RESOLUTION OF THE
RESOURCES AND DEVELOPMENT COMMITTEE
of the 24th NAVAJO NATION COUNCIL—Fourth Year, 2022

AN ACTION

RELATING TO RESOURCES AND DEVELOPMENT COMMITTEE, CERTIFYING RAMAH NAVAJO CHAPTER COMMUNITY-BASED LAND USE PLAN WHICH HAS REEVALUATED AND READJUSTED RAMAH NAVAJO CHAPTER'S PREVIOUS COMMUNITY-BASED LAND USE PLAN

BE IT ENACTED:

SECTION 1. 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.

C. Pursuant to 26 N.N.C. § 2004 (B), "Community Based Land Use Plan. The chapter, at a duly-called chapter meeting shall by resolution, vote to implement a community-based land use plan, after the CLUPC has educated the community on the concepts, needs, and process for planning and implementing a community-based land use plan. The community-based land use plan shall project future community land needs, shown by location and extent, of areas identified for residential, commercial, industrial, and public purposes. The land use plan shall be based upon the guiding principles and vision as articulated by the community; along with information revealed in inventories and assessments of the natural, cultural, human resources, and community infrastructure; and, finally with consideration for the land-carrying capacity. Such a plan may also include the following: 1. An open space plan which preserves for the people certain areas to be retained in their natural state or developed for recreational purposes. 2. A thoroughfare plan which provides information about the existing and proposed road network in relation to the land use of the surrounding area. 3. A community facilities plan which shows the location, type, capacity, and area served, of present and projected or required community facilities

including, but not limited to, recreation areas, schools, libraries, and other public buildings. It will also show related public utilities and services and indicate how these services are associated with future land use."

SECTION 2. FINDINGS

A. Resources and Development Committee of the Navajo Nation Council through Resolution RDCS-19-16 recertified Ramah Navajo Chapter's Community-Based Land Use Plan which reevaluated and readjusted Ramah Navajo Chapter's First Community-Based Land Use Plan.

B. Ramah Navajo Chapter adopted Resolution 122109 "Approving and Adopting the Updated Ramah Navajo Chapter Land Use Plan and Requesting the Resources and Development Committee to Certify, in Accordance with 26 N.N.C. Navajo Nation Local Governance Act" which is attached as **Exhibit A.**

C. At page 18 of the Ramah Navajo Chapter Community Based Land Use Plan it states: "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 aid in the stewardship of its ecological, natural, and scenic resources, as well as recover economically from the coronavirus pandemic. It is a document that strongly re-affirms Ramah Navajo's connection to the land while serving as a guide for balanced growth, preserving the character of Ramah Navajo for future generations, and responding to and recovering from the economic impacts of the coronavirus pandemic."

D. The Resources Committee, predecessor of the Resources and Development Committee, approved Resolution RCD-216-99 on December 9, 1999, in which "[t]he Resources Committee of the Navajo Nation Council hereby requests that each community of the Navajo Nation designate lands for community cemeteries in accordance with Title 13, Navajo Nation Code ... ."

E. The Ramah Navajo Chapter's Community-Based Land Use Plan references a Proposed Community Cemetery at pages 115 and 225 of **Exhibit A.**

SECTION 3. Certification of Ramah Navajo Chapter Reevaluated and Readjusted Community-Based Land Use Plan

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

SECTION 4. Directives

A. The Ramah Navajo Chapter has use of or partial use of three Navajo Nation fee lands. These are the Bond Ranch (including Section 21 of Bond Ranch), the Nicoll Ranch, and the White Land.

B. The Ramah Navajo Chapter is hereby directed to submit the Bond Ranch Land Management Plan, the Section 21 Bond Ranch Land Management Plan, the Nicoll Ranch Land Management Plan, and the White Land Management Plan through the Executive Official Review (EOR) process for review by the Navajo Nation Division of Natural Resources, the Navajo Controller's Office and the Navajo Nation Department of Justice and other divisions and departments as the Department of Justice determines.

C. After the Executive Official Review, the Navajo Nation Department of Justice is hereby directed to determine whether legislation is necessary to approve the above-mentioned Land Management Plans or whether the approval of the plans is an administrative function for a particular Navajo Nation division or department.

CERTIFICATION

I, hereby, certify that the following resolution was duly considered by the Resources and Development Committee of the 24th Navajo Nation Council at a duly called meeting at Window Rock, (Navajo Nation) Arizona, at which quorum was present and that same was passed by a vote of 5 in favor, 0 opposed, on this 28th day of September 2022.

Thomas Walker, Jr., Vice-Chairperson
Resources and Development Committee
Of the 24th Navajo Nation Council

Motion: Honorable Rickie Nez
Second: Honorable Mark A. Freeland

EXHIBIT
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A

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RAMAH NAVAJO CHAPTER

also recognized as the

RAMAH BAND OF THE NAVAJO TRIBE

COMMUNITY-BASED LAND USE PLAN

DECEMBER 2021 UPDATE

David Jose
President

Chancey K. Martinez
Vice-President

Dixie M. Begay
Secretary/Treasurer

RAMAH NAVAJO CHAPTER
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Jamie Henio
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RESOLUTION OF THE RAMAH NAVAJO CHAPTER

NO. 122109

Approving and Adopting the Updated Ramah Navajo Chapter Land Use Plan and Requesting the Resources and Development Committee to Certify, in Accordance with *26 N.N.C. Navajo Nation Local Governance Act*

WHEREAS:

1. Pursuant to *Navajo Tribal Council Resolution CJ-20-55*, the Ramah Navajo Chapter is a certified Chapter of the Navajo Nation and the Chapter is uniquely situated as a 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. Title 26 Navajo Nation Local Governance Act provides authorization to the Chapters to develop a community-based land use plan; and

4. Pursuant to LGA, Ramah Navajo approved and passed resolutions to meet the requirements towards local administration of land, including a resolution stating the Chapter's desire to develop and implement a Community Land Use Plan, and a resolution establishing the Community Land Use Planning Committee (renamed Community Land Use Planning Commission); and

5. On March 7, 2006, the Ramah Navajo Land Use Plan was first adopted and certified by the Transportation and Community Development Committee (TCDC) of the Navajo Nation Council; and

6. *Resolution RDCS-69-16* of the Resources and Development Committee of the Navajo Nation Council certified Ramah Navajo Chapter's Community-Based Land Use Plan which was reevaluated and readjusted Ramah Navajo Chapter's First Community-Based Land Use plan; and

7. The Ramah Navajo Chapter 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; and

8. Beginning in 2019 thru 2021, Ramah Navajo has come together once again to revise and update their land use plan, from their own hearts and in their own words.

NOW, THEREFORE, BE IT RESOLVED:

1. The Ramah Navajo Chapter hereby approves and adopts the updated *Ramah Navajo Chapter Land Use Plan - 2021.*

2. The Ramah Navajo Chapter recommends the Resources and Development Committee of the 24th 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 at Mt. View, Navajo Nation (New Mexico), at which a quorum was present and that the same was approved **10** in favor, **0** opposed and **01** abstained, this 16th day of December, 2021.

David Jose, President

Chancey K. Martinez, Vice President

Dixie M. Begay, Secretary/Treasurer

Motion by: Chancey K. Martinez
Second by: Monica Yazzie

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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' Bi'tah, 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 "Washingdon." 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

Ramah Navajo Chapter

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Community Land Use Planning Commission

Nixon Martinez • President – Unit #3
Carolyn Coho • Vice-President – Unit #2
Vivianita Coho • Secretary/Treasurer – Unit #5
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Joseph K. Martine • Member – Unit #1

Chapter Leadership

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JJ Clacs & Company • Fort Wingate, New Mexico

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1. INTRODUCTION

five-year Update

Ramah Navajo Chapter (hereafter interchangeably referred to as Ramah Navajo or the Chapter) completed its five-year update in December 2021. This *Community-Based Land Use Plan* (hereafter interchangeably referred to as Land Use Plan or the Plan).

The chapter began its five-year update in October 2019 and abruptly halted its process in March 2020 due to the COVID-19 shutdown. Amidst the various disruptions caused by the coronavirus pandemic, the Chapter reconvened its update process in early 2021 under strict Center for Disease Control (CDC) and Navajo Nation COVID-19 protocols. After a longer than expected timeline, this land use plan has been updated. While most of the content is unchanged, certain parts have been updated to comply with laws, incorporate new Census data, embody resetting of priorities, and reflect the COVID-19 related impacts.

Background

Ramah Navajo 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 apartgovernmentally, 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 RamahNavajo 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 andin their own words.

In the following pages, this land use plan articulates Ramah Navajo's approach to stewardship andgrowth 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 planto reality. This land use plan, provided in more detail below, provides a flexible framework for achieving balanced growth, preserving the unique character of Ramah Navajo, and long-term recovery and implementing pandemic recovery projects.

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.

sick. Community member requiring advanced medical care were sent to regional hospitals and some were sent as far away as Denver, Phoenix, Las Vegas, and California.

Lack of broadband, computers and other technology hindered our ability to conduct telemedicine sessions with doctors. Many of our people, as the rest of the country, missed their regular doctor, dental and other medical appointments during the COVID-19 shutdown.

Schools were also closed; as the rest of the country went to virtual learning, our children and students could not easily transition due to no broadband service in many parts of Ramah Navajo. Further students did not have the technology to connect to the internet if it were available.

Many of our community members live and hold on to traditional practices and ceremonies. COVID-19 put a hold on these as well as other types of gatherings. For example, puberty ceremonies, for girls transitioning to womanhood, which typically bring extended families together could not be held in the same manner. Scaled down versions were held in some cases and others were all together canceled.

COVID-19 has brought revelations to our community. It has shaken the foundations of our local government, family units, households, and frankly, our way of life.

Purpose

This Community-Based 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 aid in the stewardship of its ecological, natural, and scenic resources, as well as recover economically from the coronavirus pandemic. It is a document that strongly re-affirms Ramah Navajo's connection to the land while serving as a guide for balanced growth, preserving the

COVID-19 Related Impacts

The coronavirus pandemic has had a devasting and disproportionate toll on our community and the greater Navajo Nation. In spring of 2020, the Navajo Nation had more COVID-19 cases per capita than any other U.S. state. As of December 2021, Navajo Nation alone has had over 54,600 positive cases and 1,579 confirmed deaths (https://www.ndoh.navajo-nsn.gov/COVID-19/Data). The positive cases amount to 35 percent of the Navajo population on the reservation while the death rate is about one percent of the total Navajo population. November 2020 through February 2021, April 2021, and September through December 2021, Ramah Navajo has been listed among the Navajo communities with uncontrolled spread of COVID-19.

Aside from the public health impacts of the pandemic, Ramah Navajo has felt the economic, social, educational, cultural, and governmental impacts of COVID-19. As stay-at-home orders and mandatory shutdowns were imposed, revenue streams from arts and crafts, agriculture, tourism, gaming, and local businesses were disrupted across the Navajo Nation. Navajo Nation roads were closed to visitors and tourists. Census 2019 reports Ramah Navajo's unemployment rate is 31.2 percent and a poverty level at 41.3 percent (Census ACS 2015-2019). Unemployment in Ramah Navajo is five times higher than the state of New Mexico while the poverty level is almost three times higher.

Our chapter house and program offices were ordered to close in March 2020 without clear communication from central government. Ramah Navajo was left to figure out how to take care of our people and community. We took the 'boots straps on the ground' approach and reached out for assistance. We were able to secure food donations and some emergency supplies. Then storage became a problem. We had to quickly modify our chapter house to become the central storage warehouse.

The pandemic exposed crowded living conditions, lack of internet or advanced communication technology, lack of hospital beds, and homes without running water or electricity. Multi generation or multiple families living together did not allow for any social distancing or the ability to quarantine. Entire households would become infected with the coronavirus. Our small clinic could not accommodate the level of care needed for the very

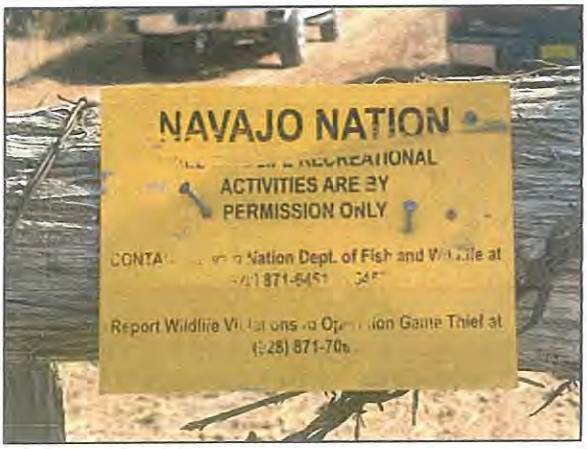
character of Ramah Navajo for future generations, and responding to and recovering from the economic impacts of the coronavirus pandemic.

This Land Use Plan does not diminish, relinquish, extinguish, or surrender Ramah Navajo Chapter's independent sovereign authority. Ramah Navajo Chapter expressly retains all rightsand 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 Community-Base 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 previous 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

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, 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 Community-Based Land Use Plan (2021) 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.

Chapter resolutions adopting this 2021 Update and adopting the 2016 Land Use Plan are inserted at the beginning of this document.

The process to make future amendments and updates are presented in **APPENDIX B.**

2. HISTORY, LEADERSHIP & SELF-DETERMINATION

Historical Overview

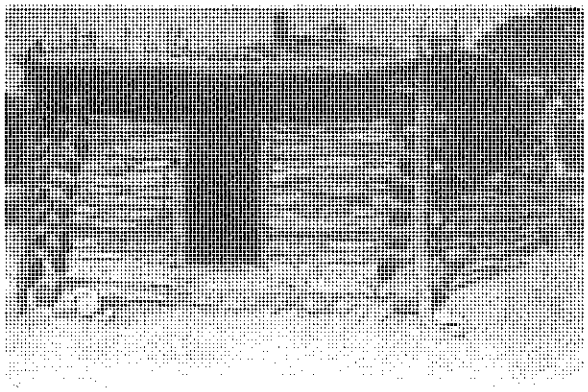
Since time immemorial, the Ramah Band of the Navajo Tribe known as Tl' ohchini Dine'e, "People of the Place of Wild Onions" have occupied Northwestern New Mexico prior to the coming of the Spanish explorers and white settlers. Ramah Navajo farmed, hunted, and herded livestock in the entire northwest 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

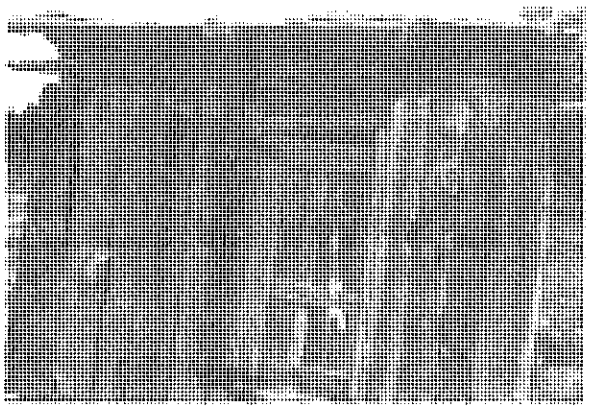
Mountain (Young 1949). The men of Ramah Navajo traveled to the Zuni Mountains to hunt and gather food for their families, and they returned with stories of the beauty and abundance of wildlife, wood, and plants. On following trips, the men took their families to the place of the wild onions and remained 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 people who live on this land have lived here all their lives. In almost all cases, the land has been in their families for several generations.

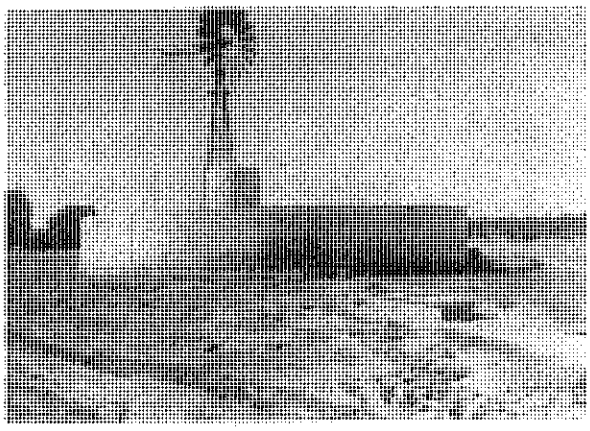


the treaty reservation was not big enough. Consequently, some Navajo People such as the Ramah Band of Navajos remained outside the reservation. Further, the treaty stipulated that all Navajos were to live within the reservation boundaries. Those individuals who took up residence on public lands were 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

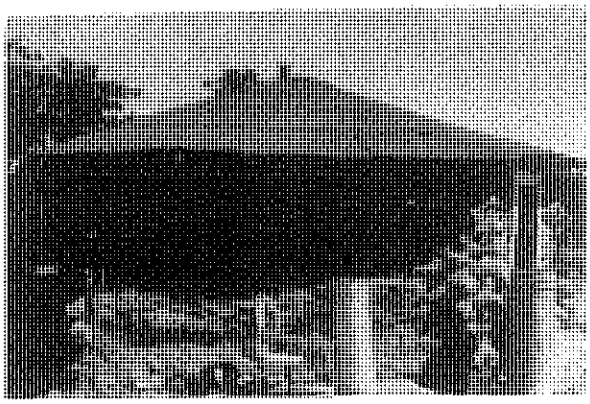
were living on railroad land from which they could be removed (Hastiin Biyo' Lani Yee Biye' n.d.).

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).



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



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. 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).

Some Navajos have raised their own food by dry land farming. The land status has forced them to build fences from tree branches to protect their fields. The restraint of federal funds has allowed grazing conditions to deteriorate.

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 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 helped Ramah Navajos file allotment claims on public domain land. 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 because 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 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.

Historical Overview of Ramah Navajo Land Tenure

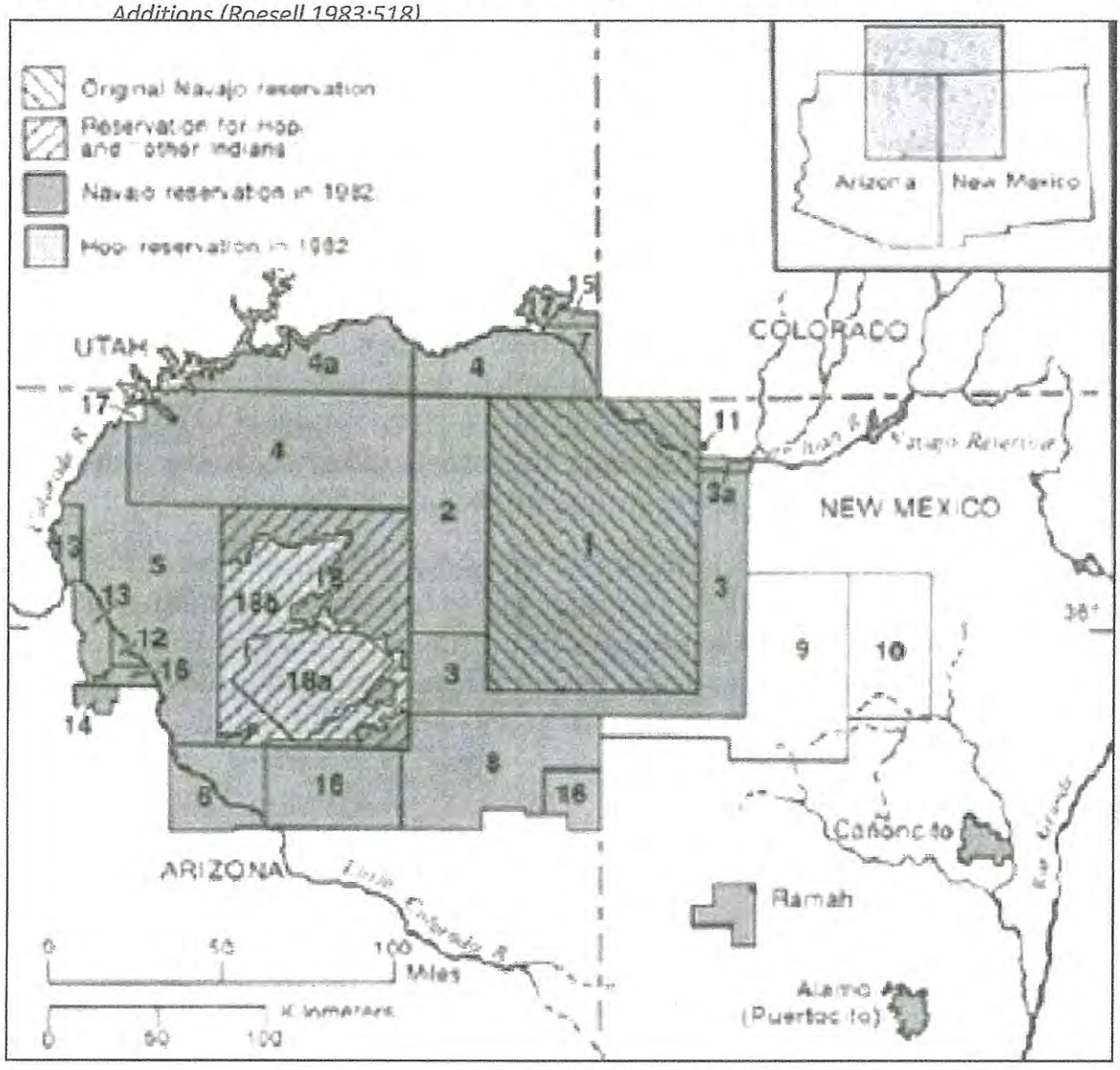
Since time immemorial, the Ramah Band of the Navajo Tribe known as Tl' ohchini Dine'e, "People of the Place of Wild Onions" have occupied Northwestern New Mexico prior to the coming of the Spanish explorers and white settlers. Ramah Navajo farmed, hunted, and herded livestock in the

entire northwest region before settling in the Zuni Mountains and as far south as Reserve and Apache Creek, New Mexico.

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 returned to their homeland placing them outside the reservation boundaries provided in the Treaty of 1868.

In 1868, the Navajo reservation was delineated by a rectangle area comprising a little more than three million acres across Arizona and New Mexico **(FIGURE 1)**. The rectangle did not extend south to include Ramah.

Figure 1. The Boundaries of the Navajo Nation Showing the 1868 Reservation and Subsequent Additions (Roesell 1983:518)



Being an off-reservation group and separated from the contiguous Navajo reservation, the Ramah Navajos use and occupancy of land in the Ramah area was not legally recognized. Waves of non-Indian settlers assumed control and eventual ownership of parcels of land in Ramah. Nevertheless, Ramah Navajos retreated and resettled. maintaining a strong connection with their homeland.

USGS Land Office began surveying in the Ramah area in 1881. The first allotment, in the Ramah area, to a Navajo under the Dawes Act of 1887 was not made until 1908; no others were made until 1920, and the majority in the 1930's (Kluckhohn 1964). These allotments (totaling approximately 47,482 acres) were interspersed among areas belonging to other private owners, and among sections of the public lands, creating a checkerboard effect.

By 1944, arrangements were made 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.

Two important federal statutes declare lands to be held by the United States in trust for the Ramah Band of the Navajo Tribe. 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.

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 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 1983	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 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. Honorable Jamie Henio, Delegate, 24th Navajo Nation Council, represents Ramah Navajo, Tahajalee, and Alamo chapters.

Honorable Jamie Henio, Delegate
24th Navajo Nation Council

Table 2. Navajo Nation Council Delegates for Ramah Navajo

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)
2019	Jamie Henio (Ramah Navajo, Tohajalee, Alamo)

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..."*

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. Ramah Navajo has exercised 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.

President David 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. Cecil 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.

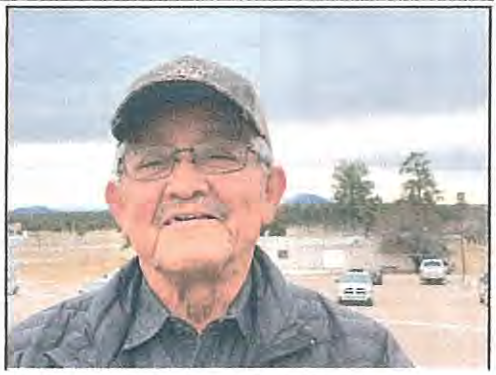
Table 3. Chapter Officials & Land Board for Ramah Navajo Chapter

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
2020	David Jose	Chancey Martinez	Dixie M. Begay	Rodger Martinez

Source: Navajo Election Office & Ramah Navajo Community Members

The current land board is Rodger Martinez. He also served as Vice-President for the chapter from 1996 to 2000.

The Navajo Nation is is divided into grazing districts. Ramah Navajo is part of District 16. Nine Land Board representatives make up District 16.

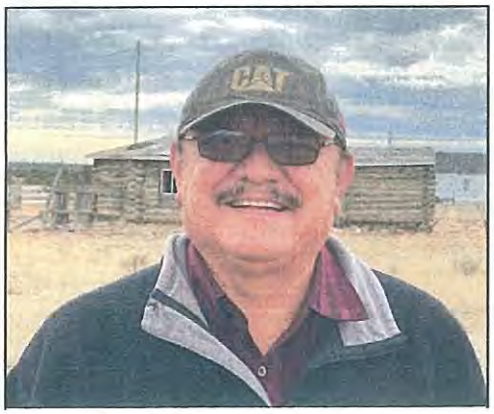


Rodger Martinez, Land Board

As listed in Table 3, the current chapter officials are:

- David Jose, President
- Chancey Martinez, Vice-President
- Dixie Begay, Secretary/Treasurer

David Jose, Chapter President



Chauncey Martinez,
Chapter Vice-President

Dixie M. Begay,
Chapter Secretary/Treasurer

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-

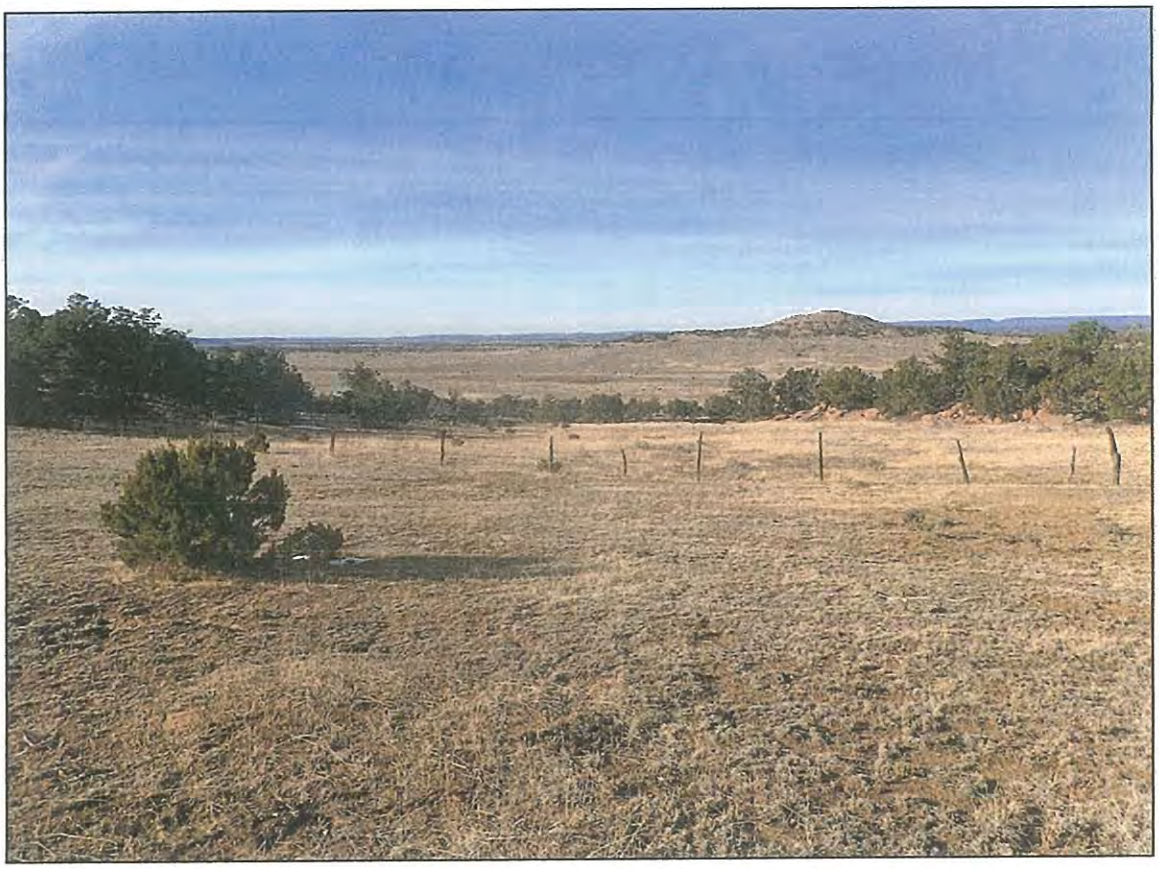
profit, corporation to provide education, job training, health, and social services for the Ramah Navajo people.

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 1868through the 1960s, Ramah Navajo acted independently of the Navajo Nation.

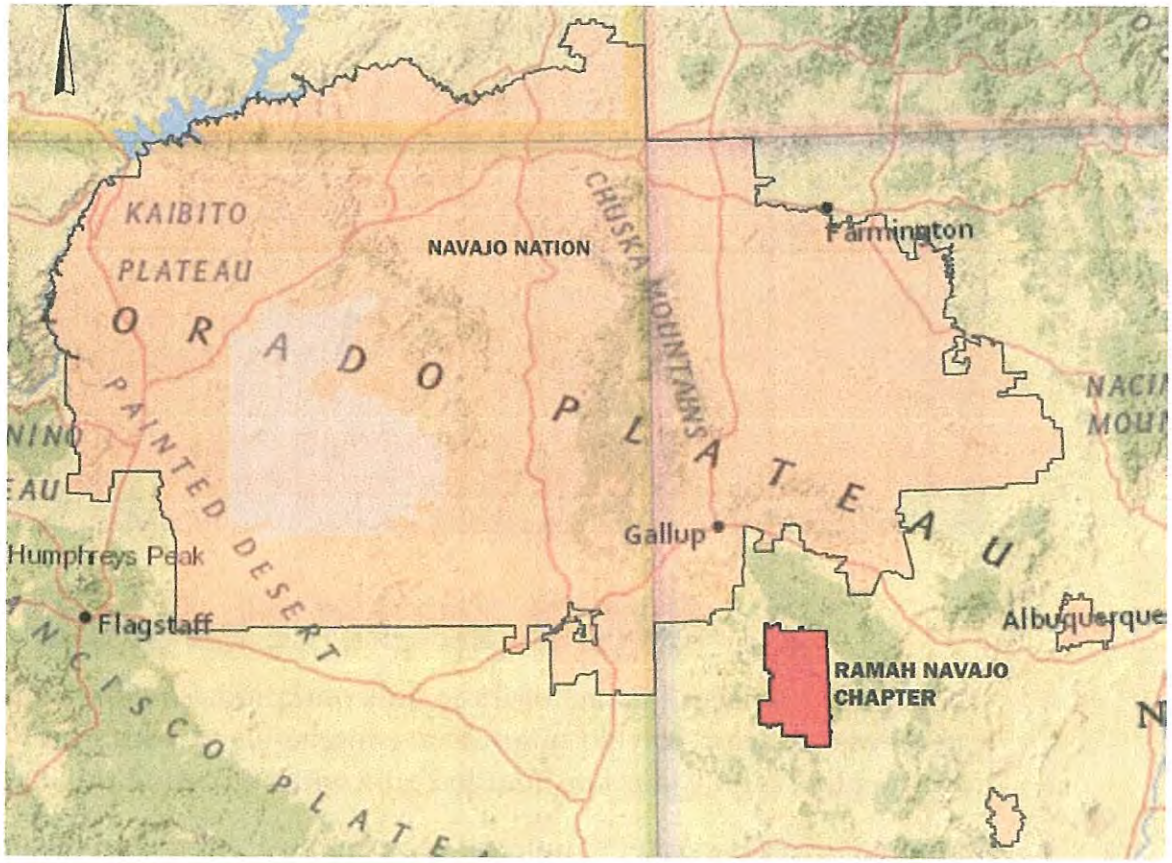
Although the Ramah Band of Navajo lived on their lands for centuries up to the 1970s, their rights to them had not been fully secured under United States law since a transfer by the U.S. government had not occurred. Ramah Navajos were not eligible for services and benefits provided by the governmental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

In 1980, congress enacted Public Law 96-333, securing land for the Ramah Band of the NavajoTribe. 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 **(FIGURE 2)**.

Figure 2. Location of Ramah Navajo



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.

Planning Area

The planning area **(FIGURE 3)**, 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.

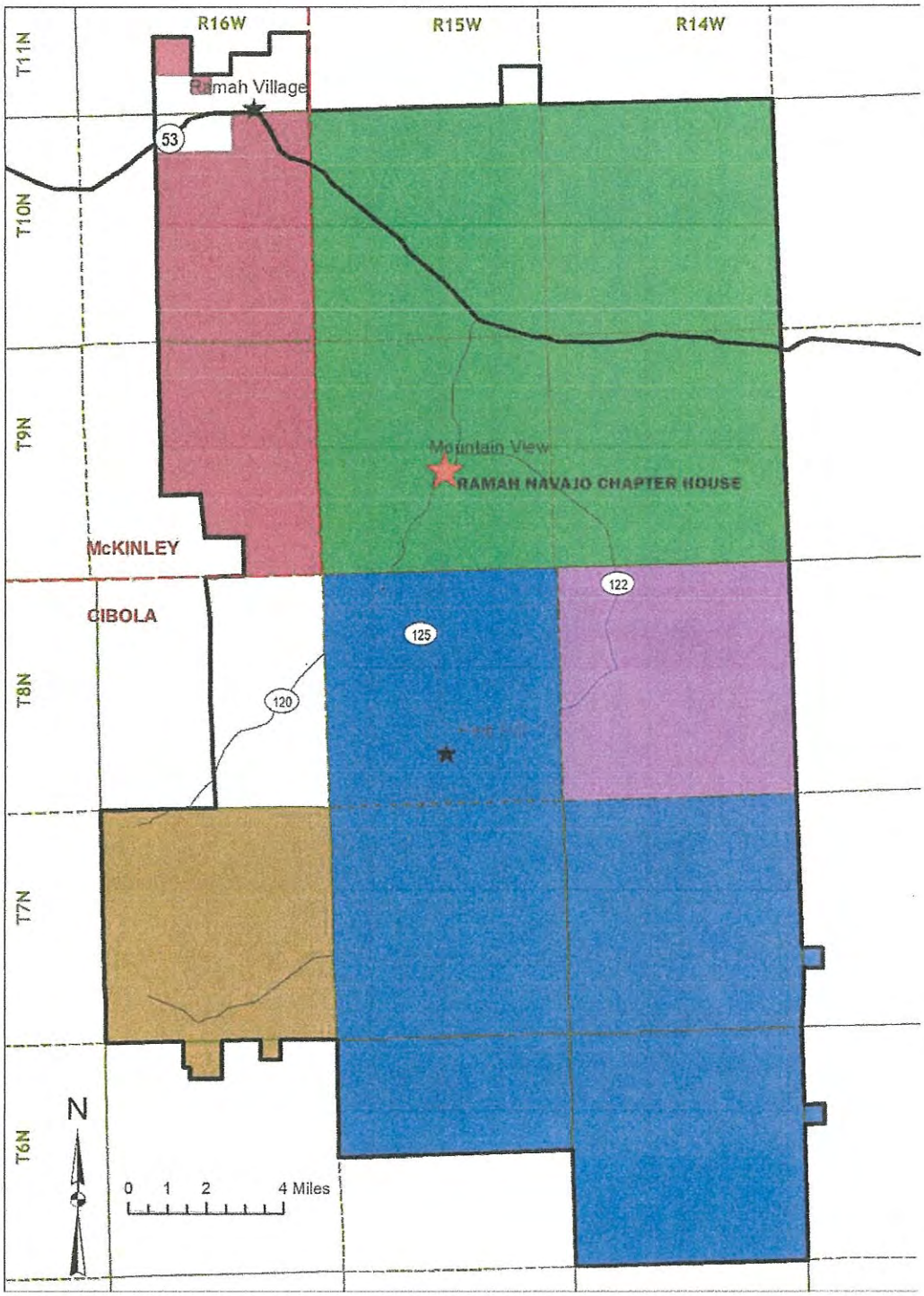
The planning area was initially surveyed between 1881 and 1885, comprising Townships 7, 8, 9, and 10 with the upper and lower halves respectively of Townships 6 and 11; Ranges 14, 15 and 16West. The total area thus defined

covers over 504 square miles. Most of the planning area lies in Cibola County. A small portion to the northwest is in McKinley County.

Figure 3. Plan Area Map

Ramah Navajo is further subdivided into five Units **(FIGURE 4)**. The Units help the chapter manage it resources.

Figure 4. Range Units Map



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 **(FIGURE 5)**.

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 Piccuris 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 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.

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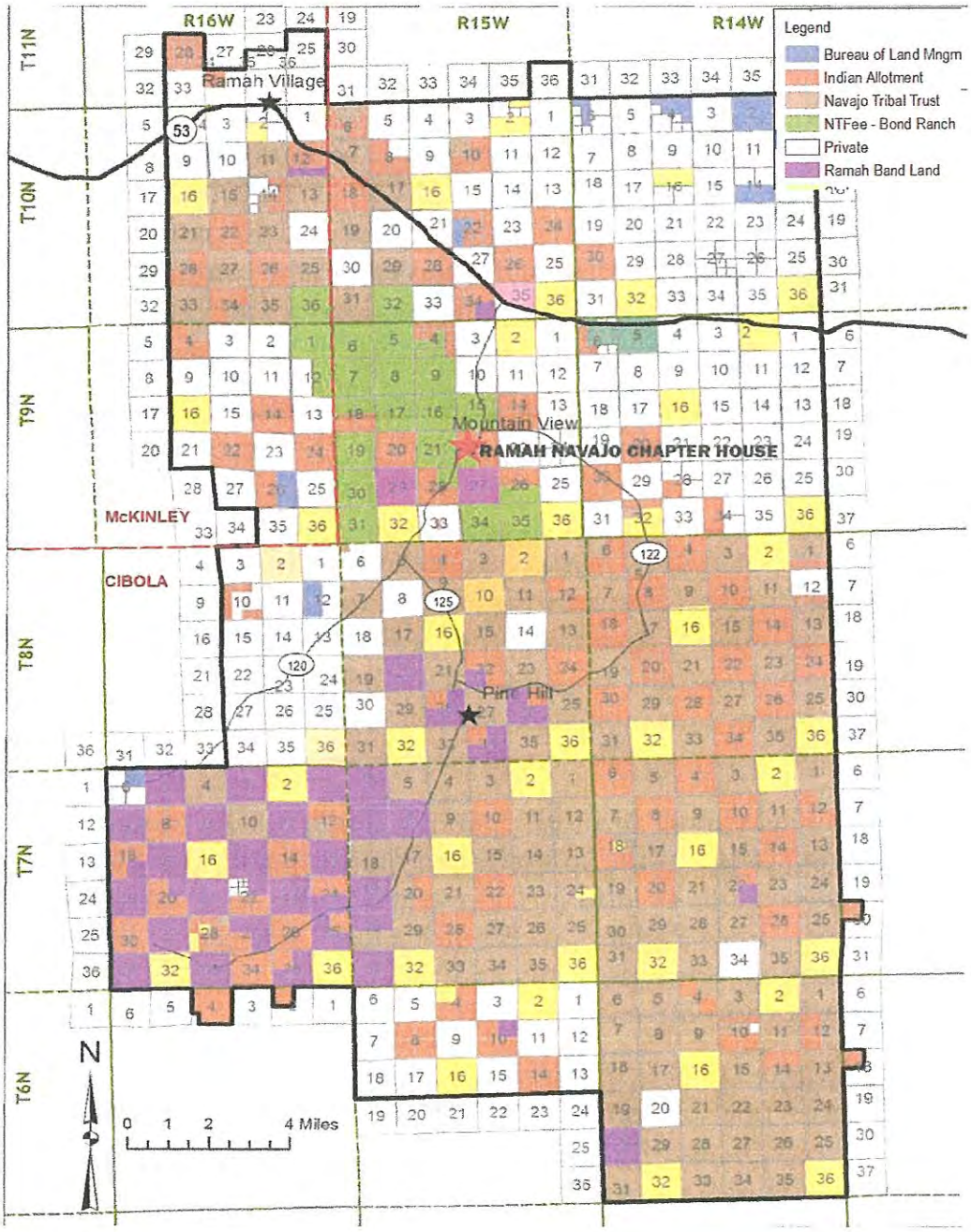
Navajo Tribal Fee land is land purchased in the mid-eighties by the Navajo Tribe not yet transferred to tribal trust land. The tribal fee land includes approximately 720 acres of the Nicoll Ranch spread in the middle of the community just south of the Chapter house.

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.

Figure 5. Land Status Map



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. This figure is greater than the 2010 Census count or the current ACS. Census data does not accurately reflect data because many community members live off the reservation, returning on weekends, for special occasions, and at other times. Further, the checkerboard nature of the land base adds to the complexity of an accurate census count. There are no official counts thus Census 2010 statistics are presented here.

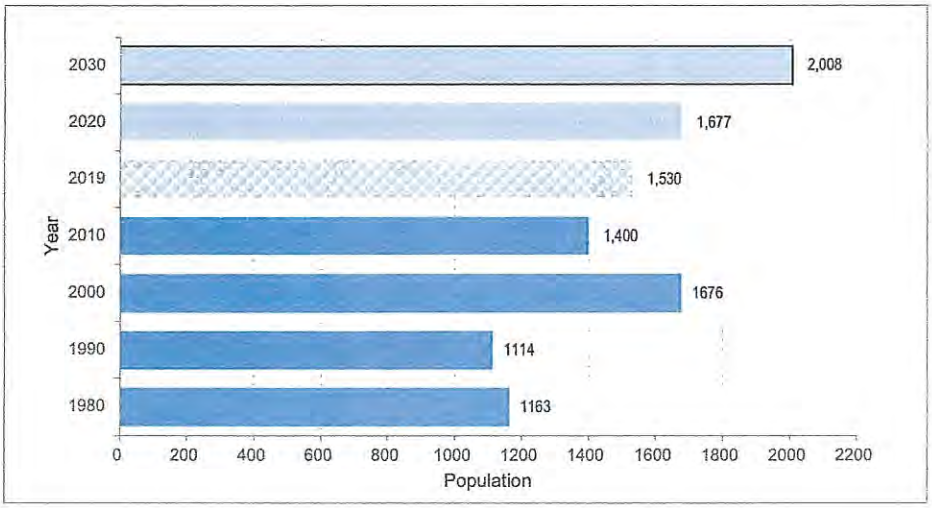
Demographic factors such as age, household composition, and income certainly affect current and future demands for housing, educational, community facilities, and community support programs.

Population Trends and Forecasts

It is hard to account for every person; many people live outside the community for work, school, or other reasons, yet they maintain residence in Ramah Navajo. Ramah Navajo estimates its population around 3,500.

Population for Ramah Navajo from 1980 to 2030 are presented in **FIGURE 6.** According to the 2019 American Community Survey (ACS) 5-Year Estimates, the current population is 1,530. The current population is about a 10 percent increase from the 2010 population. 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. 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 (Navajo Nation Division of Economic Development 2006). At this growth rate, projections continue to increase to 2,008 for 2030.

Figure 6. Population Trend and Forecast



Age

Age composition is an important factor in determining demand for types of housing, health care, and community facilities. In 2019, Ramah Navajo has the youngest population with a median ageof 29.8 years of all jurisdictions shown in **TABLE 4.** Ramah Navajo, Navajo Nation, and McKinley County have the highest percentage of persons under the age of 18. The percent of thepopulation over 65 years of age is lowest on the Navajo Nation and McKinley County. Ramah Navajo is fairly low with 14.1 percent. The state of New Mexico has the highest senior population (16.9 percent).

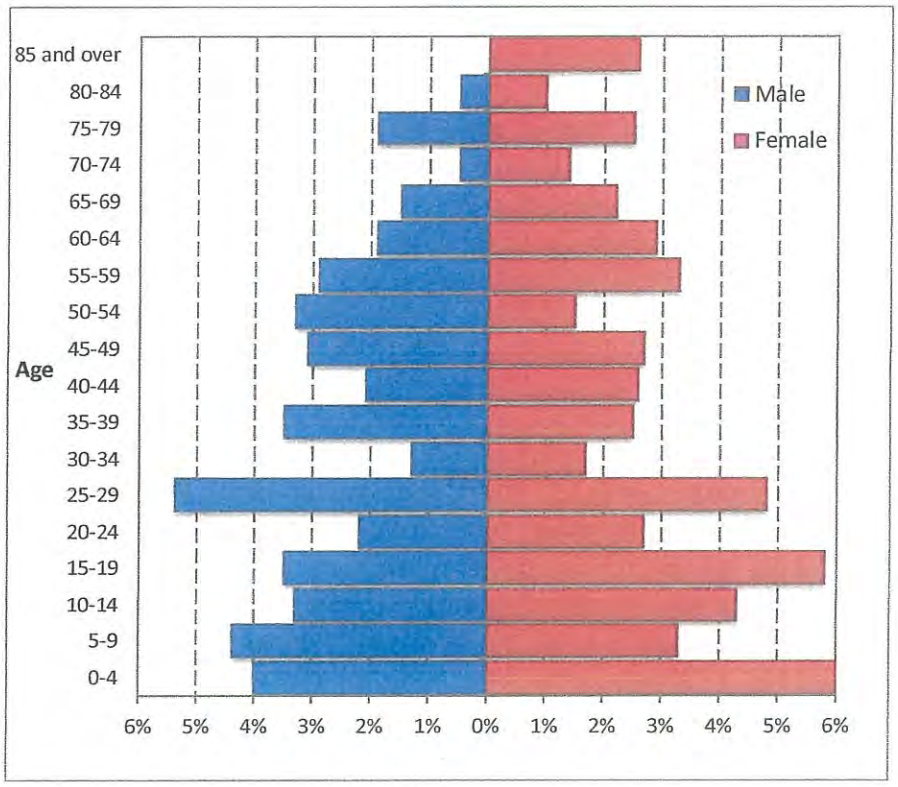
Table 4. Age Characteristics

YEAR	School Aged 5-18 (%)	Age 65 or older (%)	Median Age (Years)
United States	23.1	15.6	38.1
New Mexico	23.8	16.9	37.8
Navajo Nation	28.5	12.2	32.5
Ramah Navajo	32.5	14.1	29.8
Cibola County, NM	25.0	16.0	37.3
McKinley County, NM	29.2	11.7	32.4
Source: U.S. Census Bureau, 2019 American Community Survey 5-Year Estimates (S0101)			

Age Distribution

The age distribution for Ramah Navajo is shown in FIGURE 7. Under 30 years represents the largest sub-population. A decrease in age from 30 to 50 may reflects a population attending seeking employment outside the Chapter boundaries. This decline is followed by a gradual decrease in population through age 74. The population of elders is among the lowest. In general, there are more females than males across all age ranges.

Figure 7. Age Range



Households

The average number of persons per house household in Ramah Navajo is 3.2, slightly lower than the Navajo Nation's average household size of 3.61 **(TABLE 5)**. While McKinley County's average household size is 3.42, the average household size ranges from 2.62 to 2.92 across Cibola County, the state, and the country.

The average family size in Ramah Navajo is 4 persons.

Table 5. Households

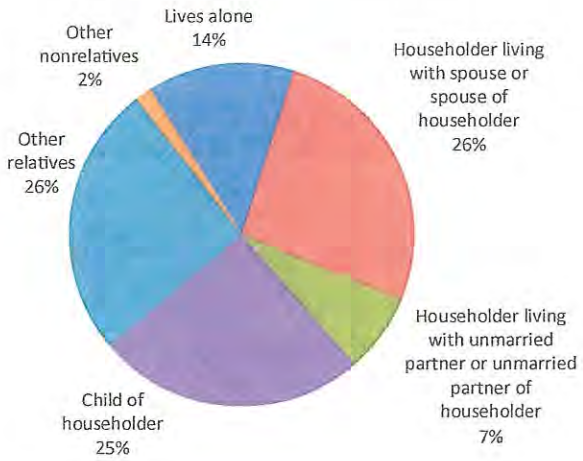
	HOUSEHOLDS	AVERAGE HOUSEHOLD SIZE
United States	120,756,048	2.62
New Mexico	780,249	2.63
Navajo Nation	47,530	3.61
Ramah Navajo	478	3.20
Cibola County	8,708	2.92
McKinley County	20,942	3.42
Source: U.S. Census Bureau, 2019 American Community Survey 5-Year Estimates (S0101)		

Among the 478 households in the Chapter, 41.2 percent of these households have individuals under 18 years. Similarly, among the 478 households, 41.6 percent have individuals 60 years and over. Almost 30 percent (29.7%) of the householders live alone (2019 ACS 5-Year Estimate Table 1101).

Living Arrangements

ACS estimates there are 1,032 adults 18 years and older (2019 ACS 5-Year Estimate Table 1101). The living arrangements for these 1032 adults is shown in **FIGURE 8.**

Figure 8. Living Arrangements, All Adults Over 18 Years



About 26 percent of the householders are living with a spouse; 26 percent live with other relatives; 25 percent are adult children of the householder; and 14 percent live alone. Around two percent of the adults live with other non-relatives.

The next three figures **(FIGURES 9, 10 and 11)** show the living arrangements for adults grouped into three separate age ranges.

The age range, 18 to 34 years **(FIGURE 9)** suggests about half (53%) of the adults live with a parent or parents, which is the highest across the three groups. This group also has the lowest percentage, 10 percent, living with a spouse. The unmarried partners are also at 10 percent. This age group also has the lowest number of adults living with other relatives and six percent live alone.

The number of married adults is much higher in the 35 to 64 years group **(FIGURE 10)**. Adult living with a parent or parents drops significantly to 17 percent while adults living with other relatives slightly increase to 23 percent and unmarried partners remains the same at 9 percent. Adults living alone doubles to 12 percent.

Forty percent of the adults 64 years and older live with other relatives **(FIGURE 11)**. About one-third in this age range are married and another one-third live alone. Very few live with a parent or other non-relatives and unmarried couples are non-existence in this group.

The living arrangements across all age groups is an indication of the closeness of the families and how the generations care for each other. At the same time, the data indicate needs for more housing, adult care facilities or programs.

Figure 9. Living Arrangements, 18 to 34 Years

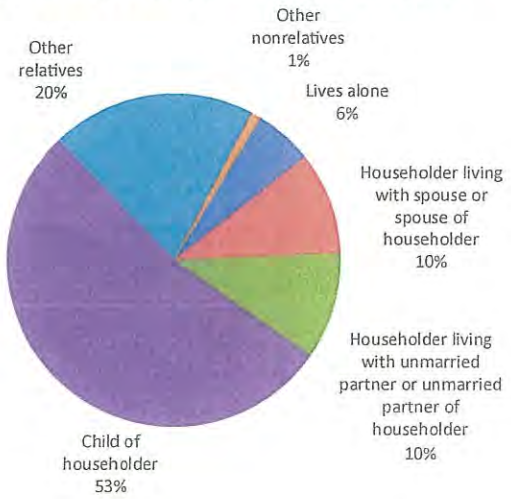


Figure 10. Living Arrangements, 35 to 64 Years

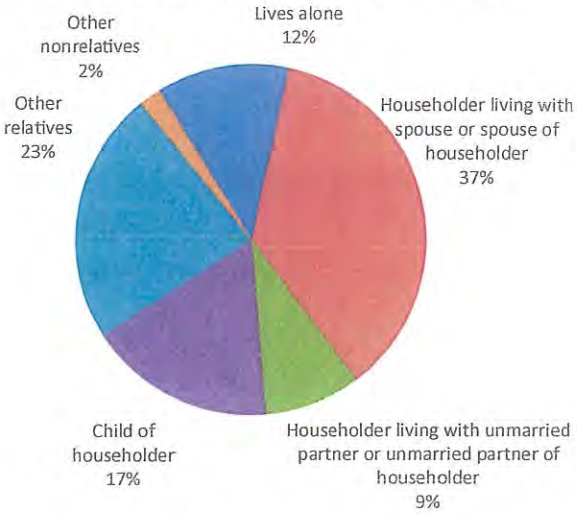
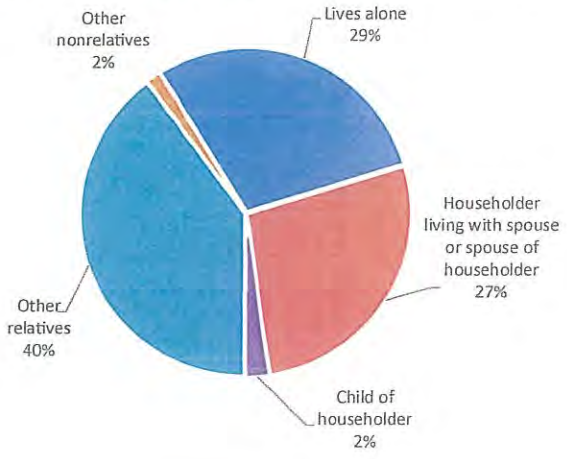


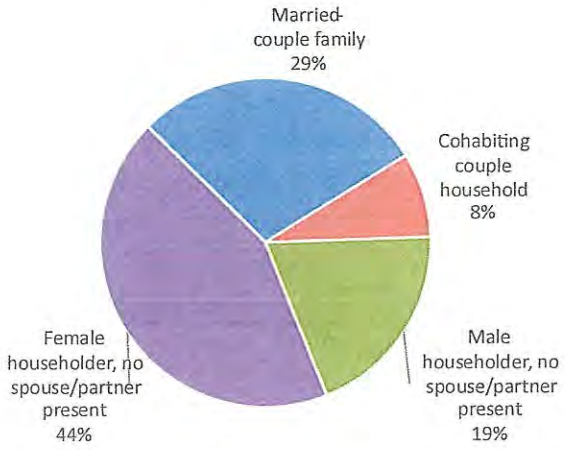
Figure 11. Living Arrangements, 65 Years and Older



Single Parent Home

Of the 478 households, over half, 53 percent, are single parent households. Female single parent householder is 44 percent and 19 percent are male single parents householders.

Figure 12. Single Parent Households

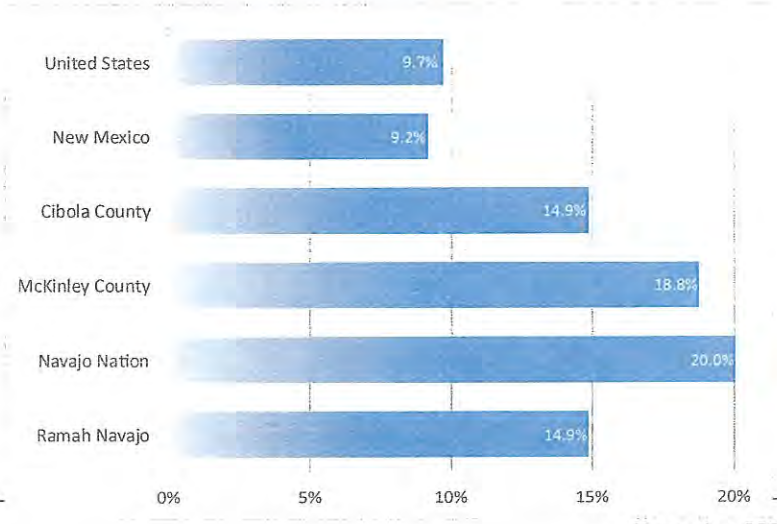


Large Families

Large family households are defined as households with five or more persons. A five-person household would typically need a three-bedroom unit while a seven-person household would need a five to six-bedrooms.

2019 ACS reports large families comprise 14.9 percent of the households in Ramah Navajo and Cibola County **(FIGURE 13)**. The Navajo Nation has the highest number of large families followed by McKinley County. The state of New Mexico and the United States are lower than 10 percent.

Figure 13. Large Families Households



Veterans

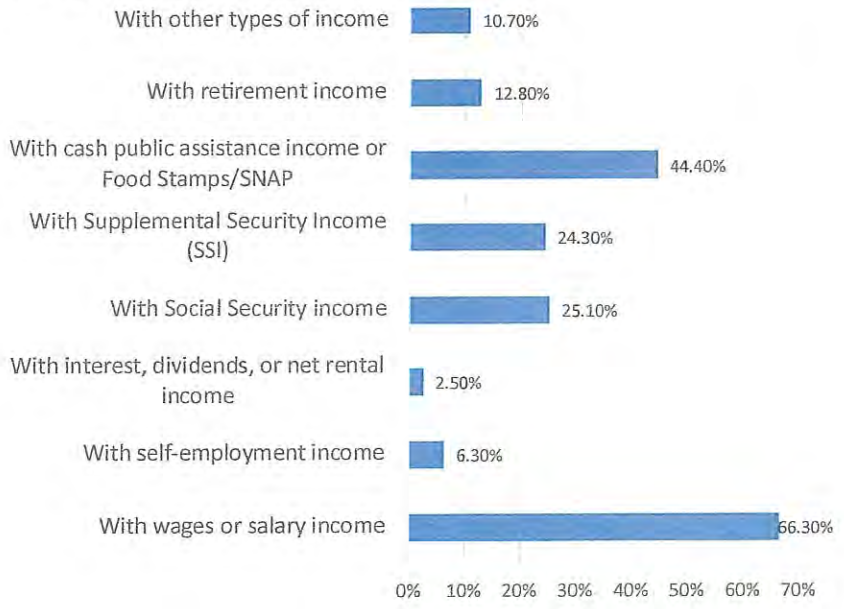
The Chapter reports over 100 Veterans in Ramah Navajo. According to the 2019 American Community Survey (ACS) 5-Year Estimates, there are an estimate of 20 veterans in Ramah Navajo. Of these veterans, eight are Gulf War (9/2001 or later) veterans, three are Gulf War (8/1990 to 8/2001) veterans, and five are Vietnam era veterans. Veterans play a vital role the community.

According to the U.S. Department of Veterans Affairs (2012), American Indian and Alaska Native veterans have lower incomes, lower educational attainment and higher unemployment than veterans of other races. They are also more likely to lack health insurance and have a disability, service-connected or otherwise, than veterans of other races.

Source of income

Of the 478 households, **FIGURE 14** shows the source of income. Over half, 66.3 percent earn wages or have salary income and 44.4 percent get public assistance or food stamps. Approximately 25 percent each, receive SSI and Social Security, respectively.

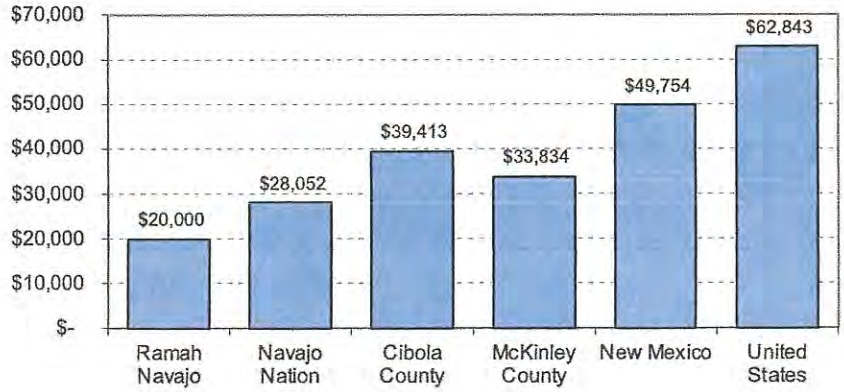
Figure 14. Source of Income for all households



Median Income

According to the 2019 American Community Survey (ACS) 5-Year Estimates, median annual household income for residents of Ramah Navajo is $20,000. Ramah Navajo has the lowest median income in caparison to the other regions shown in **FIGURE 15.** Ramah Navajo's median income is half of the state of New Mexico and three times lower nationally.

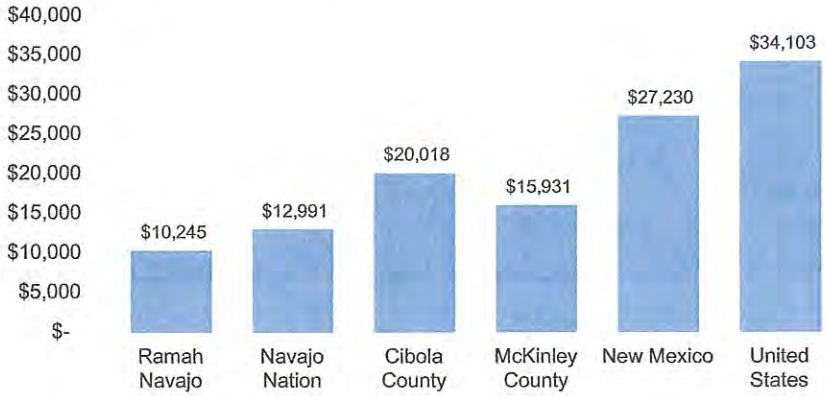
Figure 15. Median Household Income



Per Capita Income

The per capita income for residents of Ramah Navajo is $10,245, which is the lowest of all regions depicted in **FIGURE 16** (2019 American Community Survey (ACS) 5-Year Estimates). The margin continues to increase with the Navajo Nation, counties, state, and national levels.

Figure 16. Per Capita Income



Employment and Labor Force

The 2019 American Community Survey (ACS) 5-Year Estimates reports a population of 1,109 for 16 years and over. Of this population, about half, 584 individuals (53%), are in the labor force **(FIGURE 17)**. The other half, 525 persons (47%), are not in the labor force. Of those individuals in the labor force, 36 percent (402 individuals) are employed, and the remaining 17 percent (182 individuals) are not employed.

Figure 17. Labor Force

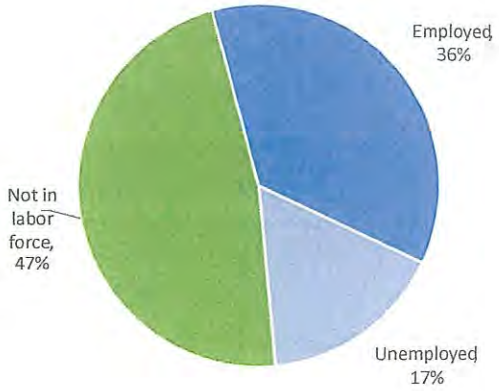


FIGURE 18 shows the class of the workers. Of the 402 employed individuals, over half (56 percent) work for the government, 41 percent are wage earners, and two percent are self-employed.

Figure 18. Class of Workers

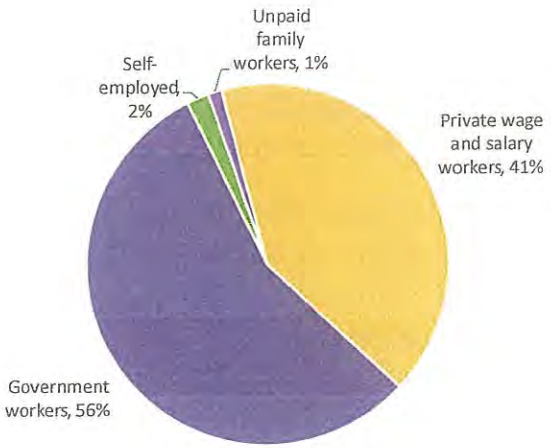
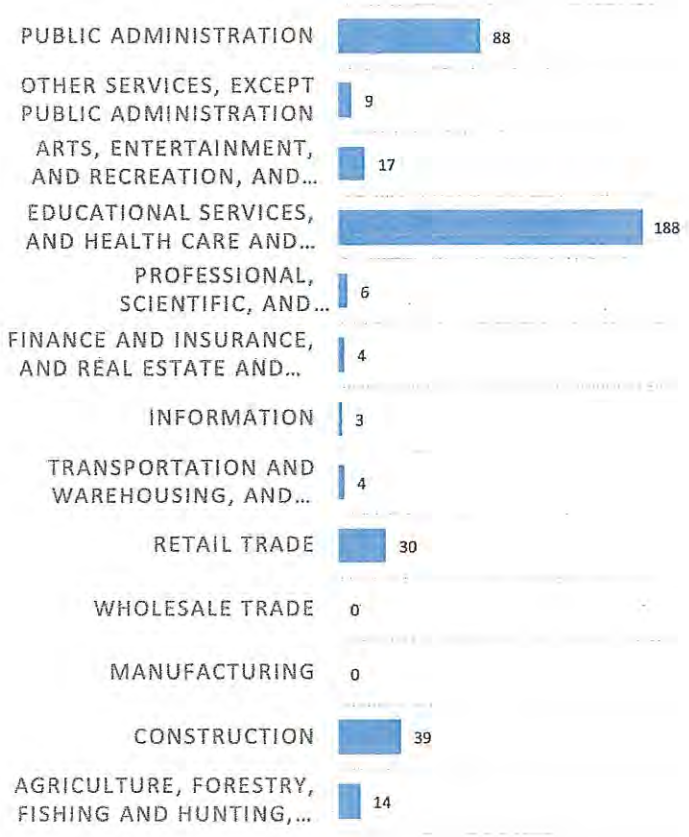


FIGURE 19 breaks down the industries where these workers are employed. Educational services is by far the largest industry followed by public administration. The retail and construction industries are the next two industries with workers. Even smaller is agricultural and arts and crafts industries.

Figure 19. Employment Industries



Unemployment and Poverty

According to the 2019 American Community Survey 5-Year Estimates, the unemployment rate for Ramah Navajo is 31.2 percent, which is much higher than the other regions shown in **TABLE 6.**

Often correlated with high rates of unemployment are high rates of poverty. An estimated 41.3 percent of the total number of families residing in Ramah Navajo had income in the past 12 months below the poverty level. Poverty rates are most severe across the broader Navajo Nation Reservation where upwards of 35.2 percent of families are classified as impoverished. Poverty levels are the lowest for New Mexico and the United States.

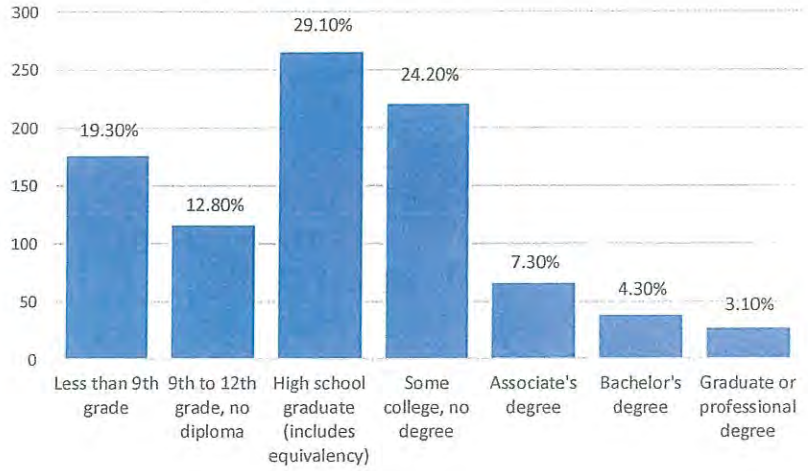
Table 6. Unemployment and Poverty

	UNEMPLOYMENT RATE	POVERTY LEVEL
United States	5.3%	9.5%
New Mexico	6.7%	14.5%
Navajo Nation	16.8%	33.7%
Ramah Navajo	31.2%	41.3%
Cibola County	13.7%	22.0%
McKinley County	14.0%	30.1%

Educational Attainment

Educational attainment refers to the highest level of education an individual has completed. Among the population 25 years and older, Ramah Navajo has more high school graduates and individuals with some college education (no degrees) than the other groups shown in **FIGURE 20**. About one-third do not have a high school diploma; 19.3 percent have less than 9th grade education. 14.7 percent of the population have college degrees.

Figure 20. Educational Attainment (Population 25 Years and Older)

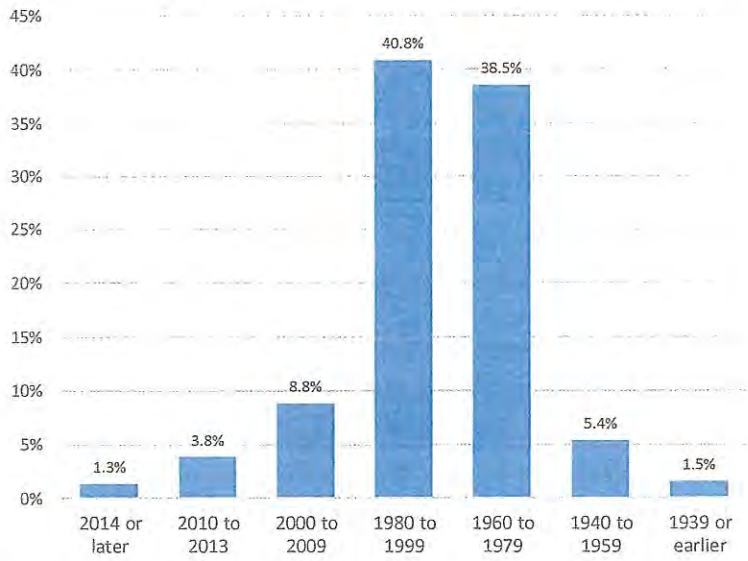


Housing

According to the 2019 American Community Survey 5-Year Estimates, Ramah Navajo has 478 occupied housing units. The housing count is a slight increase over the 2010 Census count of 453 occupied housing units, but it is nearly the same as it was in 2000, which was 471.

The majority of the occupied housing units are 1-unit detached (77.2 percent) and 11.3 percent are mobile homes. Most the structures were built 1979 and 1999 **(FIGURE 21)**. A few homes were bult 1939 or earlier.

Figure 21. Year Structure Built



Complete plumbing facilities are defined as hot and cold piped water, a bathtub or shower, and a flush toilet. 20.5 percent of the Chapter's homes lack complete plumbing facilities **(TABLE 7)**. Similarly, 10.7 percent of the Chapter's homes lack complete kitchen facilities. About 11.5 percent of the housing units in the Chapter have no land line telephone service.

Table 7. Lacking Facilities and Telephone Service

	OCCUPIED HOUSING UNITS	LACKING COMPLETE PLUMBING	LACKING COMPLETE KITCHEN	NO TELEPHONE SERVICE
Ramah Navajo	478	20.5%	10.7%	11.5%

According to the 2019 American Community Survey 5-Year Estimates, almost all homes (74.5 percent) rely on wood or pellets for heating **(TABLE 8)**. Approximately 14 percent of the occupied housing units are heated by propane and 11.3 percent are heated by electricity

Table 8. Source of Heating

	Propane	Electricity	Wood or Pellet
Ramah Navajo	14.0%	11.3%	74.7%

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 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 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 NavajoRamah culture.

NATURAL RESOURCES

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

HUNTING

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. Hunters use bows, traps made of local woods, boomerangs and slingshots to bring home the bounty. Hunting is especially popular inthe 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 farmlands 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

Most 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 for Navajo Tribal trust and fee lands. Ramah Navajo Chapter and its 638 programs oversee the permits on Ramah Navajo trust and fee lands. Ramah Navajo 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).

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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

A topographic map is presented in **FIGURE 22**. 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 lavabeds 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 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 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 the following United Sates Geological Survey (USGS) 7.5′ quadrangles: Timer Canyon; Ramah; Kettner Canyon; Pescado; Togeye Lake; El Morro; Shoemaker Canyon; Nicoll Lake; Goat Hill; Shoemaker Canyon Se; Red Lak Mission, Cerro Alto, Chimney Hill, and Cerro Pomo.

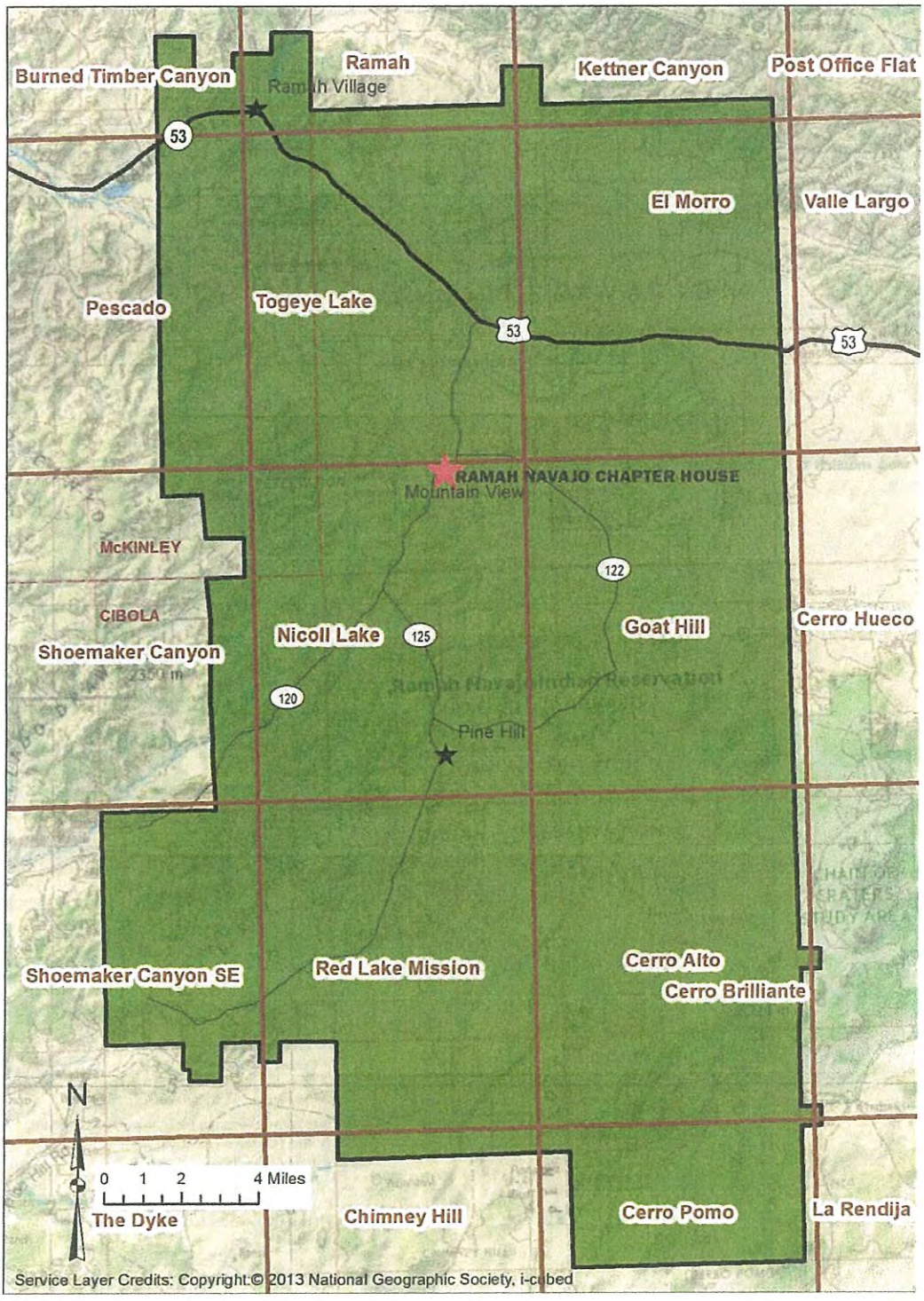
Significant Landmarks

Ramah Navajo recognizes and identifies the significant landmarks located near or within the planning area **(TABLE 9)**.

Table 9. 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

Figure 22. Topographic Map



Geology

The general geological map is presented in **FIGURE 23** and the the geologic formations are listed in **(TABLE 10)**.

Figure 23. Geology Map

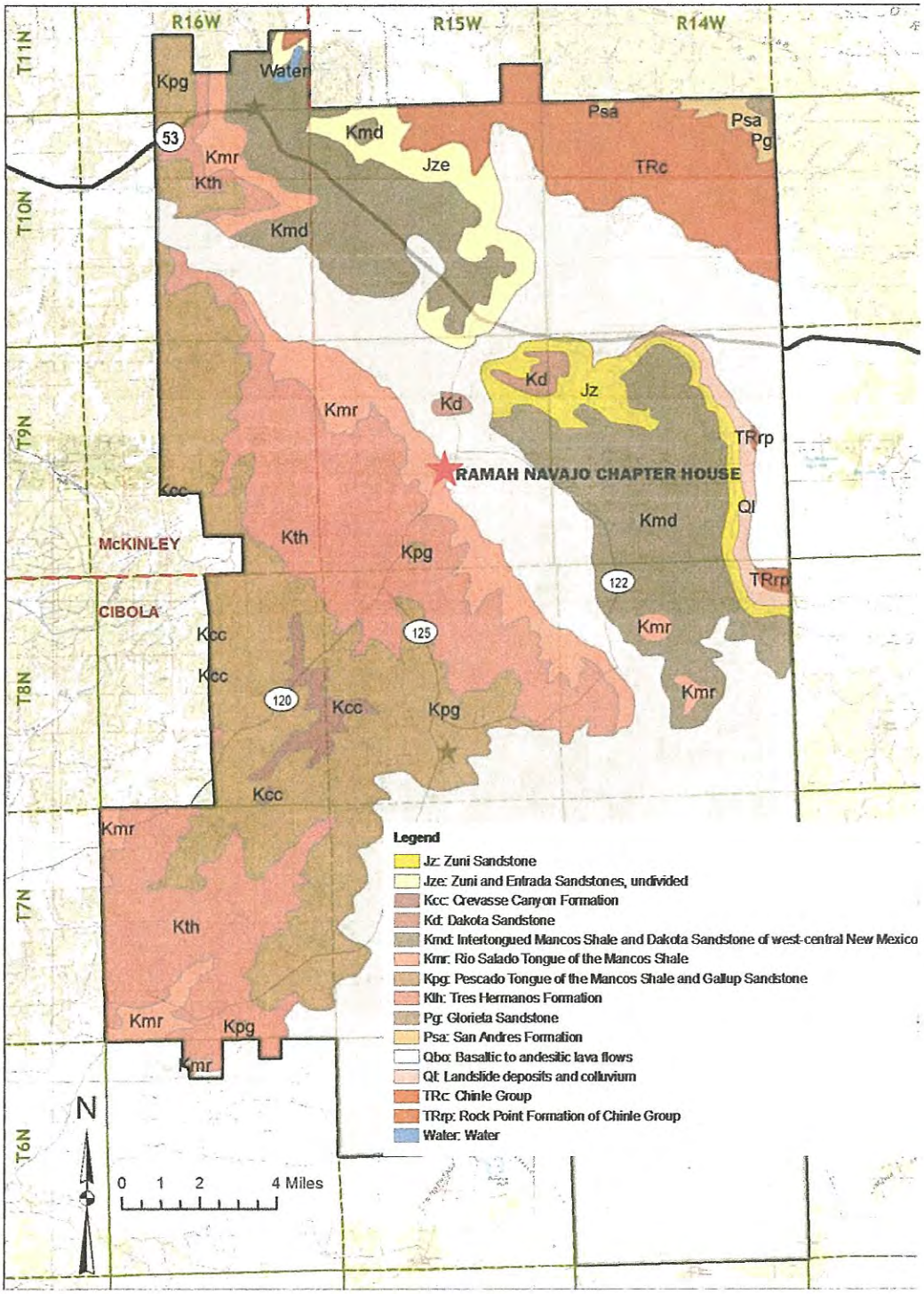


Table 10. Geologic Formation

MAP UNIT	FORMATION NAME	PRIMARY LITHOLOGY	DESCRIPTION
Jz	Zuni Sandstone	sandstone	Zuni Sandstone (Callovian) — 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/#

Soils

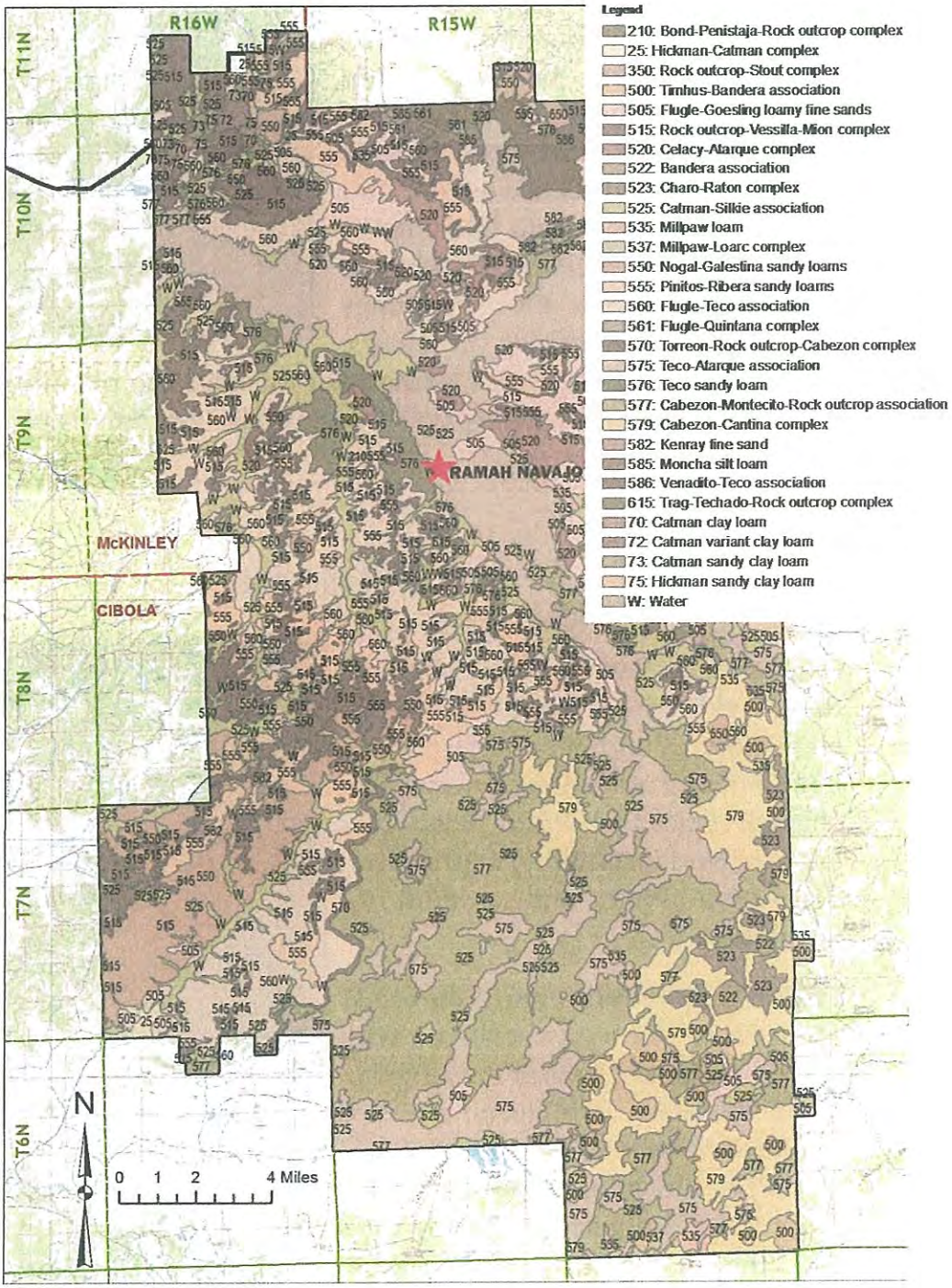
The planning area lies within the U.S. Department of Agriculture, Natural Resources Conservation Service Soils Report Number NM692 entitled Cibola Area, New Mexico, Parts of Cibola, McKinley, and Valencia Counties accessed from the Soil Survey Geographic (SSURGO) database. According to Soils Report NM692, slopes and soil types 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 11)**.

A corresponding soils map is presented in **FIGURE 24**. The soils map shows much of the flat area consists of Penistaja-Tintero complex (205) with patches of Mido loamy fine sand (353). Soils along the unnamed arroyo extending southeast to Northwest consist of Zia sandy loam (352). Soil reports generated from the SSURGO data are included in **APPENDIX C.** The Map Unit Description report describes the eleven different soil units. Additional tables indicating the severity of individual soil limitations are provided in the Dwellings and Small Commercial Buildings report **(APPENDIX D)**. 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

Table 11. Soils

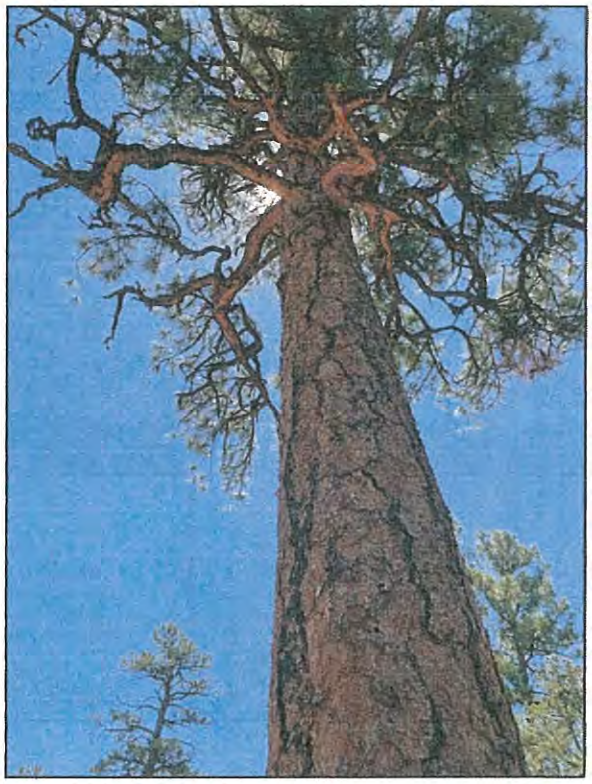
MAP UNIT	SOIL	PERCENT SLOPE
25	Hickman-Catman complex	1 to 6
70	Catman clay loam	1 to 3
72	Catman variant clay loam	1 to 3
73	Catman sandy clay loam	1 to 3
75	Hickman sandy clay loam	1 to 3
210	Bond-Penistaja-Rock outcrop complex	2 to 15
350	Rock outcrop-Stout complex	3 to 15
500	Timhus-Bandera association	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	Torreon-Rock outcrop- Cabezon complex	15 to 45
575	Teco-Atarque association	1 to 8
576	Teco sandy loam	2 to 5
577	Cabezon-Montecito-Rock outcrop association	1 to 10
579	Cabezon-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	

Figure 24. Soils Map



site specific and does not eliminate the need for onsite soil investigation by experienced experts. Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. The soil limitations tables show the degree and kind of soil limitations that affect dwellings and small commercial buildings. Information in these tables is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction.

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 12**. 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 12. Soil Composition with Ecological Class (Rangeland)

MAP UNIT	MAP UNIT NAME	PERCENT	COMPONENT NAME	ECOLOGICAL CLASS (RANGELAND SITE)
2525	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-5tout 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 2S	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	40 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 26	VenaditoTeco	Clayey Bottomland Clayey
615	Trag-Techado-Rock outcrop complex, 3 to 55 percent slopes	35 30 20		Mountain Grassland Shallow Savanna
W	Water	100	Water	

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

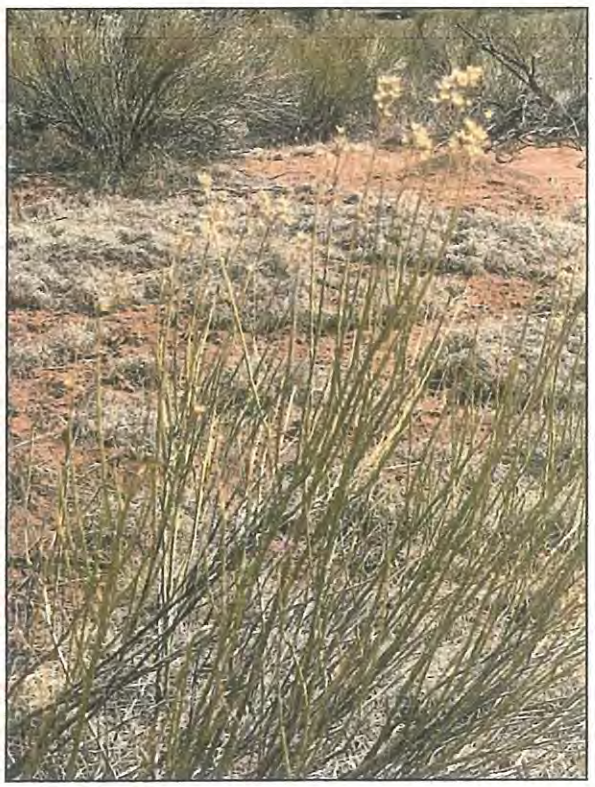
This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, coyote, black-tailed jackrabbit, Botta's pocket gopher, sparrow hawk, mourning dove, chipping sparrow, western spadefoot, leopard lizard, and prairie rattlesnake.

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 ru-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-collard 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 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. 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 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
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 form 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.

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

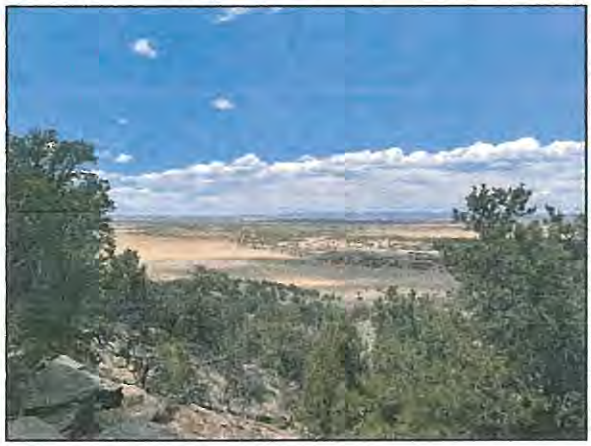
This site occurs on summits of mesas, hills, and ridges, and dipslopes of cuestas. Loamy and Savannah Ecological Sites often occur as areas of deeper soils interspersed or adjacent to the Shallow Sandstone site. This is a moderately productive site characterized by a mixture of warm- and cool-season 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.

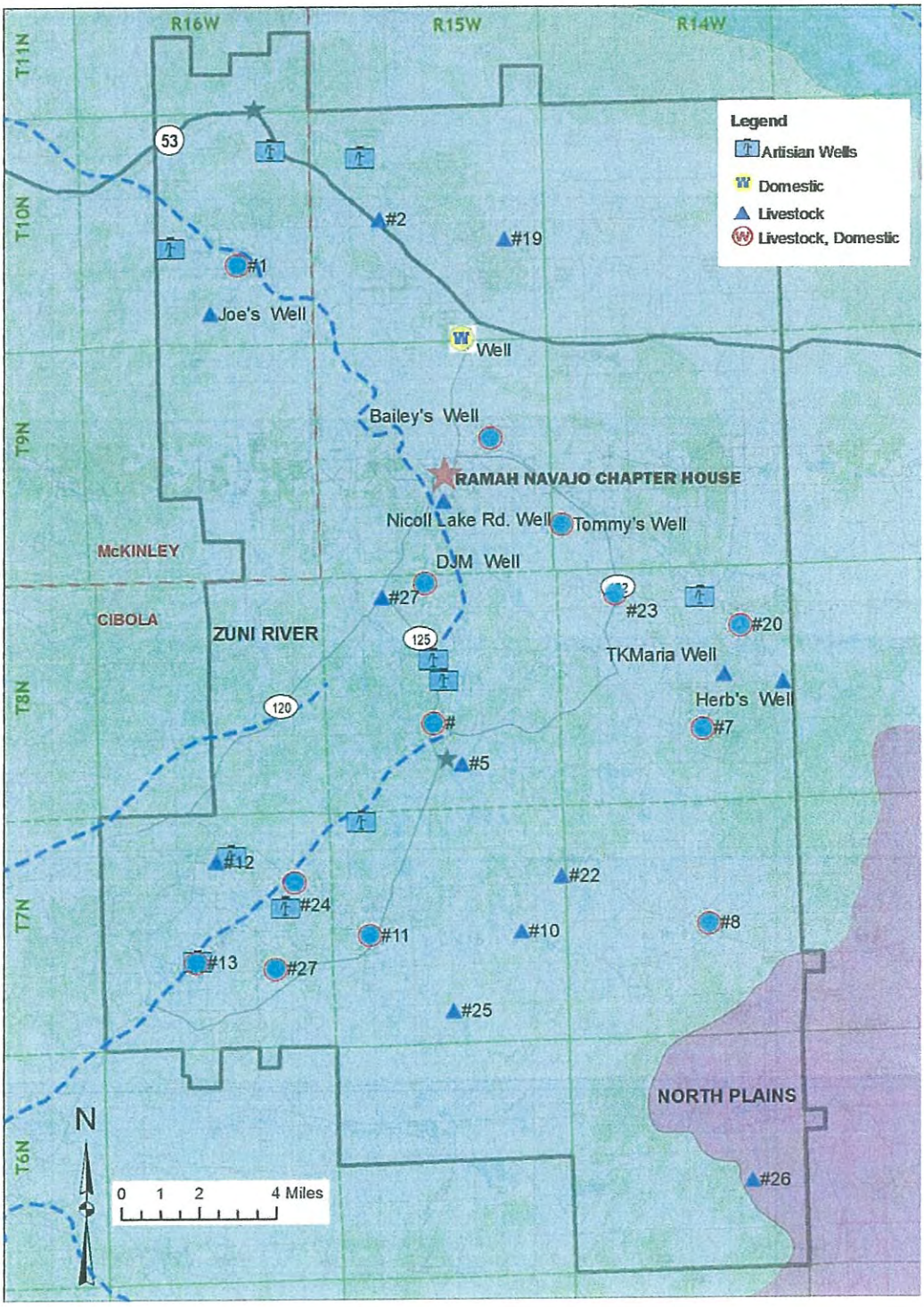
Major Surface Water and Groundwater Sources

Surface water and water wells are depicted in **FIGURE 25**. 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.

Figure 25. Surface Water & Water Wells Map



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7. EXISTING STRUCTURES & BUILT ENVIRONMENT

Existing structures and built environment refer 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 these elements impact land use patterns.

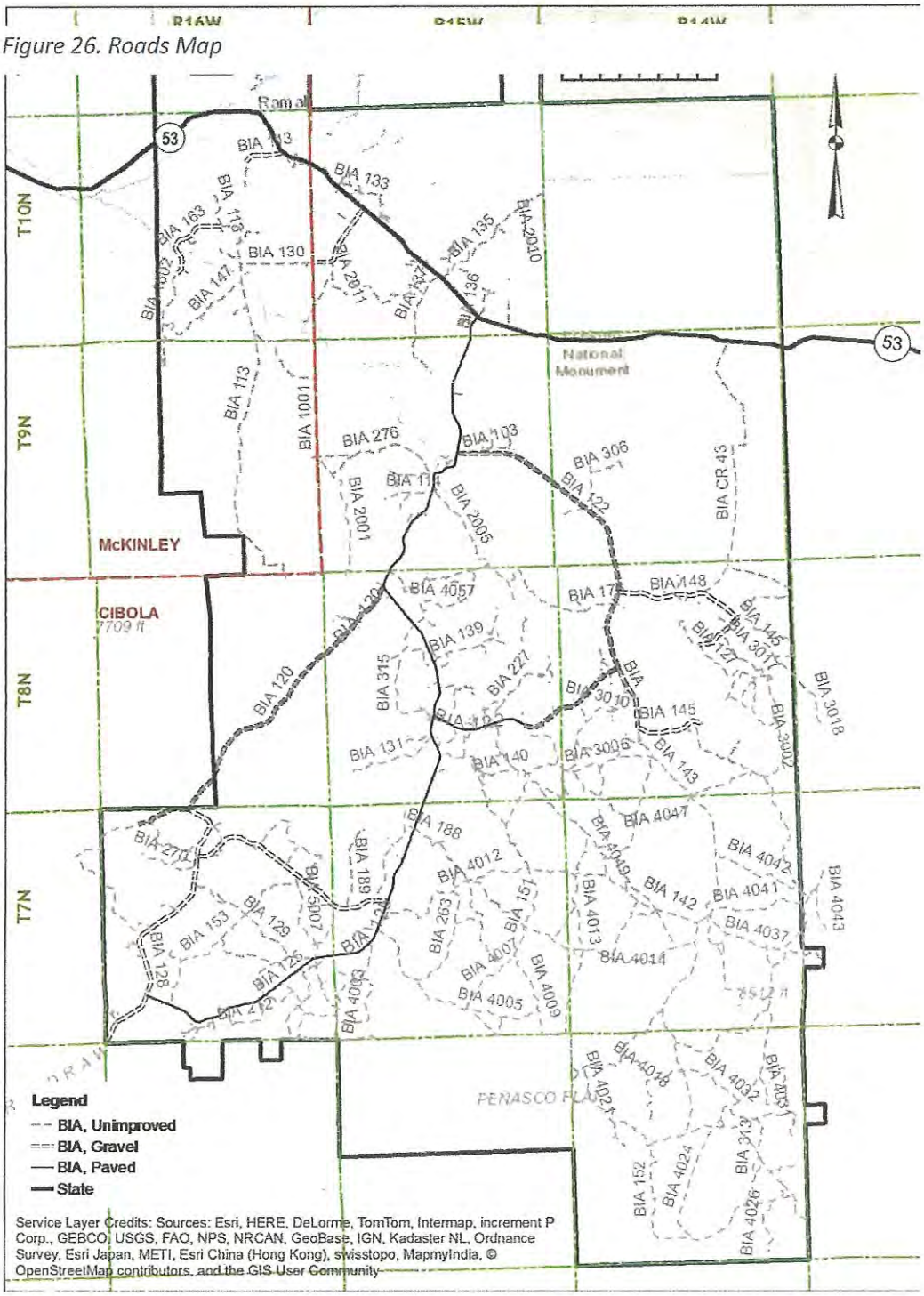
Roads

The road system within Ramah Navajo is currently composed of approximately 29 paved miles and 451 miles of gravel surfaced or maintained earthen roadway routes **FIGURE 26**.

The main arterial and backbone of the Chapter's 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 roads/routes in Ramah Navajo.

Figure 26. Roads Map



The Ramah Navajo Department of Transportation (RNDOT) manage-ment areas are subdivided in five transportation system elements aligned with the units. The Chapter through the Office of Grants and Contracts and the RNDOT performs leadership functions for the Chapter's road system including 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. **FIGURE 27** shows the power lines and water lines throughout Ramah Navajo.

ELECTRIC

Continental Divide Electric Cooperative (CDEC) provides electric service to 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 serve the community along its route.

WATER

Ramah Navajo Utility Authority (RNUA) provides water services to 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 Souder, Miller & Associates in 1999.

- The Pine Hill water system 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 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 homes. 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.

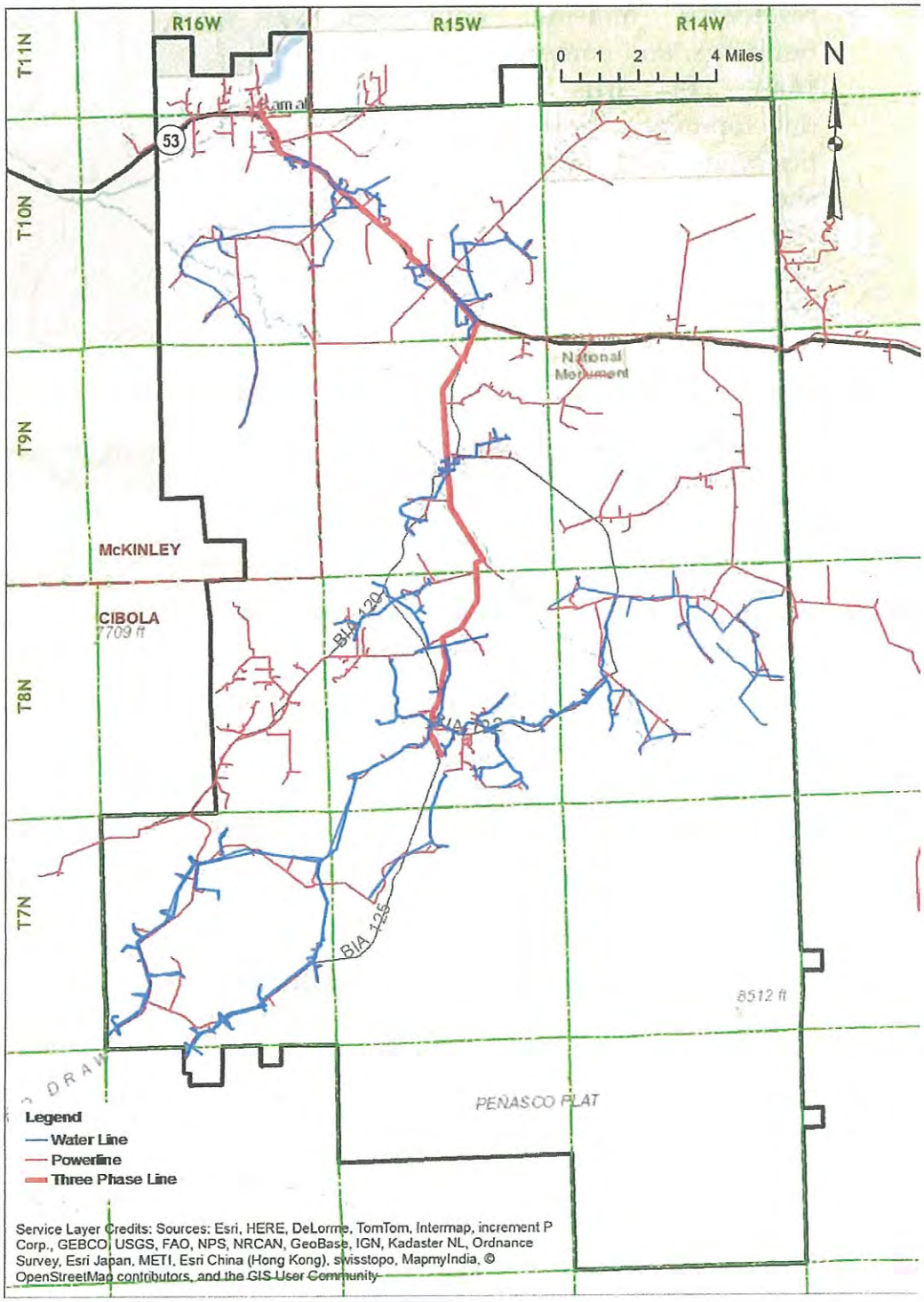
SEWER

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. The rest of the community use septic systems.

PROPANE

Natural gas service is not available. Propane is provided by distributors in nearby towns.

Figure 27. Utilities Map



Buildings and Facilities

Building and facilities include residential housing, commercial buildings, and community facilities. **TABLE 13** lists the existing development areas for these buildings and facilities. **TABLE 28** shows Ramah Village, Sunset, and Cedar Bluff are located along New Mexico State Route 53. Mountain View and Pine Hill are located along BIA Route 125.

Table 13. Existing Development Areas

Development Area	BUILDINGS AND FACILITIES	DEVELOPMENT TYPE
Ramah Village	Old Dorm Former Trading Post	Community Facilities Commercial
Sunset	Housing	Residential Housing
Cedar Bluff	Detention Center	Community Facilities
Mountain View	Community Facilities (Chapter house, 638 offices and senior center)	Community Facilities
Pine Hill	Store School Clinic Post Office NHA Housing	Commercial Community Facilities Community Facilities Community Facilities Residential Housing

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 in two primary community center areas: Sunset and Pine Hill. 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 13** lists these housing developments areas.

Table 14. Residential 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 Tribal Trust
RNSB Mobile Home Park	Pine Hill	20	120	Ramah Band 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

Commercial

The Pinehill Shopping Center is 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://nnscinc.com/node/56).

Community Facilities

Existing community facilities are in four general geographical areas. 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. Eriacho 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 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 twelveth. 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 (RNUA), 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 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. The El Morro National Monument is not owned or operated by Ramah Navajo, it provides an interesting recreational facility and attracts visitors.

Farming

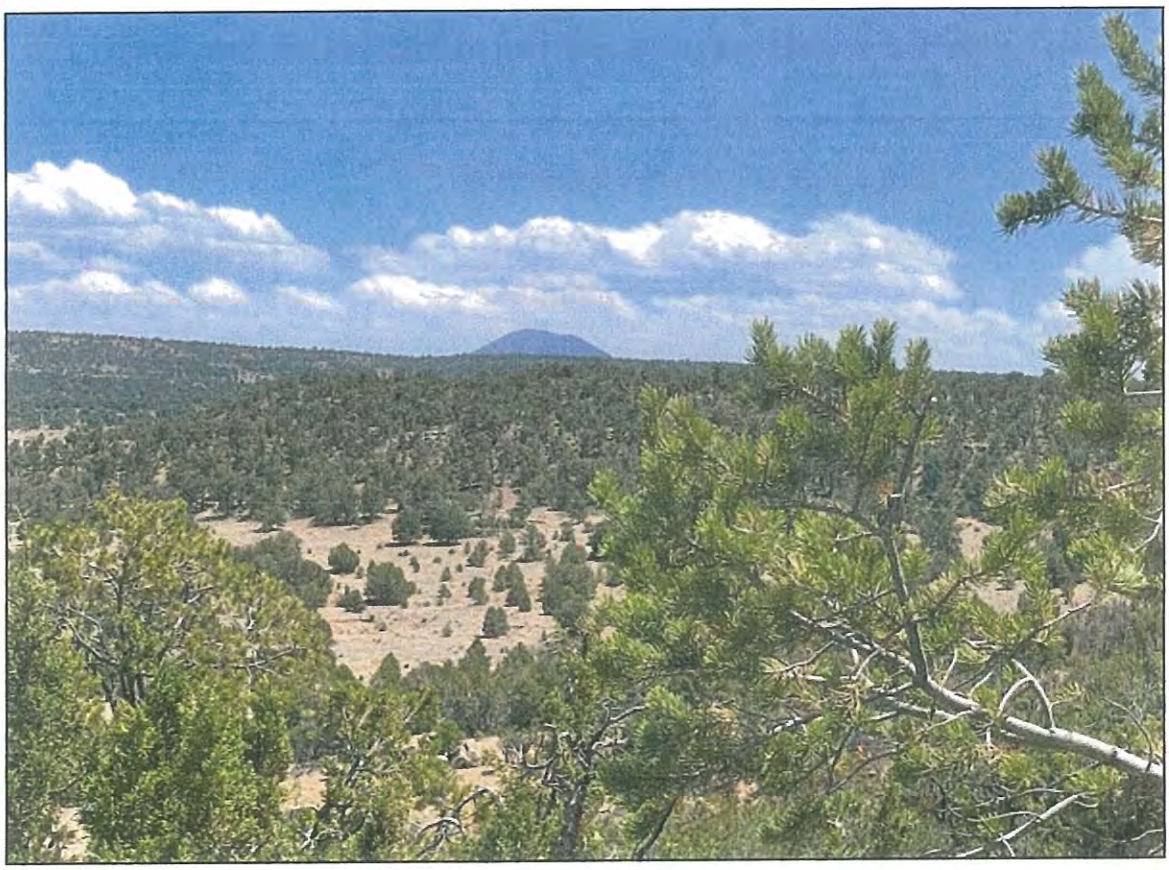
Although on a smaller scale than grazing, farming is another important way of life forcommunity members. Farming has a long history in Ramah Navajo. Crops grown for food or to provide feed for livestock are themajor farming enterprises in the area. Large farming plots are vacant due to the drought. Smaller farm plots or family gardens are being used today. 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 have respected them. Each individual site is not located on the land use plan map in an attempt to further protect these sites.



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 our way of life as we live in harmony with a healthy environment, flourishing community, and a vibrant economy.

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: *Preserve our natural and environmental resources and open space; before us, beneath, above, and all around us*

HOZHO: *Beauty & well-being in 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, land, and community. Fundamental to this commitment are our ongoing priorities developed from the hearts and words of our people.

The priorities are flexible and equally important; they are numbered and may be reordered or changed around to respond to opportunities, situations, and emergencies such as the coronavirus pandemic. The goals represent the big picture while objectives are more specific, quantifiable steps.

PRIORITY 1: MAINTAINING AND IMPROVING ROADS; AND BUILDING NEW ROADS TO NEW DEVELOPMENTS

A. Roads

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

Objectives:

- Work with 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 (RNUA) 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
- Extend water and electric lines to new development

PRIORITY 3: SUPPORTING GRAZING, WILDLIFE, AND AGRICULTURE WHILE USING NATURAL RESOURCES WISELY

A. Rangeland

Goal: Healthy rangelands that support livestock grazing and wildlife habitat; understand the importance of rangeland resources, management, and conservation 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 land management program
- Develop a land management plan for Bond Ranch, Nicoll Ranch, White Land
- Protect the rangeland ecosystem, create a balance between grazing and other uses; manage rangelands to protect habitat for a variety of plant and animal species
- Establish conservation areas for wildlife habitat and/or environmentally sensitive species; begin with White Land
- Regenerate rangelands, prevent overgrazing and provide for the preservation of natural foods and medicines
- Manage rangelands to protect and conserve water resources that flow through and under the rangeland areas
- Promote and improve the cattle/livestock industry through education/training and responsible chapter farm/livestock management policies and practices
- Improve the condition and productivity of the 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: Productive agricultural enterprises alongside thriving family farm plots and ranches 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
- Develop Bond Ranch into a community owned ranching enterprise managed by the Chapter or a Community-Based Coop or a Livestock Association
- 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 and support dry farming techniques
- Encourage use of native seeds and crops (i.e. corn, melons, onions, potatoes and bean farms)

C. Forest and Woodlands

Goal: Healthy 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: Quality 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 graywater for watering alfalfa, etc.
- Support/advocate for extension of Navajo-Gallup Water pipeline (San Juan River water) to Ramah Navajo

E. Environmental Stewardship

Goal: Preserve open space, protect biodiversity, and use natural resources wisely.

Objectives:

- Protect and maintain integrity of water resources
- Protect and improve water quality, water supply, living resources, soil function and hydrology
- Prevent habitat fragmentation
- Increase education and outreach efforts focused on implementing sustainable land use practices across both developed and undeveloped landscapes
- Reduce land-use impacts on natural resource
- Promote and support sustainable land use and related practices (e.g., soil restoration and low-impact development)

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, disabled, and veterans
- Create opportunities for community members to make additions/ improvements to their existing home
- Advocate for a group home, nursing home, and transitional housing
- 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, land, and natural resources

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:

- Develop Section 21 to include 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, senior center, multi-use 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)
- Designate area for community cemetery
- Establish an ALERT team and 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
- Build broadband system and connect every home
- 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 and develop a land database in coordination with land use planning and project managment
- 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 a federally recognized Indian 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 enriching the sense of place and understanding of Ramah Navajos, its lands, and surroundings.

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
- Negotiate land exchanges with BLM, State and other land jurisdictions.
- Establish fund account for land acquisitions

B. Bond Ranch

Goal: Successful cattle and sheep ranch operated by the Chapter or Community-Based Livestock Association

Objectives:

- Establish a sustainable grazing system while protecting the rangeland ecosystem
- Replace perimeter fence
- Repair or construct new watering sources
- Develop Section 21 as a mixed used area including community facilities, residential and recreation
- Ensure orderly prudent development for Section 21 in coordination with other community initiatives and development options ensuring the result will be of the greatest benefit to Ramah Navajo.

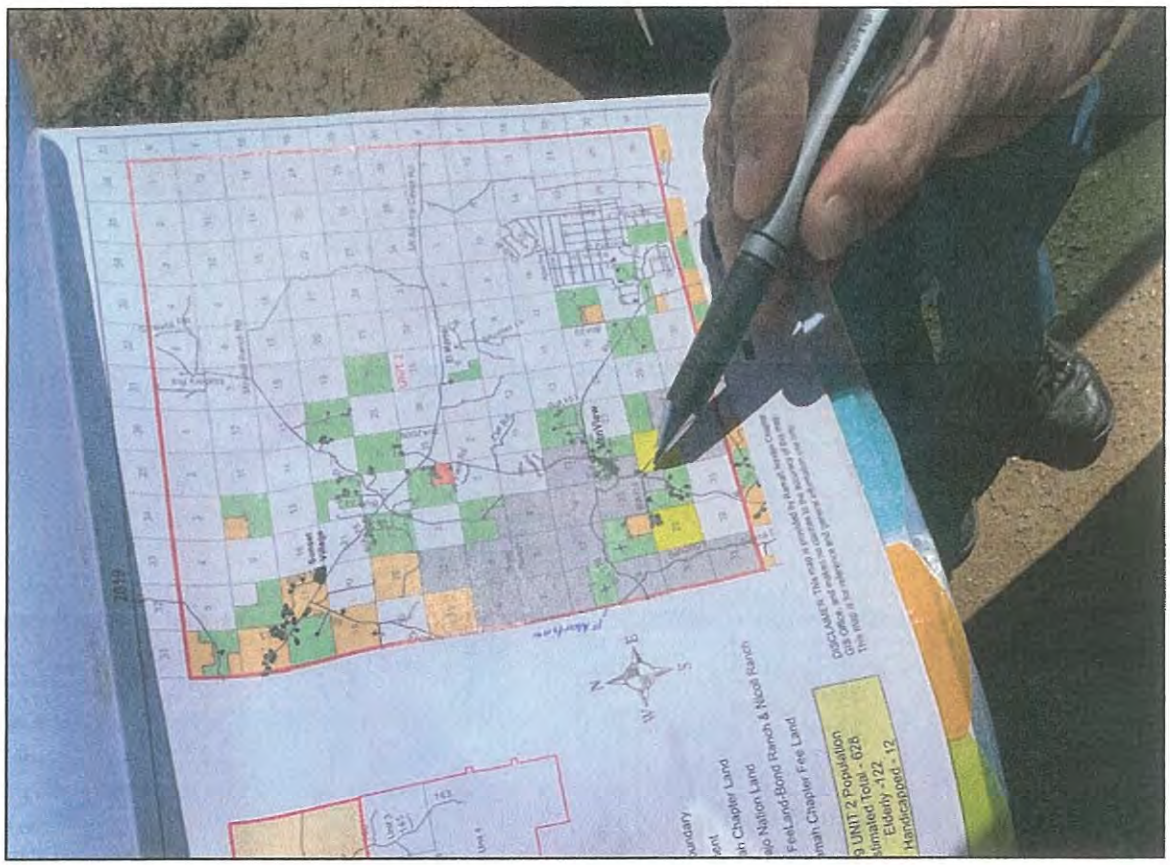
PRIORITY 10: CONTROLLING AND PREVENTING EROSION

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.



9. LAND USE FRAMEWORK

This section establishes a land use framework for future land stewardship and development in Ramah Navajo over the next five years and beyond. This framework includes places and land use patterns Ramah Navajo would like to foster and encourage in each unit.

FIGURE 28 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.

The land use framework presented herein guides future development decisions, infrastructure improvements, land acquisitions, capital expenditures, public and private investments, and land stewardship within Ramah Navajo.

Figure 28. Existing and Proposed Land Use Map

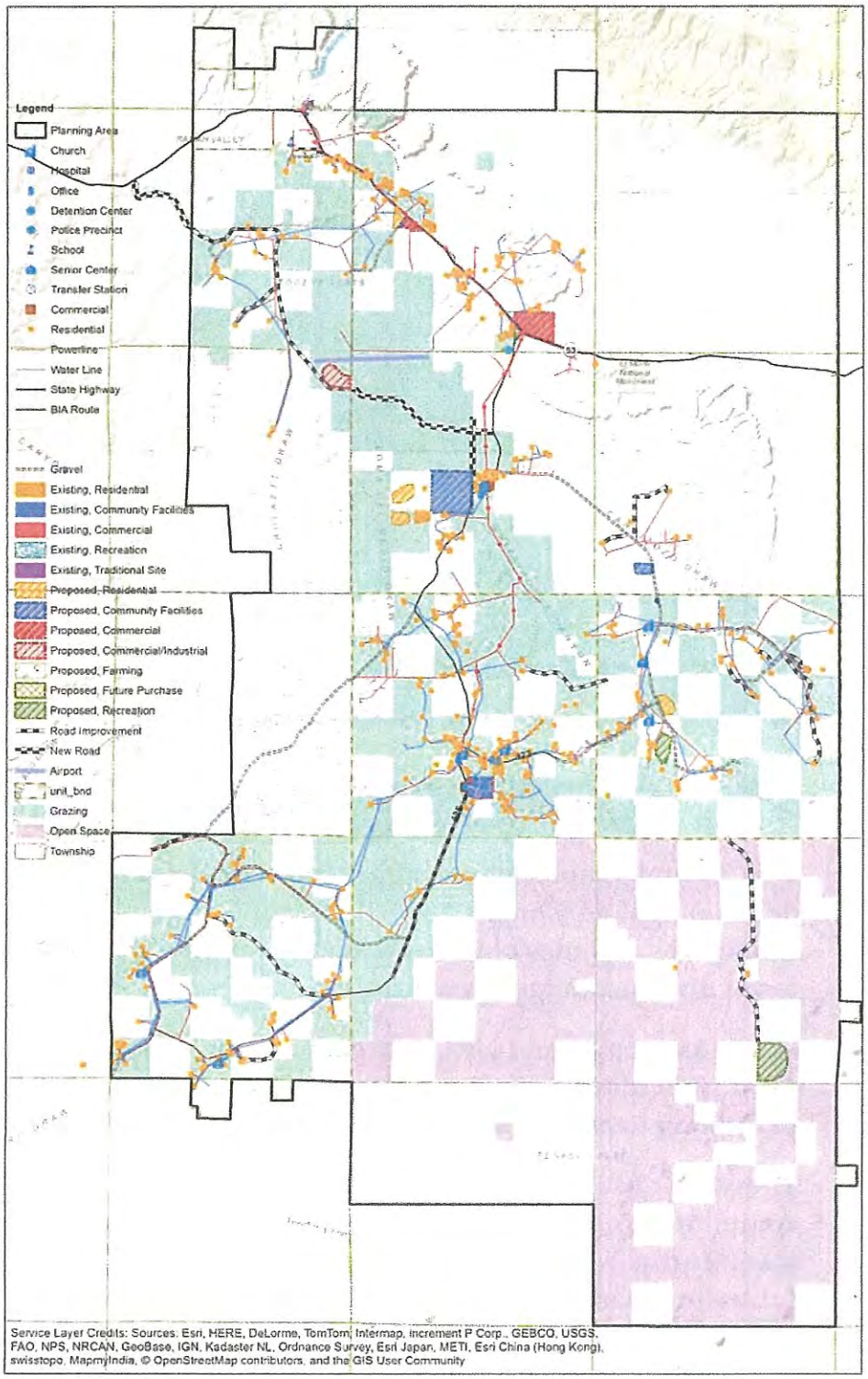
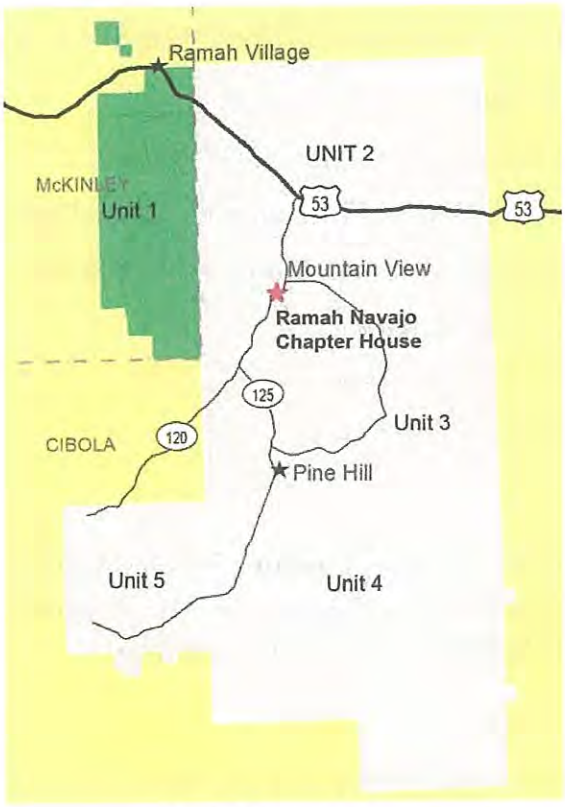


Figure 29. Unit 1 Location Map



Unit 1 Land Use

OVERVIEW

Unit 1 is one of five land units in Ramah Navajo Chapter. Located in the northwest corner of the planning area south of Ramah Village as shown in **FIGURE 29**. It is the only Unit within McKinley County.

LAND BASE

Unit 1 encompasses 28,363 acres, however only 52.7 percent is under Chapter/Navajo jurisdiction.

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 **FIGURE 30** 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 (**FIGURE 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 scattered throughout the Unit.
- Commercial: Ramah Navajo School Board, Inc. purchased 3.5 acres with the Ramah Navajo Trading Post (old trading post) located in the Ramah Village along Highway 53. Ramah Village is not part of Ramah Navajo. It is a small community with a post office, schools, and other facilities.
- Community Facilities: The old BIA dorm property, 17.5 acres, is located on the east side of Ramah Village. One of the buildings was turned into a preschool/headstart; however, it has been vacant. There is a walking trail on the old dorm property.
- Transportation: Highway 53 crosses in the north end and northeast corner of Unit 1. Highway 53 serves as the major access road. All other roads within Unit 1 are gravel and dirt roads.
- Windmills: One (1) windmill west of Dog Lake.
- Grazing: Ranching, sheepherding and livestock grazing occur throughout. Grazing permits and land leases are issued by the Chapter through its 638 program

Future Land Use

The needs and desires relating to land use expressed by community members for Unit 1 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

Proposed Developments for Unit 1:

Residential and Farming – ***FIGURE 32:***

- proposed residential housing development south of BIA Route 130; this could be scattered homesites or a subdivision type housing development tract
- proposed farming north of BIA Route 130

Trading Post and Old BIA Dorm – ***FIGURE 33:***

- Commercial: re-opening Ramah Trading Post
- Community Facility: develop a training/education center on the former BIA dormitory site in the village of Ramah (MAP 16)

Figure 30. Unit 1 Land Status Map

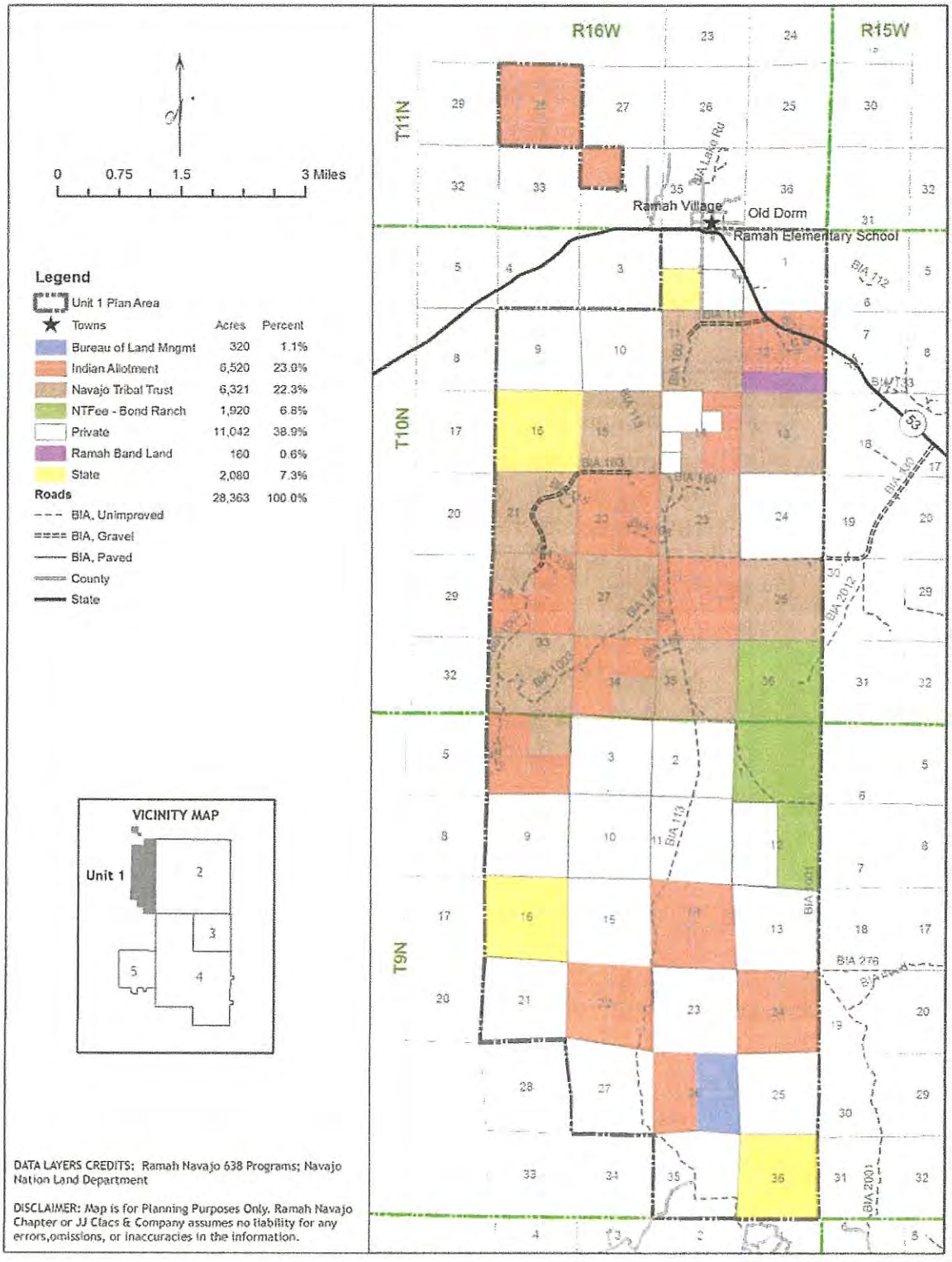


Figure 31. Unit 1 Land Use Plan

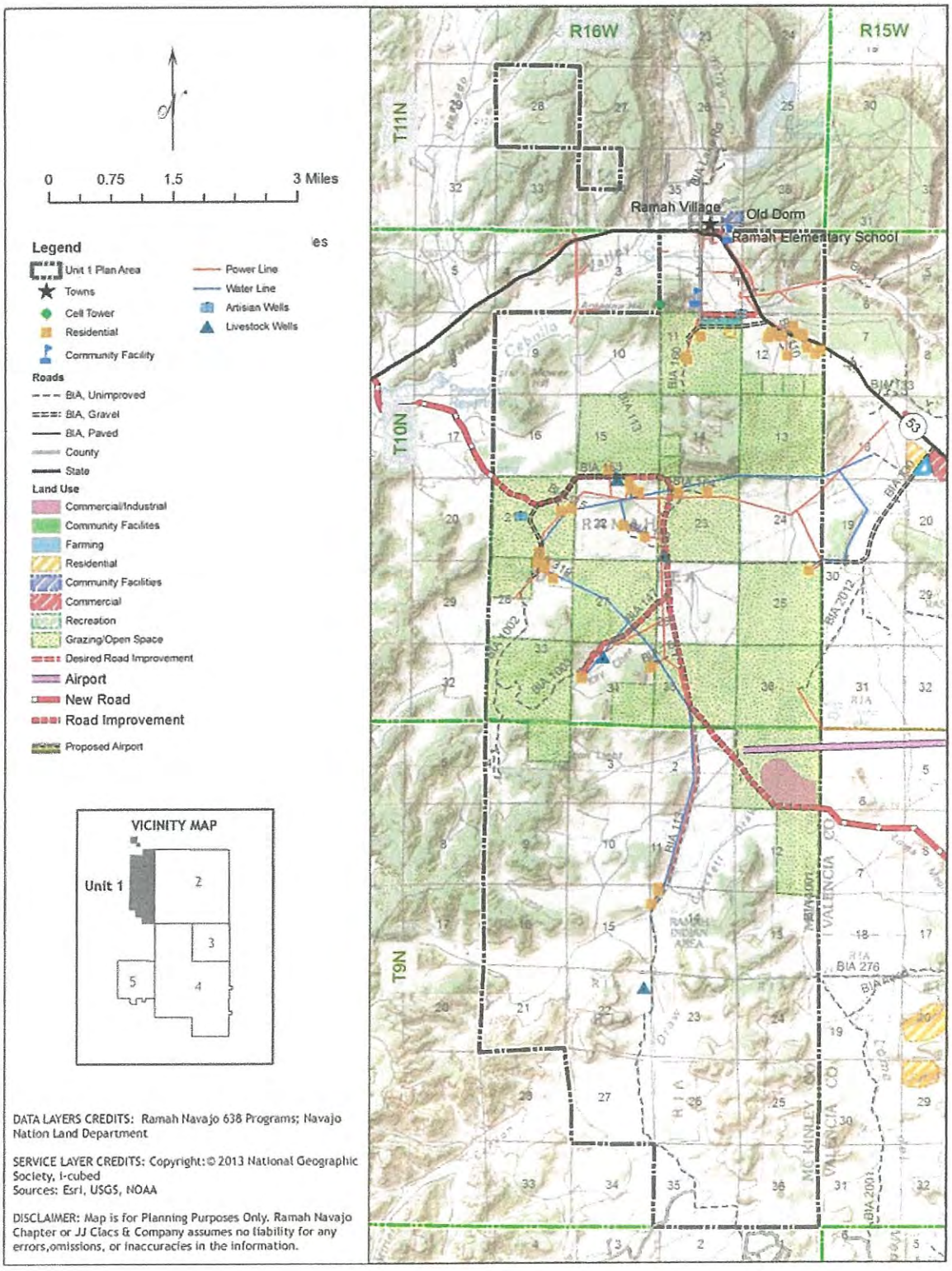


Figure 32. Unit 1 Proposed Residential & Farming

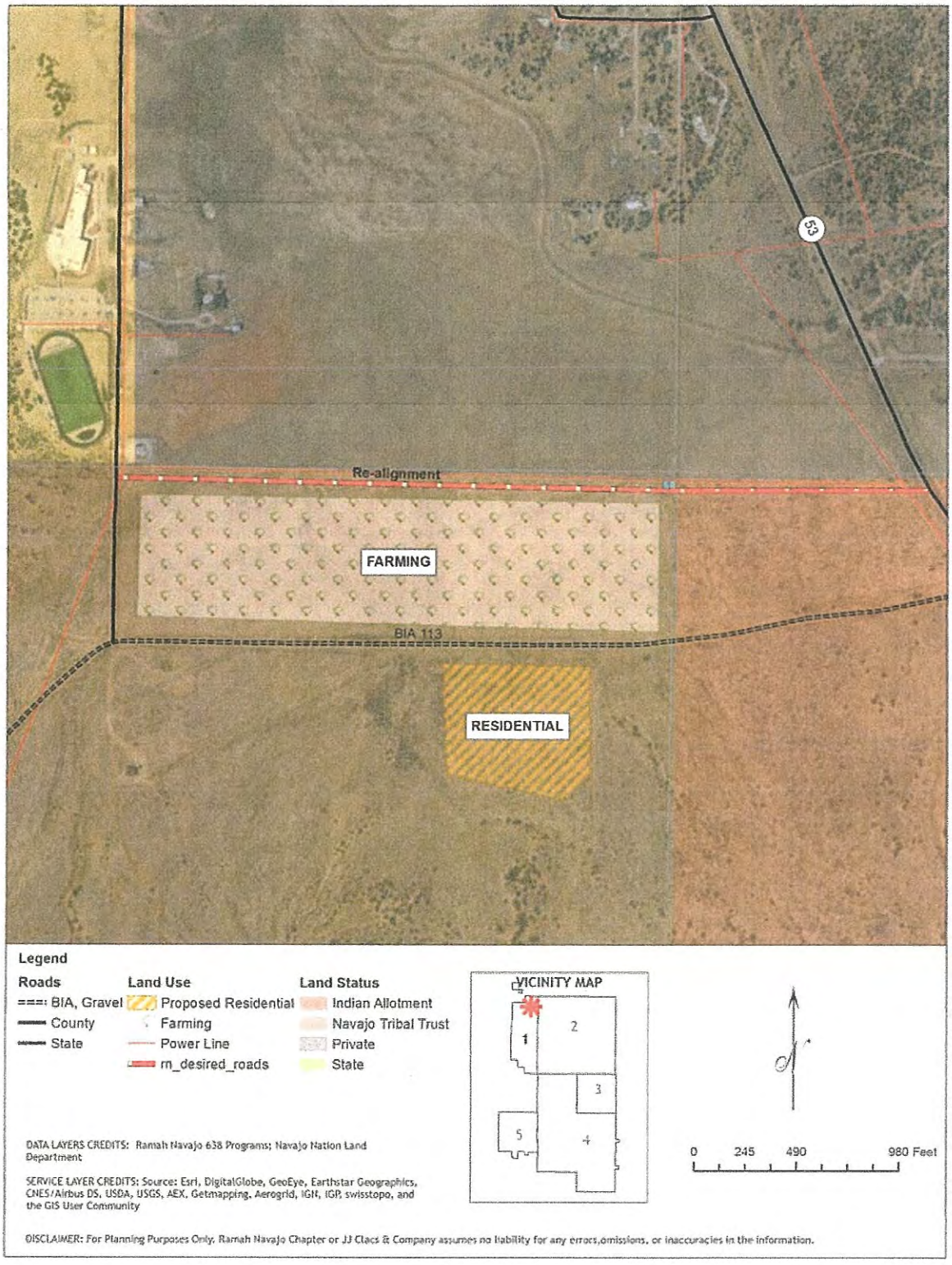


Figure 33. Unit 1 Trading Post & Old BIA Dorm

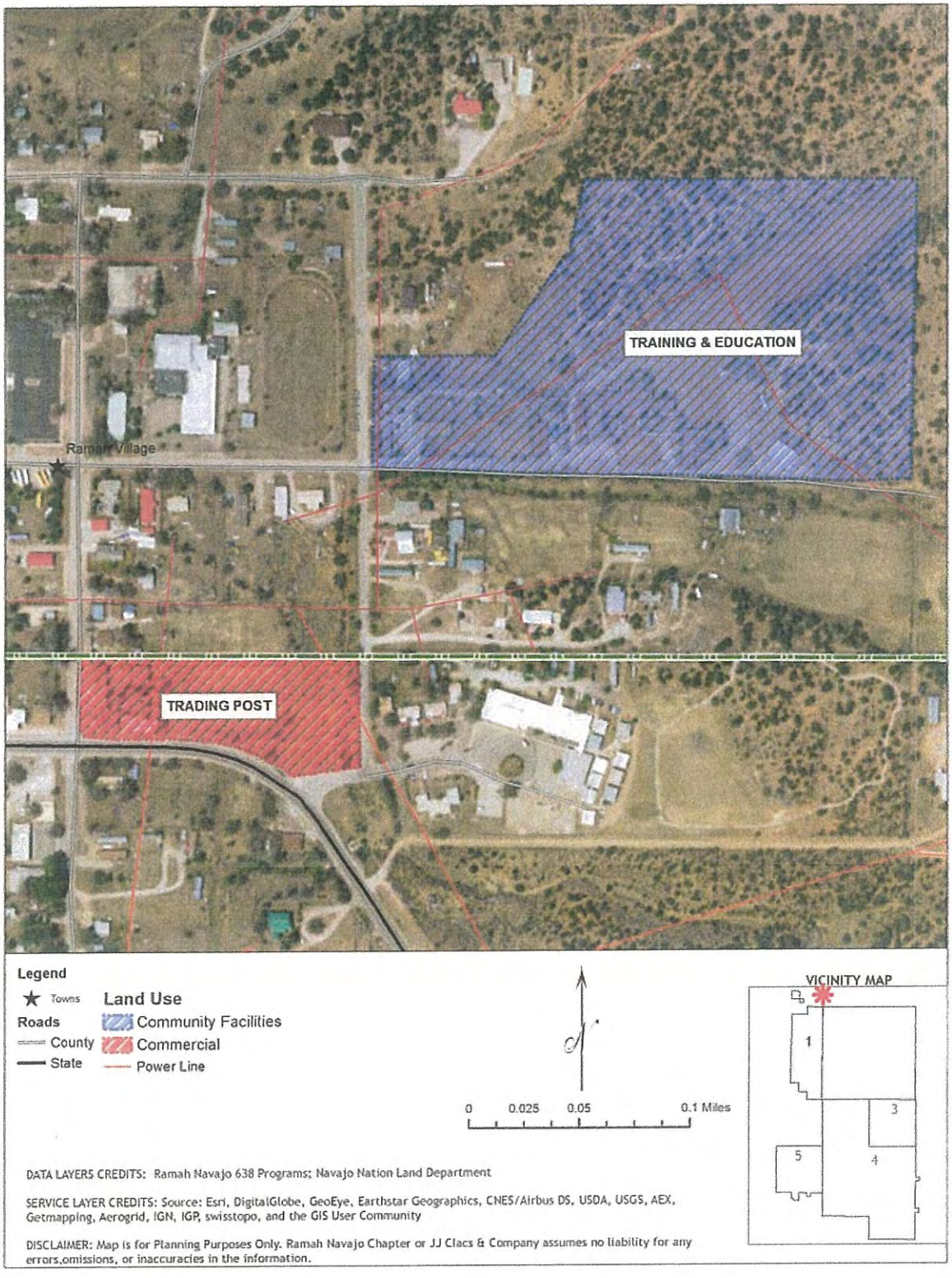
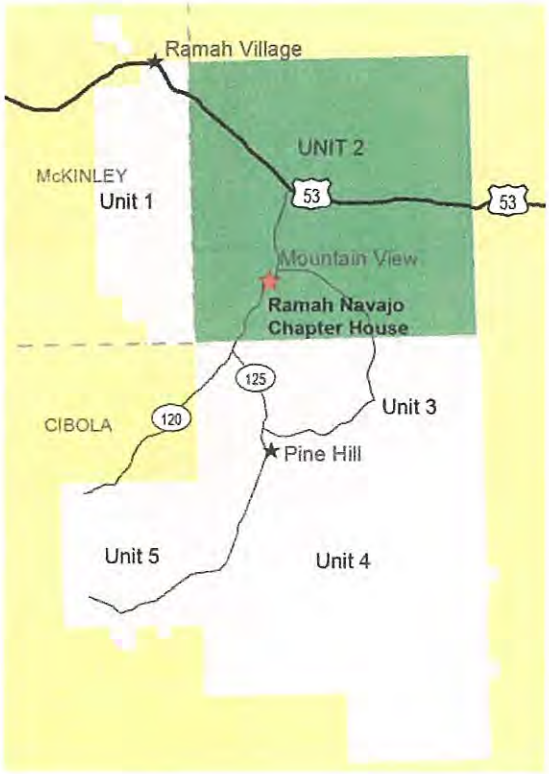


Figure 34. Unit 2 Location Map



Unit 2 Land Use

OVERVIEW

Unit 2 is one of five Units in the Ramah Navajo Chapter. Unit 2 is in the upper northeast corner of the planning area as shown in **FIGURE 34**. The unit is square approximately 12 miles by 12 miles and within Cibola County.

LAND BASE

Unit 2 encompasses 92,528 acres, however only 29.4 percent is under Chapter/Navajo jurisdiction.

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 for Unit 2 **(FIGURE 35)** shows the ownership or management status of the land within Unit 2. 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 **(FIGURE 36)** 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 mostly in the western half of Unit 2. Navajo Housing Authority has subdivisions at Sunset Village. Pine Meadows housing subdivision in the southeast quadrant 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. Cedar Bluff area has a detention center.
- Tourism: Nearby Attractions include El Morro National Monument, Inscription Rock
- Commercial: Cedar Bluff Development is located at the junction of Highway 53 and BIA Route 125
- Nearby Businesses: Lewis Trading Post located along Highway 53 near Sunset housing, Ramah Village to the north and Candy Kitchen to the southwest

- Grazing: Ranching, sheepherding and livestock grazing occur throughout. Grazing permits and land leases are issued by the Chapter through its 638 program
- Oso Vista Ranch project. Broadband Internet
- Wells and Windmills: 4 wells and 1 windmill

Future Land Use

The needs and desires relating to land use expressed by community members for Unit 2 include:

- Improve dirt and gravel roads
- Improve roads to all homes for safety and accessibility
- Develop new roads because private lands have been fenced
- Solar power for windmills
- Purchase private lands that are for sale and create economic, tourism or community development
- Extend fiber optic to family homes located along the state highway
- Develop economic development on the Cedar Bluff tract
- 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/wastewater upgrades: renew the sewer lines at Mountain View and rebuild the lift station
- Build a governmental center/complex - offices, commercial kitchen, meeting rooms, senior center, wellness center, veterans center, training/computer center, and warehouse
- Plan and design a master plan for the Bond Ranch – Section 21 development site

<u>Proposed Developments for Unit 2:</u>

*Bond Ranch – **FIGURE 37**:*

- Maintain Bond Ranch minus Section 21 as a ranch for livestock grazing with limited development
- Proposed thoroughfare (road) across Bond Ranch
- Explore feasibility of an airport facility and a nearby development tract for commercial or other land uses **(FIGURE 38)**

*Bond Ranch Section 21 – **FIGURE 39:***

- 640 acres located west of existing chapter house development area
- Mixed use development concept plan **(FIGURE 40)**
- community facilities (i.e. offices for consolidated local government, library, computer center, new chapter house, cultural center, museum, youth center, fine arts center, community college, senior center, multi-use center, Veterans center/park)
- economic development (i.e. stores, bed and breakfast, golf course)
- recreational activities (i.e. trails, picnic facilities, sports complex)
- housing (i.e. unique residential lots, apartments, transitional, ranch type lots)
- veterans park or monument

*Cedar Bluff – **FIGURE 41:***

- 400 acres owned by Ramah Navajo School Board located east of Highway 53
- economic development (i.e. resort, tourism and eco tourism)
- additional community facilities east of detention center
- additional housing west of detention center
- buffer to existing scatter housing; incorporate this existing residential development into a cohesive master plan for the tract

*Dog Lake – **FIGURE 42:***

- located along Highway 53, this site proposes commercial and residential development alongside a traditional site as depicted on a conceptual plan in **FIGURE 43**

*Community Cemetery – **FIGURE 44:***

- known as the Brownville site along BIA122
- existing cultural sites in the northeast corner
- existing burial plots towards the middle and west end of the tract
- proposed community cemetery

Figure 35. Unit 2 Land Status Map

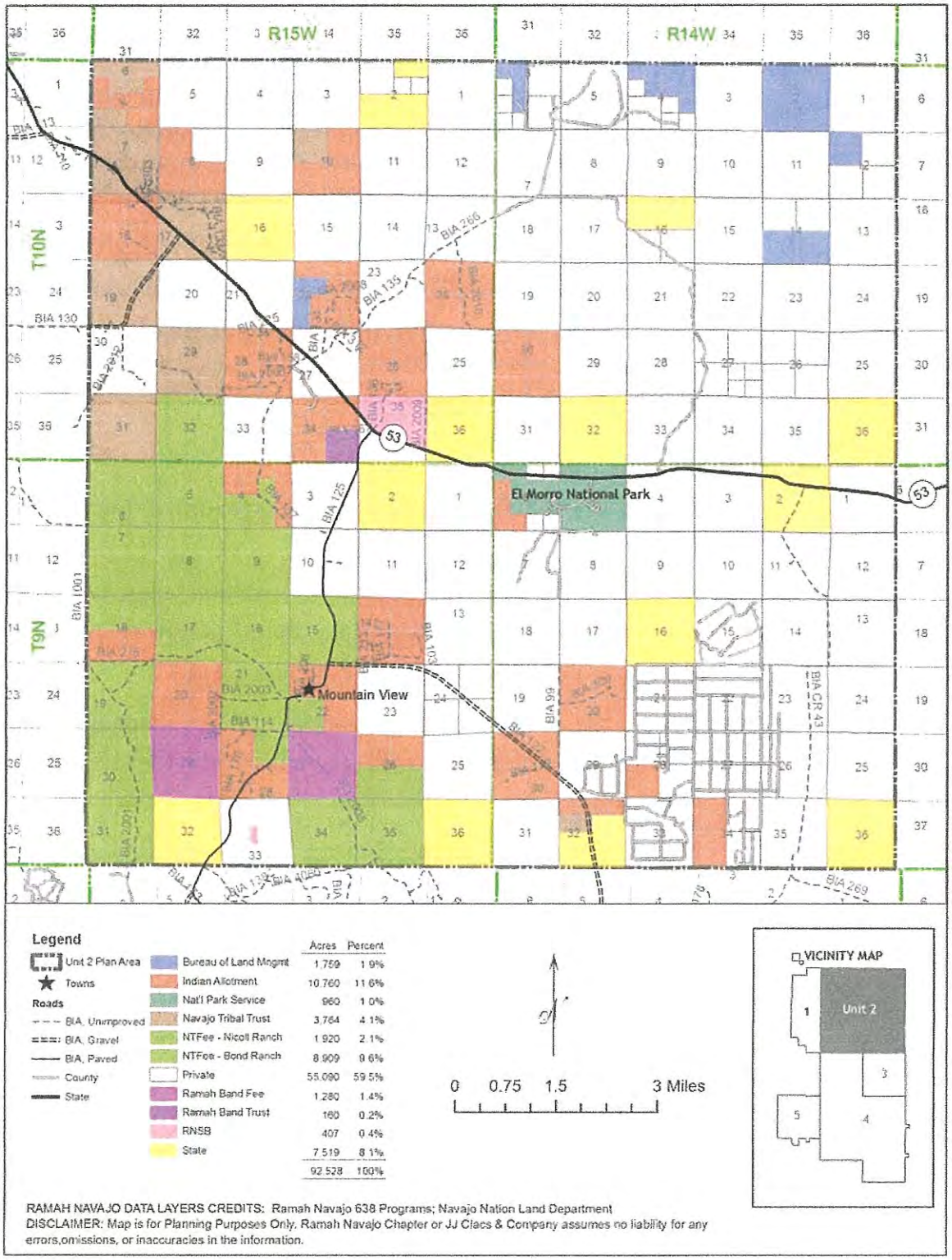


Figure 36. Unit 2 Land Use Plan

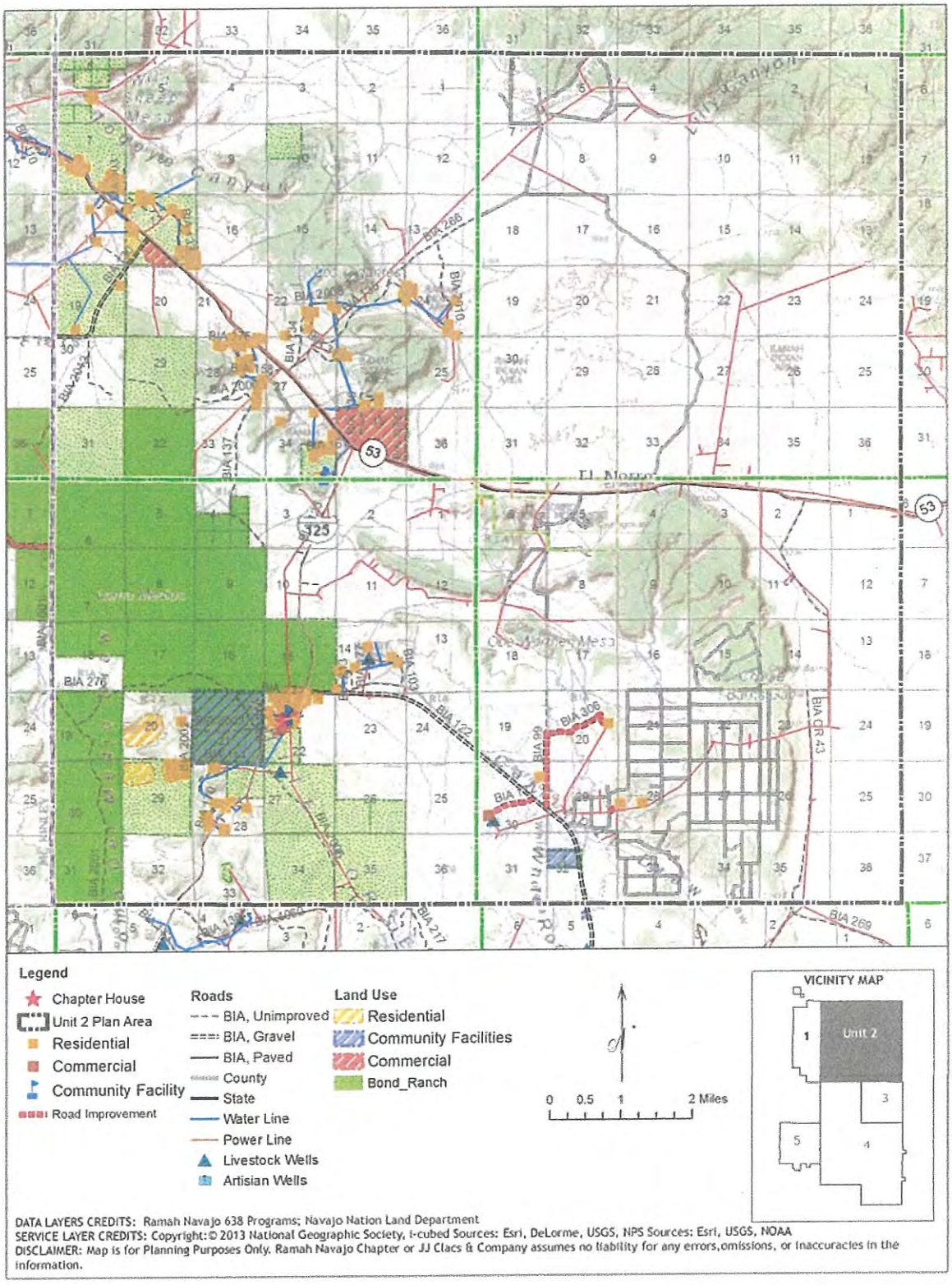


Figure 37. Bond Ranch Proposed Land Use

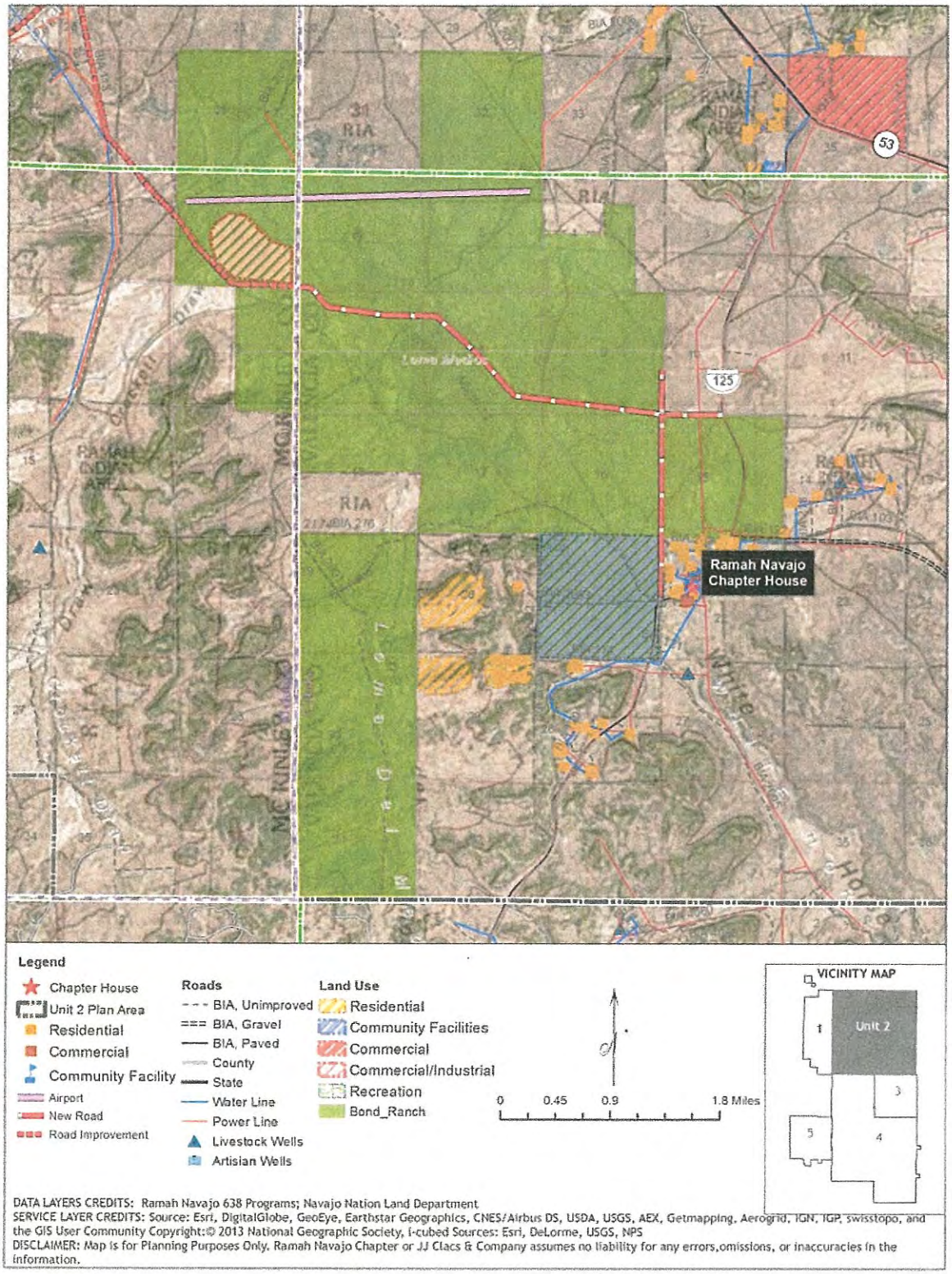


Figure 38. Bond Ranch Proposed Airport & Commercial

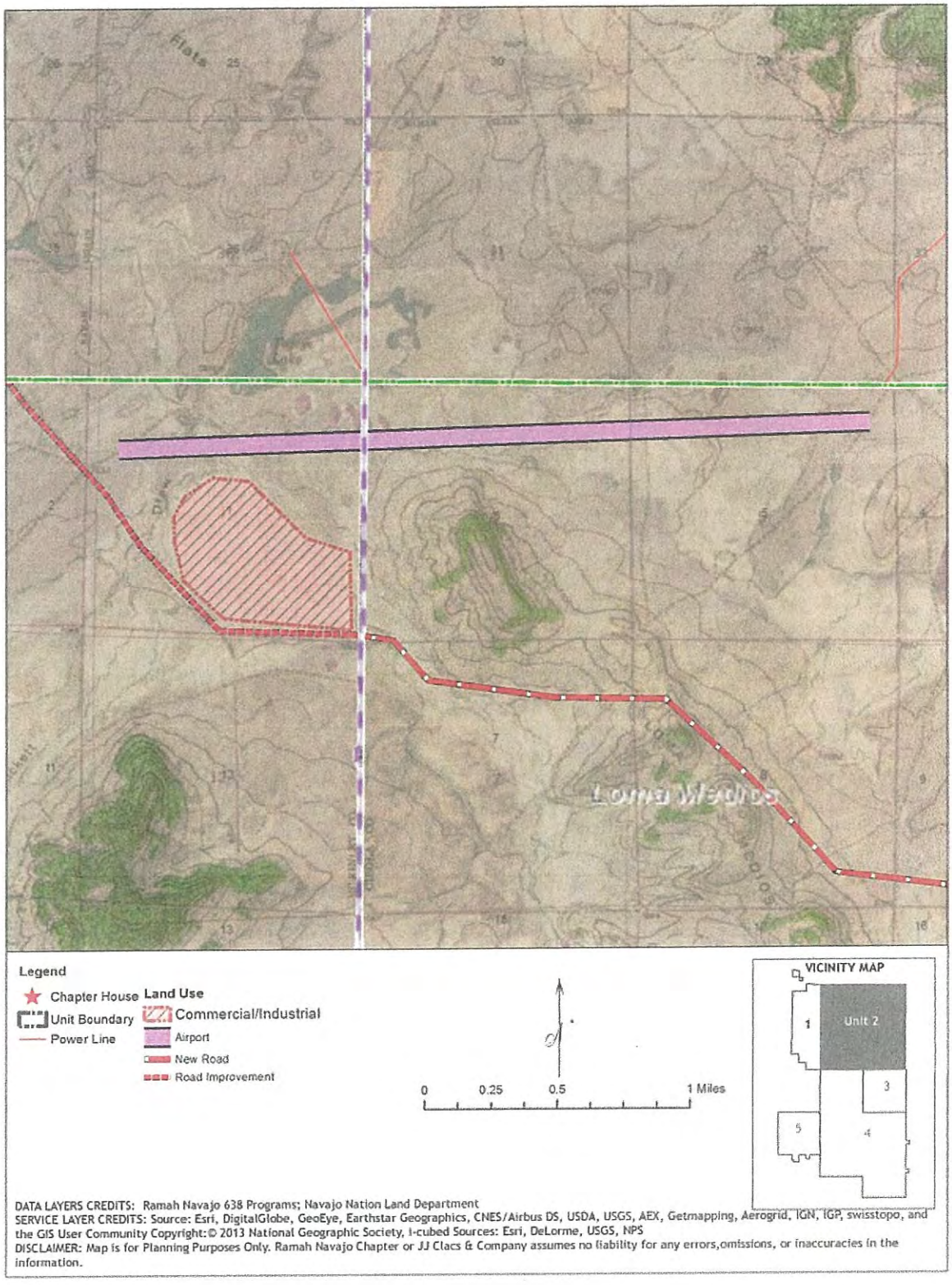


Figure 39. Section 21 Proposed Land Use

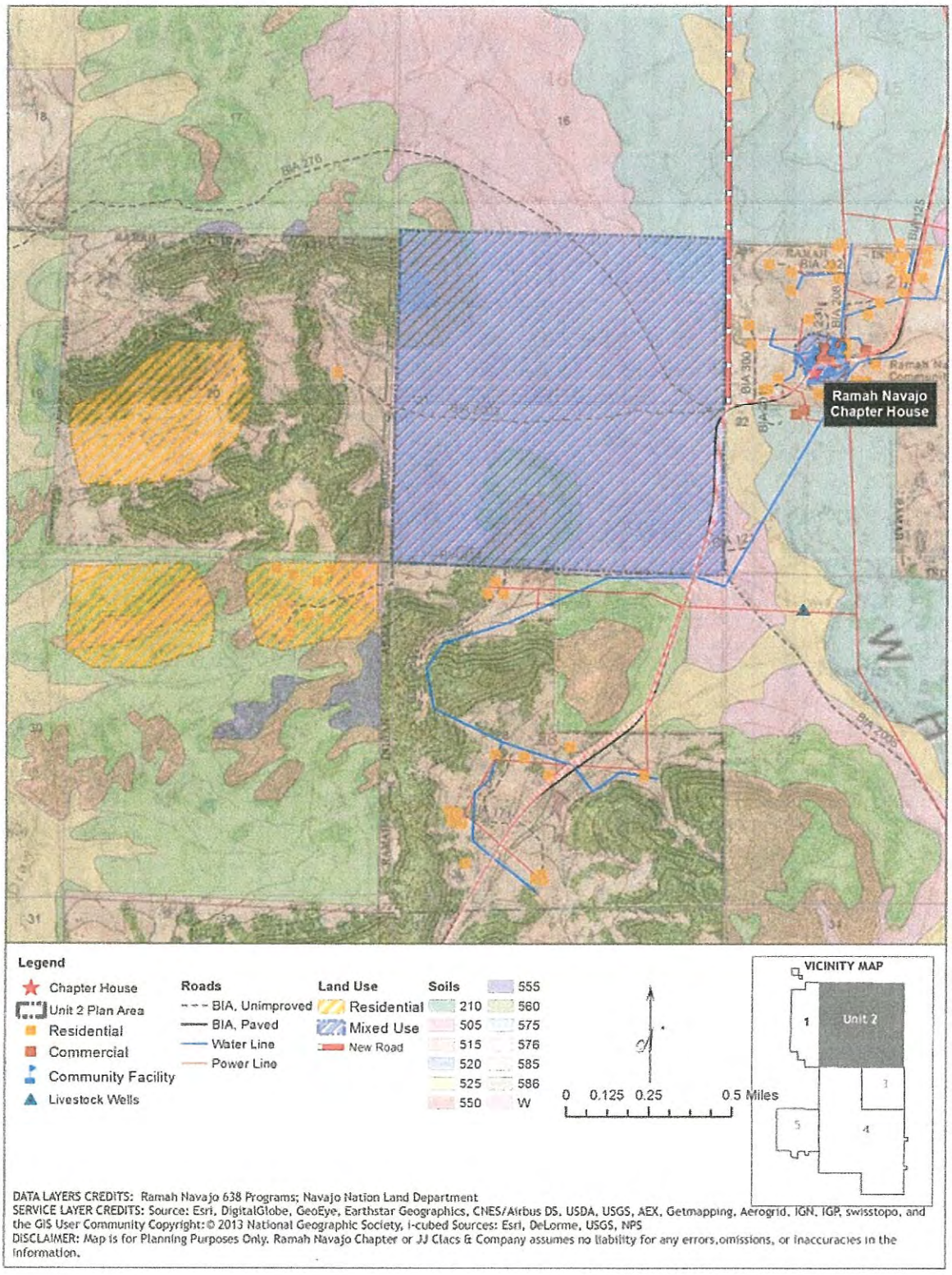


Figure 40. Section 21 Concept Plan

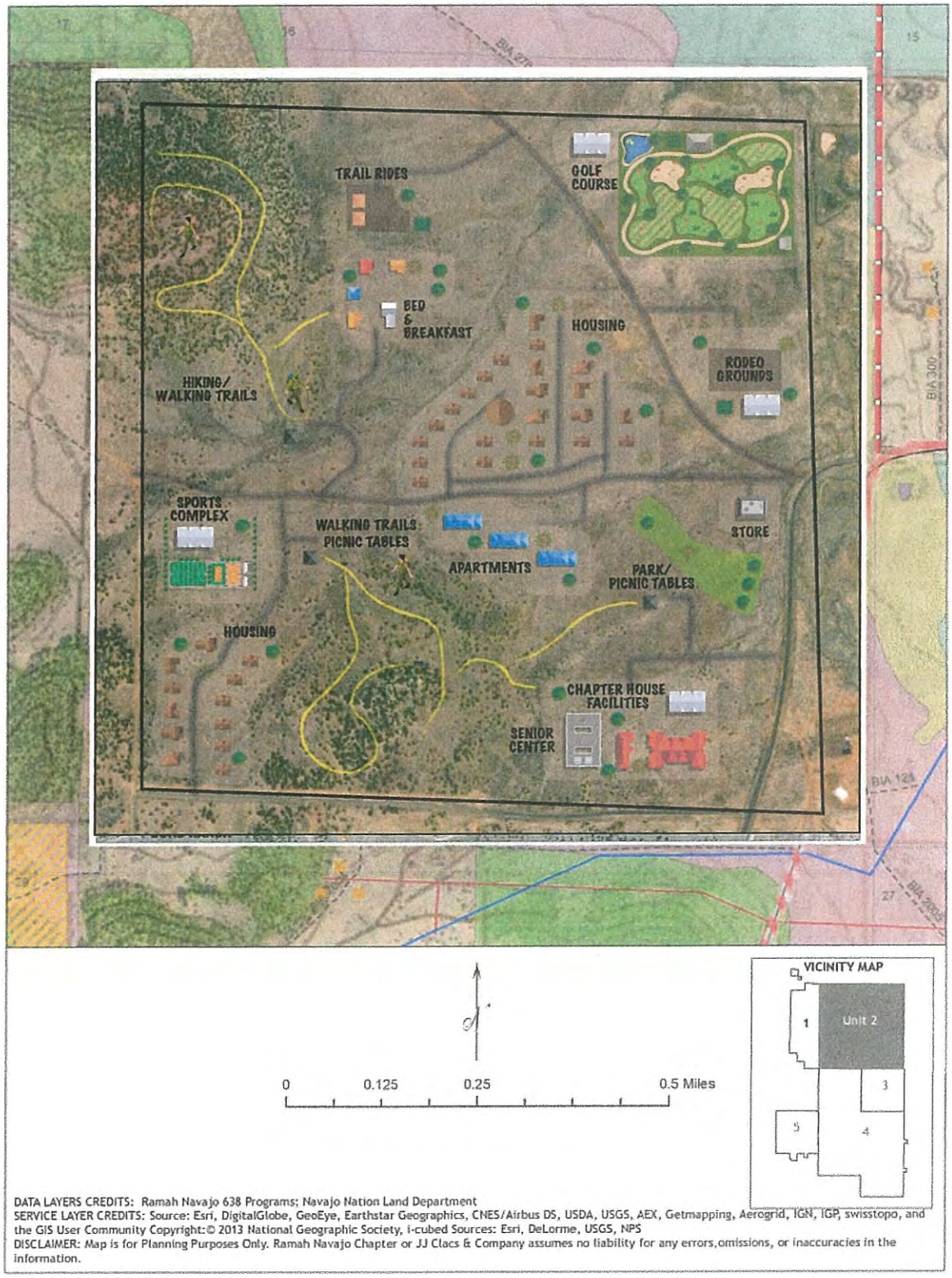


Figure 41. Cedar Bluff Proposed Land Use

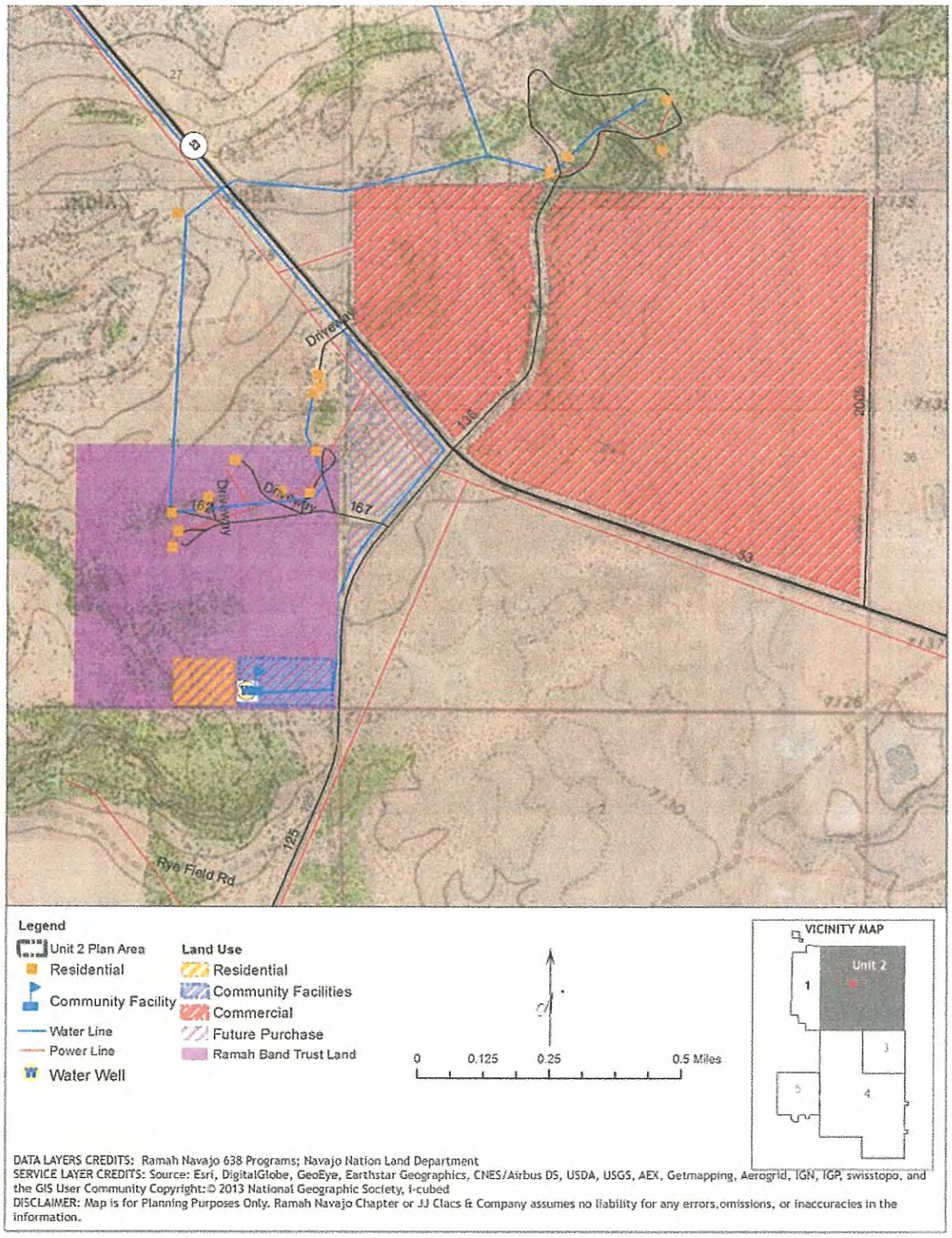


Figure 42. Dog lake Proposed Land Use

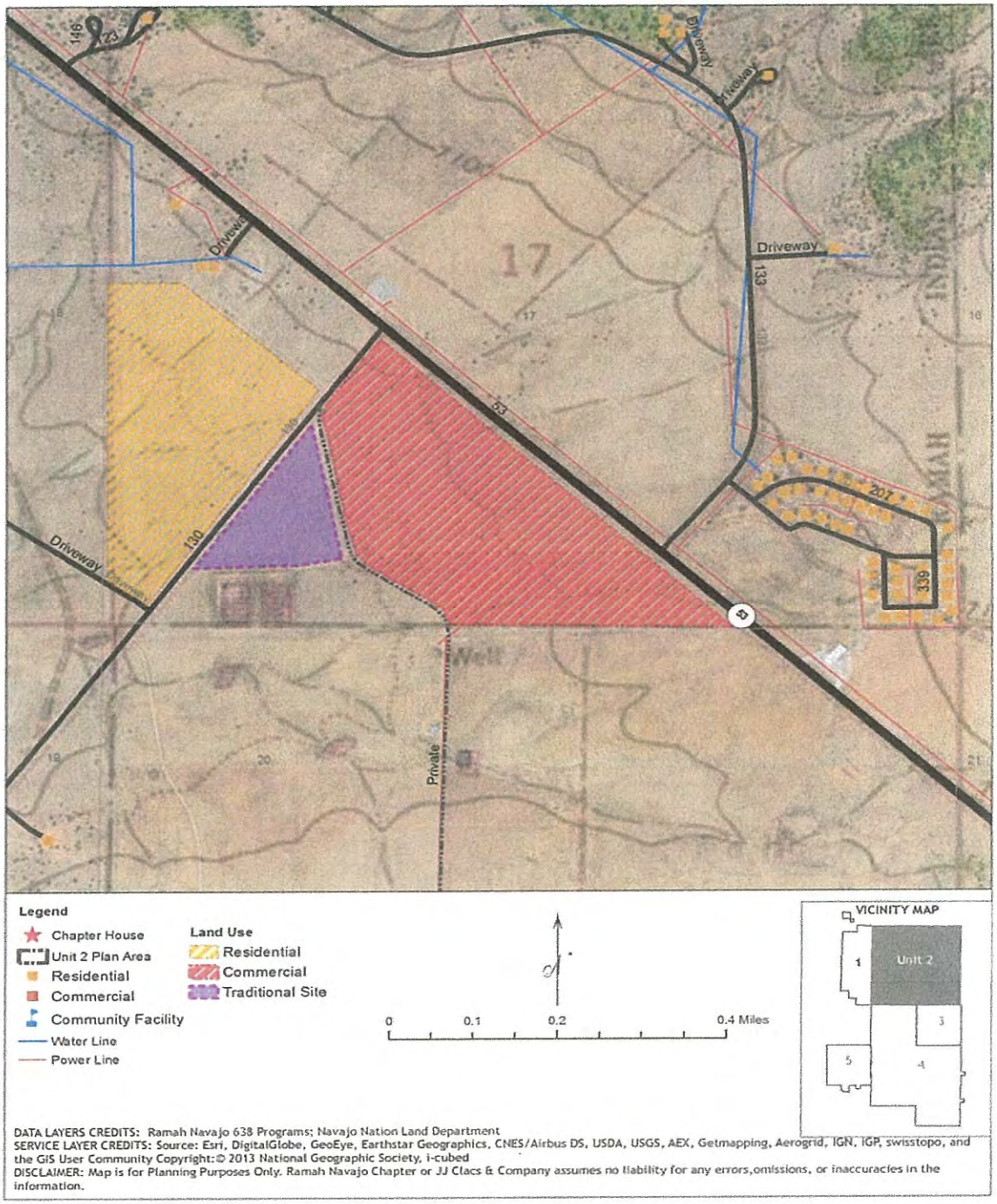


Figure 43. Dog Lake Concept Plan

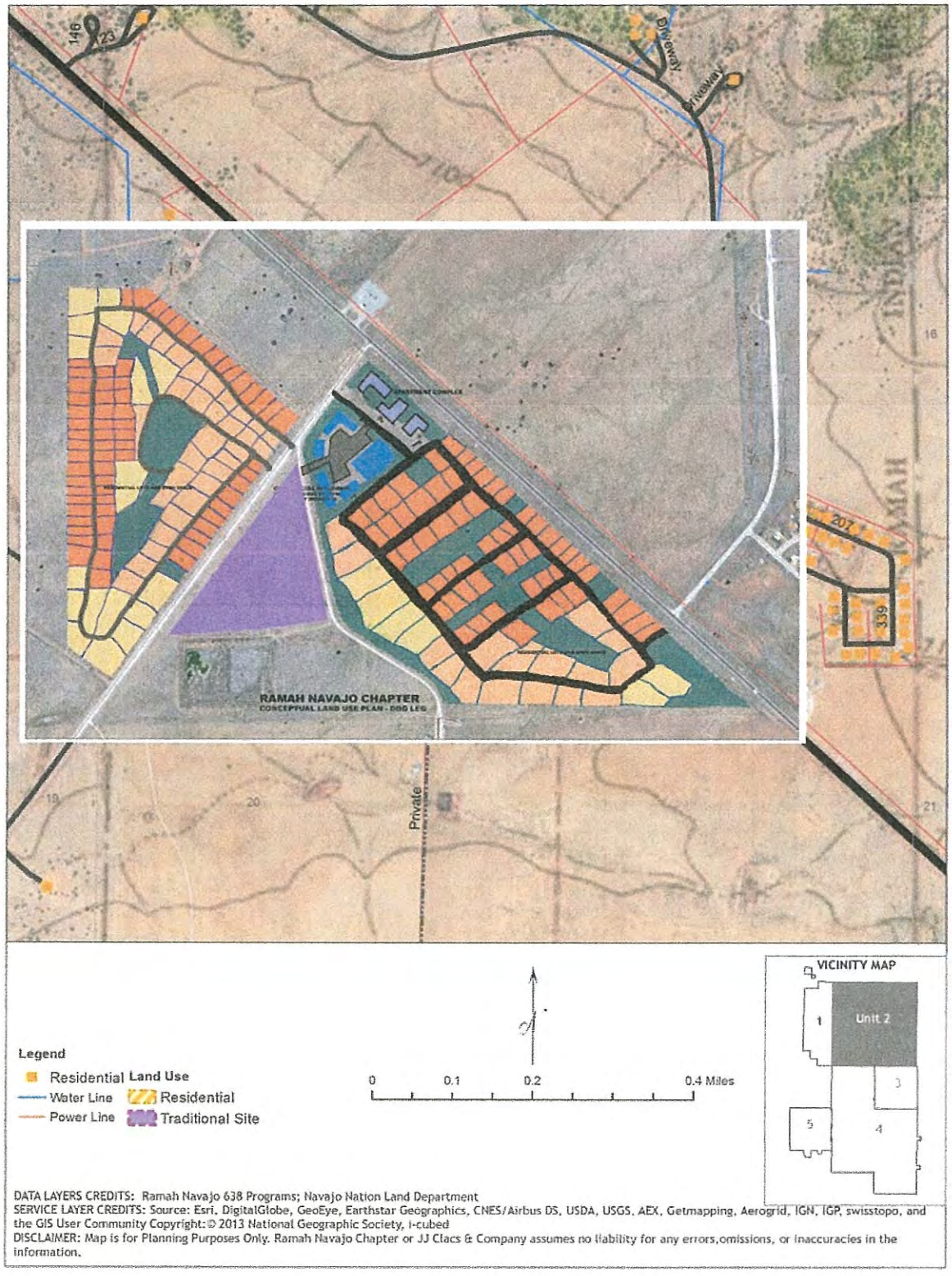


Figure 44. Proposed Community Cemetery

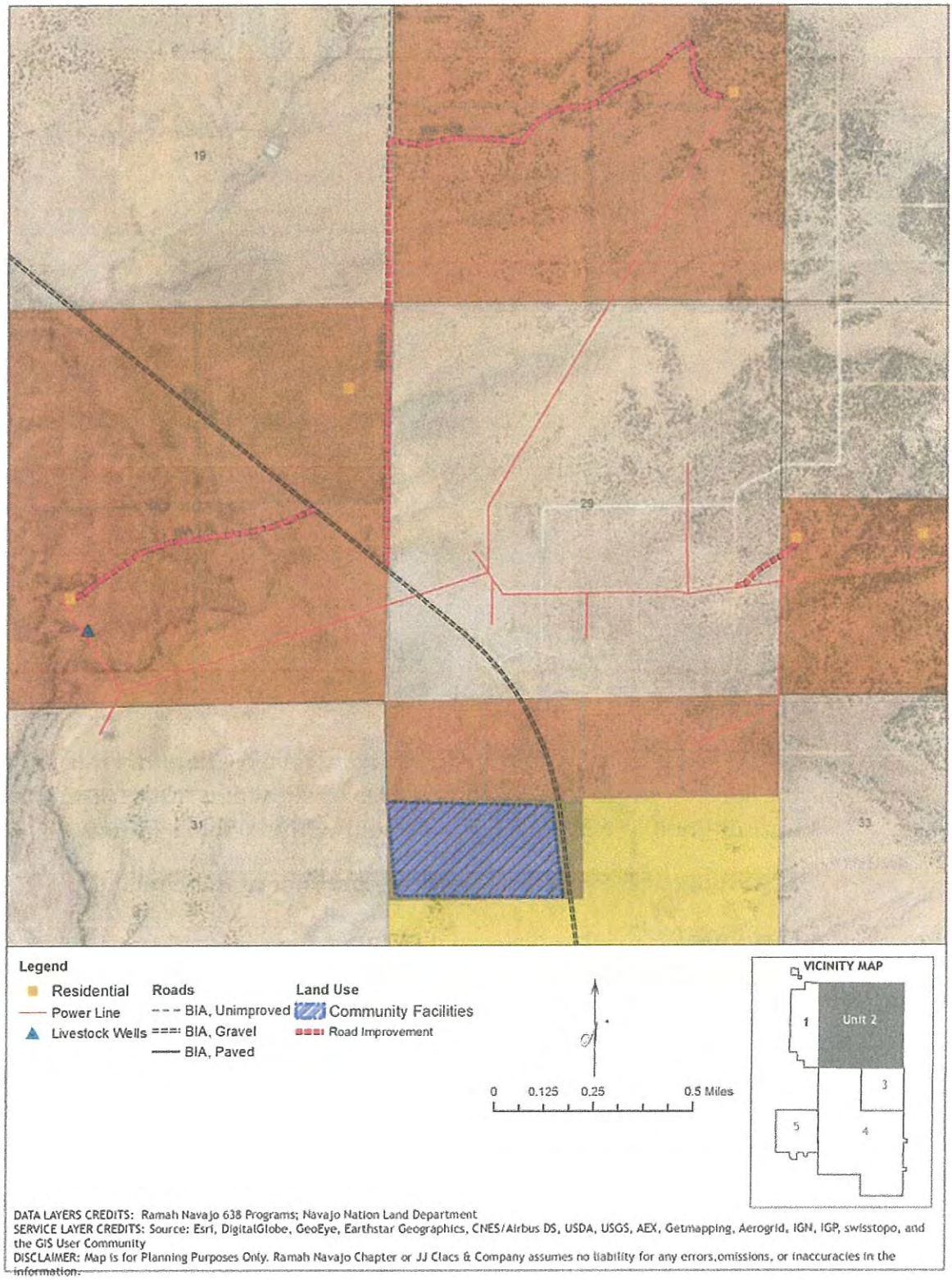
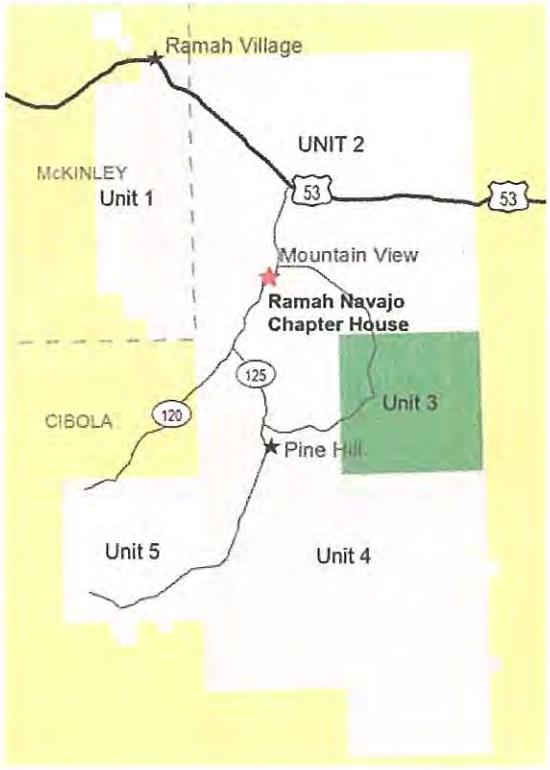


Figure 45. Unit 3 Location Map



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 45**. The unit is square approximately 6 miles by 6 miles and within Cibola County.

BIA Route 122 crosses the northwest corner of the Unit.

LAND BASE

Unit 3 encompasses 23,304 acres, of which 85.6 percent is under Chapter/Navajo jurisdiction.

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 **(FIGURE 46)** 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 – 8,433acres
- Navajo Tribal Trust – 11,513 acres
- State - 2,878 acres
- Private - 480 acres

LAND USE

The land use plan map **(FIGURE 47)** 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 occur throughout. Grazing permits and land leases are issued by the Chapter through its 638 program
- Infrastructure: Power and water lines is 2, 4 and 6 in.

Future Land Use

The needs and desires relating to land use expressed by community members for Unit 1 include:

- Gravel roads to homes
- Powerline and water line extensions
- Road improvement – Maria Road needs major and immediate improvement
- Windmills or other water points to support grazing for livestock and wildlife
- Preservation and conservation of land, wildlife, 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

Proposed Development for Unit 3:

Ozark Lake – ***FIGURE 48***

- Located on Section 20 west of BIA 143
- the lake is dry, but plans are to restore the watering point for livestock along with some recreational activities
- Proposed residential across the BIA 143
- Improve the BIA 143

Figure 46. Unit 3 Land Status Map

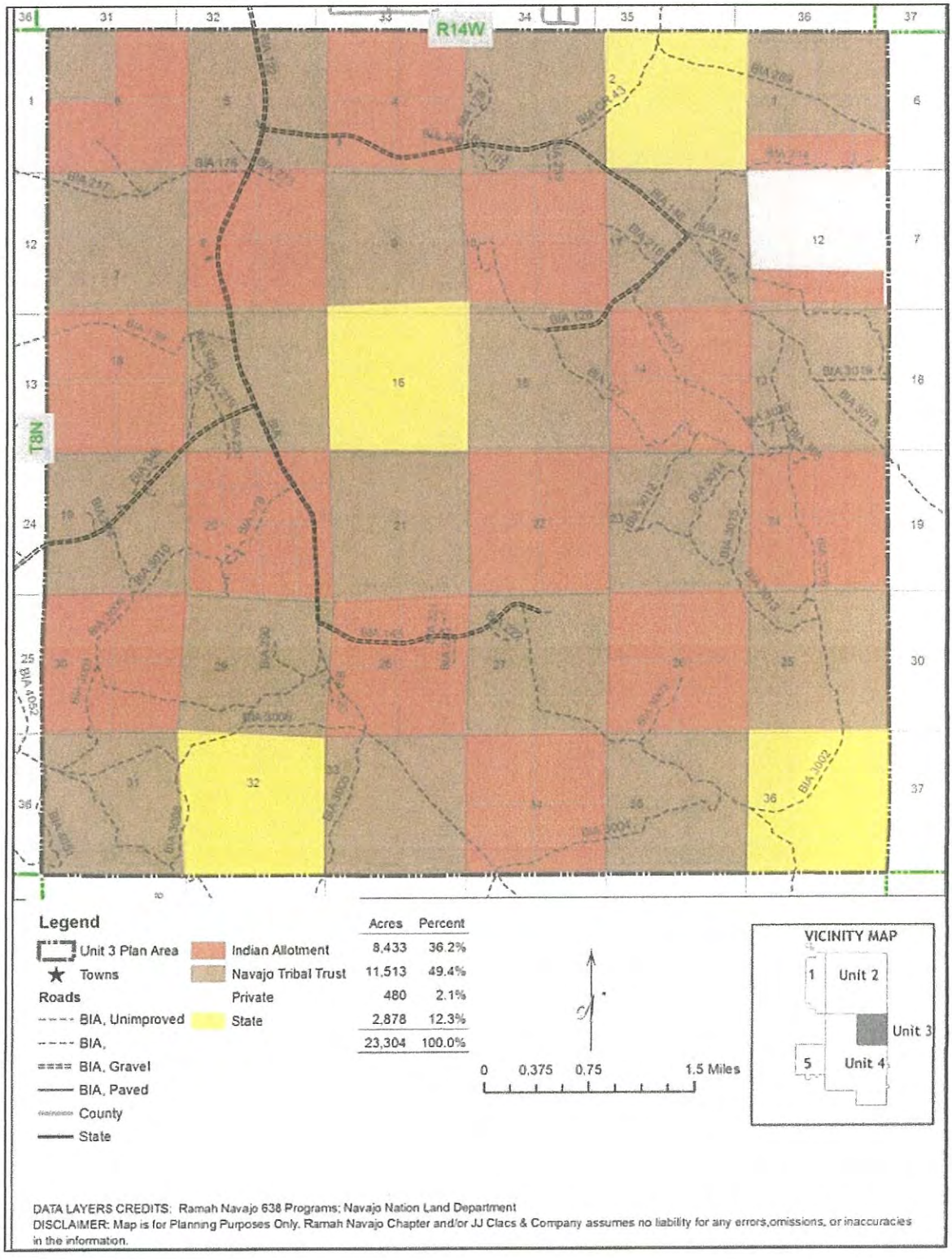


Figure 47. Unit 3 Land Use

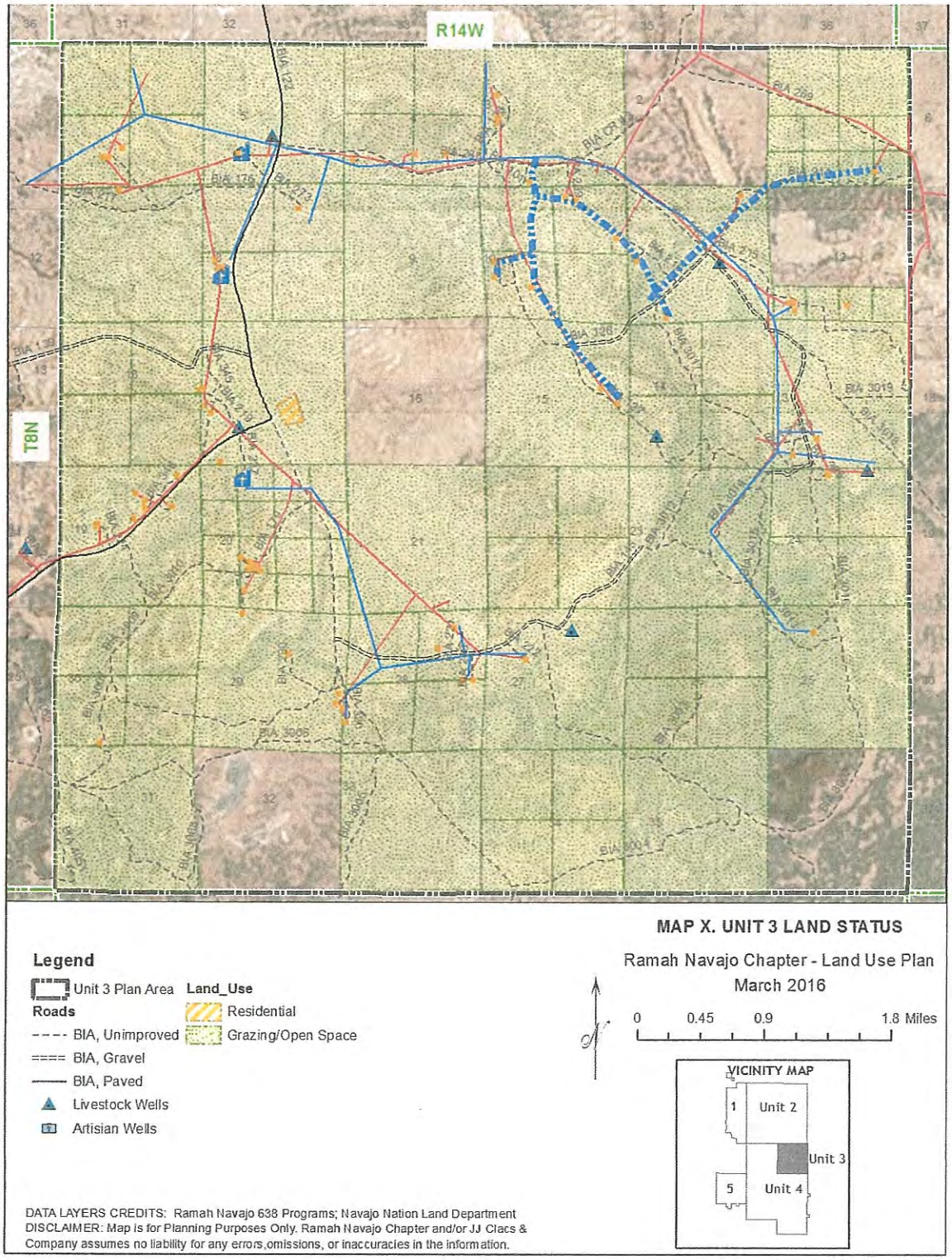


Figure 48. Ozark Lake Proposed Land Use

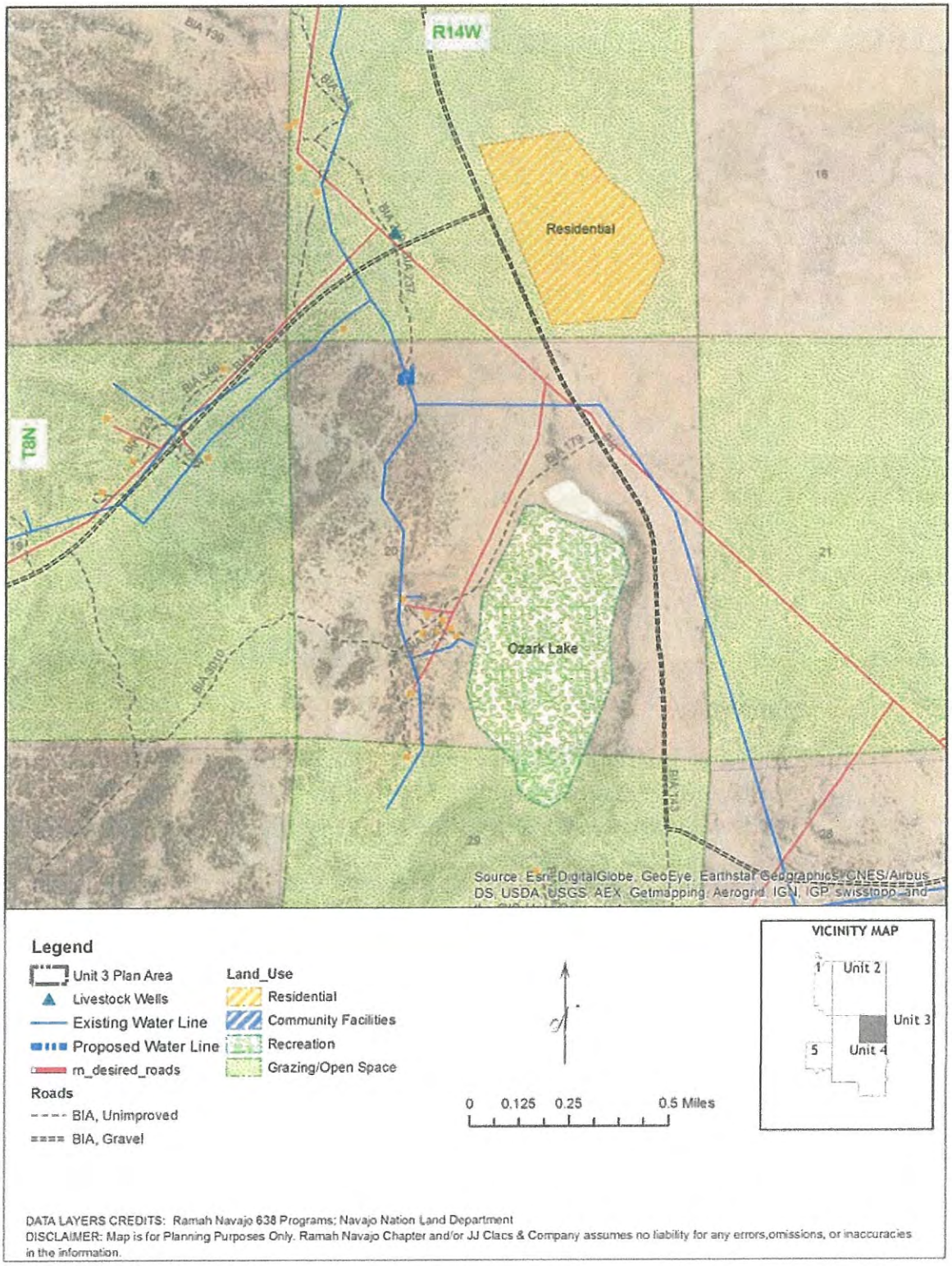
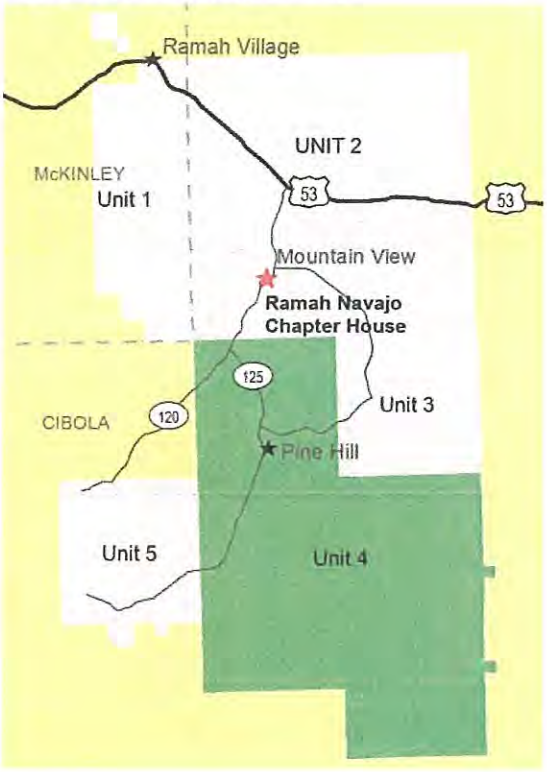


Figure 49. Unit 4 Location Map



Unit 4 Land Use

OVERVIEW

Unit 4 is in the southeast part of the planning area **(FIGURE 49)**. The unit is mostly long approximately 5 miles by 14 miles. BIA Route 125 is in the northwest part of the Unit. Pine Hill is in the northern quadrant of the Unit.

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

LAND BASE

Unit 4 encompasses 106,435 acres, however only 78 percent is under Chapter/Navajo jurisdiction.

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 (**FIGURE 50**) 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 (**FIGURE 51**) 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, laundromat
- Grazing: Ranching, sheepherding and livestock grazing occur throughout. Grazing permits and land leases are issued by the Chapter through its 638 program

Future Land Use

The needs and desires relating to land use expressed by community members for Unit 4 include:

- Gravel roads to all homes
- Water
- Windmills
- Need more windmills
- Earthen Dams – as part of conservation plan
- Protect open space area for grazing and wildlife

- Reservation boundary fencing
- Gravel pit

Proposed Development for Unit 4:

Pine Hill – **FIGURE 52**

- Fill-in development at Pine Hill for community facilities, commercial, recreational, and open space

Cerro Alto – **FIGURE 53**

- Environmentally friendly recreational development at the base of Cerro Alto (i.e. trails, picnic tables)

White Land – **FIGURE 54**

- Proposed conservation area for wildlife and plants

Figure 50. Unit 4 Land Status Map

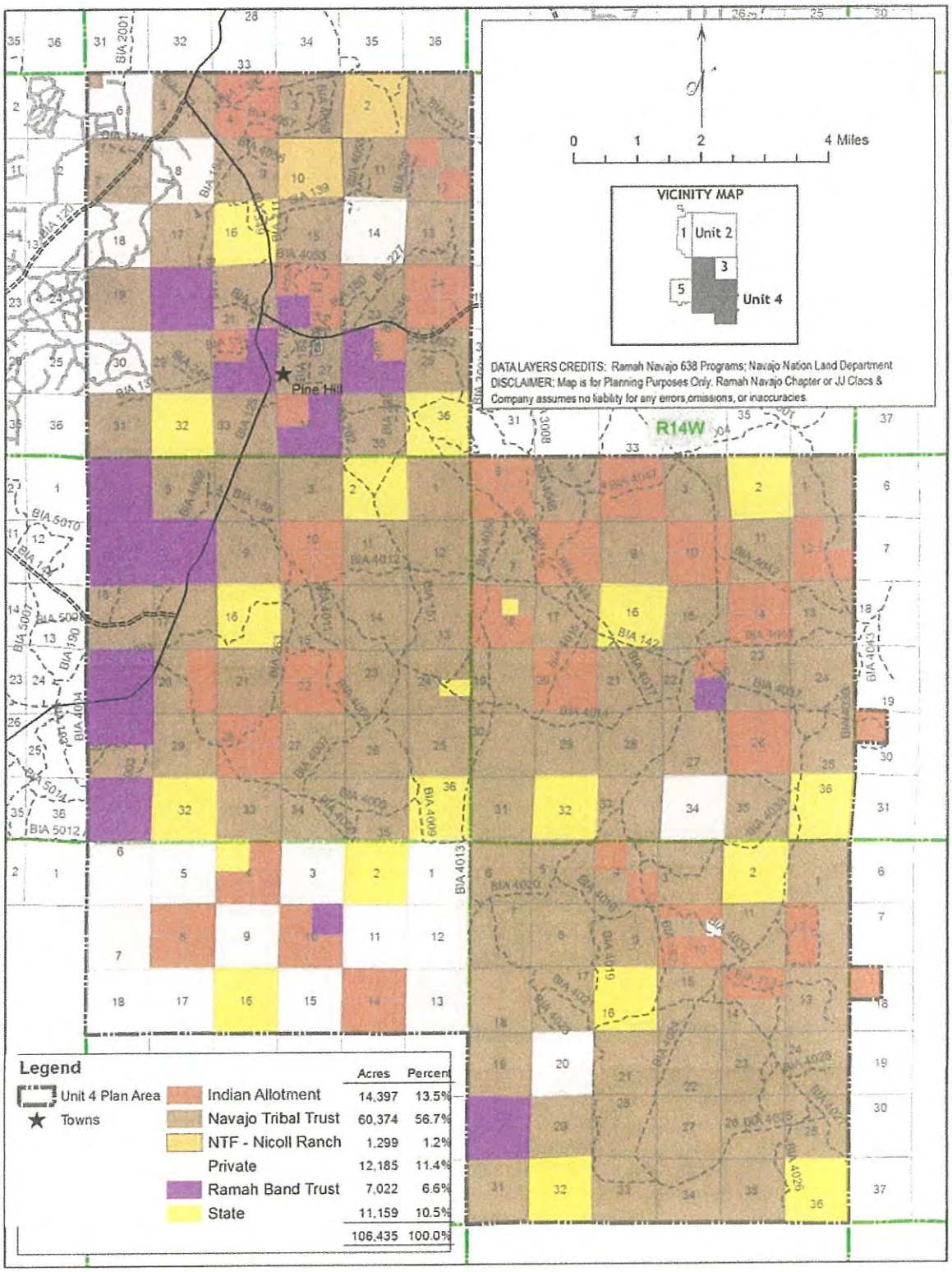


Figure 51. Unit 4 Land Use

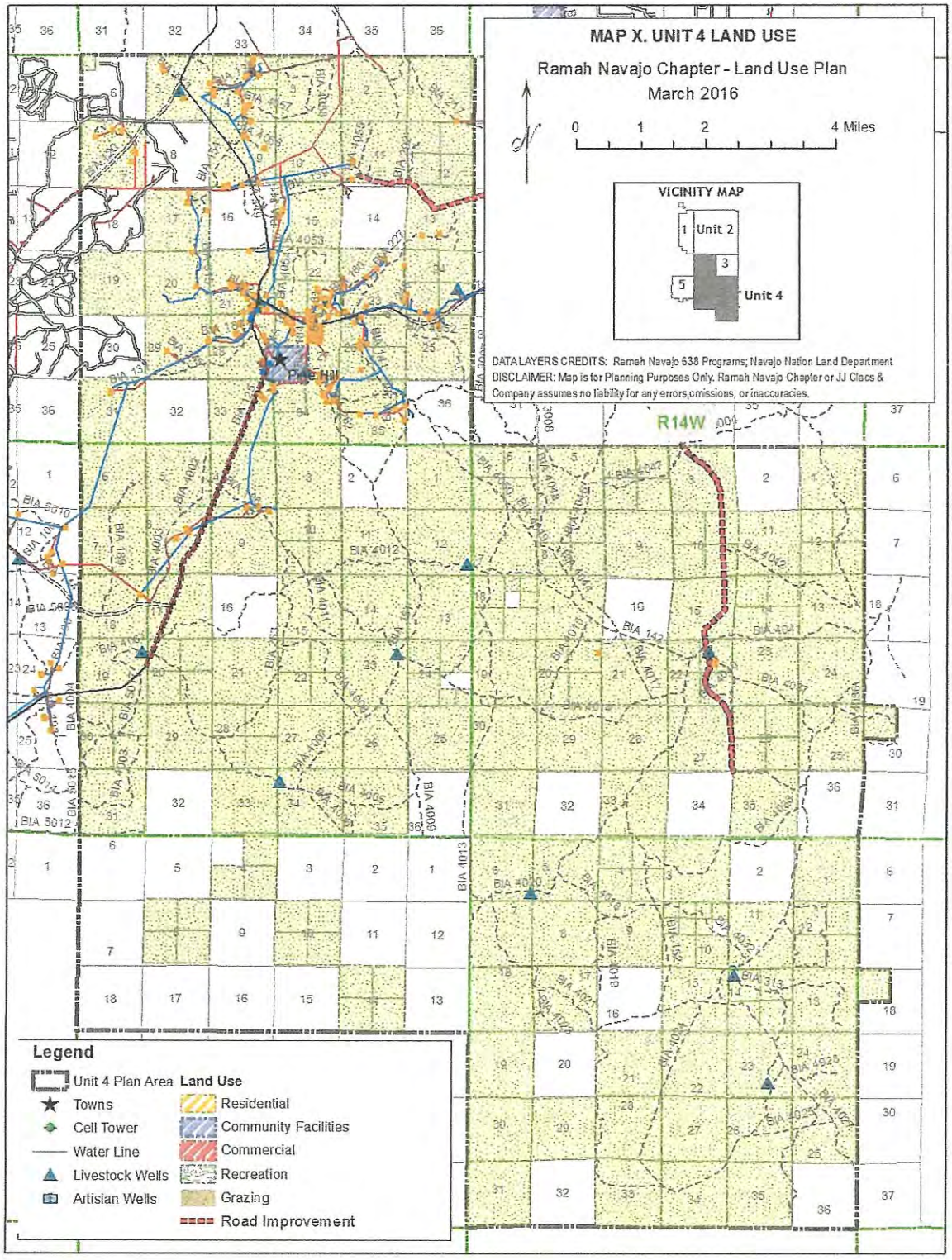


Figure 52. Pine Hill Land Use

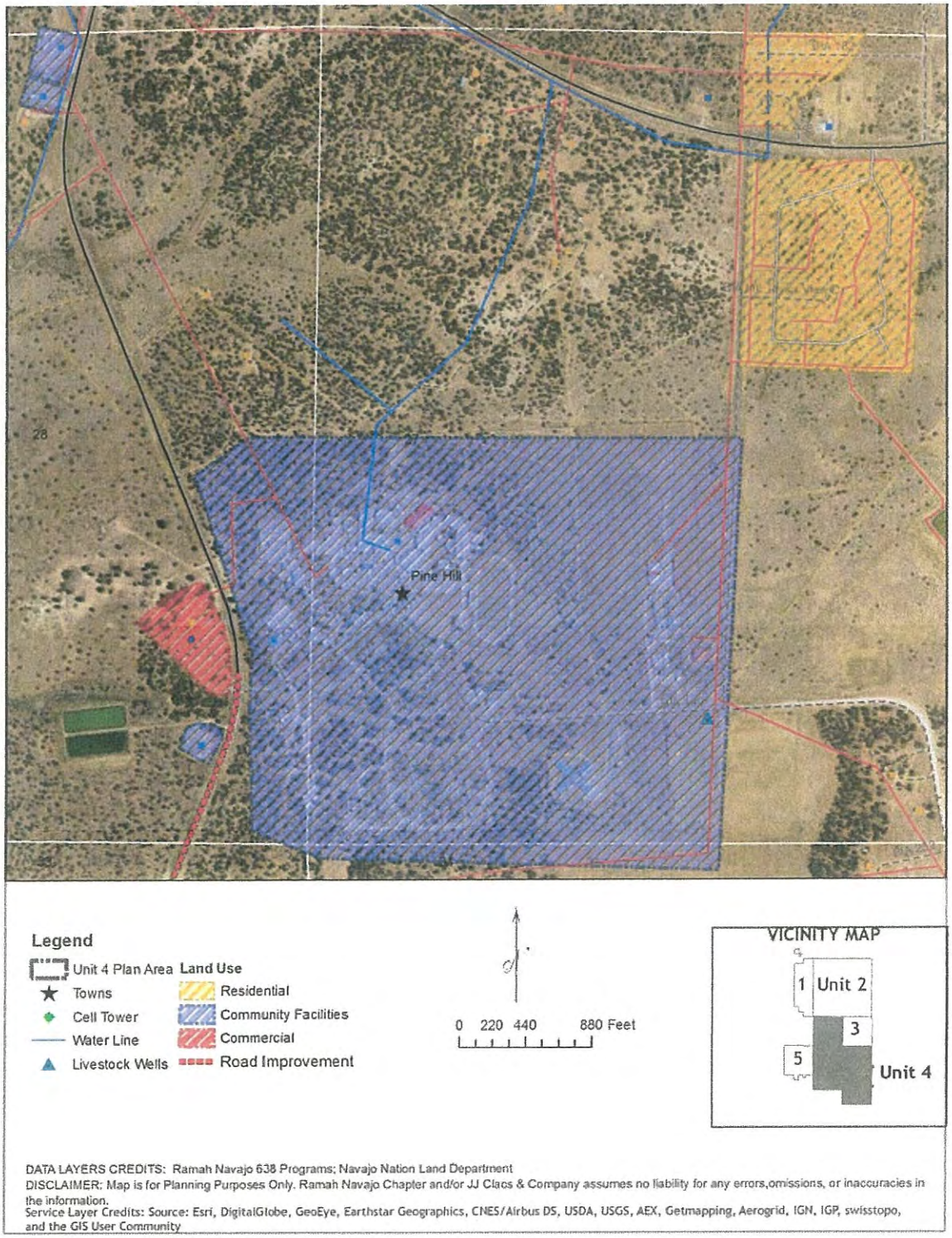


Figure 53. Cerro Alto Proposed Land Use

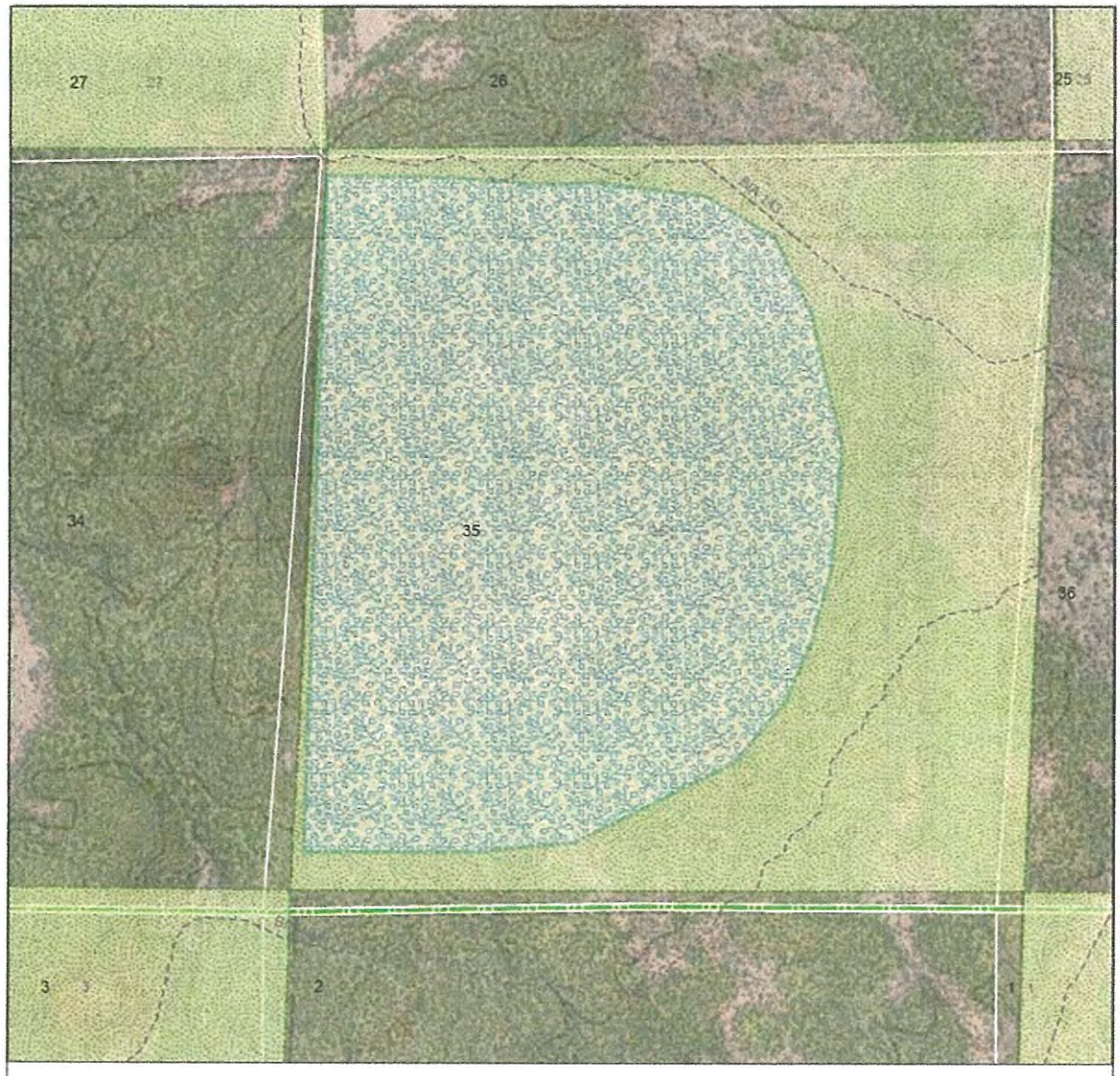


Figure 54. White Land Proposed Land Use

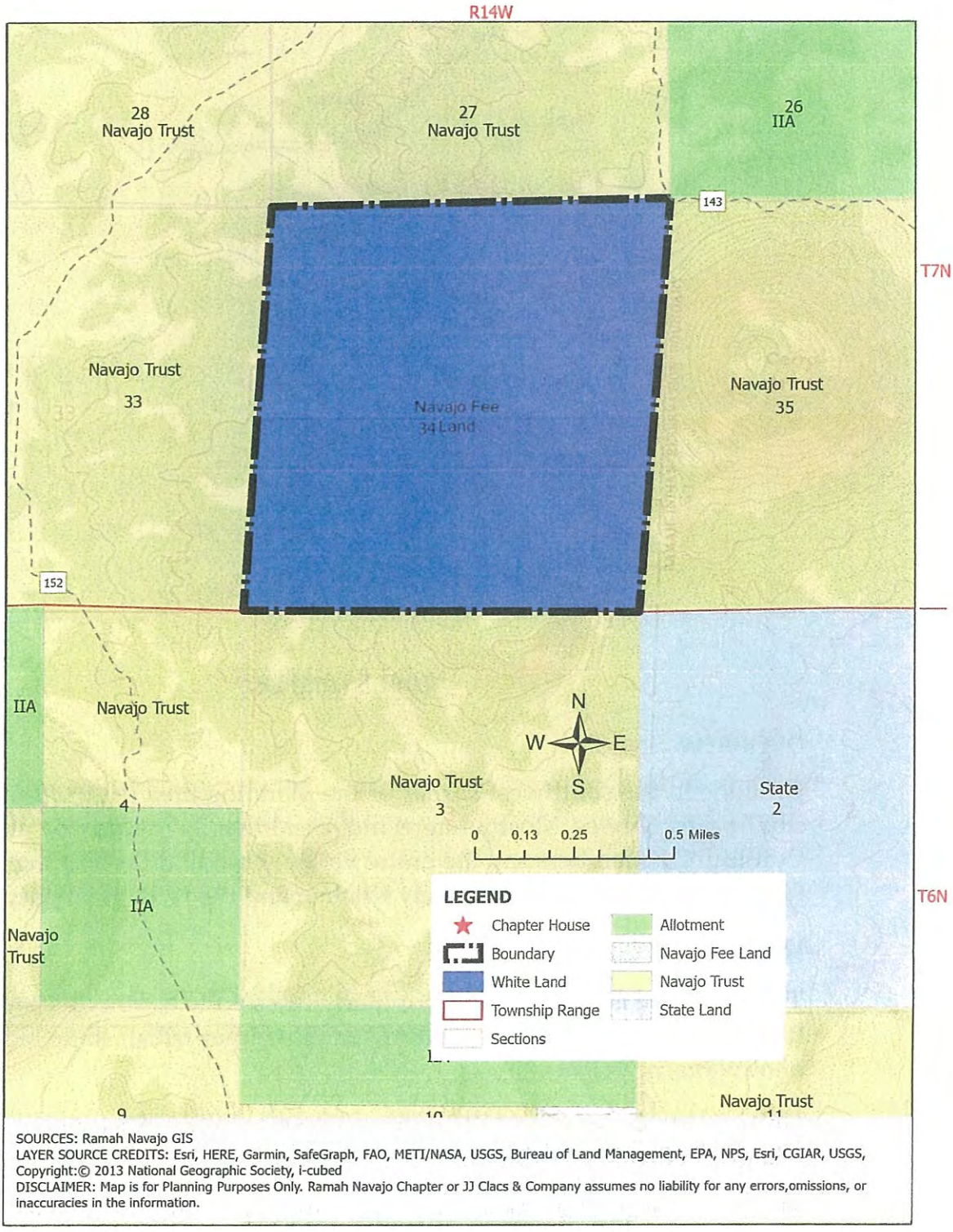
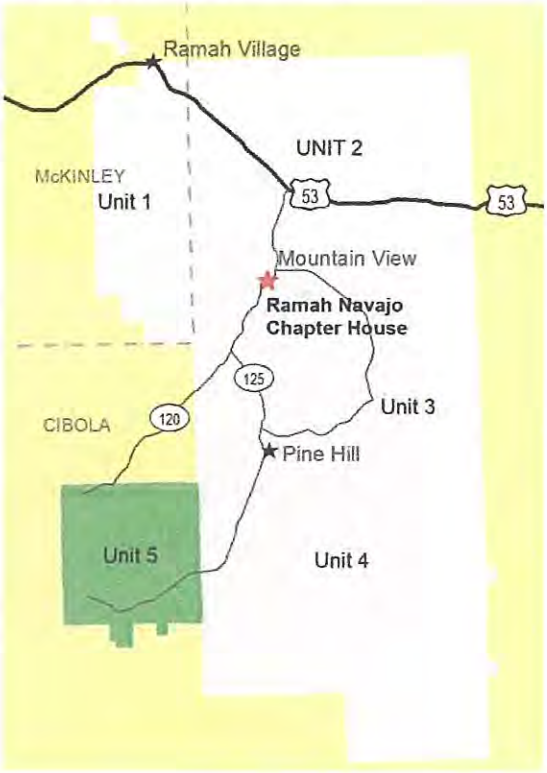


Figure 55. Unit 5 Location Map



Unit 5 Land Use

OVERVIEW

Unit 5 is in the southwest corner of the planning area (**FIGURE 55**). The unit is square 6 by 6 miles. Mostly rangeland. Used mainly for grazing and livestock. Community members say the entire valley was good for grazing at one time, now it is full of sage. Near Candy Kitchen and the Wolf Sanctuary.

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.

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

The land status map (**FIGURE 56**) 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 - allotments, 7 sections of state land.

LAND USE

The land use plan map (**FIGURE 57**) 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 a mile from the road
- Grazing: 4 working windmills
- Open range: areas are designated as open range

Future Land Use

The needs and desires relating to land use expressed by community members for Unit 5 include:

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

<u>Proposed Development for Unit 5:</u>

Big Pine Park – ***FIGURE 58***

- Improve and update recreational facilities

Figure 56. Unit 5 Land Status Map

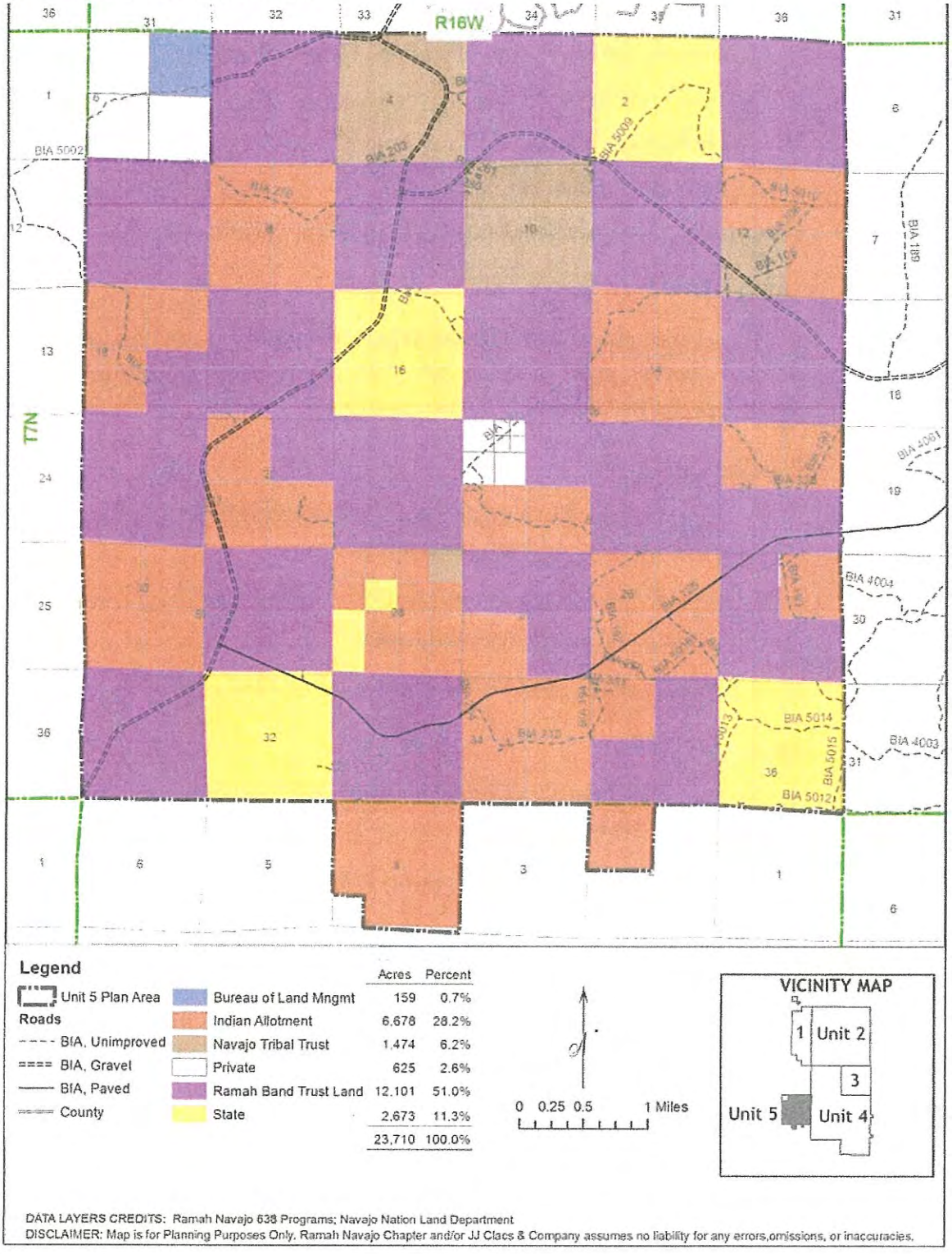


Figure 57. Unit 5 Land Use

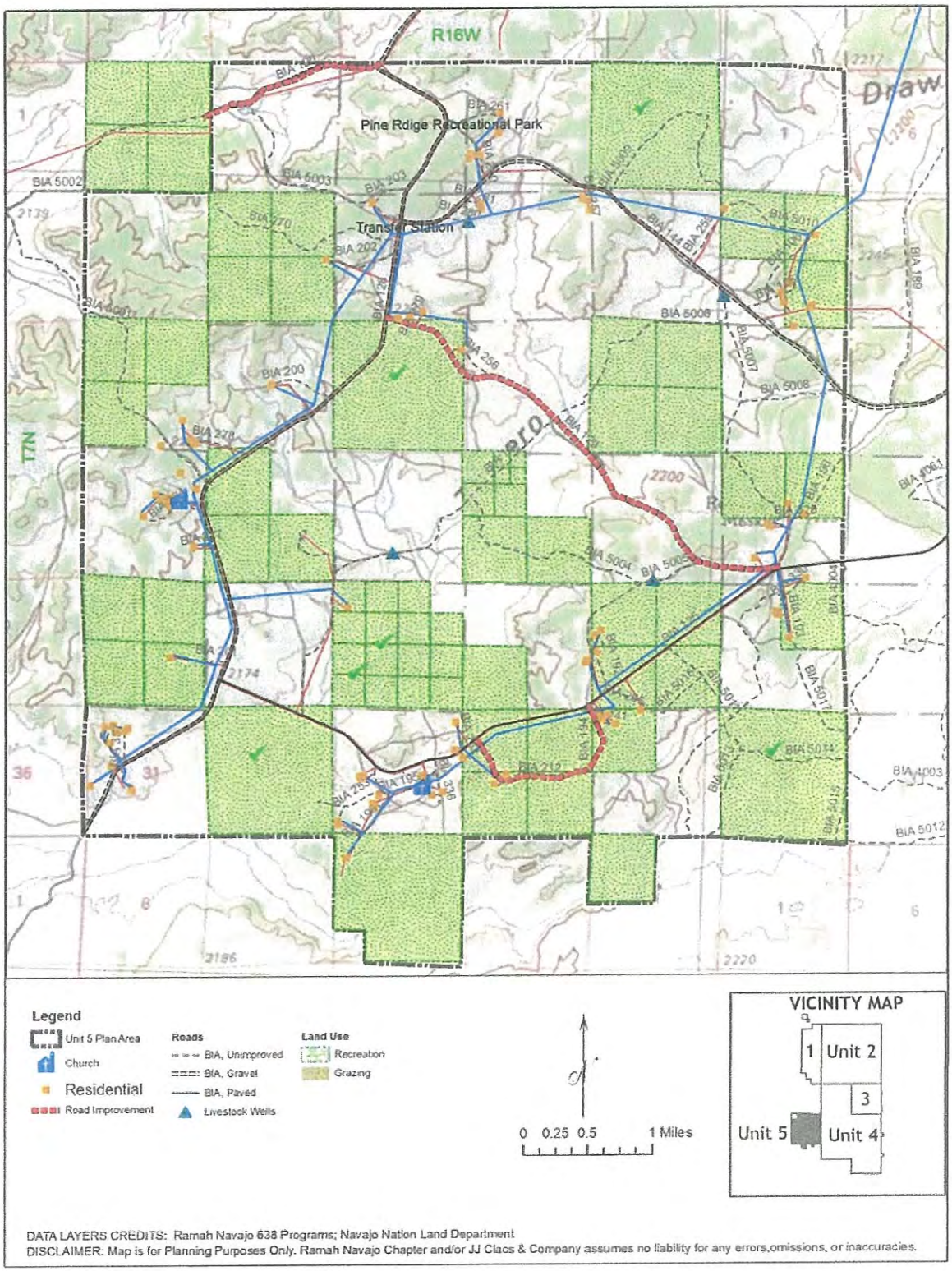
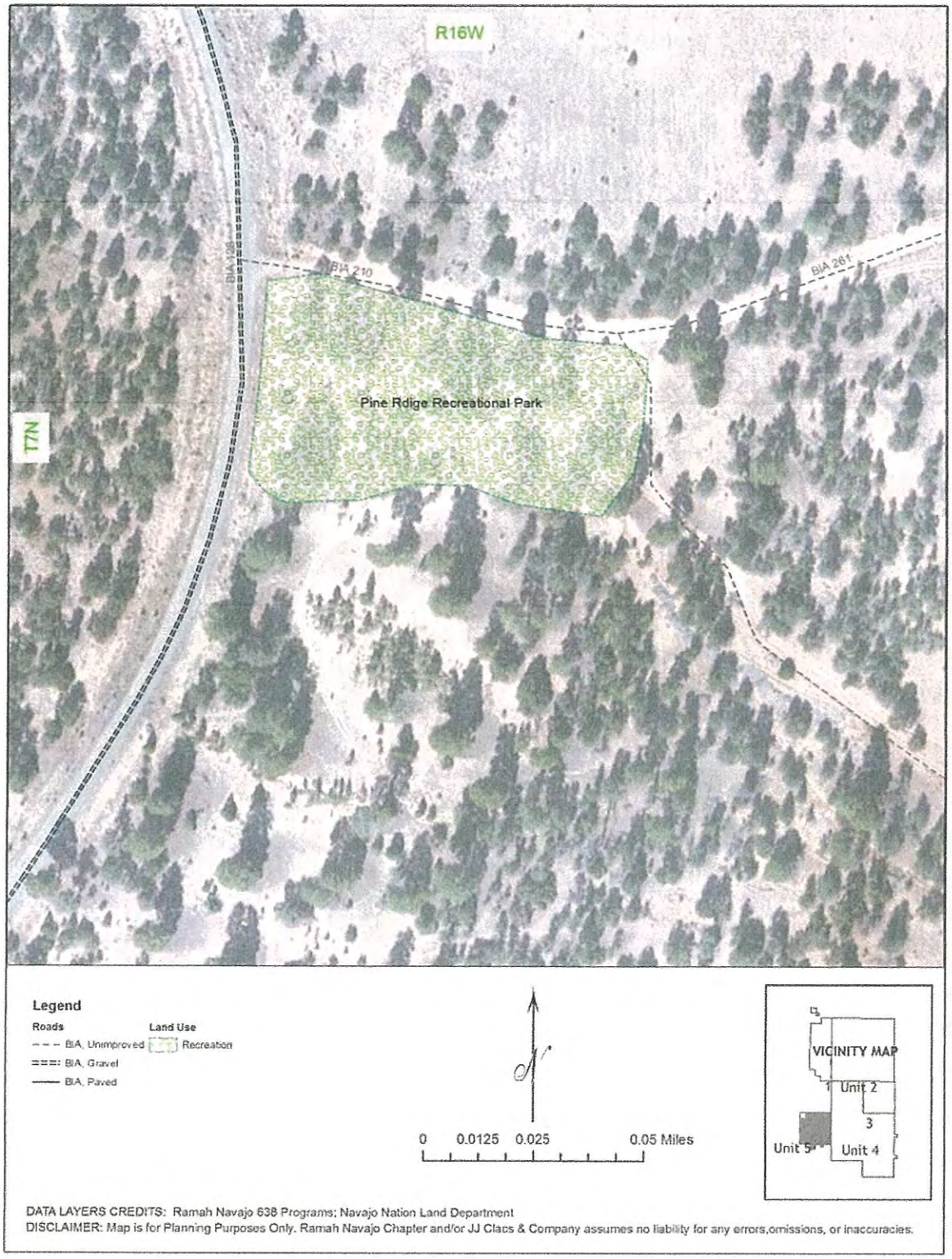


Figure 58. Big Pine Proposed Land Use



Land Acquisition Plan

OVERVIEW

From time-to-time land becomes available for purchase, transfer, gift, or exchange. Ramah Navajo is most interested in land located in their planning area. The goals are previous stated and presented here because several sections have been identified for immediate acquisition.

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.

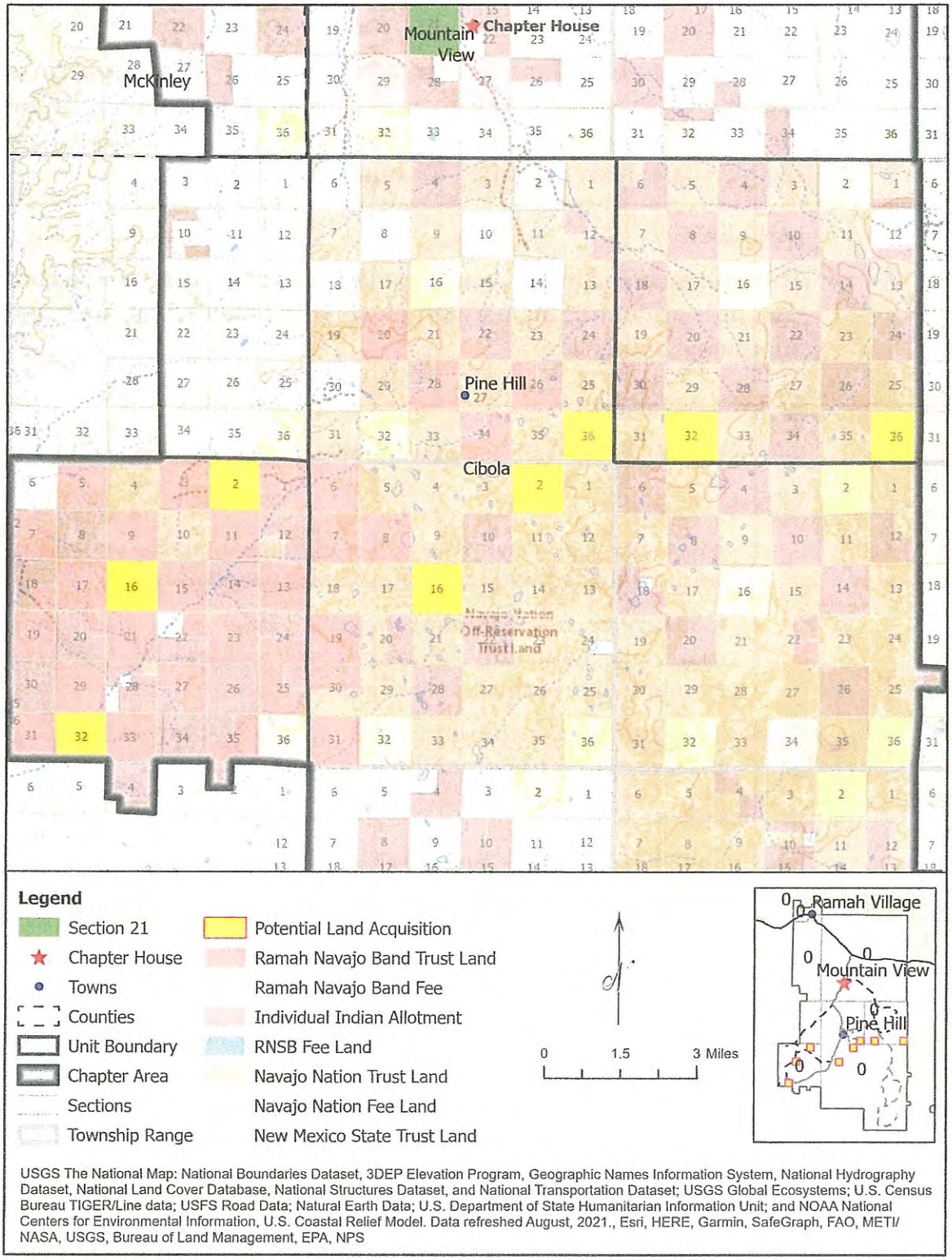
A. Land Acquisition

Goal: Acquire land to reduce/eliminate the 'checkerboard' status

Objectives:

- Most recently 8 sections of state land have been identified for immediate acquisition by Ramah Navajo **(FIGURE 58)**.
- 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
- Negotiate land exchanges with BLM, State, and other land jurisdictions.
- Establish fund account for land acquisitions

Figure 59. Potential Immediate Land Acquisition



10. IMPLEMENTATION

Commitment

The teachings, bravery, and extraordinary leadership of our elders and early leaders grounds us and gives us strength to make wise and timely decisions in implementing this land use plan.

We are committed to working together and making things happen in the best interest of our People, land, and heritage.

Strategies

Leverage Dollars

- Identify and seek funds at the federal, state, county, and tribal levels.
- Identify and seek funds from foundations, non-profits and other entities.
- Leverage and multiply funds

Transfer Land into Ramah Navajo Band Trust Land

- Moving these lands into Ramah Navajo Band trust land will also propel the Chapter closer to some of its highest goals and objectives, which is to: 1) implement land use plans; 2) identify land for future development; 3) identify land use options; 4) track new lands for purchase; and 5) identify land related energy development.
- Establish zoning codes or ordinances for orderly growth and development of the Ramah Navajo Chapter's lands.

Orderly prudent Development

- Provide for the orderly prudent development of the Ramah Navajo Chapter's resources for maximum economic advantage and sustained yield, keeping in mind opportunities for Ramah Navajo entrepreneurship on an individual and/or collective basis, i.e., by designating areas for specific development and considering viable options for RNC entrepreneurship.
- Design and construct a facility (i.e. governmental facility) that is safe, well ventilated, and accessible to everyone, regardless of age, ability or mobility, and a place where people want to visit, work, gather, and be well.
- Increase productivity and utilization of the Chapter's prime tourism resources compatible with wise forest/woodland and rangeland uses, values, and user demands.
- identify potential outdoor recreational opportunities and enterprises for forests, woodlands, and rangelands, determine their respective feasibility, and develop their potential.

Develop Partnerships

- Develop understanding, cooperation, and partnerships among public and private organizations, chapter leadership, and Ramah Navajo community membership to promote understanding of and support for the land use plan.

Protect Water Rights

- provide for the protection of water rights and the effective use of water. Examples include, farming all irrigable land, taking steps to stop residential construction on agricultural lands, establish water usage ordinances/codes, initiate agriculture development, and implement land acquisition and consolidation programs.

Community Outreach

- improve the Chapter's knowledge and skills in packaging and marketing forest/woodlands, rangelands, agricultural, outdoor recreations, and tourism opportunities and enterprises to diversify the Ramah Navajo Chapter economy, create employment and career opportunities for the Chapter membership, expand enterprise development, increase business, and enhance profitability.
- 10. To establish zoning codes or ordinances for orderly growth and development of the Ramah Navajo Chapter's lands.

Create jobs

- Create employment and career opportunities
- Create unique hands-on training or on-the-job training for community members

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APPENDIX A

Community Participation Plan

Ramah Navajo Chapter

Reevaluating and Updating the Community Land Use Plan

Community Education and Participation Plan

Developed by:
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P.O. Box 479
Fort Wingate, New Mexico 87316

Approved by:
Ramah Navajo Chapter
Community Land Use Planning Commission
HCR 61 Box 13
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October 12, 2015

Table of Contents

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
8 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			12/28th or 12/29th

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 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

- Hickman and similar soils: 45 percent of the unit
- 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

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

Composition

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

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

Composition

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

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

Composition

- 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

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

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): cuestas, 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):

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

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

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

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

Composition

- Flugle and similar soils: 55 percent of the unit
- 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

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

[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

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

Composition

- Celacy and similar soils: 55 percent of the unit
- 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

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

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

[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

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

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

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

Composition

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

[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

535--Millpaw loam, 0 to 5 percent slopes

Composition

- Millpaw and similar soils: 85 percent of the unit
- 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

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

[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

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

[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

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

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

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

[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

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

Composition

- Flugle and similar soils: 45 percent of the unit
- 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

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

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

Composition

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

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

Composition

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

[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

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

Composition

- 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

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

Composition

- Cabezon and similar soils: 35 percent of the unit
- Montecito and similar soils: 30 percent of the unit
- Rock outcrop: 20 percent of the unit
- 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

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):

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

Composition

- Cabezon and similar soils: 45 percent of the unit
- 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

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

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

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

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

Composition

- Venadito and similar soils: 60 percent of the unit
- 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

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

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:
Saturated hydraulic conductivity class: Moderately High

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:

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):

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

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.

EXHIBIT "A"

The Ramah Navajo Chapter
Community Land Use Commission

Plan of Operation

I. Establishment:

A. The Ramah Navajo Chapter Community Land Use Commission (hereinafter referred to as "Commission") is hereby established and continued as a standing committee of the Ramah Navajo Chapter.

B. The principal office of the Commission shall be on Ramah Navajo Chapter land, Cibola County, State of New Mexico and the Ramah Navajo Chapter House.

II. Purpose:

A. It is the purpose of the Commission to monitor and coordinate the land use activities of Ramah Navajo Chapter and make recommendations accordingly.

III. Duties and Responsibilities:

A. Approve the processes for local land use planning.

B. Oversee land use planning activities.

C. Educate the community on the concepts, needs, and process for planning and implementing a land use plan.

Ensure that the development and subsequent updates of the community land use plan are based upon the guiding principles, priorities, goals and vision as articulated by the community.

D. Approve a community participation plan describing methods that will foster public education and participation through work sessions, public meetings, hearings, newspaper and radio.

Work closely with the community membership; the Chapter administration; Land Board; P.L. 638 Office of Grants and Contracts and departments; Chapter officials and other chapter standing and special committees.

Develop recommendations for the implementation of the land use plan.

E. Collaborate with the Land Board to ensure land use plan includes preservation through proper grazing management, the land, water, forest, forage, wildlife and recreational values in the Ramah Navajo Reservation area and recommendations for improvements and restoration of resources where they may have deteriorated.

F. Collaborate with the Land Board to promote land use planning activities of the range resources by Ramah Navajos to enable them to earn a living in whole or in part through the grazing of their own livestock.

G. Collaborate with the Land Board to balance the land uses by individual landowners and land users with the demands of tribal programs by granting and recommending grazing privileges in a manner consistent with the land use plan.

H. Collaborate with the Land Board to properly educate Ramah Navajo Livestock owners and non-livestock owners of land use planning including, but not limited to, range management: conservation planning, and improvements.

I. Review and recommend to the Ramah Navajo Chapter the approval or disapproval of projects pertaining to land use.

J. Propose ordinances relating to land uses within the community.

K. Protect the interests of the Ramah Navajo People, land base and land resources through prudent planning and implementation of land use activities and the efficient use of natural resources.

L. Oversee and provide direction for land use activities within the committee's authority.

IV. Composition:

A. Membership; advisors

1. The Commission shall consist of five (5) members, one representative from each grazing ~~unit~~ as recognized by the Ramah Navajo Chapter.

2. The Ramah Navajo 638 Program Directors, staff and other personnel from appropriate agencies shall serve as advisors to the Commission and shall provide appropriate support, advice, and counsel on all matters.

E. Qualifications for members:

1. A candidate must be a registered voter of Ramah Navajo Chapter and be on the census roll of the Navajo Nation.

2. A candidate must be at least eighteen (18) years of age at the time of nomination at the regular Chapter meeting.

3. A candidate must not be a staff member of the Ramah Navajo Chapter Public Law 93-638 Natural Resources/Agriculture and Realty programs.

4. A candidate must have good reputation within the community and shall not have been convicted of any felony within five (5) years preceding the date of the nomination.

5. A candidate must be knowledgeable in the maintenance and management of livestock operations and land management.

6. A candidate must not be a delegate of the Tribal Council, or as Chapter officer or a District Land Board. A member must not hold any of these positions, unless the term expires prior to taking office.

7. A candidate must have experience with and knowledge of the complex land status in the Ramah Navajo area, as well as being familiar with the land use policies and procedures of the Navajo Nation and the Federal and State Governments.

F. Selection of and Duties and Responsibilities of Commission Officers:

1. The members of the Commission shall, at their first duly called meeting elect officers composed of a President, Vice President and Secretary/Treasurer.

2. The duties of the President are to preside over all duly called meetings and sign documents on behalf of the commission.

3. In the absence of the President, the Vice President shall assume the duties and responsibilities of the President, for meeting purposes only, or as may be duly assigned.

4. The Secretary/Treasurer shall take roll call, keep minutes of commission meetings and maintain all records and documentation of the commission.

VII. **Compensation:**

A. The Commission members shall be compensated at the budgeted rate of the prevailing fiscal year and contingent upon the availability of funds.

B. The Committee members shall be compensated at a rate of one hundred and twenty-five dollars ($125.00) per meeting, whether it be regular or special meetings; work sessions, public hearings or training sessions.

C. At the direction of the chapter or its delegated representatives, it may assign any member of the commission to be on official travel or attend training. Commission members are allowed to get compensation at a set rate for travel expenses and other accommodations contingent upon funding. The costs of reimbursement shall be at the same rate as applied to staff meetings conducted by the Navajo Nation and recognized agencies interest groups.

VIII. **Removal of Commission Member:**

A. Grounds for removal:

The Commission member may be removed from office for the following causes or reasons:

1. For excessive use of alcohol, of other intoxicants or for the unlawful use of controlled substances.

2. Failure to attend, without good cause and justifications, three (3) consecutive meetings of the commission.

3. Failure to perform the duties and responsibilities of a commission member.

4. Other just cause(s) determined by the members of the commission.

B. Procedure for Removal:

In the event that a commission member fails to be in compliance or fails to perform its duties and responsibilities of a commission member as required, the commission through its recommendation will advise the Chapter to elect a new member to fill in the unexpired term of such member.

C. Resignation - any commission member may resign from membership and resignation may be granted with prior notes to resign and shall be referred to the Chapter for final determination.

VI. **Other Duties and Responsibilities of the Commission:**

A. To assist the Land Board in the review of all applicants for grazing permits to ensure consistency with the land use plan and submit recommendations to Ramah Navajo Chapter.

B. May assist the Land Board and mediate land disputes, and in case of disputes or protests that beyond control, refer to them in writing to the Ramah Navajo Agency Superintendent for proper actions.

C. To assist the Chapter with realistic plans and organize the summer livestock program and assist the Chapter in organizing the livestock sales program.

D. To assist in review and make realistic recommendations with collaboration of the Land Board to the Chapter of all permit, leases, home site, and business sites pertaining to all land and forest matters.

E. To provide recommendations of all long-range plans on grazing livestock and submit to the Ramah Navajo Chapter.

F. To assist with the finalization of the Ramah Navajo Range and Land Use Code.

VII. **Meetings and Procedures:**

A. The Commission shall establish a meeting schedule which will provide for at least one meeting day per month. These scheduled meetings are to be known as the "regular meetings" for the commission. All scheduled meetings will open to the public, unless the Commission goes into Executive Session.

B. The schedule of "regular meeting" shall be announced at the Chapter meeting or at other meetings, listing the date, time, and location for such meetings. The meeting date may also be announced from local radio.

C. The Commission may at its discretion call for a "special meeting," or call "emergency meeting," as deem necessary. All these special meetings shall be conducted in an orderly manner and be compensated for meeting(s).

D. All substantive actions by the commission shall be undertaken by a written memorandum, setting forth the actions taken and referred to the Chapter Officials for further action.

E. A quorum consisting of at least three (3) commission members shall constitute a quorum. All decisions shall be made by a majority vote. If no consensus can be reached, all commission members, including the officers shall be eligible to vote.

VIII. **Technical Assistance:**

The Commission may seek technical assistance from Navajo Nation, Federal, State and County governments, or others as needed.

IX. **Ethics:**

Members of the Commission are required to comply with the Navajo Nation Ethics and Government Law.

X. **Amendments:**

This Plan of Operation may be amended by the Ramah Navajo Chapter with the recommendation of the Commission.

RESOURCES AND DEVELOPMENT COMMITTEE
24th NAVAJO NATION COUNCIL

FOURTH YEAR 2022

ROLL CALL
VOTE TALLY SHEET

LEGISLATION #0167-22: AN ACTION RELATING TO RESOURCES AND DEVELOPMENT COMMITTEE, CERTIFYING RAMAH NAVAJO CHAPTER COMMUNITY-BASED LAND USE PLAN WHICH HAS REEVALUATED AND READJUSTED RAMAH NAVAJO CHAPTER'S PREVIOUS COMMUNITY-BASED LAND USE PLAN. *Sponsor: Honorable Jamie Henio*

Date: September 28, 2022 – Regular Meeting (Teleconference)
Location: Resources and Development Committee also called in via teleconference from their location within the boundary of the Navajo Nation.

Main Motion:

M: Rickie Nez **S:** Mark A. Freeland **V:** 5-0-1 (VCNV)
In Favor: Rickie Nez; Kee Allen Begay, Jr.; Herman M. Daniels; Mark A. Freeland; Wilson C. Stewart, Jr.
Opposition: None
Excuse: None
Not Voting: Thomas Walker, Jr., *Vice-Chairperson*

Thomas Walker, Jr.
Honorable Thomas Walker, Jr., *Vice-Chairperson*
Resources and Development Committee

Rodney L. Tahe
Rodney L. Tahe, *Legislative Advisor*
Office of Legislative Services