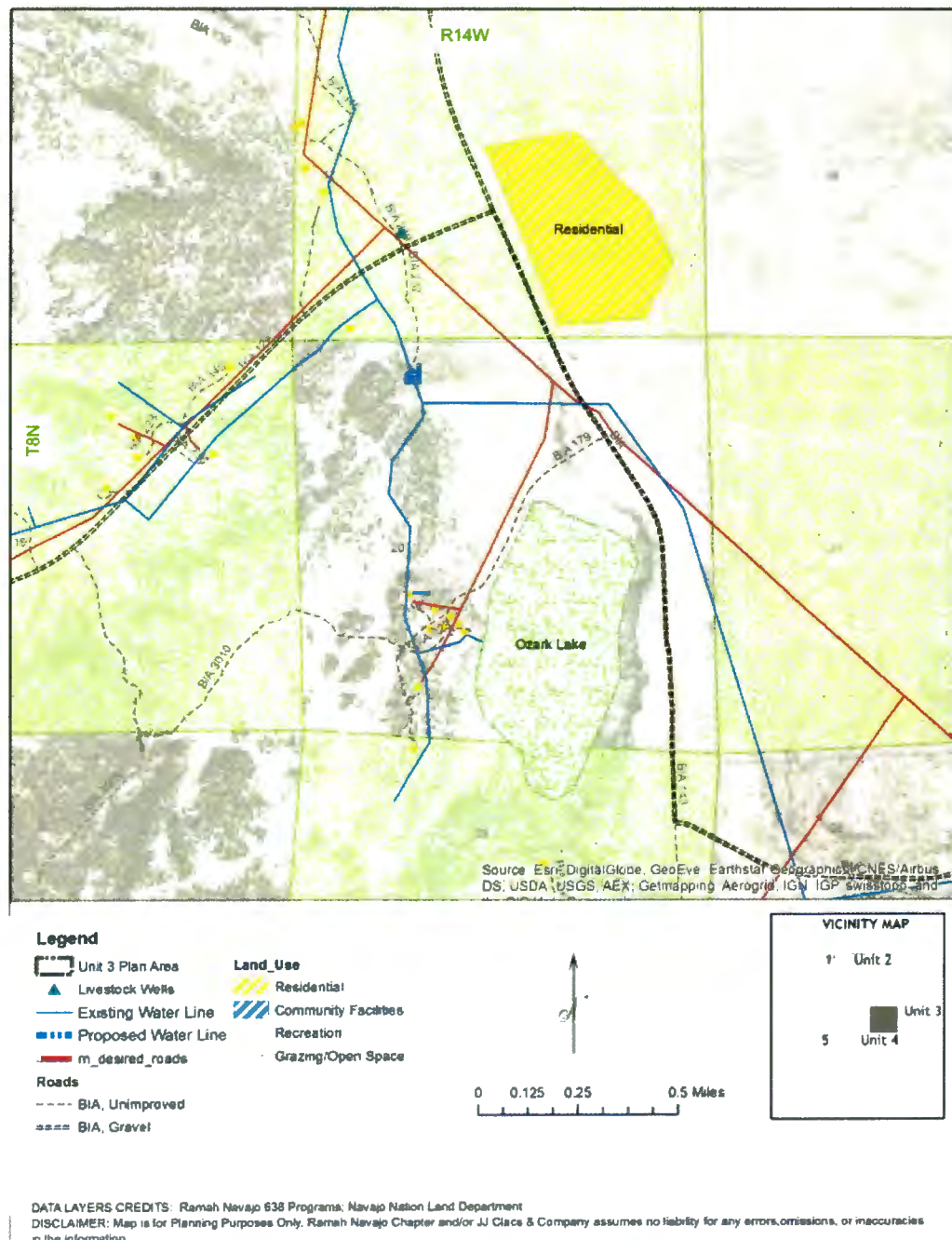
- Gravel roads to homes
- Powerline and water line extensions
- Road improvement – Maria Road needs major and immediate improvement
- Windmills to support grazing
- Preservation and conservation of land, wildlife and plants and forage.
- Fencing along the reservation boundary
- Land acquisition to support land acquisition
- Livestock water distribution from windmill. Could be run to other parts of the Unit



MAP 27: UNIT 3 LAND STATUS



MAP 28: UNIT 3 LAND USE



MAP 29: UNIT 3 OZARK LAKE AND RESIDENTIAL

UNIT 4 LAND USE

OVERVIEW

Unit 4 is located in the southeast part of the planning area. The unit is mostly long approximately 5 miles by 14 miles. BIA Route 125 is located in the northwest part of the Unit. PineHill is located in the northern part of the Unit. Unit 4 encompasses 106,435 acres, however only 78 percent is under Chapter/Navajo jurisdiction. **FIGURE 8**

Cerro Alto Tall Mountain in Navajo. Volcanic cones. Bobcat Hill is located west of Cerro Alto. Bobcat Hill volcanic cone.

LAND BASE

The land base is complex and popularly referred to as 'checkerboard' because the lands are intermingled with ownership either tribal, state, federal, Indian allotments, or private.

The land status map (**MAP 30**) shows the ownership or management status of the land within in Unit 4. The acreage is as follows with the percentage indicated on the map:

- Indian Allotments – 14,397 acres
- Navajo Tribal Trust – 60,374 acres
- Navajo Fee - Nicoll Ranch - 1,299 acres
- Ramah Band of Navajo Tribe - 7,022 acres
- State - 11,159 acres
- Private - 25,619 acres

LAND USE

The land use plan map (**MAP 31**) shows existing and future land uses as well as the needs and desires of the community members. The following descriptions provide more information.

Existing Land Use

- Residential: Homes are mainly around Pinehill. Nisjahae towards Unit 5.
- Community Facilities: Pinehill Nidischee shi shodi. Pinehill School. Dormitory.
- Community Facilities: Clinic, post office, rodeo ground.
- Commercial: Grocery/convenience store, landromat
- Grazing: 9 windmills.

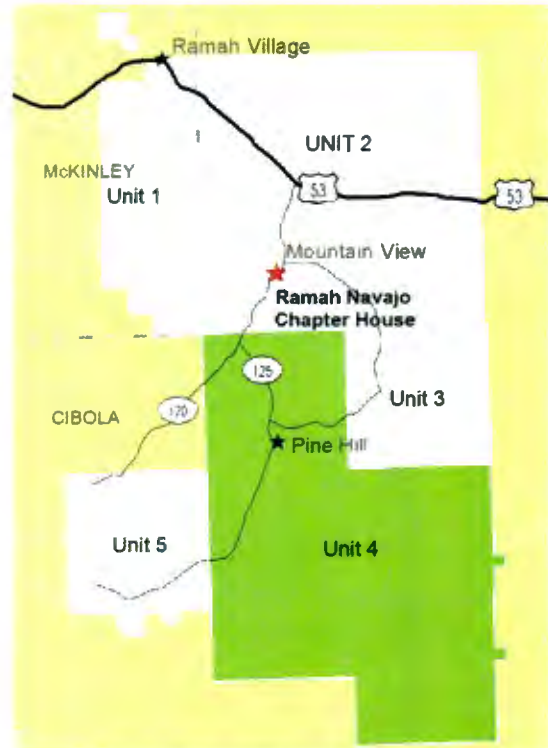


FIGURE 8. UNIT 4 LOCATION

- Grazing: Ranching and sheepherding and livestock grazing. There are approximately 23 grazing permits.
- Open Space: Wildlife.

Future Land Uses

Future land use plans for Unit 4 include:

- Community: expanding community development at Pine Hill (**MAP 32**)
- Recreational: proposed recreational development at Cerro Alto (**MAP 33**).

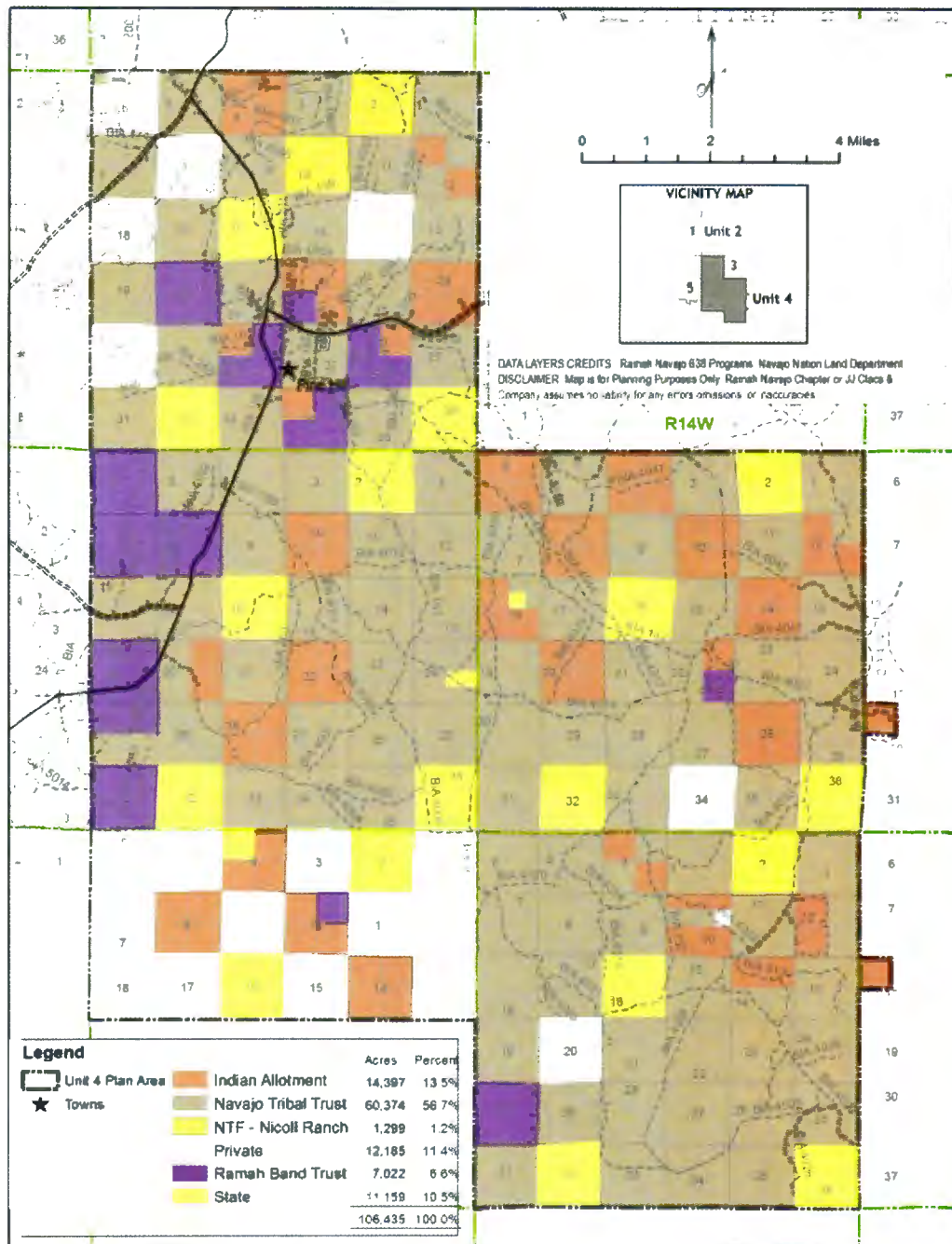
The site details are indicated in **TABLE 15**.

TABLE 14. PROPOSED DEVELOPMENT IN UNIT 4		
PROPERTY	ACRES	POTENTIAL LAND USE
Pine Hill	xx	Community Facilities
Cerro Alto	xx	Recreational

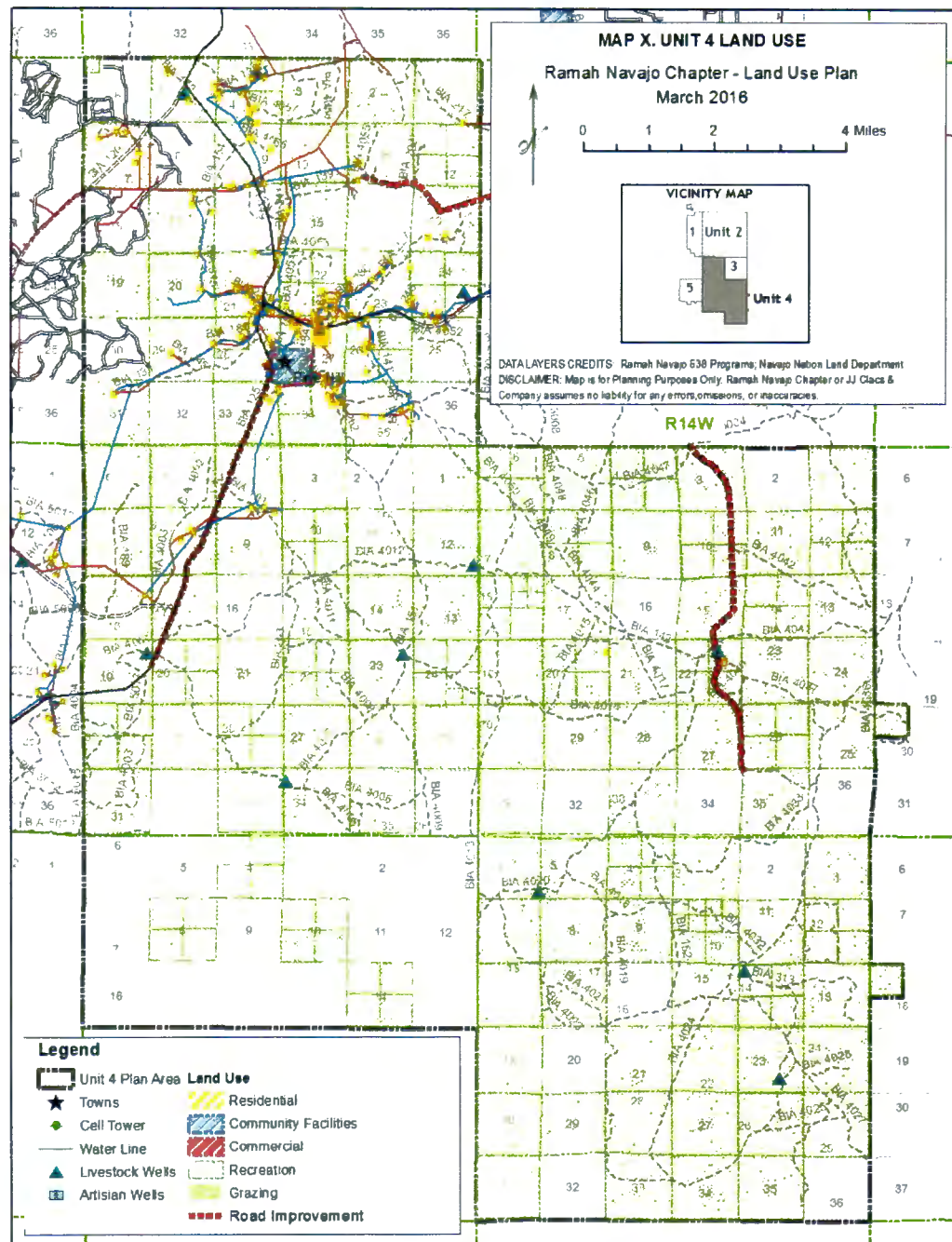
NEEDS AND DESIRES

The community needs and desires include:

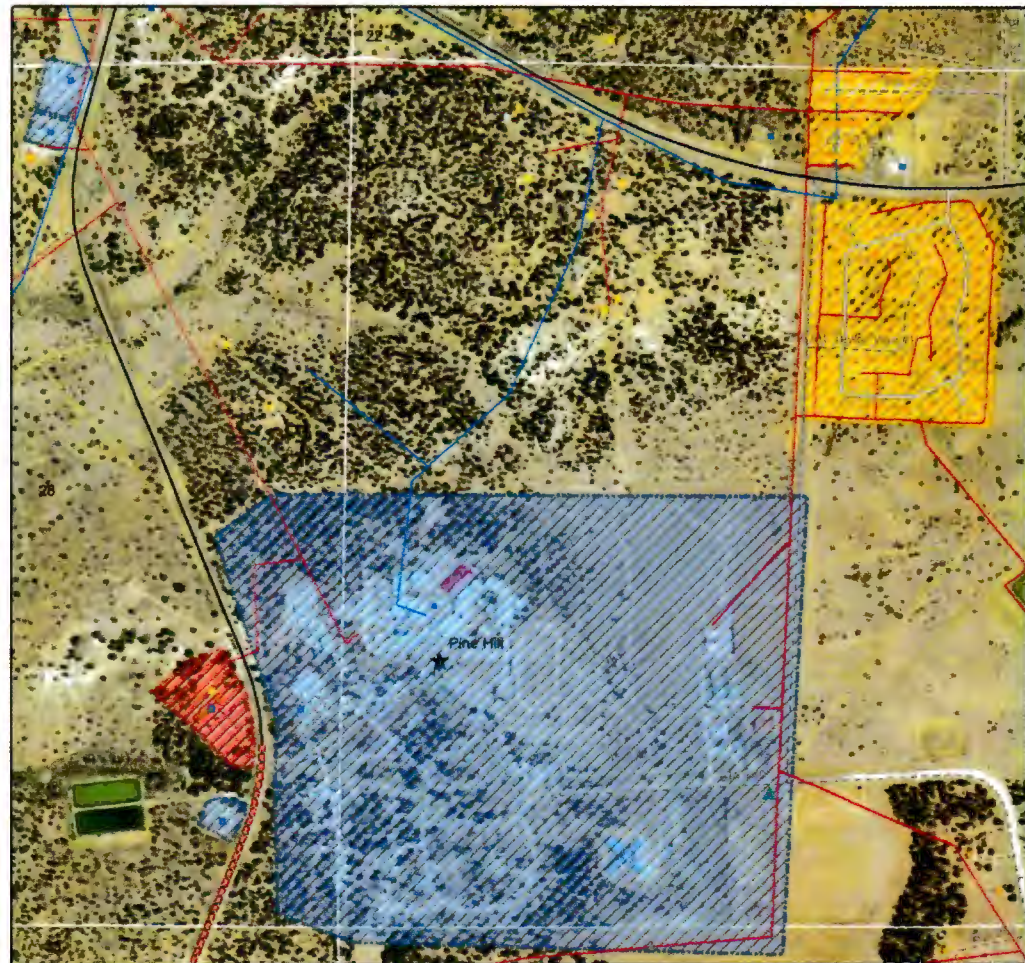
- Gravel roads to all homes
- Water
- Windmills
- Need more windmills
- Dam – as part of conservation plan
- Protect open space area for grazing and wildlife
- Reservation boundary fencing
- Gravel pit



MAP 30: UNIT 4 LAND STATUS

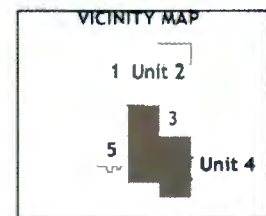
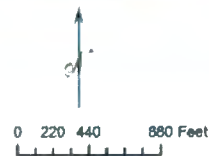


MAP 30: UNIT 4 LAND USE



Legend

Unit 4 Plan Area	Land Use
Towns	Residential
Cell Tower	Community Facilities
Water Line	Commercial
Livestock Wells	Road Improvement

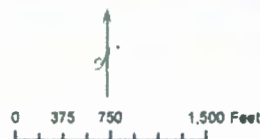


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MAP 32: UNIT 4 PINE HILL DEVELOPMENT



Legend
Land Use
Recreation
Grazing/Open Space



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MAP 33 - UNIT 4 CERRO ALTO RECREATIONAL DEVELOPMENT

UNIT 5 LAND USE

OVERVIEW

Unit 5 is located in the southwest corner of the planning area. The unit is square 6 by 6 miles. Mostly rangeland. Using mainly for grazing and livestock. The entire valley was good for grazing, now it is full of sage. Near Candy Kitchen. Wolf Sanctuary. **FIGURE 9**

Unit 5 encompasses 23,710 acres, however only 85.4 percent is under Chapter/Navajo jurisdiction.

LAND BASE

The land base is complex and popularly referred to as 'checkerboard' because the lands are intermingled with ownership either tribal, state, federal, Indian allotments, or private.

The land status map (**MAP 34**) shows the ownership or management status of the land within in Unit 5. The acreage is as follows with the percentage indicated on the map:

- Indian Allotments – 6,678 acres
- Navajo Tribal Trust – 1,474 acres
- Ramah Band of Navajo Tribe Trust - 12,101 acres
- BLM - 159 acres
- State - 2,673 acres
- Private - 625 acres

Over half is Ramah Band land. 11 sections of Allotments, 7 sections of state land.

LAND USE

The land use plan map (**MAP 35**) shows existing and future land uses as well as the needs and desires of the community members. The following descriptions provide more information.

Existing Land Use

- Residential: Homes are scattered throughout the Unit. Mostly along 125, 128 and 144. 70 households
- Every house is less than ½ mile from the road
- Grazing: 4 working windmills
- Open range: areas are designated as open range

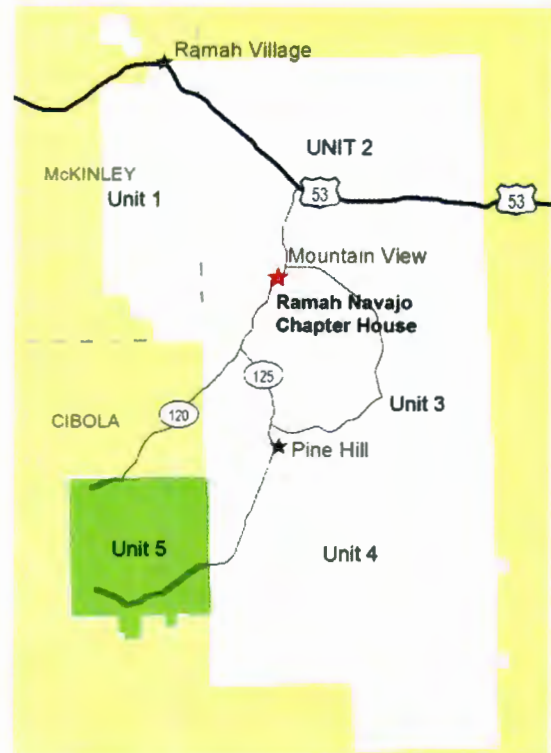


FIGURE 9. UNIT 5 LOCATION

- Grazing: Ranching and sheepherding and livestock grazing. There are approximately 23 grazing permits

Future Land Uses

Future land use plans for Unit 5 include:

- Recreational: upgrade recreational area at Big Pine Park (**MAP 36**)

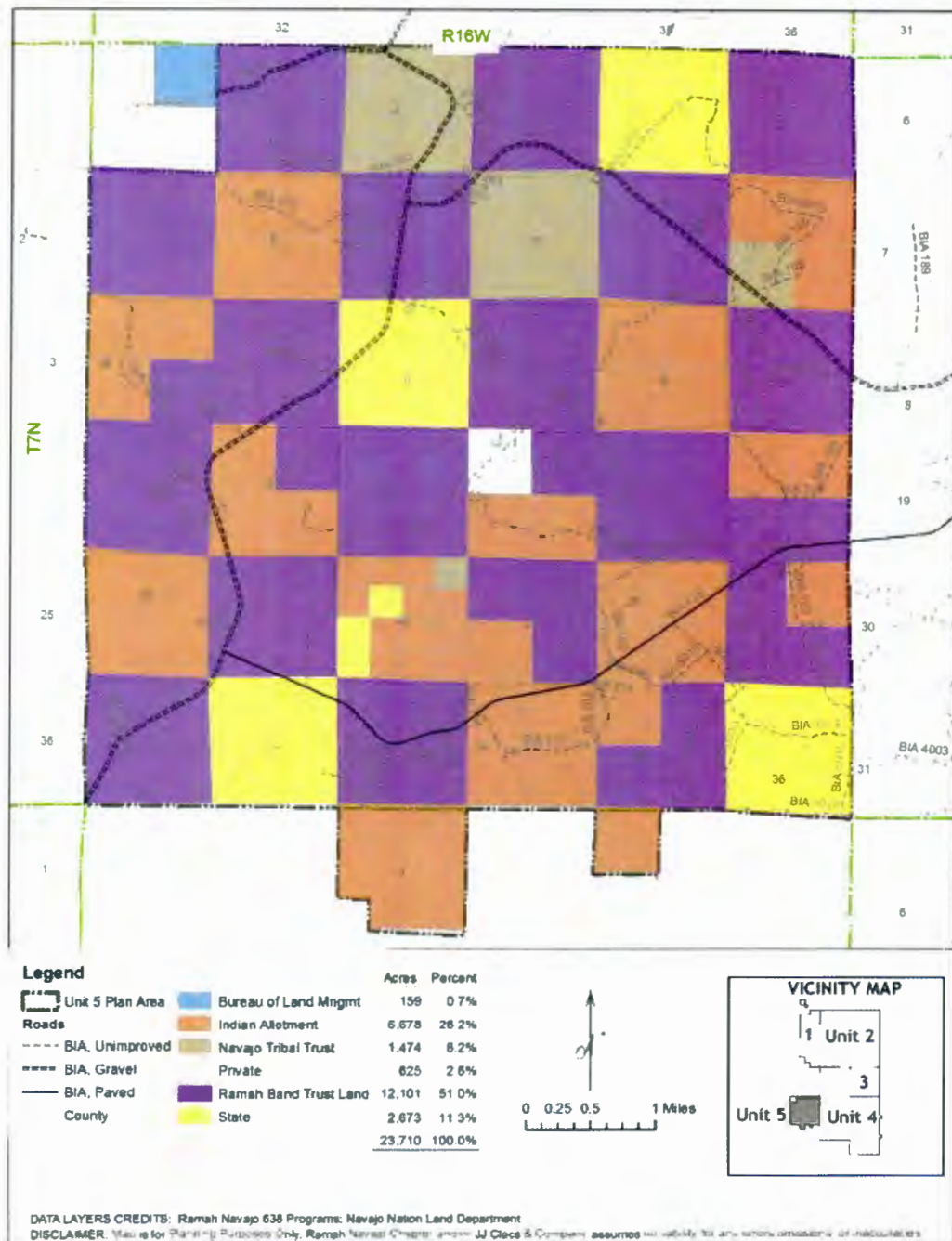
The site details are indicated in **TABLE 15**.

TABLE 15. PROPOSED DEVELOPMENT IN UNITS		
PROPERTY	ACRES	POTENTIAL LAND USE
Big Pine Park	xx	Recreational

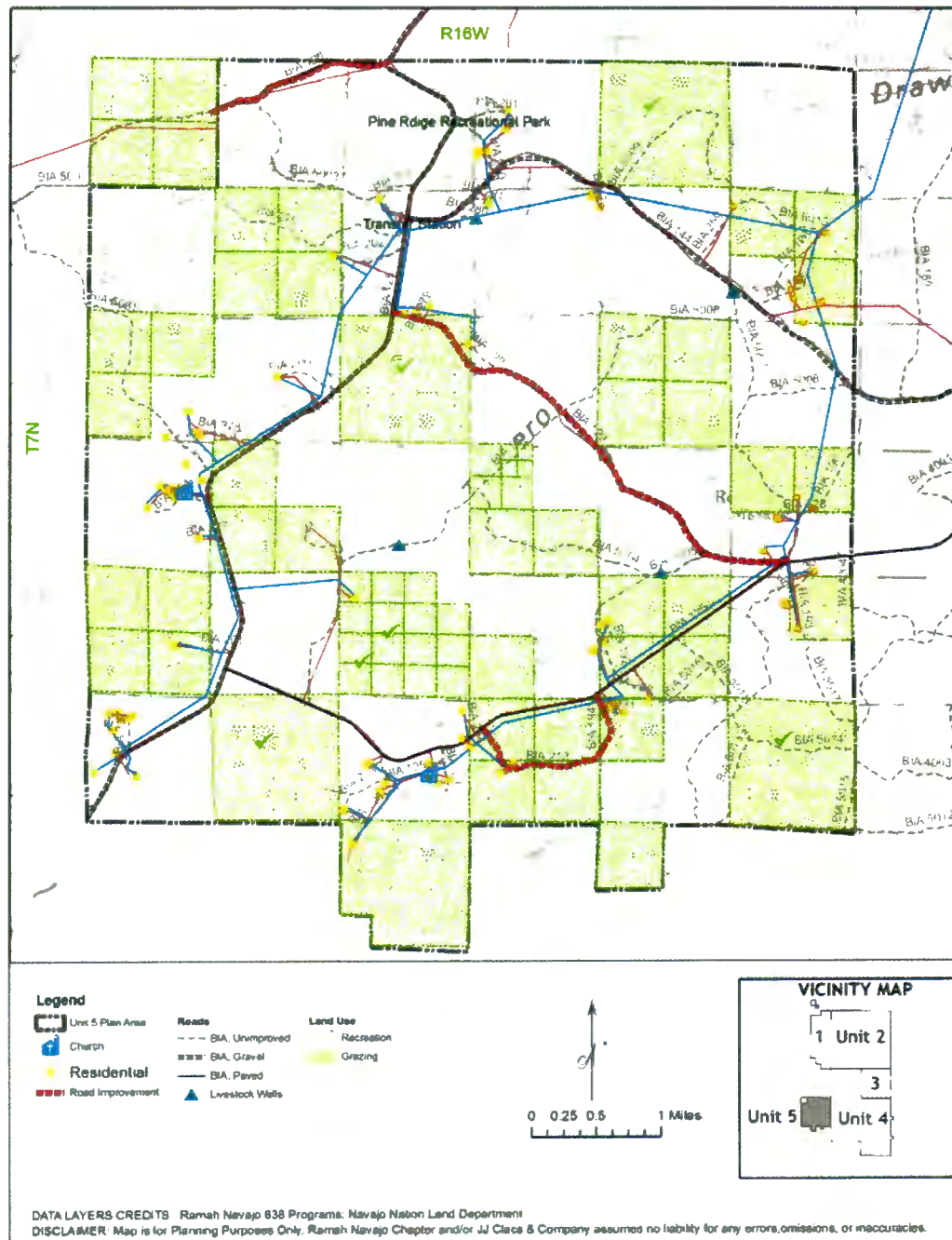
NEEDS AND DESIRES

The community needs and desires include:

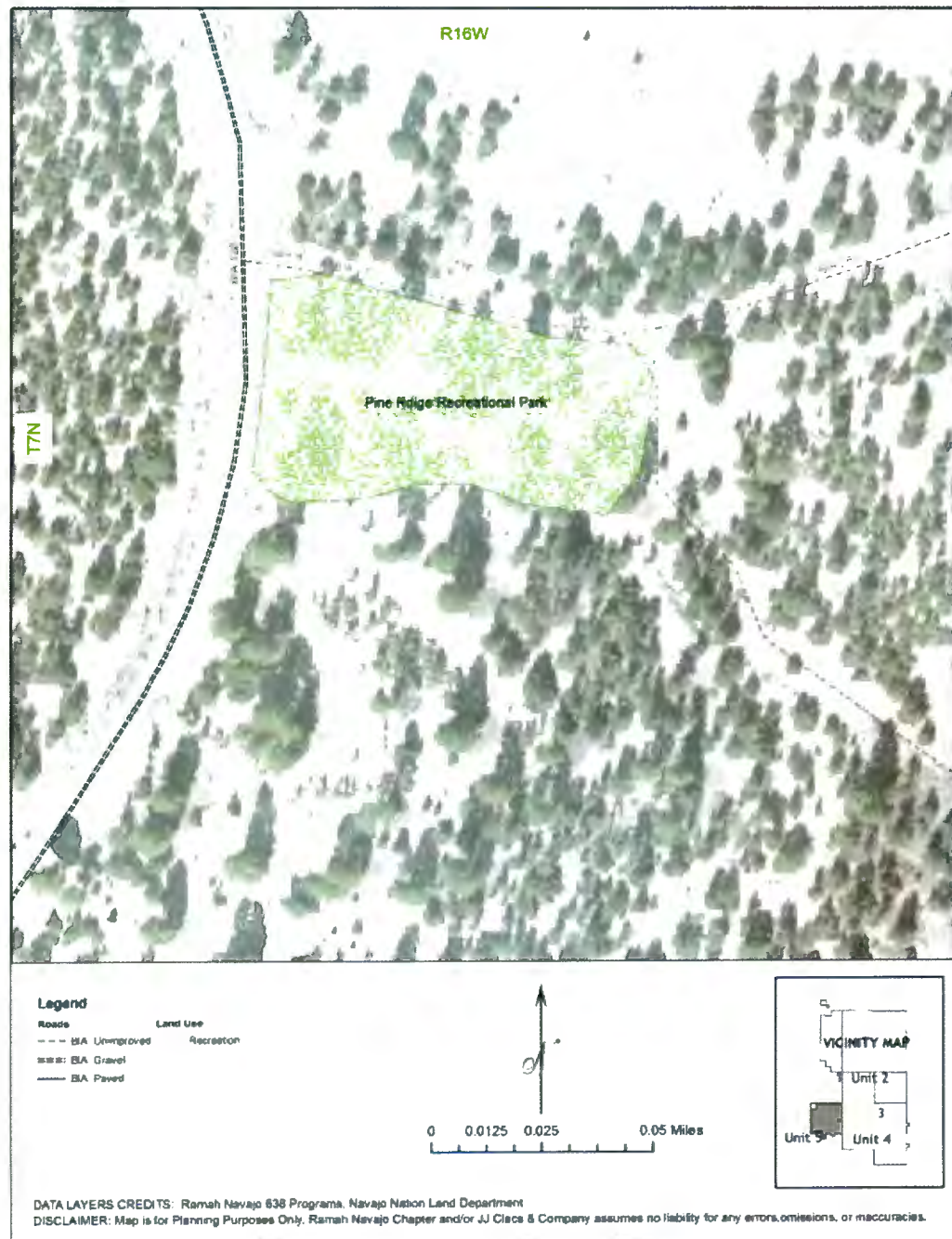
- Gravel roads to homes
- Powerline extensions
- Waterline extensions
- Improve existing homes or build new structures
- Land conservation including conserving artesian well
- Land acquisition



MAP 34 : UNIT 5 LAND STATUS



MAP 35: UNIT 5 LAND USE



MAP 36: UNIT 5 BIG PINE DEVELOPMENT



9. CAPITAL IMPROVEMENT PLAN

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

INFRASTRUCTURE AND CAPITAL IMPROVEMENT PLAN

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, Cemeteries, 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 house wiring required as a precedent to planned or current waterline extensions or electrical powerline extensions for the same project.

Ramah Navajo's ICIP Plan covers prioritized projects. A current project summary is presented on the following page. As the ICIP plan is updated, it will supersede the current version.

TABLE 10. RAMAH NAVAJO CHAPTER INFRASTRUCTURE CAPITAL IMPROVEMENT PLAN (ICIP) 2017-2021	
PROIRITY	PROJECT
1	Construct Sewer/Waste Water
2	Ramah Detention Center
3	Section 21/27 Master Site Development Plan
4	Interior Finishing for Livestock Training Facility
5	Ramah Transfer Station
Source: RNC Resolution 051513	

RAMAH NAVAJO COMMUNITY DEVELOPMENT DEPARTMENT

The Ramah Navajo Chapter Office of Grants and Contracts Community Development Department provides oversight on the ICIP projects. This deparmtent also offers a variety of different essential services for the Ramah Navajo Community members. Services offered from this department include:

- Housing Assistance
- Bathroom Addition Assistance
- Power line Extension Assistance
- USDA 504 Grant Assistance
- IHS Waterline Extension Assistance
- Physical Address Verification
- GIS/ Mapping Services
- Website/Facebook Managing
- Copying/Scanning/Printing/Faxing Services.

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Vroman, Adam Clark, 1903. Azusa Publishing, LLC, Englewood, Colorado.

Ramah Navajo Chapter

ramahnavajo.org

APPENDIX A

COMMUNITY PARTICIPATION PLAN

Ramah Navajo Chapter
Reevaluating and Updating the Community Land Use Plan

Community Education and Participation Plan

Developed by:
JJ Clacs & Company
P.O. Box 479
Fort Wingate, New Mexico 87316

Approved by:
Ramah Navajo Chapter
Community Land Use Planning Commission
HCR 61 Box 13
Ramah, New Mexico 87321-9601

October 12, 2015

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Purpose

The purpose of the *Community Education and Participation Plan* is to guide the Community Land Use Planning Commission (CLUPC) through the land use planning process by giving all community members, allottees (if they so choose) and interested parties the opportunity to learn and actively participate in reviewing, updating and revising Ramah Navajo's *Community Land Use Plan*.

The *Community Education and Participation Plan* objectives are to:

- encourage community members, allottees and interested parties to participate in every step of the process;
- provide a means to educate and inform participants about land use planning;
- obtain ideas and opinions about future land use in the community; and
- let people know what will occur, stay on track and keep within the set timeline.

Authorization

Navajo Nation Code Title 26 Local Governance Act (LGA) authorizes the chapter to develop a *Community Land Use Plan* based upon results of a community assessment. LGA further requires chapters to reevaluate its *Community Land Use Plan* every five years to meet the needs of the changing community. Section 2004(C)(3)(b) provides a mandate for developing a *Community Education and Participation Plan*.

In accordance with LGA, Ramah Navajo Chapter previously approved and passed the following resolutions to meet the requirements towards local administration of land:

- pursuant to §2004(C)(1), Ramah Navajo Chapter approved and passed a resolution stating the Chapter's desire to develop and implement a *Community Land Use Plan*; and
- pursuant to §2004(C)(1), Ramah Navajo Chapter approved and passed a resolution establishing the CLUPC to approve the processes for planning and to oversee planning activities.

Key Roles in Land Use Planning

An important element to the *Community Land Use Plan* is the establishment of the CLUPC and the identification of other key players. The purpose of the CLUPC is to represent a variety of community interests, as well as guide the preparation of the land use plan.

Duties of the CLUPC:

- *approve the processes for planning and oversee planning activities;*
- *approve the community participation plan;*

- *educate the community on the concepts, needs, and process for planning and implementing a community based land use plan;*
- *develop the Community Land Use Plan; and*
- *recommend the Community Land Use Plan to the Chapter for approval.*

Duties of the Chapter Officials:

- *provide leadership and guide policy making;*
- *recommend the establishment of CLUPC to the chapter membership for approval;*
- *encourage and promote community participation in land use planning; and*
- *participate in the land use planning process.*

Duties of the Land Board:

- *provide guidance and assistance as it relates to grazing and Navajo Code Title 3;*
- *encourage and promote community participation in land use planning; and*
- *participate in the land use planning process.*

Duties of the Administration and Support Programs:

- *provide administrative support and technical assistance;*
- *nurture the well-being and growth of the community and its people; and*
- *participate in the land use planning process.*

Duties of Community Members, allottees and interested parties including registered voters, residents, youth, grazing permit holders, community organizations, schools, businesses, service providers and other groups or entities:

- *participate in the land use planning process; and*
- *comment in writing or in testimony regarding the land use plan.*

Duties of the Chapter membership:

- *participate in the land use planning process;*
- *approve and pass a Chapter resolution stating the Chapter's desire to develop and implement a land use plan;*
- *approve and pass a Chapter resolution establishing the CLUPC; and*
- *approve and pass a Chapter resolution adopting the Community Land Use Plan.*

Duties of the Council Delegate:

- *provide legislative guidance to land use planning development and implementation;*
- *encourage and promote community participation in land use planning;*
- *participate in the land use planning process;*

- *submit the chapter approved Community Land Use Plan to the Resources Development Committee of the Navajo Nation Council for certification; and*
- *support the chapter's land use planning priorities.*

Methods to Foster Public Education and Participation

CLUPC meetings, work sessions and a public hearing will be used to educate the community about land use planning and allow for participation. Each method is defined below:

- CLUPC meetings inform, update and recommend land use planning activities;
- Work sessions offer the community a hands-on approach to participating;
- Public hearing is a formal setting to present the draft land use plan and obtain community views and comments in writing or testimony; and
- Face-to-face communication.

Community members, allottees and interested parties will be encouraged and urged to attend and participate in any or all methods. Food will be provided to encourage people to attend.

All information pertaining to the land use plan shall be available to the public.

Public Notices and Announcements

Public notices and announcements will be used to inform the community and the general public about the Community Land Use Planning events and activities as well as encourage involvement in the planning efforts. Notices and announcements will include:

- Public service radio announcements
- Flyers – posting in common public areas and businesses
- Display in the chapter house for public viewing
- Announcements at meetings and/or other gatherings
- Email and Facebook
- Word of Mouth
- Invitation to local media including reporters, Gallup Sun, Navajo Times and others

Schedule

The following table presents the anticipated schedule for reviewing, updating and revising *Ramah Navajo's Community Land Use Plan*:

LAND USE PLANNING SCHEDULE			
ACTIVITY	Oct	Nov	Dec
1. CLUPC Meeting - Planning Process - Community Participation Plan	10/12/15 9 am		
2. Work Session - Chapter Profile - Geographic Scope - Inventories and Assessments - Vision, Goals and Priorities - Existing and Future Land Use	10/16/15 2 pm		
3. Public Hearing - present draft Land Use Plan - open 60-day comment period	10/19/15 9 am		
4. CLUPC Meetings - Review and incorporate comments		11/04/15 9 am	12/02/15 9 am
6 CLUPC Meeting - Close 60-day comment period - Finalize Land Use Plan			12/18/15 9 am
11. Chapter Meeting - Approve Community Land Use Plan			12/23/15 9 am
12. RDC Meeting - LGA Re-certification			12/28 th or 12/29 th

APPENDIX B

PLAN AMENDMENT AND UPDATE PROCESS

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?
- Ensure 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. 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.

APPENDIX C

SOIL REPORT: MAP UNIT DESCRIPTION

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia 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]

25--Hickman-Catman complex, 1 to 6 percent slopes

Composition

- o Hickman and similar soils: 45 percent of the unit
- o Catman and similar soils: 40 percent of the unit

Setting

Landform(s): alluvial fans, swales, valleys

Elevation: 6499 to 7500 feet

Precipitation: 12 to 16 inches

Slope gradient: 2 to 6 percent

Air temperature: 47 to 51 °F

Frost-free period: 110 to 135 days

Characteristics of Hickman and similar soils

Average total avail. water in top five feet (in.): 9.0

Available water capacity class: High

Parent material: slope alluvium derived from calcareous sandstone

Restrictive feature(s): none

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): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Land capability class, irrigated:

Land capability class, nonirrigated: 6w

Hydric soil: no

Hydrologic group: B

Runoff class: medium

Potential frost action: low

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 4	Loam	0.6 to 0.7	7.4 to 8.4	0.0 to 2.0	1 to 5
C -- 4 to 60	Stratified sandy loam to silty clay loam	7.8 to 8.9	7.4 to 9.0	0.0 to 2.0	1 to 12

Ecological class(es): NRCS Rangeland Site - Bottomland

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[25 - Hickman-Catman complex, 1 to 6 percent slopes]

Characteristics of Catman and similar soils

Average total avail. water in top five feet (in.): 8.9

Available water capacity class: Moderate

Parent material: alluvium derived from shale

Restrictive feature(s): none

Depth to Water table: 4 inches

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: 6w

Hydric soil: yes

Hydrologic group: D

Runoff class: low

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
A -- 0 to 8	Silty clay loam	1.5 to 1.7	7.4 to 7.8	2.0 to 8.0	2 to 4
Bss -- 8 to 60	Clay	6.8 to 7.8	7.4 to 8.4	2.0 to 8.0	2 to 4

Ecological class(es): NRCS Rangeland Site - Clayey Bottomland

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[70 - Catman clay loam, 1 to 3 percent slopes]

70--Catman clay loam, 1 to 3 percent slopes

Composition

- o Catman and similar soils: 85 percent of the unit
- o Sparank and similar soils: 4 percent of the unit

Setting

Landform(s): alluvial fans, flood plains, valleys

Elevation: 6801 to 7001 feet

Precipitation: 13 to 16 inches

Slope gradient: 1 to 3 percent

Air temperature: 47 to 51 °F

Frost-free period: 100 to 120 days

Characteristics of Catman and similar soils

Average total avail. water in top five feet (in.): 8.6

Available water capacity class: Moderate

Parent material: fan alluvium derived from shale

Restrictive feature(s): none

Depth to Water table: 4 inches

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: 6w

Hydric soil: yes

Hydrologic group: D

Runoff class: very 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
A -- 0 to 6	Clay loam	0.8 to 1.2	7.4 to 7.8	2.0 to 8.0	0 to 2
Bss -- 6 to 60	Clay	7.0 to 8.1	7.4 to 8.4	2.0 to 8.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Clayey Bottomland

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[72 - Catman variant clay loam, 1 to 3 percent slopes]

72--Catman variant clay loam, 1 to 3 percent slopes

Composition

- o Catman, variant and similar soils: 85 percent of the unit
- o Sparank and similar soils: 10 percent of the unit

Setting

Landform(s): alluvial fans, flood plains, valleys

Elevation: 6801 to 6900 feet

Precipitation: 13 to 16 inches

Slope gradient: 1 to 3 percent

Air temperature: 47 to 51 °F

Frost-free period: 100 to 120 days

Characteristics of Catman, variant and similar soils

Average total avail. water in top five feet (in.): 5.9

Available water capacity class: Low

Parent material: fan alluvium derived from shale

Restrictive feature(s): none

Depth to Water table: 36 inches

Drainage class: somewhat poorly 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: 3s

Land capability class, nonirrigated: 4c

Hydric soil: no

Hydrologic group: D

Runoff class: very high

Potential frost action: high

Saturated hydraulic conductivity class: Moderately Low

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
Ap -- 0 to 10	Clay loam	1.3 to 1.4	7.9 to 8.4	4.0 to 8.0	0 to 2
Bss -- 10 to 60	Clay	3.5 to 5.5	7.9 to 8.4	4.0 to 16.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Salt Meadow

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[73 - Catman sandy clay loam, 1 to 3 percent slopes]

73--Catman sandy clay loam, 1 to 3 percent slopes

Composition

- o Catman and similar soils: 85 percent of the unit

Setting

Landform(s): alluvial fans, flood plains, valleys

Elevation: 6801 to 7001 feet

Precipitation: 13 to 16 inches

Slope gradient: 1 to 3 percent

Air temperature: 47 to 51 °F

Frost-free period: 100 to 120 days

Characteristics of Catman and similar soils

Average total avail. water in top five feet (in.): 8.7

Available water capacity class: Moderate

Parent material: fan alluvium derived from sandstone and shale

Restrictive feature(s): none

Depth to Water table: 4 inches

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: 6w

Hydric soil: yes

Hydrologic group: D

Runoff class: very 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
A -- 0 to 10	Sandy clay loam	1.4 to 2.0	7.4 to 7.8	2.0 to 8.0	0 to 2
Bss -- 10 to 60	Clay	6.5 to 7.5	7.4 to 8.4	2.0 to 8.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Clayey Bottomland

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[75 - Hickman sandy clay loam, 1 to 3 percent slopes]

75--Hickman sandy clay loam, 1 to 3 percent slopes

Composition

- Hickman and similar soils: 85 percent of the unit

Setting

Landform(s): alluvial fans, flood plains, uplands

Elevation: 6499 to 7500 feet

Precipitation: 12 to 16 inches

Slope gradient: 1 to 3 percent

Air temperature: 47 to 51 °F

Frost-free period: 110 to 135 days

Characteristics of Hickman and similar soils

Average total avail. water in top five feet (in.): 9.2

Available water capacity class: High

Parent material: fan 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): 6

Wind erodibility index (WEI): 48

Land capability class, irrigated: 3w

Land capability class, nonirrigated: 6w

Hydric soil: no

Hydrologic group: B

Runoff class: medium

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 6	Sandy clay loam	1.1 to 1.2	7.4 to 8.4	0.0 to 2.0	1 to 5
Ck -- 6 to 60	Stratified sandy loam to silty clay loam	7.6 to 8.6	7.4 to 9.0	0.0 to 2.0	1 to 12

Ecological class(es): NRCS Rangeland Site - Bottomland

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[210 - Bond-Penistaja-Rock outcrop complex, 2 to 15 percent slopes]

210--Bond-Penistaja-Rock outcrop complex, 2 to 15 percent slopes

Composition

- Bond and similar soils: 45 percent of the unit
- Penistaja and similar soils: 25 percent of the unit
- Rock outcrop: 20 percent of the unit

Setting

Landform(s): cuestras, hills, ridges, uplands

Elevation: 5899 to 7100 feet

Precipitation: 10 to 12 inches

Slope gradient: 2 to 15 percent

Air temperature: 48 to 53 °F

Frost-free period: 120 to 140 days

Characteristics of Bond and similar soils

Average total avail. water in top five feet (in.): 2.0

Available water capacity class: Very low

Parent material: eolian deposits derived from sandstone

Restrictive feature(s): lithic bedrock at 6 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): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

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 7	Sandy loam	0.9 to 1.0	6.6 to 7.8	0.0 to 2.0	0 to 2
Bt -- 7 to 16	Sandy clay loam	1.0 to 1.2	6.6 to 8.4	0.0 to 2.0	0 to 2
2R -- 16 to 20	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Shallow Sandstone

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[210 - Bond-Penistaja-Rock outcrop complex, 2 to 15 percent slopes]

Characteristics of Penistaja and similar soils

Average total avail. water in top five feet (in.): 9.2
Available water capacity class: High
Parent material: slope alluvium derived from sandstone
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): 3
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 6c
Hydric soil: no
Hydrologic group: B
Runoff class: medium
Potential frost action:

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 3	Sandy loam	0.4 to 0.5	6.6 to 8.4	0.0 to 2.0	0 to 2
Btk -- 3 to 30	Sandy clay loam	4.0 to 4.8	6.6 to 8.4	0.0 to 2.0	0 to 2
Bck -- 30 to 60	Sandy clay loam	3.6 to 4.5	6.6 to 8.4	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Loamy

Characteristics of Rock outcrop

Average total avail. water in top five feet (in.):
Available water capacity class: NA
Parent material:
Restrictive feature(s): lithic bedrock at 0 to 0 inches
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: 8s
Hydric soil: no
Hydrologic group: D
Runoff class:
Potential frost action:

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
R -- 0 to 60	Bedrock			Null	Null

Ecological class(es):

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[350 - Rock outcrop-Stout complex, 3 to 15 percent slopes]

350--Rock outcrop-Stout complex, 3 to 15 percent slopes

Composition

- Rock outcrop: 60 percent of the unit
- Stout and similar soils: 25 percent of the unit

Setting

Landform(s):

Elevation:

Precipitation:

Slope gradient: 3 to 15 percent

Air temperature:

Frost-free period:

Characteristics of Rock outcrop

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

Available water capacity class: NA

Parent material:

Restrictive feature(s): lithic bedrock at 0 to 0 inches

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: 8s

Hydric soil: no

Hydrologic group: D

Runoff class:

Potential frost action:

Saturated hydraulic conductivity class: Moderately Low

Representative soil profile:

Horizon -- Depth (inches)

Texture

Available water
capacity (inches)

pH

Salinity (mmhos/cm)

SAR

R -- 0 to 60

Bedrock

Null

Null

Ecological class(es):

Characteristics of Stout and similar soils

Average total avail. water in top five feet (in.): 1.7

Available water capacity class: Very low

Parent material: eolian deposits derived from sandstone

Restrictive feature(s): lithic bedrock at 6 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): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 6s

Hydric soil: no

Hydrologic group: D

Runoff class: very high

Potential frost action: moderate

Saturated hydraulic conductivity class: Moderately Low

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[350 - Rock outcrop-Stout complex, 3 to 15 percent slopes]

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 3	Sandy loam	0.3 to 0.4	6.6 to 7.3	0.0 to 2.0	0
C -- 3 to 14	Sandy loam	1.2 to 1.4	6.6 to 7.3	0.0 to 2.0	0
2R -- 14 to 18	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Mountain Grassland

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[500 - Timhus-Bandera association, 20 to 50 percent slopes]

500--Timhus-Bandera association, 20 to 50 percent slopes

Composition

- Timhus and similar soils: 45 percent of the unit
- Bandera and similar soils: 40 percent of the unit

Setting

Landform(s): cinder cones, uplands

Elevation: 7300 to 8300 feet

Precipitation: 16 to 20 inches

Slope gradient: 20 to 50 percent

Air temperature: 40 to 45 °F

Frost-free period: 90 to 110 days

Characteristics of Timhus and similar soils

Average total avail. water in top five feet (in.): 2.8

Available water capacity class: Very low

Parent material: colluvium derived from volcanic and sedimentary rock

Restrictive feature(s): abrupt textural change

Depth to Water table: none within the soil profile

Drainage class: somewhat excessively drained

Flooding hazard: none

Ponding hazard: none

Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Land capability class, irrigated:

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: B

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 5	Extremely gravelly loam	0.3 to 0.3	6.6 to 7.3	0.0 to 2.0	0
Bk1 -- 5 to 20	Very gravelly loam	1.2 to 1.3	7.4 to 7.8	0.0 to 2.0	0
Bk2 -- 20 to 29	Extremely gravelly loam	0.5 to 0.5	7.9 to 8.4	0.0 to 2.0	0
2C -- 29 to 60	Cinders	0.3 to 0.9	7.9 to 8.4	0.0	0

Ecological class(es): NRCS Rangeland Site - Cinder

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[500 - Timhus-Bandera association, 20 to 50 percent slopes]

Characteristics of Bandera and similar soils

Average total avail. water in top five feet (in.): 2.3

Available water capacity class: Very low

Parent material: colluvium derived from volcanic and sedimentary rock

Restrictive feature(s): abrupt textural change

Depth to Water table: none within the soil profile

Drainage class: somewhat excessively drained

Flooding hazard: none

Ponding hazard: none

Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

Land capability class, irrigated:

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: B

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 3	Very gravelly loam	0.2 to 0.4	6.6 to 8.4	0.0 to 2.0	0
C1 -- 3 to 16	Very gravelly loam	0.8 to 1.6	6.6 to 8.4	0.0 to 2.0	0
2C2 -- 16 to 60	Cinders	0.4 to 1.3	6.6 to 8.4	Null	Null

Ecological class(es): NRCS Rangeland Site - Cinder

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[505 - Flugle-Goesling loamy fine sands, 1 to 8 percent slopes]

505--Flugle-Goesling loamy fine sands, 1 to 8 percent slopes

Composition

- o Flugle and similar soils: 55 percent of the unit
- o Goesling and similar soils: 25 percent of the unit

Setting

Landform(s): fan remnants, hills, mesas, ridges, uplands

Elevation: 6001 to 7100 feet

Precipitation: 10 to 14 inches

Slope gradient: 1 to 8 percent

Air temperature: 48 to 53 °F

Frost-free period: 115 to 140 days

Characteristics of Flugle and similar soils

Average total avail. water in top five feet (in.): 9.0

Available water capacity class: High

Parent material: fan 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): 2

Wind erodibility index (WEI): 134

Land capability class, irrigated:

Land capability class, nonirrigated: 6c

Hydric soil: no

Hydrologic group: B

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	Loamy fine sand	0.5 to 0.5	6.6 to 7.3	0.0 to 2.0	0
Bt -- 5 to 41	Sandy clay loam	5.7 to 6.4	6.6 to 8.4	0.0 to 2.0	0
Bk -- 41 to 61	Sandy loam	2.2 to 2.6	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Loamy

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[505 - Flugle-Goesling loamy fine sands, 1 to 8 percent slopes]

Characteristics of Goesling and similar soils

Average total avail. water in top five feet (in.): 8.7

Available water capacity class: Moderate

Parent material: fan alluvium derived from sandstone

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): 2

Wind erodibility index (WEI): 134

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

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 5	Loamy fine sand	0.5 to 0.5	6.6 to 7.8	0.0 to 2.0	0
Bt -- 5 to 18	Sandy clay loam	2.2 to 2.5	6.6 to 8.4	0.0 to 2.0	0
Bk -- 18 to 60	Sandy loam	5.4 to 6.3	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Loamy

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[515 - Rock outcrop-Vessilla-Mion complex, 3 to 55 percent slopes]

515--Rock outcrop-Vessilla-Mion complex, 3 to 55 percent slopes

Composition

- Rock outcrop: 45 percent of the unit
- Mion and similar soils: 20 percent of the unit
- Vessilla and similar soils: 20 percent of the unit

Setting

Landform(s):

Elevation:

Precipitation:

Slope gradient: 3 to 55 percent

Air temperature:

Frost-free period:

Characteristics of Rock outcrop

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

Available water capacity class: NA

Parent material:

Restrictive feature(s): lithic bedrock at 0 to 0 inches

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: 8s

Hydric soil: no

Hydrologic group: D

Runoff class:

Potential frost action:

Saturated hydraulic conductivity class: Moderately Low

Representative soil profile:

Horizon -- Depth (inches) | Texture

R -- 0 to 60 | Bedrock

Available water
capacity (inches)

pH

Salinity (mmhos/cm)

SAR

Null

Null

Ecological class(es):

Characteristics of Mion and similar soils

Average total avail. water in top five feet (in.): 1.8

Available water capacity class: Very low

Parent material: colluvium over alluvium derived from shale

Restrictive feature(s): paralithic bedrock at 10 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): 4L

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: D

Runoff class: very high

Potential frost action: low

Saturated hydraulic conductivity class: Moderately Low

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[515 - Rock outcrop-Vessilla-Mion complex, 3 to 55 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 8.4	0.0 to 2.0	0 to 1
C -- 2 to 11	Silty clay	1.4 to 1.5	7.4 to 8.4	0.0 to 2.0	0 to 2
2Cr -- 11 to 15	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Shallow Savanna

Characteristics of Vessilla and similar soils

Average total avail. water in top five feet (in.): 2.0

Available water capacity class: Very low

Parent material: eolian deposits over colluvium derived from sandstone

Restrictive feature(s): lithic bedrock at 6 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): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 7s

Hydric soil: no

Hydrologic group: D

Runoff class: medium

Potential frost action: low

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 3	Sandy loam	0.3 to 0.4	6.6 to 8.4	0.0 to 2.0	0
C -- 3 to 15	Sandy loam	1.5 to 1.8	7.4 to 8.4	0.0 to 2.0	0 to 1
2R -- 15 to 19	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Savanna

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[520 - Celacy-Atarque complex, 1 to 10 percent slopes]

520--Celacy-Atarque complex, 1 to 10 percent slopes

Composition

- o Celacy and similar soils: 55 percent of the unit
- o Atarque and similar soils: 30 percent of the unit

Setting

Landform(s): cuestas, mesas, uplands

Elevation: 6601 to 7300 feet

Precipitation: 12 to 14 inches

Slope gradient: 1 to 5 percent

Air temperature: 48 to 52 °F

Frost-free period: 115 to 135 days

Characteristics of Celacy and similar soils

Average total avail. water in top five feet (in.): 4.0

Available water capacity class: Low

Parent material: eolian deposits over alluvium derived 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): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

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	Sandy loam	0.2 to 0.3	7.4 to 7.8	0.0 to 2.0	0
Btk -- 2 to 24	Sandy clay loam	3.5 to 4.0	7.4 to 7.8	0.0 to 2.0	0
2R -- 24 to 28	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Savanna

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[520 - Celacy-Atarque complex, 1 to 10 percent slopes]

Characteristics of Atarque and similar soils

Average total avail. water in top five feet (in.): 2.4

Available water capacity class: Very low

Parent material: eolian deposits derived from sandstone

Restrictive feature(s): lithic bedrock at 8 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): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 7s

Hydric soil: no

Hydrologic group: D

Runoff class: medium

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	Fine sandy loam	0.3 to 0.3	6.6 to 7.3	0.0 to 1.0	0
Bt -- 2 to 16	Sandy clay loam	2.0 to 2.3	6.6 to 7.8	0.0 to 2.0	0
2R -- 16 to 20	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Shallow Sandstone

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[522 - Bandera association, 15 to 45 percent slopes]

522--Bandera association, 15 to 45 percent slopes

Composition

- Bandera and similar soils: 50 percent of the unit
- Bandera and similar soils: 30 percent of the unit

Setting

Landform(s): cinder cones, hills, uplands

Elevation: 7401 to 8300 feet

Precipitation: 16 to 20 inches

Slope gradient: 30 to 45 percent

Air temperature: 40 to 45 °F

Frost-free period: 90 to 110 days

Characteristics of Bandera and similar soils

Average total avail. water in top five feet (in.): 2.8

Available water capacity class: Very low

Parent material: colluvium derived from volcanic and sedimentary rock

Restrictive feature(s): abrupt textural change

Depth to Water table: none within the soil profile

Drainage class: somewhat excessively drained

Flooding hazard: none

Ponding hazard: none

Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Land capability class, irrigated:

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: B

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 8	Gravelly loam	0.8 to 1.2	6.6 to 8.4	0.0 to 2.0	0
C1 -- 8 to 18	Very gravelly loam	0.6 to 1.2	6.6 to 8.4	0.0 to 2.0	0
2C2 -- 18 to 60	Cinders	0.4 to 1.3	6.6 to 8.4	0.0	0

Ecological class(es): NRCS Rangeland Site - Cinder

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[522 - Bandera association, 15 to 45 percent slopes]

Characteristics of Bandera and similar soils

Average total avail. water in top five feet (in.): 2.7

Available water capacity class: Very low

Parent material: colluvium derived from volcanic and sedimentary rock

Restrictive feature(s): abrupt textural change

Depth to Water table: none within the soil profile

Drainage class: somewhat excessively drained

Flooding hazard: none

Ponding hazard: none

Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Land capability class, irrigated:

Land capability class, nonirrigated: 7s

Hydric soil: no

Hydrologic group: B

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 9	Gravelly loam	0.9 to 1.4	6.6 to 8.4	0.0 to 2.0	0
C1 -- 9 to 16	Very gravelly loam	0.4 to 0.9	6.6 to 8.4	0.0 to 2.0	0
2C2 -- 16 to 60	Cinders	0.4 to 1.3	6.6 to 8.4	Null	Null

Ecological class(es): NRCS Rangeland Site - Cinder

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[523 - Charo-Raton complex, 1 to 10 percent slopes]

523--Charo-Raton complex, 1 to 10 percent slopes

Composition

- Charo and similar soils: 45 percent of the unit
- Raton and similar soils: 40 percent of the unit

Setting

Landform(s): plains, swales, valleys

Elevation: 7201 to 8199 feet

Precipitation: 16 to 24 inches

Slope gradient: 1 to 5 percent

Air temperature: 40 to 45 °F

Frost-free period: 80 to 110 days

Characteristics of Charo and similar soils

Average total avail. water in top five feet (in.): 4.7

Available water capacity class: Low

Parent material: alluvium derived from shale

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

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

Land capability class, irrigated:

Land capability class, nonirrigated: 4c

Hydric soil: no

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
A -- 0 to 2	Cobbly loam	0.3 to 0.3	6.6 to 7.3	0.0 to 2.0	0
Bt -- 2 to 28	Clay loam	3.9 to 4.7	6.6 to 7.8	0.0 to 2.0	0
2R -- 28 to 32	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Cinder Hills

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[523 - Charo-Raton complex, 1 to 10 percent slopes]

Characteristics of Raton and similar soils

Average total avail. water in top five feet (in.): 1.8
Available water capacity class: Very low
Parent material: slope alluvium derived from shale
Restrictive feature(s): lithic bedrock at 6 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): 8
Wind erodibility index (WEI): 0
Land capability class, irrigated:
Land capability class, nonirrigated: 7s
Hydric soil: no
Hydrologic group: D
Runoff class: very 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 7	Very cobbly loam	0.7 to 0.9	6.6 to 7.3	0.0 to 2.0	0 to 1
Bt -- 7 to 18	Very stony clay	0.9 to 1.0	6.6 to 7.3	0.0 to 2.0	0 to 2
2R -- 18 to 22	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Mountain Malpais

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[525 - Catman-Silkie association, 1 to 10 percent slopes]

525--Catman-Silkie association, 1 to 10 percent slopes

Composition

- o Catman and similar soils: 45 percent of the unit
- o Silkie and similar soils: 40 percent of the unit
- o Int. ponds: 4 percent of the unit

Setting

Landform(s): alluvial fans, valleys, valleys

Elevation: 6499 to 7500 feet

Precipitation: 12 to 16 inches

Slope gradient: 1 to 5 percent

Air temperature: 47 to 51 °F

Frost-free period: 100 to 135 days

Characteristics of Catman and similar soils

Average total avail. water in top five feet (in.): 8.5

Available water capacity class: Moderate

Parent material: fan alluvium derived from shale

Restrictive feature(s): none

Depth to Water table: 4 inches

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: 6w

Hydric soil: yes

Hydrologic group: D

Runoff class: very 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
A -- 0 to 3	Clay loam	0.4 to 0.6	7.4 to 7.8	2.0 to 8.0	0 to 2
Bss -- 3 to 60	Clay	7.4 to 8.5	7.4 to 8.4	2.0 to 8.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Clayey Bottomland

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[525 - Catman-Silkie association, 1 to 10 percent slopes]

Characteristics of Silkie and similar soils

Average total avail. water in top five feet (in.): 10.3

Available water capacity class: High

Parent material: fan alluvium derived from 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): 6

Wind erodibility index (WEI): 48

Land capability class, irrigated:

Land capability class, nonirrigated: 4c

Hydric soil: no

Hydrologic group: D

Runoff class: very 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
A -- 0 to 4	Clay loam	0.7 to 0.8	7.4 to 7.8	0.0 to 2.0	0 to 1
Btk -- 4 to 60	Clay	8.9 to 10.1	6.6 to 7.8	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Clayey

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[535 - Millpaw loam, 0 to 5 percent slopes]

535--Millpaw loam, 0 to 5 percent slopes

Composition

- o Millpaw and similar soils: 85 percent of the unit
- o Int. ponds: 3 percent of the unit

Setting

Landform(s): swales, valleys
Elevation: 7001 to 7798 feet
Precipitation: 14 to 16 inches

Slope gradient: 0 to 5 percent
Air temperature: 47 to 51 °F
Frost-free period: 100 to 120 days

Characteristics of Millpaw and similar soils

Average total avail. water in top five feet (in.): 10.4
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): 6
Wind erodibility index (WEI): 48
Land capability class, irrigated:
Land capability class, nonirrigated: 4c
Hydric soil: no
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
A -- 0 to 3	Loam	0.5 to 0.6	7.4 to 7.8	0.0 to 2.0	0
BA -- 3 to 29	Clay loam	4.4 to 4.9	7.4 to 7.8	0.0 to 2.0	0
Btk -- 29 to 60	Sandy clay loam	4.9 to 5.5	7.4 to 8.4	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Loamy

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[537 - Millpaw-Loarc complex, 0 to 10 percent slopes]

537--Millpaw-Loarc complex, 0 to 10 percent slopes

Composition

- Millpaw and similar soils: 50 percent of the unit
- Loarc and similar soils: 35 percent of the unit

Setting

Landform(s): mesas, swales, uplands

Elevation: 7001 to 7798 feet

Precipitation: 14 to 16 inches

Slope gradient: 0 to 5 percent

Air temperature: 47 to 51 °F

Frost-free period: 100 to 120 days

Characteristics of Millpaw and similar soils

Average total avail. water in top five feet (in.): 10.5

Available water capacity class: High

Parent material: fan 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): 6

Wind erodibility index (WEI): 48

Land capability class, irrigated:

Land capability class, nonirrigated: 4c

Hydric soil: no

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
A -- 0 to 2	Loam	0.3 to 0.4	7.4 to 7.8	0.0 to 2.0	0 to 1
BA -- 2 to 37	Clay loam	6.0 to 6.7	7.4 to 7.8	0.0 to 2.0	0 to 1
Btk -- 37 to 60	Clay loam	3.7 to 4.1	7.4 to 8.4	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Loamy

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[537 - Millpaw-Loarc complex, 0 to 10 percent slopes]

Characteristics of Loarc and similar soils

Average total avail. water in top five feet (in.): 8.1

Available water capacity class: Moderate

Parent material: fan 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): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 4c

Hydric soil: no

Hydrologic group: B

Runoff class: medium

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 4	Fine sandy loam	0.5 to 0.6	6.6 to 7.3	0.0 to 2.0	0
Bt -- 4 to 31	Sandy clay loam	3.8 to 4.3	6.6 to 8.4	0.0 to 2.0	0
Bk -- 31 to 60	Sandy loam	3.2 to 3.7	6.1 to 9.0	0.0 to 2.0	0 to 2

Ecological class(es): NRCS Rangeland Site - Loamy

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[550 - Nogal-Galestina sandy loams, 1 to 10 percent slopes]

550--Nogal-Galestina sandy loams, 1 to 10 percent slopes

Composition

- Nogal and similar soils: 45 percent of the unit
- Galestina and similar soils: 35 percent of the unit

Setting

Landform(s): hills, mesas, uplands

Elevation: 6801 to 7500 feet

Precipitation: 14 to 16 inches

Slope gradient: 1 to 10 percent

Air temperature: 47 to 51 °F

Frost-free period: 100 to 120 days

Characteristics of Nogal 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 sandstone and shale

Restrictive feature(s): paralithic 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 Low

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

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 1	Sandy loam	0.1 to 0.2	6.6 to 7.3	0.0 to 2.0	0
Btk -- 1 to 31	Clay	3.3 to 5.1	7.4 to 8.4	0.0 to 2.0	0
Cr -- 31 to 35	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Savanna

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[550 - Nogal-Galestina sandy loams, 1 to 10 percent slopes]

Characteristics of Galestina and similar soils

Average total avail. water in top five feet (in.): 7.7

Available water capacity class: Moderate

Parent material: slope alluvium derived from sandstone and shale

Restrictive feature(s): paralithic bedrock at 40 to 60 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): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

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 2	Sandy loam	0.2 to 0.3	6.6 to 7.3	0.0 to 2.0	0
BA -- 2 to 7	Loam	0.8 to 0.9	6.6 to 7.8	0.0 to 2.0	0
Btk -- 7 to 46	Clay	6.2 to 7.0	6.6 to 7.8	0.0 to 2.0	0
Cr -- 46 to 60	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Loamy

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[555 - Pinitos-Ribera sandy loams, 1 to 10 percent slopes]

555--Pinitos-Ribera sandy loams, 1 to 10 percent slopes

Composition

- Pinitos and similar soils: 50 percent of the unit
- Ribera and similar soils: 30 percent of the unit

Setting

Landform(s): hills, mesas, uplands

Elevation: 6801 to 7500 feet

Precipitation: 14 to 16 inches

Slope gradient: 2 to 10 percent

Air temperature: 47 to 51 °F

Frost-free period: 100 to 120 days

Characteristics of Pinitos and similar soils

Average total avail. water in top five feet (in.): 9.2

Available water capacity class: High

Parent material: slope alluvium derived from sandstone

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): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 4c

Hydric soil: no

Hydrologic group: B

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 2	Sandy loam	0.2 to 0.3	6.6 to 7.3	0.0 to 2.0	0
Bt -- 2 to 24	Sandy clay loam	3.7 to 4.2	6.6 to 7.8	0.0 to 2.0	0
Bk -- 24 to 60	Sandy loam	4.7 to 5.4	7.4 to 7.8	0.0 to 2.0	0

Ecological class(es): NRCS Forestland Site - Juniperus monosperma-Pinus edulis/Fallugia paradoxa/Bouteloua hirsuta-Bouteloua gracilis

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[555 - Pinitos-Ribera sandy loams, 1 to 10 percent slopes]

Characteristics of Ribera and similar soils

Average total avail. water in top five feet (in.): 6.9

Available water capacity class: Moderate

Parent material: slope alluvium derived 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

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

Hydric soil: no

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 3	Sandy loam	0.4 to 0.5	6.6 to 7.8	0.0 to 2.0	0
Btk -- 3 to 39	Clay loam	5.7 to 6.8	7.4 to 8.4	0.0 to 2.0	0
2R -- 39 to 43	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Savanna

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[560 - Flugle-Teco association, 1 to 8 percent slopes]

560--Flugle-Teco association, 1 to 8 percent slopes

Composition

- Flugle and similar soils: 50 percent of the unit
- Teco and similar soils: 30 percent of the unit

Setting

Landform(s): mesas, ridges, uplands

Elevation: 6001 to 7500 feet

Precipitation: 10 to 16 inches

Slope gradient: 3 to 8 percent

Air temperature: 47 to 53 °F

Frost-free period: 110 to 140 days

Characteristics of Flugle and similar soils

Average total avail. water in top five feet (in.): 8.7

Available water capacity class: Moderate

Parent material: slope 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

Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Land capability class, irrigated:

Land capability class, nonirrigated: 6c

Hydric soil: no

Hydrologic group: B

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 5	Loamy fine sand	0.5 to 0.5	6.6 to 7.3	0.0 to 2.0	0
Bt -- 5 to 37	Sandy clay loam	5.1 to 5.7	6.6 to 8.4	0.0 to 2.0	0
Bk -- 37 to 60	Sandy loam	2.5 to 3.0	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Loamy

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[560 - Flugle-Teco association, 1 to 8 percent slopes]

Characteristics of Teco and similar soils

Average total avail. water in top five feet (in.): 9.7

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): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Runoff class: medium

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	Sandy loam	0.2 to 0.3	6.6 to 7.3	0.0 to 2.0	0
Bt -- 2 to 18	Clay loam	2.4 to 2.9	7.4 to 8.4	0.0 to 2.0	0
Btk -- 18 to 60	Gravelly very fine sandy loam	6.3 to 7.1	7.9 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Clayey

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[561 - Flugle-Quintana complex, 2 to 15 percent slopes]

561--Flugle-Quintana complex, 2 to 15 percent slopes

Composition

- o Flugle and similar soils: 45 percent of the unit
- o Quintana and similar soils: 35 percent of the unit

Setting

Landform(s): hills, ridges, uplands

Elevation: 6001 to 7100 feet

Precipitation: 10 to 12 inches

Slope gradient: 2 to 8 percent

Air temperature: 49 to 53 °F

Frost-free period: 120 to 140 days

Characteristics of Flugle and similar soils

Average total avail. water in top five feet (in.): 9.4

Available water capacity class: High

Parent material: slope 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

Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 6c

Hydric soil: no

Hydrologic group: B

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 2	Sandy loam	0.2 to 0.3	6.6 to 7.3	0.0 to 2.0	0
Bt -- 2 to 47	Sandy clay loam	7.2 to 8.1	6.6 to 8.4	0.0 to 2.0	0
Bk -- 47 to 60	Sandy loam	1.4 to 1.7	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Loamy

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[561 - Flugle-Quintana complex, 2 to 15 percent slopes]

Characteristics of Quintana and similar soils

Average total avail. water in top five feet (in.): 8.5

Available water capacity class: Moderate

Parent material: slope 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

Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Runoff class: medium

Potential frost action: low

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 11	Fine sandy loam	1.4 to 1.7	7.4 to 7.8	0.0 to 1.0	0
Bk1 -- 11 to 46	Sandy clay loam	4.9 to 5.6	7.9 to 8.4	0.0 to 2.0	0
Bk2 -- 46 to 60	Sandy loam	1.5 to 1.8	7.9 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Loamy

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[570 - Torreon-Rock outcrop-Cabezon complex, 15 to 45 percent slopes]

570--Torreon-Rock outcrop-Cabezon complex, 15 to 45 percent slopes

Composition

- o Torreon and similar soils: 55 percent of the unit
- o Rock outcrop: 25 percent of the unit
- o Cabezon and similar soils: 15 percent of the unit

Setting

Landform(s): hills, ridges, uplands
Elevation: 6401 to 7798 feet
Precipitation: 12 to 16 inches

Slope gradient: 15 to 35 percent
Air temperature: 47 to 52 °F
Frost-free period: 90 to 110 days

Characteristics of Torreon and similar soils

Average total avail. water in top five feet (in.): 10.6
Available water capacity class: High
Parent material: colluvium over slope alluvium derived from shale and siltstone
Restrictive feature(s): none
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): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Land capability class, irrigated:
Land capability class, nonirrigated: 6e
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 2	Very cobbly loam	0.2 to 0.2	6.6 to 7.3	0.0 to 2.0	0
Btk -- 2 to 25	Clay loam	3.3 to 3.7	6.6 to 7.8	0.0 to 2.0	0
Bk -- 25 to 60	Silty clay loam	6.6 to 7.3	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Loamy

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[570 - Torreon-Rock outcrop-Cabezon complex, 15 to 45 percent slopes]

Characteristics of Rock outcrop

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

Available water capacity class: NA

Parent material:

Restrictive feature(s): lithic bedrock at 0 to 0 inches

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: 8s

Hydric soil: no

Hydrologic group: D

Runoff class:

Potential frost action:

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
R -- 0 to 60	Bedrock			Null	Null

Ecological class(es):

Characteristics of Cabezon 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 clayey shale

Restrictive feature(s): lithic bedrock at 10 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): 8

Wind erodibility index (WEI): 0

Land capability class, irrigated:

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: D

Runoff class: very 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
A -- 0 to 3	Very cobbly loam	0.3 to 0.3	6.1 to 7.8	0.0 to 1.0	0
Bt -- 3 to 13	Cobbly clay loam	1.4 to 1.7	6.1 to 7.8	0.0 to 1.0	0
2R -- 13 to 17	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Shallow Savanna

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[575 - Teco-Atarque association, 1 to 8 percent slopes]

575--Teco-Atarque association, 1 to 8 percent slopes

Composition

- o Teco and similar soils: 60 percent of the unit
- o Atarque and similar soils: 25 percent of the unit
- o Int. ponds: 1 percent of the unit

Setting

Landform(s): mesas, swales, uplands
Elevation: 6499 to 7500 feet
Precipitation: 12 to 16 inches

Slope gradient: 1 to 4 percent
Air temperature: 47 to 52 °F
Frost-free period: 110 to 135 days

Characteristics of Teco and similar soils

Average total avail. water in top five feet (in.): 9.6
Available water capacity class: High
Parent material: eolian deposits over 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
Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Land capability class, irrigated:
Land capability class, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Runoff class: medium
Potential frost action: low

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 5	Fine sandy loam	0.6 to 0.7	6.6 to 7.3	0.0 to 1.0	0
Btk -- 5 to 24	Clay loam	2.8 to 3.4	7.4 to 8.4	0.0 to 2.0	0
Bk -- 24 to 60	Gravelly very fine sandy loam	5.4 to 6.1	7.9 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Clayey

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[575 - Teco-Atarque association, 1 to 8 percent slopes]

Characteristics of Atarque and similar soils

Average total avail. water in top five feet (in.): 2.8

Available water capacity class: Very low

Parent material: slope alluvium derived from sandstone and shale

Restrictive feature(s): lithic bedrock at 8 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 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: 7s

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 3	Fine sandy loam	0.4 to 0.5	6.6 to 7.3	0.0 to 2.0	0
Bt -- 3 to 19	Sandy clay loam	2.2 to 2.5	6.6 to 7.8	0.0 to 2.0	0
2R -- 19 to 23	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Malpais

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[576 - Teco sandy loam, 2 to 5 percent slopes]

576--Teco sandy loam, 2 to 5 percent slopes

Composition

- o Teco and similar soils: 80 percent of the unit

Setting

Landform(s): hills, valleys, valleys

Elevation: 6499 to 7500 feet

Precipitation: 12 to 16 inches

Slope gradient: 2 to 5 percent

Air temperature: 47 to 51 °F

Frost-free period: 110 to 135 days

Characteristics of Teco and similar soils

Average total avail. water in top five feet (in.): 10.0

Available water capacity class: High

Parent material: slope 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

Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Runoff class: medium

Potential frost action: low

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 3	Sandy loam	0.4 to 0.4	6.6 to 7.3	0.0 to 2.0	0
Btk -- 3 to 60	Clay	8.5 to 10.2	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Clayey

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[577 - Cabezon-Montecito-Rock outcrop association, 1 to 10 percent slopes]

577--Cabezon-Montecito-Rock outcrop association, 1 to 10 percent slopes

Composition

- o Cabezon and similar soils: 35 percent of the unit
- o Montecito and similar soils: 30 percent of the unit
- o Rock outcrop: 20 percent of the unit
- o Int. ponds: 5 percent of the unit

Setting

Landform(s): hills, ridges, uplands

Elevation: 6401 to 7798 feet

Precipitation: 12 to 16 inches

Slope gradient: 2 to 10 percent

Air temperature: 47 to 52 °F

Frost-free period: 90 to 120 days

Characteristics of Cabezon and similar soils

Average total avail. water in top five feet (in.): 2.8

Available water capacity class: Very low

Parent material: slope alluvium derived from clayey shale

Restrictive feature(s): lithic bedrock at 10 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): 8

Wind erodibility index (WEI): 0

Land capability class, irrigated:

Land capability class, nonirrigated: 7s

Hydric soil: no

Hydrologic group: D

Runoff class: very 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
A -- 0 to 2	Very cobbly loam	0.2 to 0.2	6.1 to 7.8	0.0 to 2.0	0
Bt -- 2 to 18	Cobbly clay loam	2.3 to 2.7	6.1 to 7.8	0.0 to 2.0	0
2R -- 18 to 22	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Shallow Savanna

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[577 - Cabezon-Montecito-Rock outcrop association, 1 to 10 percent slopes]

Characteristics of Montecito and similar soils

Average total avail. water in top five feet (in.): 10.5
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): 6
Wind erodibility index (WEI): 48
Land capability class, irrigated:
Land capability class, nonirrigated: 6c
Hydric soil: no
Hydrologic group: B
Runoff class: medium
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 3	Clay loam	0.6 to 0.7	6.6 to 7.8	0.0 to 2.0	0
Btk -- 3 to 24	Clay loam	4.0 to 4.4	7.4 to 8.4	0.0 to 2.0	0
Bk -- 24 to 60	Sandy clay	5.4 to 6.1	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Clayey

Characteristics of Rock outcrop

Average total avail. water in top five feet (in.):
Available water capacity class: NA
Parent material:
Restrictive feature(s): lithic bedrock at 0 to 0 inches
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: 8s
Hydric soil: no
Hydrologic group: D
Runoff class:
Potential frost action:

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
R -- 0 to 60	Bedrock			Null	Null

Ecological class(es):

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[579 - Cabezon-Cantina complex, 1 to 7 percent slopes]

579--Cabezon-Cantina complex, 1 to 7 percent slopes

Composition

- o Cabezon and similar soils: 45 percent of the unit
- o Cantina and similar soils: 40 percent of the unit

Setting

Landform(s): hills, uplands
Elevation: 6401 to 7798 feet
Precipitation: 12 to 16 inches

Slope gradient: 1 to 7 percent
Air temperature: 47 to 52 °F
Frost-free period: 90 to 120 days

Characteristics of Cabezon and similar soils

Average total avail. water in top five feet (in.): 2.1
Available water capacity class: Very low
Parent material: slope alluvium derived from sandstone and shale
Restrictive feature(s): lithic bedrock at 10 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): 8
Wind erodibility index (WEI): 0
Land capability class, irrigated:
Land capability class, nonirrigated: 7s
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	Very cobbly sandy loam	0.1 to 0.2	6.1 to 7.8	0.0 to 2.0	0
Bt -- 2 to 14	Cobbly clay loam	1.7 to 2.1	6.1 to 7.8	0.0 to 2.0	0
2R -- 14 to 18	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Shallow Savanna

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[579 - Cabezon-Cantina complex, 1 to 7 percent slopes]

Characteristics of Cantina and similar soils

Average total avail. water in top five feet (in.): 8.5

Available water capacity class: Moderate

Parent material: alluvium derived from sandstone and shale

Restrictive feature(s): lithic bedrock at 40 to 60 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): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Land capability class, irrigated:

Land capability class, nonirrigated: 4c

Hydric soil: no

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
A -- 0 to 2	Sandy loam	0.2 to 0.3	6.6 to 7.3	0.0 to 2.0	0
Bt -- 2 to 9	Sandy clay loam	1.0 to 1.1	6.6 to 7.3	0.0 to 2.0	0
Btk -- 9 to 31	Sandy clay	3.3 to 3.7	7.4 to 8.4	0.0 to 2.0	0
Bk -- 31 to 54	Sandy clay loam	3.4 to 3.9	7.9 to 8.4	0.0 to 2.0	0
2R -- 54 to 58	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Loamy Savanna

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[582 - Kenray fine sand, 3 to 15 percent slopes]

582--Kenray fine sand, 3 to 15 percent slopes

Composition

- Kenray and similar soils: 80 percent of the unit

Setting

Landform(s): dunes, uplands

Elevation: 7300 to 7999 feet

Precipitation: 16 to 20 inches

Slope gradient: 3 to 15 percent

Air temperature: 43 to 45 °F

Frost-free period: 90 to 110 days

Characteristics of Kenray and similar soils

Average total avail. water in top five feet (in.): 4.0

Available water capacity class: Low

Parent material: eolian deposits derived from sandstone

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): 220

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: A

Runoff class: very 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
A -- 0 to 15	Fine sand	0.7 to 1.0	6.6 to 7.3	0.0 to 2.0	0
C -- 15 to 60	Sand	2.7 to 3.6	6.6 to 7.3	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Deep Sand

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[585 - Moncha silt loam, 2 to 10 percent slopes]

585--Moncha silt loam, 2 to 10 percent slopes

Composition

- Moncha and similar soils: 85 percent of the unit

Setting

Landform(s): fan remnants, mesas, uplands

Elevation: 6801 to 7500 feet

Precipitation: 14 to 16 inches

Slope gradient: 2 to 10 percent

Air temperature: 47 to 51 °F

Frost-free period: 100 to 120 days

Characteristics of Moncha and similar soils

Average total avail. water in top five feet (in.): 12.0

Available water capacity class: High

Parent material: fan alluvium derived from shale and siltstone

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: 6e

Hydric soil: no

Hydrologic group: B

Runoff class: high

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 2	Silt loam	0.4 to 0.4	7.9 to 8.4	0.0 to 2.0	0
Bt -- 2 to 21	Silty clay loam	3.6 to 4.0	7.9 to 8.4	0.0 to 2.0	0
C -- 21 to 60	Silty clay loam	7.4 to 8.2	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Clayey

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[586 - Venadito-Teco association, 0 to 10 percent slopes]

586--Venadito-Teco association, 0 to 10 percent slopes

Composition

- o Venadito and similar soils: 60 percent of the unit
- o Teco and similar soils: 25 percent of the unit

Setting

Landform(s): valleys, valleys
Elevation: 6201 to 7500 feet
Precipitation: 12 to 16 inches

Slope gradient: 0 to 5 percent
Air temperature: 47 to 52 °F
Frost-free period: 110 to 140 days

Characteristics of Venadito and similar soils

Average total avail. water in top five feet (in.): 9.1
Available water capacity class: High
Parent material: alluvium derived from 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: 6c
Hydric soil: no
Hydrologic group: D
Runoff class: very 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
A -- 0 to 3	Clay loam	0.6 to 0.7	7.9 to 8.4	0.0 to 2.0	0
Bss -- 3 to 60	Clay	7.9 to 9.1	7.9 to 8.4	2.0 to 4.0	0

Ecological class(es): NRCS Rangeland Site - Clayey Bottomland

Characteristics of Teco and similar soils

Average total avail. water in top five feet (in.): 10.3
Available water capacity class: High
Parent material: slope 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): 6
Wind erodibility index (WEI): 48
Land capability class, irrigated:
Land capability class, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Runoff class: high
Potential frost action: low

Saturated hydraulic conductivity class: Moderately High

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[586 - Venadito-Teco association, 0 to 10 percent slopes]

Representative soil profile:

Horizon – Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
A -- 0 to 3	Clay loam	0.6 to 0.7	6.6 to 7.3	0.0 to 2.0	0
Btk -- 3 to 60	Clay loam	8.5 to 10.2	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Clayey

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[615 - Trag-Techado-Rock outcrop complex, 3 to 55 percent slopes]

615--Trag-Techado-Rock outcrop complex, 3 to 55 percent slopes

Composition

- Trag and similar soils: 35 percent of the unit
- Techado and similar soils: 30 percent of the unit
- Rock outcrop: 20 percent of the unit

Setting

Landform(s): benches, mountains, mountains
Elevation: 7201 to 8901 feet
Precipitation: 16 to 22 inches

Slope gradient: 3 to 30 percent
Air temperature: 40 to 45 °F
Frost-free period: 90 to 110 days

Characteristics of Trag and similar soils

Average total avail. water in top five feet (in.): 8.3
Available water capacity class: Moderate
Parent material: colluvium over slope 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
Saturated hydraulic conductivity class: Moderately High

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Land capability class, irrigated:
Land capability class, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
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 2	Cobbly loam	0.2 to 0.3	6.1 to 7.3	0.0 to 2.0	0
Bt -- 2 to 35	Sandy clay loam	4.6 to 6.0	6.1 to 7.3	0.0 to 2.0	0
C -- 35 to 60	Cobbly sandy loam	2.5 to 3.0	6.1 to 7.8	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Mountain Grassland

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[615 - Trag-Techado-Rock outcrop complex, 3 to 55 percent slopes]

Characteristics of Techado and similar soils

Average total avail. water in top five feet (in.): 3.3

Available water capacity class: Low

Parent material: colluvium over slope alluvium derived from sandstone and shale

Restrictive feature(s): paralithic bedrock at 10 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): 8

Wind erodibility index (WEI): 0

Land capability class, irrigated:

Land capability class, nonirrigated: 6e

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 2	Cobbly clay loam	0.2 to 0.3	6.6 to 7.3	0.0 to 2.0	0
C -- 2 to 19	Clay loam	2.5 to 3.6	6.6 to 7.3	0.0 to 2.0	0
2Cr -- 19 to 38	Bedrock			Null	Null

Ecological class(es): NRCS Rangeland Site - Shallow Savanna

Characteristics of Rock outcrop

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

Available water capacity class: NA

Parent material:

Restrictive feature(s): lithic bedrock at 0 to 0 inches

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: 8s

Hydric soil: no

Hydrologic group: D

Runoff class:

Potential frost action:

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
R -- 0 to 60	Bedrock			Null	Null

Ecological class(es):

Map Unit Description (Brief, Tabular)

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties

[W - Water]

W--Water

Composition

- Water: 100 percent of the unit

Setting

Landform(s):

Elevation:

Precipitation:

Slope gradient:

Air temperature:

Frost-free period:

Characteristics of Water

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

Available water capacity class: NA

Parent material:

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:

Hydric soil: no

Hydrologic group:

Runoff class:

Potential frost action:

Saturated hydraulic conductivity class: NA

Ecological class(es):

APPENDIX D

SOIL REPORT: DWELLINGS AND SMALL COMMERCIAL BUILDINGS

Dwellings and Small Commercial Buildings

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia 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
25:							
Hickman	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Catman	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
70:							
Catman	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Sparank	4	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
72:							
Catman, variant	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to saturated zone	0.95		
Sparank	10	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
73:							
Catman	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Dwellings and Small Commercial Buildings

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia 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
75:							
Hickman	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
210:							
Bond	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
Penistaja	25	Not limited		Not limited		Somewhat limited Slope	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
350:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Stout	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
500:							
Timhus	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Bandera	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
505:							
Flugle	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.04	Shrink-swell	0.50
						Slope	0.13
Goesling	25	Not limited		Not limited		Somewhat limited Slope	0.13
515:							
Rock outcrop	45	Not rated		Not rated		Not rated	
Mion	20	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Slope	1.00

Dwellings and Small Commercial Buildings

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia 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
515:							
Vessilla	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
520:							
Celacy	55	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Atarque	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50
522:							
Bandera	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Bandera	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
523:							
Charo	45	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Raton	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	1.00	Large stones	1.00	Large stones	1.00
						Slope	0.50
525:							
Catman	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Silkie	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
						Slope	0.88

Dwellings and Small Commercial Buildings

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia 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
525:							
Int. ponds	4	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 saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
535:							
Millpaw	85	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.98	Shrink-swell	1.00
Int. ponds	3	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 saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
537:							
Millpaw	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Loarc	35	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.10			Slope	0.50
						Shrink-swell	0.10
550:							
Nogal	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.35	Slope	0.50
Galestina	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
						Slope	0.13
555:							
Pinitos	50	Not limited		Not limited		Somewhat limited Slope	0.50
Ribera	30	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.01	Depth to hard bedrock	1.00	Slope	0.50
						Depth to hard bedrock	0.01

Dwellings and Small Commercial Buildings

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia 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
560:							
Flugle	50	Somewhat limited Shrink-swell	0.35	Somewhat limited Shrink-swell	0.01	Somewhat limited Slope Shrink-swell	0.50 0.35
Teco	30	Somewhat limited Shrink-swell	0.01	Not limited		Somewhat limited Shrink-swell	0.01
561:							
Flugle	45	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.13	Somewhat limited Shrink-swell Slope	0.50 0.13
Quintana	35	Somewhat limited Shrink-swell Slope	0.42 0.16	Somewhat limited Slope Shrink-swell	0.16 0.09	Very limited Slope Shrink-swell	1.00 0.42
570:							
Torreon	55	Very limited Slope Shrink-swell	1.00 1.00	Very limited Slope Shrink-swell	1.00 0.93	Very limited Slope Shrink-swell	1.00 1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Cabezon	15	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 1.00 1.00	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 1.00 1.00	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 1.00 1.00
575:							
Teco	60	Somewhat limited Shrink-swell	0.42	Somewhat limited Shrink-swell	0.01	Somewhat limited Shrink-swell	0.42
Atarque	25	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.13
Int. ponds	1	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00

Dwellings and Small Commercial Buildings

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia 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
576:							
Teco	80	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
577:							
Cabazon	35	Very limited Shrink-swell Depth to hard bedrock	1.00 1.00	Very limited Shrink-swell Depth to hard bedrock	1.00 1.00	Very limited Shrink-swell Depth to hard bedrock Slope	1.00 1.00 0.50
Montecito	30	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
Int. ponds	5	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00
579:							
Cabazon	45	Very limited Shrink-swell Depth to hard bedrock	1.00 1.00	Very limited Shrink-swell Depth to hard bedrock	1.00 1.00	Very limited Shrink-swell Depth to hard bedrock	1.00 1.00
Cantina	40	Very limited Shrink-swell	1.00	Somewhat limited Shrink-swell Depth to hard bedrock	0.99 0.13	Very limited Shrink-swell	1.00
582:							
Kenray	80	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
585:							
Moncha	85	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.50 0.50
586:							
Venadito	60	Very limited Flooding Shrink-swell	1.00 1.00	Very limited Flooding Shrink-swell	1.00 1.00	Very limited Flooding Shrink-swell	1.00 1.00

Dwellings and Small Commercial Buildings

Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia 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
586:							
Teco	25	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell Slope	1.00 0.50
615:							
Trag	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Techado	30	Very limited Shrink-swell Slope Depth to soft bedrock	1.00 1.00 0.50	Very limited Shrink-swell Depth to soft bedrock Slope	1.00 1.00 1.00	Very limited Shrink-swell Depth to soft bedrock Slope	1.00 1.00 1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

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.

David Jose
President

Cecil F. Eriacho
Vice-President

Nancy R. Martine-Alonzo
Secretary/Treasurer

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Tribal Office



Norman M. Begay
Council Delegate
Navajo Nation Council

Leo L. Pino
Member
Eastern Navajo Land Board

RESOLUTION OF THE RAMAH NAVAJO CHAPTER

NO: 061604

Approving the Ramah Navajo Community Land Use Plan Subject to Approval of Resources and Development Committee of the Navajo Nation Council for Intended Purposes Pursuit to 26 NNC.

Whereas:

1. Pursuant to Navajo Tribal Council Resolution CJ-20-55, the Ramah Navajo Chapter is a sub-division of the Navajo Nation and the Chapter is uniquely situated as satellite community of the Navajo Nation; and
2. By Resolution CAP-34-98, the Navajo Nation Council enacted the Navajo Nation Local Governance Act codified as 26 NNC establishing a new title exclusively for political subdivisions of the Navajo Nation to address the governmental function of chapters that improves the governmental structure and provides the opportunity for local chapters to make decisions over local matters; and allowing communities to excel and flourish, enable Navajo leaders to lead toward a prosperous future and improve the strength and sovereignty of the Navajo Nation, including custom and tradition; and
3. On March 7, 2006, the Ramah Navajo Community Land Use Plan was first adopted and certified by the Transportation and Community Development Committee (TCDC) of the Navajo Nation Council that met the requirements under 26 NNC Section 102 (C). This certification by TCDC authorizes the chapter to administer land pursuant to Section 103 (D) (1); and
4. By Resolution 081206, the Ramah Navajo Chapter renamed Resources Committee of the Ramah Navajo Chapter and re-established said Committee as Community Land Use Planning Commission (CLUP) of the Ramah Navajo Chapter, among others; and
5. On October 7, 2015, the CLUP met and received the proposal from JJ Clacs and Company to enter into a professional services contract with the Ramah Navajo Chapter to revise and update the CLUP that was compiled by the company ten years ago to meet the needs of the changing community which is now five years behind time pursuant to 26 NNC Section 2004 (D) (2); and
6. The CLUP also scheduled the time frame as to begin the plan effective October 12th and complete the plan on December 23rd for approval by the chapter membership according to the scope of work with emphasis among others to include public participation, hearing and comment period for sixty days. It is anticipated the Resources and Development Committee of the Navajo Nation Council to certify this plan no later than December 29th; and

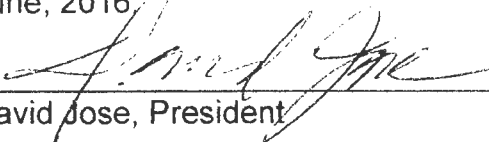
- 7 On June 1, 2016, The CLUP instead postponed their recommendation to approve the plan until this date due to editing and finalizing the final print among other matters unexpected; and
- 8 It is in the best interest for the chapter community membership to establish an up to date one of several guiding principles like self-sufficiency, self-reliance and self-governance for generations to come.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Ramah Navajo Chapter hereby approves the Ramah Navajo Community Land Use Plan subject to approval by the Resources and Development Committee (RDC) of the Navajo Nation Council.
2. The Ramah Navajo Chapter further recommends the RDC of the Navajo Nation Council to approve this plan for intended purposes pursuant to 26 NNC.

CERTIFICATION

We hereby certify that the foregoing resolution was duly considered by the Ramah Navajo Chapter at a duly called meeting in Mt. View, Navajo Nation (New Mexico), at which a quorum was present and that the same was passed by a vote of 20 in favor, 0 opposed, and 1 abstained on this 15th day of June, 2016.


David Jose, President


Cecil Eriacho, Vice President


Nancy RM Alonzo, Secretary/Treasurer

Motioned By: Sarah Adeky

Seconded By: Michael Eriacho