

EXECUTIVE SUMMARY

INTRODUCTION:

Tonalea is known as Tonehalíí in the Native Dine language, which means where water emerges or collects. It is also known intermittently as Red Lake. These names are used interchangeably and without hesitation by the people in the region, as well as people throughout the Navajo Nation.

Tonalea (Tonehalíí) Chapter is located in Northeastern Arizona, Coconino County in the Western Navajo Agency within the exterior boundary of the Navajo Nation. The chapter's land base is approximately 240 square miles. It is bordered by Black Mesa to the east, Middle Mesa to the southwest, Preston Mesa to the west and White Mesa to the north. Some landmarks that are prominent in Tonalea are the Elephants Feet, White Mesa Arch, Wildcat Peak, Cowspring Lake, and Tołani (Many Waters). U.S. Highway 160 and Navajo Route 21 are the two hard-surfaced roads through this area that link the chapters to the adjacent chapters and communities.

The chapter's land base is drained by a number of variable streams that flow south and southwestward toward Tonehalíí. Elevations range from 6,679 feet on White Mesa to 5,629 feet near Tonalea.

The climate in this region is semi-arid. Tonalea Chapter receives about 12 inches of precipitation on White Mesa to about nine inches in the lower elevations. Means annual temperatures range from 48° F in the higher elevations to about 52° F in the lower elevations according to studies conducted in 1969 by Cooley*.

HISTORY:

In the 1850's, the Mormons started encroaching what is now known as Tuba City. Non-Mormon traders were ostracized from Tuba City by Mormon leaders thus an outpost was formed in Tonehalíí around 1876, five miles south of where the current trading post is located. The community developed around Tonehalíí as water was available year round for livestock while providing a convenient location for inhabitants to meet.

Oral history of the first community leader elected was in 1952 through a democratic voting process. One of the first goals of this new leader was to establish a formal school to be operated by the Bureau of Indian Affairs. The newly formed administration initiated wells, earthen dams, soil and water conservation, a livestock enumeration system and agricultural demonstration projects. The chapter house was built in 1960, renovated in 1970, again in 2011 and was condemned due to the compromised structural integrity of the building in 2013.

In 1882 under the Executive Order, Joint Use Area was created between the US Congress and Hopi and Navajo Nations. It affected all native residents within the disputed land. 1960's Indian Commissioner Robert Bennett placed a construction freeze in the Western Navajo area. In 2009, the freeze was lifted thus, allowing development. Tonalea Chapter can now move forward with developing a stable economy for the community.

Community Vision

The traditional and cultural values, diversity, uniqueness, and language of the Navajo people have survived for many generations. We, therefore, strive to maintain and preserve these values as well as encourage, enhance progress and improvement to benefit the Tonalea community's future.

Mission

The Tonalea Chapter is a land of endless beauty rich in culture. With a genuine sense of preserving the Dine' culture and enthusiasm, we are committed to:

- Protect, preserve, and care for our Mother Earth, (instead, may include: environmental and cultural values, cultural significance.) Landmarks
- Protect, preserve, and safeguard our precious resources.

We look forward to the future of a cohesive and collaborative working atmosphere in which, we shall strive together to meet challenges with integrity and creativity.

Community Participation Plan

Public Participation

The public hearings were carried out to collect community input as part of a community-based land use plan in a grassroots approach. The first public hearing was held as a participatory planning session in 2007, and the second public hearing was a one-day follow-up land use mapping session with officials, staff, and community members which were held in the latter part of 2007. The first community public hearing focused on generating a practical vision, understanding the challenges to achieve the vision, creating strategic directions to address these challenges, and prioritizing projects for future action. The second community public hearing served as feedback from the first public hearing

All efforts to create the community land use plan, performed by the consultants' ETD Environmental Consulting and WHPacific along with past Community Land Use Planning Committee (CLUPC) consisted of educating community members about the purposes and benefits of land use planning, how the plan would be developed, and the importance of having participation in the planning process.

The community public hearings described above were the starting point for producing the information needed to update the CLUP. Public hearings were designed to serve the purpose of efficiently producing a community needs assessment, compiling ideas of future planning and zoning, and producing the first land use map.

WHPacific, Inc. researched existing plans and ongoing project efforts at tribal and federal agencies and departments. Information was gathered by field teams using Global Positioning System (GPS) to take data points at houses, roads, and other man-made features, and assess each feature's condition as very good, good, fair, poor, or very poor based on particular criteria.

The goal of this planning effort was to prove the method by which, the chapter can update its own plan as needed. In particular, the community public hearings were a successful, interactive, and efficient way to generate information quickly that could be incorporated into the plan and translated into action by the chapter in the future.

Community Demographics

Demographics and Community Profile

Population

The 2010 U.S. Census states that population for the chapter was 2,595. Baseline population projections to the year 2020 were prepared, using information from the 2010 Census. A population projection technique called Cohort Survival Methods takes into account the age and sex distribution of the population, as well as the natural influence of mortality, fertility, and birthrates. Population projections do not include in-migration or out-migration of chapter members, meaning it does not predict how many people might move in or move out of the chapter.

The projections are presented in Figure 1 Tonalea Chapter Population Growth

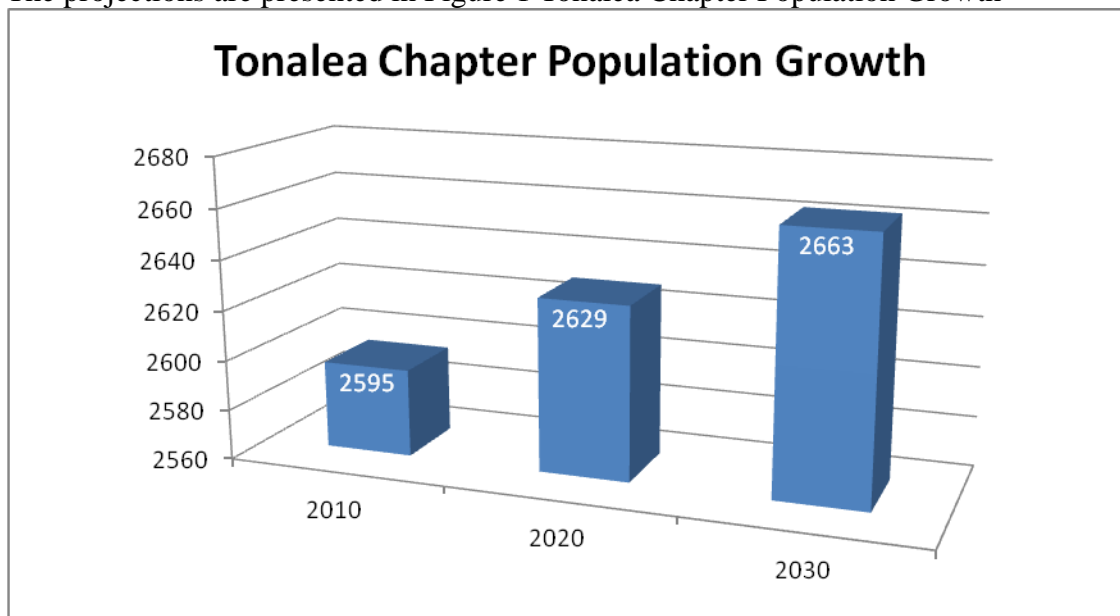


Figure 1: Tonalea Chapter Population Growth

The chapter can expect a 16 percent population increase from the year 2000 to the year 2010. Overall, the chapter is expected to grow by 35 percent by 2020.

Figure 2: Tonalea Chapter Population Growth by Percentage. See appendix.

The Tonalea community will experience a three percent population growth within a ten-year time span. Furthermore, fifty-four percent of the chapter population composes of people 24 years or younger. This group will increase the demand for affordable housing, employment, and public services.

Most households in the chapter consist of family households, a married couple with children. The chapter's average household size of 4.1 is larger than that of either the Navajo Nation or Arizona, which are both 2.6. The chapter's average family respectively.

Income

Household and per capita income in the Tonalea Chapter is like that of the Navajo Nation and much lower than that of Arizona. About 43 percent of households in the Tonalea Chapter are living below the poverty level, which is similar to the Navajo Nation (43.8 percent) and much higher than Arizona (11.8 percent).

Housing

The number of housing units found in the chapter is 753. The majority of homes are owner-occupied (89 percent). The chapter's owner-occupancy rate is higher than the Navajo Nation's (76 percent) and Arizona's (68 percent).

Most of the homes in the chapter are single detached homes (84 percent). The chapter has a higher rate of detached homes than the Navajo Nation (68 percent) and Arizona (60 percent).

Sixty-three percent of homes were built after 1980, compared to 53 percent of homes in the Navajo Nation and 54 percent of homes in Arizona. The median year for a structure built in the chapter was 1985. In comparison, the median year for the Navajo Nation is 1981 and for Arizona, 1982.

The chapter's two major heating sources are wood (84 percent) and bottled, tank, or liquid petroleum gas (8 percent), whereas the Navajo Nation's two major heating sources are wood (52 percent) and bottled, tank, or liquid petroleum (LP) gas (23 percent), while Arizona depends on electricity (54 percent) and utility gas (37 percent).

The chapter currently has two residential subdivisions near the central community area. Many of the homes in the chapter are of poor construction quality, and many in the Former Bennett Freeze Area (FBFA) have become debilitated due to the restrictions on improvements.

According to field data conducted by WHPacific in 2008, 43 percent of homes in the chapter are in poor to very poor condition and 25 percent are in good to very good condition.

Many younger families prefer clustered housing developments, instead of rural homesites since this type of development will provide amenities such as municipal utility systems, paved roads, and Internet access.

Employment/Unemployment

Unemployment rates on the reservation are exorbitant. The unemployment rate in the chapter is 16.5 percent, which is just over 4 percent higher than the Navajo Nation and almost four times as high as the State of Arizona.

The community has 651 households with a median household income of \$21,434. The per capita income is \$6,163. The median household income and the per capita income in the Tonalea Chapter are similar to the Navajo Nations. This low labor force participation rate is due to limited employment opportunities within the community.

Education

The community has two preschool centers and an elementary school. School aged students attend public or Bureau of Indian Education (BIE) middle and high schools in Tuba City or elsewhere outside of their home chapter. There is a proposed site for a new K-12 school facility within the community.

Map 1: Tonalea 3 sites See appendix.

Fifty-four percent of the population over 25 years old do not have a high school diploma and only three percent have a bachelor's degree or higher. In 2010, the following education levels were revealed from the census data for this region of the Navajo Nation: 31.3 percent have less than 9th grade education, 22.4tpercent have some high school with no diploma, 29.3percent have a high school diploma, 12percent have some college education, 5percent have an associate's degree or higher.

Health and Public Safety

During the 2008 community workshop, community members addressed the need to improve emergency response time. At present, the emergency service response time is lengthy due to distance and undocumented rural addressing. Medical facilities, fire stations, and police departments are located approximately 25 miles away.

Community Facilities, Parks, and Recreation

The chapter house, built in 1959 was condemned by the Navajo Nation Division of Health and Office of Environmental Health in 2013. All chapter businesses were conducted from a warehouse that was once used for hay storage until closure in December 2015. Consequently, chapter meetings are held in the Tonalea Senior Center. The closure also separated the chapter administration into two location; the Account Maintenance Specialist is in the Senior Center and the CSC is 21 miles in Tuba at the NNDCD.

7/1/2016 end today's sessions.

The community would benefit from a new multi-purpose center with computer facilities, meeting and conference rooms. The community desires other places to convene such as a new chapter house, new senior center, community park, youth center, recreation center/park, pool/water park, sports facilities, or golf course.

Tonalea Economy

Local businesses in the Tonalea Chapter include, the Tonalea General Store, US Postal Service, Laundromat, the Old Red Lake Trading Post, a livestock sales yard, and a roadside vending area.

Chapter residents would like to see additional commercial developments, including a watering point/water wells, telephone landlines, transfer station/recycling center, grocery store, auto shop, car wash and additional Laundromats.

The largest employer in the community is a BIE school followed by the Navajo Nation. Employment opportunities within the community are limited, and most of the workforce must commute to Kayenta, Tuba City, and Page, Arizona. A quarter of the workforce commutes over 60 minutes to work, and another 16 percent commute over 90 minutes. The majority of the

workforce is employed in the services industry, primarily in educational, health, and social services.

Jobs by Sector

The majority of the Tonalea workforce is employed in the services industry (57.7 percent), primarily in educational, health, and social services. The second largest industry is construction (15.2 percent), followed by transportation and utilities (12.8 percent).

Household Purchases

Figure 6 shows the distribution of average annual expenditures of households in the Western United States by income level for food, housing, apparel and services, transportation, healthcare, and entertainment.

Figure 3: Average Annual Expenditures. See appendix.

Identification of Existing Land Status

Existing Land Uses

Grazing

The majority of the community's land mass is open space used for grazing. The community is implementing range preservation programs and continuing public educational workshops in collaboration with various entities.

The lack of an adopted range and land management plans have resulted in deteriorating conditions. Overgrazing has caused increased soil erosion and inadequate vegetation for livestock. Most grazing areas are not clearly identified or fenced. This can result in roaming livestock that damage cultural sites, invade home sites, and cause irreversible damage to environmentally sensitive areas, such as steep slopes and riparian corridors.

The current grazing regulation system, developed in 1944, adopted in 1956, divided the Navajo Nation into 19 Range Management Districts. Regulations governing grazing use are contained in the Navajo Grazing Regulations (CFR 25, Part 167). The purpose of these regulations is to preserve land and water resources on the Navajo Nation and rebuild deteriorating resources. These regulations are overseen by an elected grazing official also have the following objectives:
Tuesday, July 12, 2016 ended at 10:25 pm.

- Adjust the number of livestock to the carrying capacity of the range to preserve the health and sustainability of livestock on the Navajo Nation,
- Enforce and increase responsibility and participation of the Navajo people, including tribal participation in all basic policy decisions, in the sound management of grazing lands,
- Improve livestock through proper breeding and culling practices,
- Establish range units to promote conservation of range/land/water management, and effective use of range resources.

The community lies in Grazing District 1-Range Unit 1. The grazing information presented in this assessment was taken from the *Western Agency Grazing Compliance Report 1999*, which was prepared by the Bureau of Indian Agency (BIA) Navajo Western Agency, Branch of Natural Resources.

Farming

Farming, similar to ranching and sheepherding, has been a major occupation and, more importantly, a way of life in the community for many years. These activities have strong connections to the customs and cultural heritage of the community. Tonalea farm was established in 1982 and covers approximately 90 acres. There is a strong sense of reviving the community Farm Advisory Board to improve upon the irrigation capabilities and rehabilitation and a land management plan would improve the capacity of the community's farming industry.

Preliminary Environmental Assessments

In this region, areas that are considered environmentally sensitive include, one or more of the following environmental characteristics: steep slopes, flood plains, stream corridors, fault areas, soils classified as having high water tables or high erosions, habitats of endangered species, and scenic and cultural areas.

Topography

USGS topographic maps were used to show topography and resultant slopes in the areas identified for development. The area comprises of gently rolling topography, steep hillsides, rocky ridges, and deep canyons. Tonalea lies at an elevation of more than 5,600 feet above sea level.

Flood Plains

Historical surface water flow data is not available for most of these areas, nor are flood plain maps. There is no evidence of wetland conditions. Floodplain boundaries for the community have not been determined by federal, state, or tribal entities. An inquiry with the Federal Emergency Management Agency revealed that the Flood Insurance Rate Map (FIRM) for the unincorporated areas of Coconino County, Arizona, dated June 5, 1997, showed that all areas of the Navajo Indian Reservation have not been mapped for floodplain hazards.

As of 2008, The Navajo Nation Department of Water Resources was working with the U.S. Corps of Engineers to develop a work plan to address numerous flood control issues on the Navajo Reservation. The first phase is expected to identify the probable flood-prone areas on the reservation, delineate the 100-year flood plain maps for potential growth zones, and prepare a flood design manual.

Surface Water

The community surface water is drained into Begashibito Wash, Shonto Wash, To'lani and other water channels, which flow in a southwest direction toward Tonalea. These water channels are ephemeral, meaning that they generally flow in response to seasonal precipitation events and snowmelt; however, most of the year they are dry creeks. The ephemeral runoffs join at the southeastern end of the Tonahelii,(Tonalea pond).

Faults

According to a Bausch and Brumbaugh report from 1994, the projected maximum earthquake ground accelerations are far below a level that would warrant earthquake designs. Since this region is not considered a fault-prone area, the chances for earthquakes are minimal.

Soils

According to the Arizona General Soils Map (Hendricks 1985), the area below White Mesa and Black Mesa, including the areas under evaluation, are part of the Sheppard-Fruitland-Rock Outcrop Association.

The Sheppard-Fruitland-Rock Outcrop Association consists of well-drained soils and rock outcrop on plains and plateaus. The plains are broken by prominent mesas, buttes, and escarpments. Steep, rock-walled canyons form the sides of the drainages that traverse the areas.

The soils formed in Aeolian sandy material weathered from sandstone and shale (Hendricks 1985).

Sheppard soils make up about 35 percent of the association, Fruitland soils 35 percent, rock outcrop about 15 percent. Minor areas of associated soils and dunes take up about 15 percent. The minor soils are mostly small areas of Moenkopi, Shalet, and Palma. The dunes occur as rural areas of low, poorly stabilized and eroded shale materials. These soils pose few limitations for potential home site development. The sandy texture of the Sheppard soils, however, is a severe limitation to shallow excavations (Hendricks 1985).

The soil potential for livestock and wildlife forage production is low due to minimal precipitation and low water-holding capacity of the major soils. Soils with high water tables or high erodibility are not found within this area.

Vegetation and Wildlife

The community is part of a transition zone between Great Basin Desert shrubs and Great Basin Conifer Woodland (Brown 1994). Juniper (*Juniperus sp.*) is the dominant tree species within the survey area. This woodland type is rural on hilltops, ridges, and mesas surrounding the project area. The understory vegetation includes grama grass (*Bouteloua sp.*), green ephedra (*Ephedra sp.*), black brush (*Coleogyne sp.*), sagebrush (*Artemisia tridentata*), and tumbleweed (*Salsola kali*).

Larger mammals associated with the Plains and Great Basin Grassland community includes, jackrabbits, coyote, and fox (Brown 1982). The list of smaller mammals associated is comprised of a longer list. Many of these, such as prairie dogs (*Cynomys spp.*), ground squirrels (*Spermophilus spp.*), pocket gophers, mice, and rats, have adapted to spending most of their time underground. These burrowing mammals and their varieties of excavations also, provide habitat for snakes and lizards (Brown 1982).

In this region, areas that are considered environmentally sensitive include habitat for endangered species.

Certain native plants and herbs are used for medicinal purposes and food sources, while some are utilized to make arts and crafts. There is also a variety of forage for grazing.

Cultural Resources

The Navajo's traditional subsistence lifestyle expresses resourcefulness, ingenuity, and strong connection to and understanding of the land. The major means of subsistence consists of sheep, cattle, horses and farming crops such as corn, squash, and melons. The various uses for natural vegetation for wool dyes, basket weaving, traditional ceremonial purposes and arts and crafts.

Sacred Areas

Traditional and culturally sensitive areas are protected from development in perpetuity to preserve their historic significance or ongoing ceremonial use. These are considered areas. The Navajo Historic Preservation office retains maps which can be utilized to identify sacred sites as project proposals move forward for development. All projected three sites, (White Mesa,

Tonalea, and Cowsprings). do not indicate sacred areas. It is important for the community to establish a guideline to ensure that sacred areas are not developed or disturb.

Existing and Future Residential Needs

Residential

Twenty-three percent of total population has adequate housing. This percentage presents overcrowding leading to domestic family issues and creating family tension. The community is in need of housing, however, the chapter does not receive adequate funding to address the housing disparity. Resources for housing funds are made available through Navajo Housing Authority (NHA), Navajo Home Improvement Program (NHIP), and other entities such as United States Department of Agriculture (USDA), Community Housing Improvement Development (CHID), United States Department of Housing and Urban Development (HUD), and the Arizona Housing Program.

The community has a systematic plan in place for housing development, which preserves the lifestyle of the culture utilizing home site leasing.

The community has identified a proposed site for assisted living for the aging population and residents with special needs.

Community Needs Assessment

A door to door survey was conducted in 2000 by EDT Consulting Firm. In 2008, three public participation workshops were held by WHPacific at the Tonalea Chapter. TCLUPC carried out public hearings at the three sites: White Mesa, Cowsprings, and the Tonalea Chapter.

Public Planning Process

The community public hearings described above were the starting point for producing the information needed to update the CLUP. Public hearings were designed to serve the purpose of efficiently producing a community needs assessment, compiling ideas of future planning and zoning and initializing the first land use map.

The overall goal of this planning effort is to demonstrate the method by which the chapter may update its own plan as needed. The community public hearings were successful, interactive, and efficient to generate information quickly that will be incorporated into the plan and translated into action by the chapter in the future.

The information gathered from the public participation were integrated with the chapter's Capital Improvement Plan. This created a collaboration which will encompass the overall plan.

Existing Conditions – Community Assessment

The purpose of this section of the TCLUP is to present the current needs and conditions of the chapter. The plan gathers information that directly contributes to the chapter's development strategy. With this information, the chapter can make better decisions for the future concerning budgeting, capital improvements, and land use. As part of the chapter plan, this report should be treated as a living document and updated every five years or as needed.

This section is based on census information gathered from the chapter, field assessments, and other sources. The community assessment provides the vision for land use, presents and assesses social characteristics and economic conditions, and collects an inventory of existing and

proposed development for selected areas within the chapter. It may also identify and describe issues that affect land use patterns and impact future development.

Existing and Future Grazing and Agricultural Information

Grazing

The majority of the community's land mass is open space used for grazing. The community hopes to implement range preservation programs and continue public educational workshops in collaboration with various entities.

These adopted land and range management plans will improve existing range conditions such as overgrazing, feral livestock, damaged fences, scattered homes and unplanned roads. Livestock owners and community members will benefit from this methodical and organized approach.

Readapting to the practice of water encashment will minimize the reliance of windmills or water hauling, and also have water readily available for livestock at earthen dams which regularly require maintenance and repair. It will conserve water going to households from NTUA. It will also rehabilitate the practice of using the natural process of reseeding using livestock.

Modifying and Mandating Land Management Regulations

Navajo Partitioned Land (NPL) is in the process of restructuring the process of issuing grazing permits. Livestock owners will be required to establish a range management plan to reinstitute previous permits. Previous permits were canceled in the 1973. FBFA is implementing a land and range management plan.

Farming

Farming, similar to ranching and sheepherding, has been a way of life in the community for many generations which has built strong connections to the customs and cultural heritage of the community. Irrigation capabilities, rehabilitation, and a land management plan would improve the capacity of the community's farming industry.

Farming education and collaborating with entities can bring about up-to-date methods of farming. Continuous research of resources are available through University of Arizona (UofA) Extension Cohort, Brigham Young University (BYU), Resources Development Committee (RDC), and New Dawn.

Future Endeavors

- Agricultural Projects
- Range Management Plan
- Commercial Farming
- Ranch Operations
- Farmer's Market
- Water Conservation & Encatchment Systems

Existing and Future Commercial and Industrial Development Information

Site 1 - Tonalea

Site 1 is located along Navajo Route (NR) 21, about ½ mile from US Highway 160, north of the existing NHA site. It is approximately 49 acres in size. The site terrain is relatively flat. Elevations on the site range from 5,640 feet to 5,650 feet above mean sea level. No defined drainages are found, however, there is a natural depression near the center of this site that collects precipitation runoff.

9.2 acres at Junction US 160 /NR21 have been identified as a Tonalea Chapter commercial site and in the process of market feasibility and accessibility studies.

Map 2: Site 1 (Tonalea) See appendix.

Site 2 – White Mesa

Site 2 is located along Navajo Route 21 on the southeast corner of the junction of Navajo Route 21. The site is L-shaped and about 97 acres in size. It is relatively flat, ranging from 6,300 feet to 6,400 feet above mean sea level. No defined drainages are located on site, but there is a small drainage about 300 feet to the northwest.

Map 3: Site 2 (White Mesa) See appendix.

Site 3 – Cowsprings

Site 3 is located in the Cowsprings community west of an existing NHA subdivision. It is about 20 acres in size. The area is located about 2,500 feet from US Highway 160 and is accessible by a dirt road. The site is relatively flat. Elevations range from 5,600 feet to 5,800 feet. No defined drainages are found on site, however, there are drainages on the east and west sides of the site.

Map 4: Site 3 (Cowsprings) See appendix.

Tonalea Chapter’s Commercial Development Policy

The following policy shall apply to all processes and procedures for engaging in commercial activity that is under the jurisdiction of the chapter:

Whenever a commercial site lease is requested, the site shall be located in an area zoned for commercial development. The applicant shall follow the chapter’s local ordinance for land development along with applicable building ordinances. If the chapter has not developed such ordinances, the applicant can continue through the process under the Navajo Nation as long as the project is consistent with the chapter’s goals for economic development.

Future Endeavors

Commercial Projects

Gas station

Café/Restaurant

Laundromat

Store

Truck Stop
Car Wash
RV Park
Fish Hatchery
Tourism Center/Cultural Center
Vendor/Arts and Crafts
Motel/Hotel

Existing and Future Community and Public Facilities Information

The Tonalea Chapter currently consist of the following establishments: the Tonalea General Store and Laundromat, US Post Office, Old Red Lake Trading Post, livestock sale yard, Warehouse (Tin Building), Tonalea Senior citizen center, Tonalea Day School, Navajo Nation Head Start I and II, Cowsprings Head Start, Veteran’s Memorial Park, seven churches, and road side vending areas.

Future Endeavors

Housing Projects
Veteran Housing
Family Cluster homes
Rental Units
Trailer Park
Health/Public Services
Chapter House
Assisted Living
Clinic
Police Station/Sub-Station
Fire Station
Elementary/High School
Day Care
Public Library
Cemetery
Boys/Girls Center
Water Treatment Center
Transfer Station
Recreation Center
Animal Center
Veteran Center

Future Endeavors

Community Use
Sewer Lagoon Expansion
Recycling Center
Emergency Medical Services
Powerlines
Waterlines

Roads
Farming
Local Manufacturing
Technology Connectivity
Telephonic Infrastructure
Sport Complex
Office Space Rental Facility
Storage Facility
Multipurpose Building
Rodeo Arena
Flea Market Facility

Ground/Surface Water

Flood Plain Maps

In 2008, the Navajo Nation Department of Water Resources was working with the U.S. Corps of Engineers to develop a work plan to address numerous flood control issues on the Navajo Reservation. The first phase is expected to identify the probable flood-prone areas on the reservation, delineate the 100-year flood plain maps for potential growth zones, and prepare a flood design manual.

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Soil Information

Preliminary Environmental Assessments

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Topography

USGS topographic maps were used to show topography and resultant slopes in the areas identified for development. The area comprises of gently rolling topography, steep hillsides, rocky ridges, and deep canyons. Tonalea lies at an elevation of more than 5,600 feet above sea level.

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The soil potential for livestock and wildlife forage production is low due to low precipitation and low water-holding capacity of the major soils. Soils with high water tables or high erodibility are not found within this area.

Culturally, Traditionally and Environmentally Sensitive Areas

Cultural Resources

The Navajo's traditional subsistence lifestyle expresses resourcefulness, ingenuity, and strong connection to and understanding of the land. The major means of subsistence consists of sheep, cattle, horses and farming crops such as corn, squash, and melons. The various uses for natural vegetation for wool dyes, basket weaving, traditional ceremonial purposes and arts and crafts.

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Tonalea Chapter is working with Arizona Department of Transportation to reclaim Elephant's Feet due to its observance as a culturally sensitive site. Identification of other culturally, traditionally and environmentally sensitive areas are ongoing such as White Mesa Arch and Wildcat Peak.

Accessibility

Transportation, Roads, and Accessibility

The needs of the community's current transportation system are essential to keep pace with future developments. There are private sectors that provide non-emergency medical transport for individuals with medical appointments on and off the reservation.

Roads

The community is accessible by two paved roads, U.S. Highway 160 and Navajo Route 21. Navajo Route 16 branches off U.S. Highway 160 to Ya ii tiin and is unpaved.

Site 1 is located approximately two miles north of US Highway 160 on Navajo Route 21. Site 2 is also located along Navajo Route 21 approximately 15 miles from U.S. Highway 160. Site 3 is located in the Cowsprings community 1,000 feet from U.S. Highway 160. It is accessible from U.S. Highway 160 by dirt road. Site 1 is most accessible followed by Site 3 and then Site 2.

Add coordinates

Infrastructure and Land Suitability

Land Suitability and Chapter Resources

Groundwater

Groundwater in the area of the Tonalea community is found mainly in the Navajo Sandstone, which is part of the Navajo (N) aquifer system. The Navajo Sandstone is the chief aquifer, and it is utilized extensively throughout this region (Cooley et al. 1969). Information obtained from the Navajo Nation Water Resource Management Branch, wells that tap the N-aquifer range from 251 feet to 1,052 feet in depth. Well, data is presented in Appendix C.

Wells within the Tonalea community range in depths from 504 feet to 960 feet. Wells within Cow Springs community range in depths from 251 feet to 550 feet. Big Whisker Well is located near the proposed residential site in White Mesa community approximately two miles.

Infrastructure and Utilities

Tonalea water sources including windmills and earthen dams for livestock in the community's grazing areas are shown in Figure 4 and 5.

Figure 4: Water Sources See appendix.

Figure 5: Water Facilities. See appendix.

Wastewater

Wastewater is channeled through sewer lagoon systems or septic tanks. The communities of Tonalea and Cow Spring are connected to a wastewater system, while the rest of the community utilizes septic tanks or outdoor facilities. Any future developments whether residential or commercial will require upgraded wastewater systems and water treatment facility.

Many of the homes in the community use septic systems to handle wastewater. While septic systems sometimes pose environmental risks: particularly to the water table, in higher-density residential areas and areas with a high water table.

Septic tanks require occasional servicing to empty the tanks and flush the lines. The remoteness of many rural-site homes means that these services cost more than they would to service areas easier to reach and closer to Page, Flagstaff or Kayenta, where private service companies are located. Many residents may not have the funds to pay for septic tank servicing. As a result, many septic systems are abandoned once the tank is full, and residents resort to using outdoor facilities or simply letting sewage pool and evaporate naturally, which poses a human health risk. Addressing this issue will require seeking grant funds for a water treatment facility.

Through chapter resolution on December 27, 2012, the community approved a water treatment facility proposed site to be located at the southern end of the community. This facility will be strategically placed at the lowest point of elevation which will allow gravity flow. Other regions of the Tonalea community will be addressed in phases to eliminate environmentally hazardous conditions.

Find the 2012 resolution/water treatment facility-check with NTUA/copy

All lagoons and wastewater facilities must be mandated to develop a management plan then filed and approved by the chapter administration.

Electrical Utilities

Electric utilities are built and maintained by Navajo Tribal Utility Authority (NTUA) for the majority of the Navajo Nation. Within the community, the main transmission line runs east to west through the community. This system provides electricity to Cow Springs, Middle Mesa, Ya ii tiin, Tonalea, a portion of White Mesa and Wildcat Peak. Sixty percent of homes in the community are connected to electric infrastructure. Contact Harry at NTUA – as built of existing electrical lines/chapter boundry.

Gas System

A natural gas pipeline runs through the community however it is not accessible now. Propane gas is used in the community to supplement and reduce electric costs for heating and cooking purposes. Neighboring propane vendors deliver propane to individual homes with tanks on a regular basis.

Community Communications

Telephone

Cellular phone services and coverage has expanded rapidly to remedy the need for personal communications to complement limited landline services. Cell phones are the primary mode of telephonic communication.

Improvements to the capacity of the landline system are called for in the proposed development areas. Continuing to improve telecommunications can help build stronger business links and stimulate commercial development opportunities.

Broadband

NTUA has recently added to their lists of services to deliver broadband and wireless services. Community members may purchase the new services offered or subscribe to satellite internet services.

Radio

Clearly transmitted AM radio stations include KTBA and KTNN from Tuba City and Window Rock, respectively. Clear FM radio stations that can be readily heard include KGHR from Tuba City, KQYI from Hopi, and KMGN, KAFF, KVNA, and KOLT from Flagstaff, Arizona. Some residents utilize satellite television.

Solid Waste

There are two 40 cubic yard open top bins within the chapter compound for Solid Waste Management.. There is a small fee assessed to cover the expense for waste management. However, there are existing illegal dumping sites throughout the community.

Railroads

The Black Mesa/Lake Powell Railroad is owned by the Salt River Project. It meanders through the middle of the Tonalea community. Its sole purpose is to transport coal from the Black Mesa Mine near Kayenta, Arizona to the Navajo Generating Station in Page, Arizona.

Land and Water Resources

Water Systems

The current water system in Tonalea community was designed and constructed by the Indian Health Service (IHS). It is currently owned and operated by the NTUA. The water source stems from three wells that penetrate the N-aquifer. This water system services the Tonalea and Cow Springs communities and rural home sites along Highway 160.

A major waterline extension project is underway through IHS, Office of Environmental Health, to bring water to 50 additional homes in the community. The water system includes two steel water storage tanks, one booster station, and pressure reducing vaults. This water system will provide water to Site 3 (identified in the Land Suitability Section).

Brown and Caldwell Inc., on behalf the Navajo Nation, are presently studying the water systems in preparation for a master water plan for the community. Upon the completion of the master water plan, the community can expand on their water plan/water usage/water development for future generations.

There is a concern of residents drinking water from windmills designated for livestock. When consumed there is the risk for bacterial contamination and airborne contaminants from livestock and vandalism. This issue can be addressed through providing safe drinking water sources closer to these remote homes, a centralized drinking water truck delivery system, and/or improving the water quality testing and treatment of all water sources, including windmills and earthen dams, which will require significant coordination with the relevant existing agencies and departments to expand their role and responsibility in this area. Tonalea Chapter needs to develop a water conservation plan to address earthen dams and water catch systems.

Implementation Recommendations

Recommendations to Implement the Plan

The Tonalea Chapter Comprehensive Land Use Plan, TCLUP represents a statement of willful intention of the chapter regarding the future physical development of the community. The TCLUP sets broad guidelines for development. This part of the Land Use Plan discusses recommendations to implement the plan. These recommendations center on the understanding of the chapter's authority and jurisdiction, adopting of specific codes, planning for enforcement, updating the plan, and other considerations. In the last section, a conclusion is presented.

Understanding Authority and Jurisdiction

The community planner and the citizens involved in planning their communities must have a working knowledge of the legal framework affecting this plan. The Tonalea Chapter is a Local Governance Act (LGA) chapter. Which allows this chapter to make decisions over local matters *Section 103, Chapter Authority, lists specific authority given to chapters to allow them to become self-governing. In implementing the LGA authority there are several issues that must be kept in mind as the chapter begins to develop its local codes. These issues relate to existing tribal codes, the delegation of authority, non-tribal members.*

Existing Tribal Laws the Navajo Nation has a comprehensive set of codes, in which chapter governments may not exceed this authority; such as Title V-Navajo Uniform Commercial Code, Title XVI, Land, and other codes. However, chapter governments can develop ordinances that meet the specific needs of the local government.

A Delegation of Authority the LGA directs Resources Development Committee to promulgate rules that re-delegate power of the Resources Committee of the Navajo Nation Council to chapter governments for home-site and business site leasing. Therefore, chapter governments may find it necessary to implement an interim policy until such time these committees develop their own necessary policies.

Non-Tribal Members Chapter governments must be cognizant of jurisdiction issues related to non-tribal members and that any ordinances developed should provide due process for all individuals as required by law. Laws that are ambiguous do not provide the necessary comfort level for an individual that wants to establish a business on the reservation.

Adopt Appropriate Codes

The chapter's comprehensive land use plan will find the force of regulation through specific ordinances, codes, and programs to manage and enforce the plan. The recommendations for implementing this plan involve the development of at least two codes, including a land development code and a building code. These codes will be incorporated into law through ordinances passed by the chapter's government. Ordinances, codes, and programs are tools to make a reality of the chapter's vision for the future.

Unified Land Development Code

The chapter should consider adopting a land development code. The purpose of the land development code is to establish standards and regulations for review and approval of all

proposed developments. A review process must be developed that will be all-inclusive, consistent, and efficient in the implementation of the comprehensive plan, other goals, policies and standards of the chapter.

The land development code is the principal code regulating subdivision and development standards and procedures for the chapter. The land development code also regulates zoning by districting land uses to promote the goals and objectives envisioned in the plan. A land development code should include the following sections:

1. *Decision making and Administrative Bodies*
2. *Planning Documents*
3. *Development Review Procedures*
4. *Development Regulations*
5. *Construction Procedures*
6. *Nonconforming Procedures*
7. *Enforcement*
8. *Effective Date and Severability*
9. *Purpose, Authority, Jurisdiction and Applicability*

Building Code The chapter must develop building codes for the community that build upon the existing Tribal Building Codes. Building codes are the written provisions and structural requirements for the construction, repair, alteration, or addition to a structure. They help protect the health and safety of the residents by ensuring safely constructed buildings. Building codes include requirements such as building height, coverage, building materials, required size of the building, and permit requirements.

Unified Land Development Code

The ability to enforce the codes is as important as the codes itself. There are a number of serious considerations when writing development codes such as financial resources, a creation of appropriate enforcement entities, adoption of the code(s), an appointment of a governing board, adoption of necessary forms, and issuance of notice to affected people.

The chapter will need to provide professional development training for current and additional staff within the chapter to implement the newly adopted plan. There may also be opportunities to hire consultants on a project-by-project basis. All forms of staffing should be carefully considered and budgeted each year to ensure the enforcement of adopted codes.

The chapter must provide municipal educational programs for the residents of the community that explains the purpose of the comprehensive plan. These educational programs entail city ordinances as well as farming/grazing management.

Update the Comprehensive Land Use Plan Every Five Years

The CLUP committee shall re-examine the comprehensive plan, prepare a written report setting forth the findings of such re-examination, and shall transmit a copy thereof to the chapter. A public hearing shall be conducted to discuss the findings. The comprehensive plan shall then be revised to reflect the agreed upon findings.

Other Recommendation

There are a number of recommendations that the chapter should consider as part of this plan. These recommendations relate to developing a capital improvement plan and special programs as necessary, as well as emphasize centralized growth areas, and prioritize land use goals.

Develop a Capital Improvements Plan (CIP) The chapter should consider adopting a CIP. A CIP is a program of municipal capital improvement projects and their estimated costs projected over a period of time. The CIP should include major projects currently being undertaken, or to be undertaken with federal, Navajo Nation, or local public funds. Such projects may include any major nonrecurring expenditure or any expenditure for physical facilities of government, such as costs for acquisition of land or interest in land; construction of buildings or other structures, including additions or major alterations; construction of streets and utility lines; improvements; acquisitions of fixed equipment; installation of landscaping; and similar expenditures. The CIP should serve as a means for systematically reviewing proposed projects to ensure coordination of expenditures and development with the comprehensive plan.

Develop Special Programs As Necessary The chapter should consider initiating special programs to provide services, funding or other incentives to enhance the community. Examples of special programs include a community block grant program, a revolving loan fund program, or a special assessment district, which assesses a fee to a special area for use of that area. In all cases, these programs should be designed for the goals and objectives of the comprehensive plan.

Emphasize a Compact Central Growth Area The comprehensive plan is based on the finding that there are needed local land used within the community. The plan establishes a central area where local commercial and residential services are designated. Indeterminate growth of the community may result in serious deterioration in the quality of transportation, the natural environment, the character of the community, and the quality of life. Therefore, future expansion of the central area would continue to create compact continuous growth and provide the highest use of infrastructure and natural resources.

Prioritize Land Use Goals One of the first tasks by the chapter should be to prioritize the land use goals listed in Part 4 of this plan. While some goals can be implemented simultaneously, other goals may require finances that are currently unavailable. One of the greatest factors for implementing the goals is finding financial resources. Prioritizing the goal factors would be done for financial reasons as well as for meeting the greatest needs first.

Conclusion

The community land use plan is the result of years' worth of work by the community of Tonalea Chapter and the CLUP committee. This work includes workshops, community survey, data collection, public meetings, and much discussion on future land-uses. The result of this work is presented in this document and represents a guiding tool for the community for the next five years. Community land use plan is a guiding tool that provides room for change, growth, and development. It is flexible to meet the changing needs of the community and yet is structured to provide a solid foundation and direction for the future. Every part of the plan has been developed

with the community's vision statement in mind. The goals as they are implemented will lead the chapter toward this vision.

This plan shall be considered an official statement of the policy of the community with the respect to the existing and developing character of various areas of the chapter. The proper objectives, standards, and directions for future maintenance, growth and development will encourage future development that will be in the best interest of the community. The actions and programs will be undertaken by the community with the respect to its future maintenance and development.

All future development regulations, zoning maps, public buildings and improvements, right-of-way, and other use of land shall be authorized, established, developed or redeveloped, by a public agency or a private developer, in accordance with the policies, goals, objectives of the plan and the Five Management System.

Land Use Plan and Corresponding Maps meet with current and proposed uses of land

All maps are included in the Appendix.