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1.0 Introduction

Vision and Mission of Tolani Lake

We are committed to protecting the Dineh cultural values and educating our youth of today. Hence, strengthening and expanding their educational opportunities as they journey through life. We will provide public services that are effective, efficient, and productive in the delivery of services as we engage in economic and industrial growth.

1.1 Plan Purpose

¹The Navajo Nation Chapter Governments are now working towards becoming a "Governance-Certified Chapter" under the provisions of the Navajo Nation Code (N.N.C.) Title 26 Local Governance Act of 1998 (LGA).

²The purpose for requiring chapters to develop a Comprehensive Community Based Land Use Plan is to identify and put into practice land uses that will best meet the needs of the community while safeguarding resources for the future. Within the Navajo Nation, there are three (3) basic needs to develop a land use plan. They are: 1) to comply with the Navajo Nation Local Governance Act (LGA) ; 2) to leverage for tribal, state and federal project development funding; and 3) to identify areas of land for community facilities, residential and commercial developments, and to preserve grazing, cultural and open areas.

³Once Tolani Lake Chapter demonstrates their capacity to develop and implement the Five Management System and receives certification from the Transportation and Community Development Committee of the Navajo Nation Council they are on their way to have more local decision-making authority. The Tolani Lake Chapter will also have the option to work in partnership with Naaataanii Community Services, Inc. in developing innovative solutions to expand grant seeking efforts.

The purpose of this Community Based Land Use Plan (CBLUP) is to present interconnecting issues that are facing the Tolani Lake Chapter (hereafter referred to as “the Chapter”). The CBLUP gathers information that will help guide future development and policies on ~~tribal~~ Chapter land. With this information, the Chapter can make better future decisions concerning budgeting, capital improvements, and land use in order to reach the community’s goals and achieve its vision.

The CBLUP is a collection of information from the Chapter, federal, state, and local governments that has been compiled into one document. The focus of the CBLUP is providing for housing, coordinating infrastructure development, protecting open space, designating commercial areas, and prioritizing needed community facility improvements. This plan includes

¹ Naataanii Community Land Use Plan, pg. 1.

² Resolution of the Transportation and Community Development Committee of the Navajo Nation Council, III. General Information, B., pg. 1.

³Naataanii Community Land Use Plan, pg. 1.

an emphasis on projects needed for the recovery from the former Bennett Freeze ⁴which includes providing decent housing, providing a suitable living environment, providing expanded economic opportunity and improving the effectiveness of programs.

The CBLUP uses a consensus-building process to facilitate present and future land use decisions. This process establishes a unified set of policies to guide future land use decisions regarding residential subdivision plans, capital improvement projects, recreation and infrastructure plans, zoning districts, and variance appeals.

1.2 Former Bennett Freeze Area (FBFA) History

Approximately 28,263 acres (18 percent) of the Chapter are located within an area that was prohibited from any development or building repairs without express approval from both the Navajo and Hopi tribes following a long-standing land dispute that resulted in the so-called Bennett Freeze.

The Bennett Freeze, or section 10(f) of Public Law 93-531, arose from a decades-long land dispute between the Navajo Nation and the Hopi Tribe. The dispute began after the United States delineated the boundaries of the Hopi Reservation in 1882, which excluded some Hopi villages, farmlands, and sacred places. In 1934, the United States defined the boundaries of the Navajo Reservation on its western side, and a portion of the Hopi Tribe's 1882 Reservation, known as District 6, was reserved exclusively for use by the Hopi Tribe.

In 1966, Bureau of Indian Affairs Commissioner Robert L. Bennett issued a series of administrative orders that restricted development in the western portion of the Navajo Reservation (as defined in 1934). This became known as the Bennett Freeze and was intended to be a temporary measure to prevent one tribe from taking advantage of the other until the land dispute was settled. The Bennett Freeze restricted property development without joint consent of the Hopi Tribe and Navajo Nation, which had a devastating impact on the area and resulted in substandard housing and infrastructure. Grazing permits were invalidated, new homesite leases could not be issued, and community facilities and utilities could not be constructed.

In 1992, a U.S. District Court judge ordered the Bennett Freeze lifted. The Arizona District Court ruled that the Hopi Tribe had legal title to 64,000 acres in the freeze area and awarded the balance to the Navajo Nation. Navajo and Hopi residents finding themselves on the "wrong side" of the dividing line were forced to relocate, affecting mostly Navajo residents. In 1995, the freeze was reinstated when the Ninth Circuit Court of Appeals reversed the Arizona District Court's decision on the question of whether Hopi religious practices gave rise to rights of occupancy.

In 1997, a Federal District Court approved an agreement between parties lifting half of the Bennett Freeze Area. Litigation continued regarding the status of the remaining area.

In 2006, Navajo and Hopi leaders signed an Intergovernmental Compact, which was approved by a federal court in 2007, lifting the Bennett Freeze. The compact clarifies the boundaries of the

⁴ Naataanii Community Land Use Plan, pg. 2.

Navajo and Hopi reservations in Arizona and ensures that access to sacred sites of both tribes is protected.

SALT TRAIL

The Salt Trail ran along the Little Colorado River to the Colorado River and then continued on from there to the Great Salt Lake. People used this trail to get salt since it was the only passable route from this region to Salt Lake. Along this route there were many ceremonial sites, especially where the Little Colorado River meets the Colorado River.

For over 40 years, the Bennett Freeze has resulted in very limited improvements and severe social and economic problems. People have been living in sub-standard conditions in dilapidated homes, because restrictions prohibited new housing construction and repairs. Due to these poor living conditions, many young people, families, and elderly have relocated to nearby towns for better health services, education, the convenience of modern-day necessities, better homes, and job opportunities.

Rehabilitation of the former Bennett Freeze Area (FBFA) will continue to be a priority for many years to come. The FBFA requires significant projects for improvement, including the following priorities: infrastructure development, housing construction and repairs, development of water resources, and development of businesses and community facilities to support economic activities.

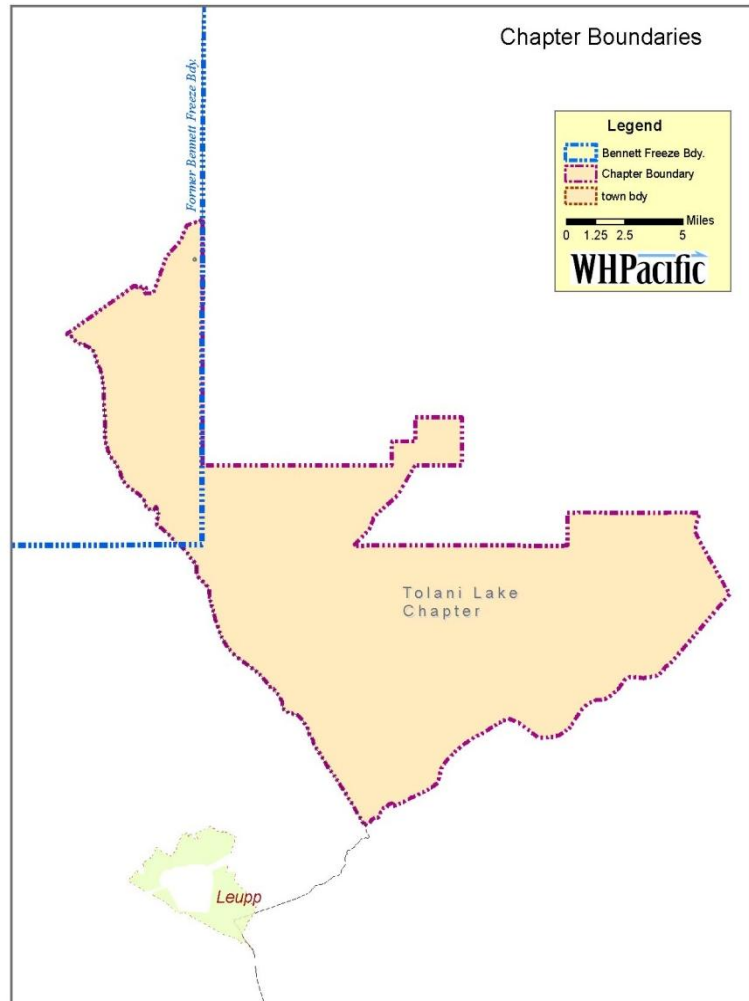


Figure1: Bennett Freeze Boundary

These projects make up the capital improvements that are part of the former Bennett Freeze Area Recovery Plan, a document prepared for the Navajo Nation's Design and Engineering Services in 2008.

1.3 Location Map

Tolani Lake is located in the west southern region of the Navajo Nation and is part of the Western Navajo Agency. The focus of this study is the Tolani Lake Chapter area, located in the southwestern region of the Navajo Nation, approximately 60 miles east of Flagstaff, Arizona (Figure 2).

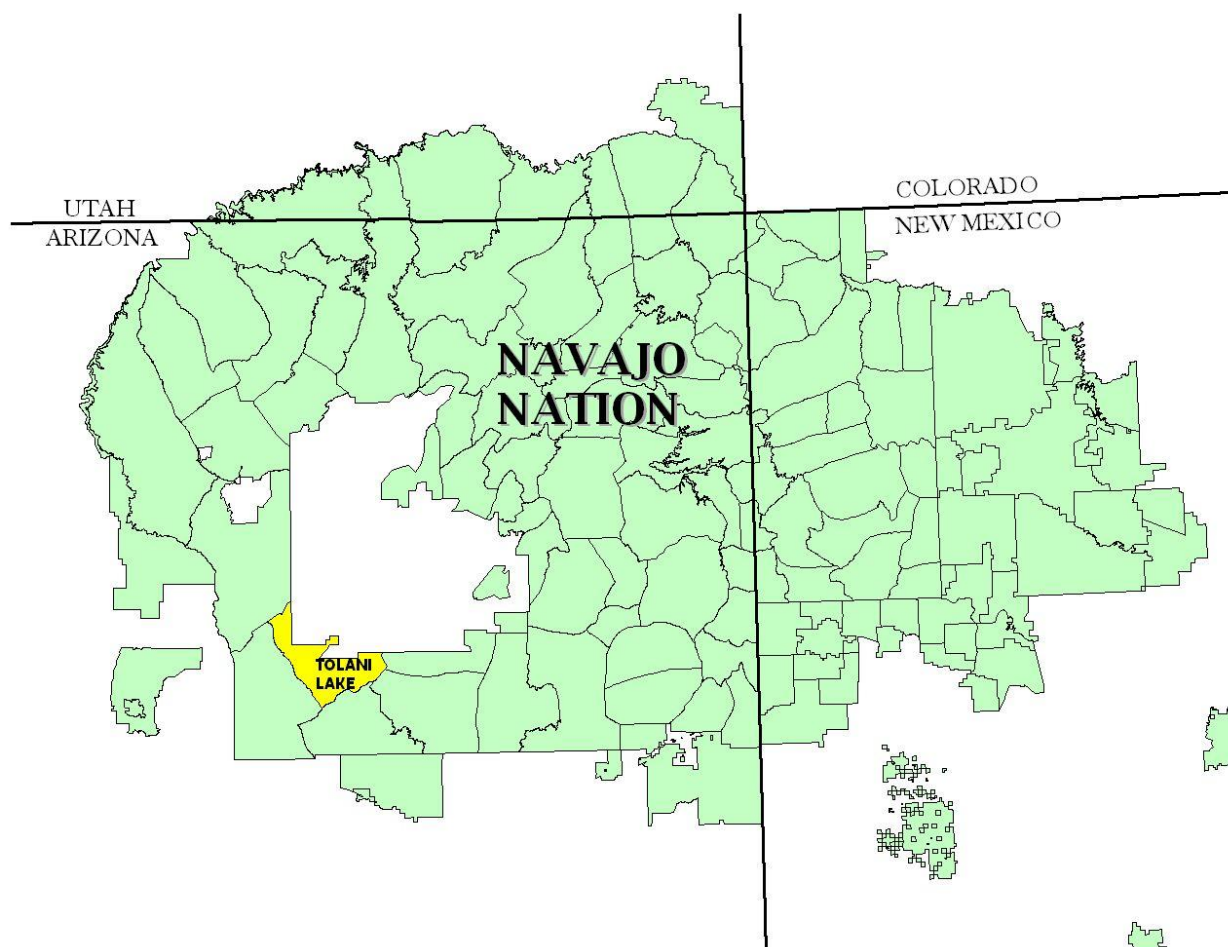


Figure 2: Chapter Location

1.4 Scope of Work

The Navajo Nation contracted with WHPacific, Inc. to provide planning services between May and September of 2008 to develop a Regional Recovery Plan for the former Bennett Freeze Area (FBFA). This effort included information-gathering within the FBFA, but also throughout the rest of the nine chapters affected by the freeze, for purposes of comparison in terms of the impact and resulting needs of residents. WHPacific, Inc. offered to provide information and services for the nine chapters so that they could update their Community Based Land Use Plans (CBLUPs) and continue their efforts toward certification.

The successful recovery process from more than 40 years of the former Bennett Freeze will require strong leadership, clear community vision, and dogged determination of all involved to implement the projects needed in impacted areas. The chapter certification process is one way to build capacity at the local level for governance, project management, and ongoing operations and maintenance.

In order to update the CBLUPs, WHPacific, Inc. combined each chapter's most recent CBLUPs document; information gathered from residents, officials, and chapter staff at two community workshops; research from existing plans and ongoing project efforts at tribal and federal agencies and departments; and new information gathered by field teams using a Global Positioning System (GPS) to take data points at houses, roads, and other man-made features, and assess each feature's condition, whether very good, good, fair, poor, or very poor based on particular criteria that are included in the Appendix 5.1.

Due to the short planning timeframe and emphasis on the FBFA Recovery Plan, the chapters, after reviewing the document, will, most likely need to further update these plans to reflect current efforts, priorities, and future plans. All files and information have been submitted electronically in order to facilitate that process. The Navajo Nation's Division of Community Development, particularly Design and Engineering Services, which managed the FBFA Recovery Plan effort, will continue to provide support for the chapters as they move forward with their community plans.

The backbone of this plan and much of its technical information and graphics were compiled in two separate planning efforts, one for the main community and one focusing on the FBFA area. The previous version of the Tolani Lake Chapter Community Land Use Plan was compiled by the consultant Swan Hulsing Partnership (SHP) in 2001. The plan was updated by Nizhonigo Nahata Consulting Service in 2005 to include a focus on the FBFA. Where WHPacific, Inc. did not gather information affecting this information, it was not changed. This document should be seen as an update and fortification of the current Land Use Plan based on information and efforts to produce the FBFA Recovery Plan.

1.5 Chapter Description

Tolani Lake Chapter is located in the southwestern region of the Navajo Nation, approximately 60 miles east of Flagstaff, Arizona and 40 miles north of Winslow, Arizona. The Chapter straddles the Coconino and Navajo County lines. The Chapter is bordered by Leupp and Birdsprings to the south, Coalmine Canyon to the north, Teetsoh and Dilkon to the east, and the Hopi Reservation to the northeast.

⁵The land status and jurisdiction of Nataanii Community lies within the Tolani Lake Chapter and adjacent to the following chapters; Cameron, Leupp and Coal Mine Mesa within the Navajo Nation boundary. Based on the primary planning area the land base consists of 160 sq. miles and is within Grazing District 5 and 3.

⁵ Naataanii Community Land Use Plan, pg. 1.

One of the most important influences in determining the present location of the Tolani Lake Chapter is the fact that the Chapter lies partially within the region commonly referred to as the Hopi Partitioned Land (HPL) and Navajo Partitioned Land (NPL), and a portion of the Chapter became what is now the FBFA. The partitioned land is very complex, controversial, and filled with deep social, economic, and psychological impacts on the people affected and the Chapter community. In addition, the 1934 former Bennett Freeze Area has placed an administrative freeze preventing the Chapter and Navajo families from home repairs or new construction.

Prior to the 1974 adoption of the Navajo-Hopi Land Partition, the Chapter had an approximate land base of 663 square miles; the partition left the chapter with 470 square miles. The estimated land size for Tolani Lake Chapter is now 157,240.40 acres, the majority of which is grazing land.

Presently, the settlement of Tolani Lake has an approximate population of 400 in the developed area of the Chapter. Tolani Lake community includes a Chapter House, Senior Citizen Center, Head Start Program and Navajo Housing Authority housing units

Current community development efforts include erecting an outside gym, extending and renovating the Senior Center, and creating an independent living within the chapter tract, for the community. The remainder of the Chapter area has widely scattered homesites where Navajo families continue traditional use of land for livestock grazing. Many remotely located Navajo families have built their own homes.

1.5.1 History

The community part of the Chapter area was settled in the late 1890s. Settlers were attracted by the rich basin for farming. Its Navajo name, Toneheliih, can be translated *Collecting of Water in a Basin*.

In 1930, a trading post and a day school were built. Before the Chapter House was built in the 1950s, community residents met by a trading post outdoors, and sometimes under trees. An old BIA school was the center of many activities before it was converted for pre-school use. Sand Springs Farm, a 170-acre community farm, was established in 1961.

Due to the Navajo-Hopi relocation turmoil of the 1977 Settlement Act (PL 93-531) as amended by (PL 96-305) in 1980, Tolani Lake was reduced by almost half to its present-day size.

A distinctive part of the Tolani Lake community is the Naataanii' Area which was named after Hosteen Natoni by chapter officials a long time ago. All of Hosteen Natoni's children and grandchildren still live in the area.

1.5.2 Physical Setting

To the west is the beautiful Dook'o'oosliid, one of the four Navajo sacred mountains. The land base is colorful with indigenous plant life. There are sand dunes, red mesas with valleys, hills, and arroyos. The rich basins along the arroyos are suitable for farming.

1.5.3 Chapter Planning Area

The Chapter Planning Area from the 2000 U.S. Census were used in this planning document. The official location of the Chapter boundaries have not been agreed upon; therefore causing

disagreements upon service areas between different Chapters. Figure 3 on the following page displays the discrepancies between the Chapter Boundaries used by the 2000 U.S. Census and the boundaries that represent the grazing districts.

Chapter service areas will affect where to direct funding, so the stakes are high. Even after funding arrives, unresolved issues with overlapping service areas complicates the implementation of projects. Even if chapters continue to agree to disagree about their boundaries, neighboring chapters should work out a system to process, approve, and implement projects in order not to cause any development delays.

⁶The Naataanii Community Services, Inc. under the authority of the Tolani Lake Chapter will plan for this sub-community since, community members felt they were not included in the Tolani Lake Chapter Community Based Land Use Plan developed by another consultant. The Naataanni Community Land Use Planning Committee will coordinate with the Tolani Lake Chapter. Also combine efforts with the planning, application, and reporting processes for Native American Housing and Self-Determination Act lead entity Navajo Housing Authority (NHA). The plan will be used as a guide and reference for the planning/development of these programs. It contains information related to Navajo Nation housing and community development policy regarding citizen participation and program development.

⁶ The Naataanii Community Land Use Plan, pg. 1.

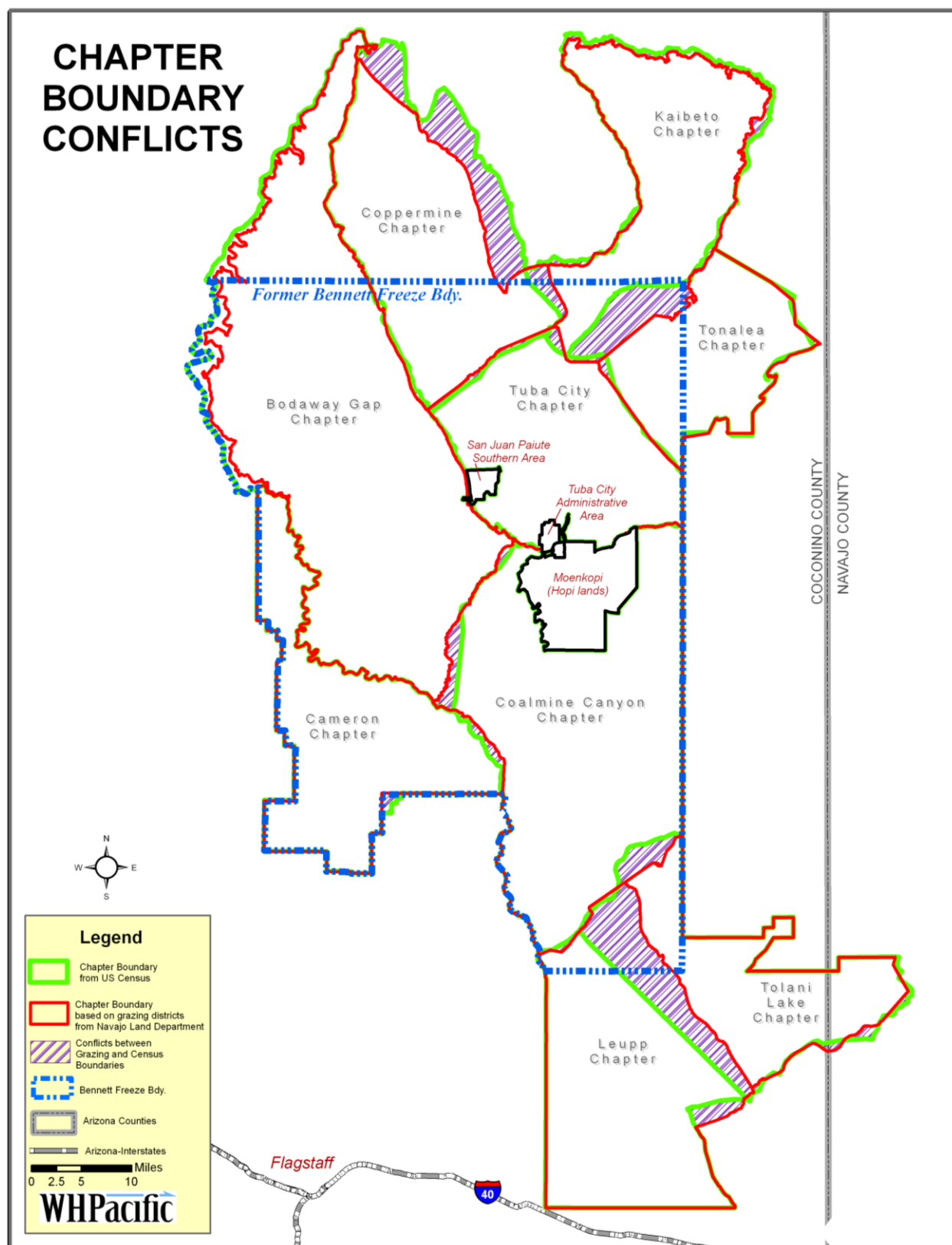


Figure 3: Chapter Boundary Conflicts

1.6 Public Participation Process and Planning Process

1.6.1 Public Participation

As part of the process to develop the FBFA Recovery Plan, WHPacific, Inc. met with each of nine affected chapters – Bodaway/Gap, Cameron, Coalmine Canyon, Coppermine, Kaibeto, Tolani Lake, Tonalea, and Tuba City – to conduct two community workshops at each chapter house.

These workshops were part of a regional comprehensive planning effort for the FBFA that continued through September 2008. The first workshop was a two-day participatory strategic planning session, and the second workshop was a one-day follow-up land use mapping session at each chapter with officials, staff, and community members. The first community workshop focused on generating a practical vision, understanding the challenges to achieving the vision, creating strategic directions to address these challenges, and prioritizing projects for future action. The second community workshop focused on confirming the priority of capital projects; producing principles to guide future development; deciding the phasing for development; and planning the location, relationship, and infrastructure needs to support projects on chapter land.

The workshops were coordinated by the chapter services coordinators and chapter officials, who determined the invitation list with guidance from the facilitation team and planned the logistics of the meeting locations, dates, and times.

⁷The Naataanii Community has four (4) sub-communities, Rock Stand, Sand Springs, Black Falls and the Naataanii Area, it is recommended that grazing permit tees and families be informed of the Land Use Plan update. The Naataanii Community Land Use Planning Committee will review and make comments during the update of the Tolani Lake Land Use Plan.

The previous efforts in 2001 and 2005 to create the chapter land use plan, performed by SHP Architects and Engineers, and Nizhonigo Nahata Consulting Services consisted of educating tribal members about the uses and benefits of land use planning, how the plan would be developed, and the importance of having participation in the planning process.

1.6.2 Planning Process

The community workshops described above were the starting point for producing the information needed to update the CBLUP. Workshops were designed to serve the purpose of efficiently producing a community needs assessment and initial land use map.

WHPacific, Inc. added this information to the most recent CBLUP and researched other existing plans and ongoing project efforts at tribal and federal agencies and departments. New information was gathered by field teams using a GPS to take data points at houses, roads, and other man-made features, and assess each feature's condition, whether very good, good, fair, poor, or very poor based on particular criteria that are included in the Appendix 5.1.

⁷ Naataanii Community Land Use Plan, pg. 8.

The planning team then compared the community needs assessment with the professional assessments performed by the field teams, using information from other agencies and departments about current planning and project efforts, to produce final recommendations for action. In the case where a project identified by the community matched the need assessed by the field teams, the planning team looked to see whether the project was identified on a previous land use map or mapped at the community land use planning workshop. If not, the project was recommended as a feasibility study to decide the project's scope and location, and funds for this study were added to the infrastructure and capital improvements plan (ICIP). If a location was identified, the chapter was asked to provide information about its current planning efforts and overall project status, whether the project had been planned, land withdrawn, surveys completed, and any design or construction work completed. Projects with identified locations were added to the chapter's ICIP based on the project's status toward completion.

Many of the ideas from the community workshops were for programs, policies, or efforts that are not considered capital projects, such as additional staff, education programs, or land preservation. These were included in the CBLUP as recommendations for the chapter to pursue as part of its operating budget or from outside or private funding sources as needed.

The overall goal of this planning effort was to demonstrate the method by which the chapter can update its own plan as needed. In particular, the community workshops 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.



2.0 Existing Conditions – Community Assessment

The purpose of this section of the CBLUP is to present the current needs and conditions of the Tolani Lake Chapter. The plan gathers information that affects, thwarts, or places pressure on the Chapter's development strategy. With this information, the Chapter can make better future decisions concerning budgeting, capital improvements, and land use. As part of the Chapter Plan, this report should be treated as a living document and updated as needed.

This section is based on census information, information gathered from the Chapter, field assessments, and other sources. The community assessment aids 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 also identifies and describes issues that affect land use patterns and may impact future development.

Information is presented in summary form in Section 2.1 to form a community profile, and subsequent sections give more detail about specific demographic information.

2.1 Demographics and Community Profile

According to the 2000 U.S. Census, 755 individuals reside in the Chapter. Population projections predict the population will grow by 22 percent by 2020, reaching a total population of 923.

In 2000, 48 percent of the population is comprised of individuals 24 years or younger. In addition, the median age for both genders is 27 years old. Both of these facts indicate that the Chapter is and will continue to experience a surge of young individuals and families in the future.

Family households comprise 76 percent of all households and are composed mostly of married couples. The Chapter's average household size is 3.9, which is larger than that of the Navajo Nation at 2.6. The Chapter's average family size is 4.5, which is the same as the Navajo Nation's. The Chapter racial and ethnic makeup is composed of 99 percent American Indian.

In the Naataanii Community area the average age is 26 years old. This gives an idea of how the age groups may be reflected in that area. Most chapters have a very high youth population. The baby boomer generation comes in second. In the not so far future, this age group will be in need of increased senior citizen services. This will include planning for a group home/assisted living facilities and standard services.

There are elders now who received some services. However, in the remote area of Naataanii it appears services are non-existent. The safety and health of this age group is one of the important goals that need to be addressed now that the "freeze" is lifted.

The Tolani Lake Chapter has 209 households with a median household income of \$28,125, which is about \$8,000 higher than the Navajo Nation. The per capita income in the Tolani Lake Chapter is \$6,749, which is slightly lower than the Navajo Nation's. Forty-one percent of Chapter households live below poverty level, which is about the same as the Navajo Nation.

There are 305 housing units in the Chapter and 85 percent of homes are owner-occupied, which is slightly less than in the Navajo Nation. Thirty-six percent of Chapter homes are vacant. One hundred percent of homes are single detached homes. Sixty-eight percent of homes were built between 1960 and 1989, which is similar to the Navajo Nation at 64 percent. The median year for a structure built to be is 1985, which is slightly newer than the Navajo Nation at 1981.

The Chapter's three major heating sources are wood (81 percent); bottled, tank, or liquid petroleum (LP) – typically butane or propane (11 percent); and fuel oil, kerosene, etc. (5 percent), which is slightly different from the Navajo Nation at wood (52 percent); bottled, tank, or LP (23 percent); and utility gas (13 percent). Eighty-three percent of homes do not have telephone services, which is slightly higher than the Navajo Nation at 60 percent. Fifty-seven percent of homes lack complete plumbing facilities, which is greater than that of the Navajo Nation at 46 percent.

Unemployment in the Chapter is 12.7 percent, which is 1.5 percent higher than the Navajo Nation. Only 39 percent of the population over 16 years old participates in the labor force. This low labor force participation rate is due to the scarcity of employment opportunities in the Chapter. The only employer in the Chapter is the Navajo Nation, which employs 14 people.

Compared to the Navajo Nation, the workforce in the Chapter has a similar level of educational attainment. Fifty-one percent of the population over 25 years old have a high school diploma, and three percent have a bachelor's degree or higher. Employment opportunities are extremely limited in the Chapter, and most of the workforce is employed by private companies and government entities in Leupp, Tuba City and Flagstaff. Sixty percent of the workforce is employed in the services industry, primarily in educational, health, and social services.

2.1.1 Population

The 2000 U.S. Census states that the population for the Chapter was 755 individuals. Baseline population projections to the year 2020 were prepared using information from the 2000 Census. A population projection technique called cohort survival 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- or out-migration of Chapter members, which means it does not predict how many people might move in or move out of the Chapter. The projections are presented in Figure 5: Tolani Lake Population by Age and Gender , Figure 6: Tolani Lake Population by Age and Gender 2010, and Figure 7: Tolani Lake Population by Age and Gender 2020, respectively.

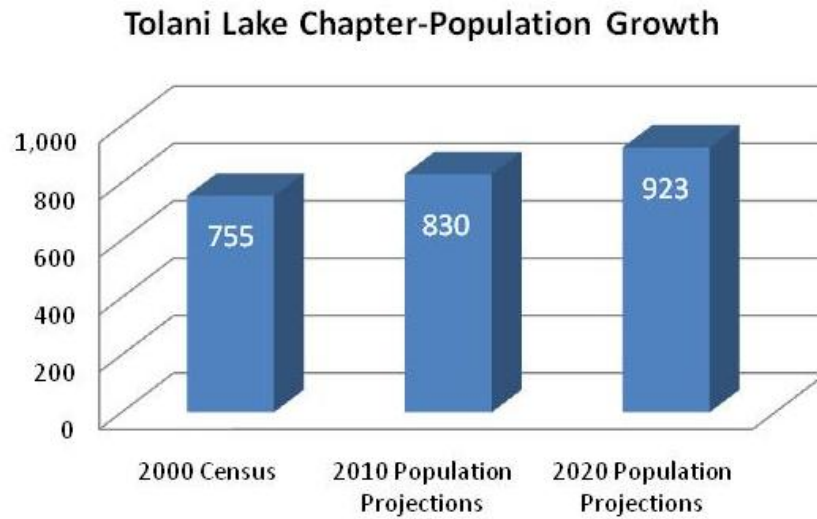


Figure 4: Tolani Lake Chapter Population Projections

Source: U.S. Census

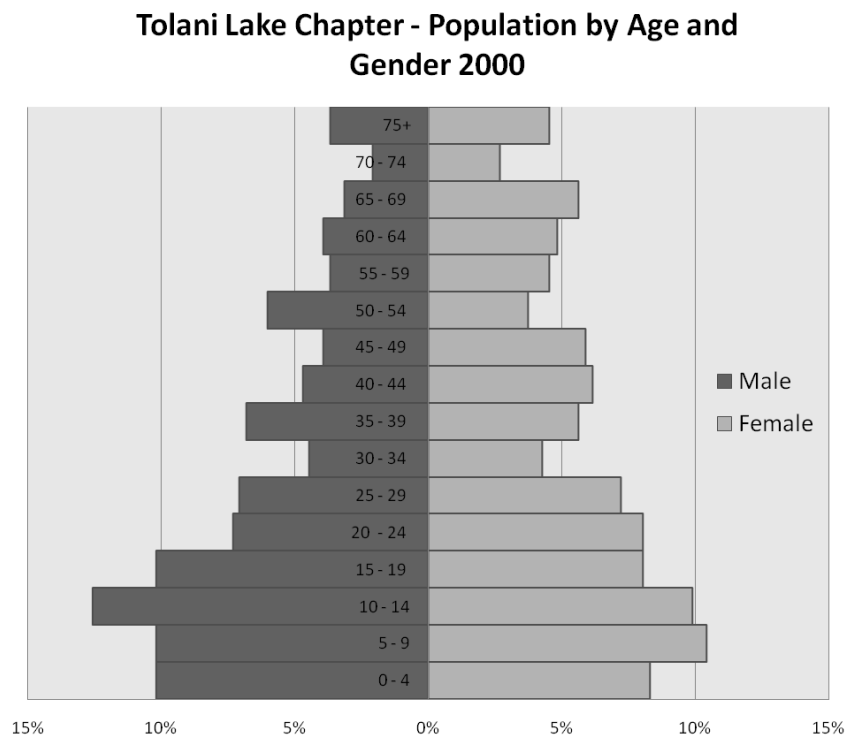


Figure 5: Tolani Lake Population by Age and Gender

Source: U.S. Census

Tolani Lake Chapter - Population by Age and Gender 2010

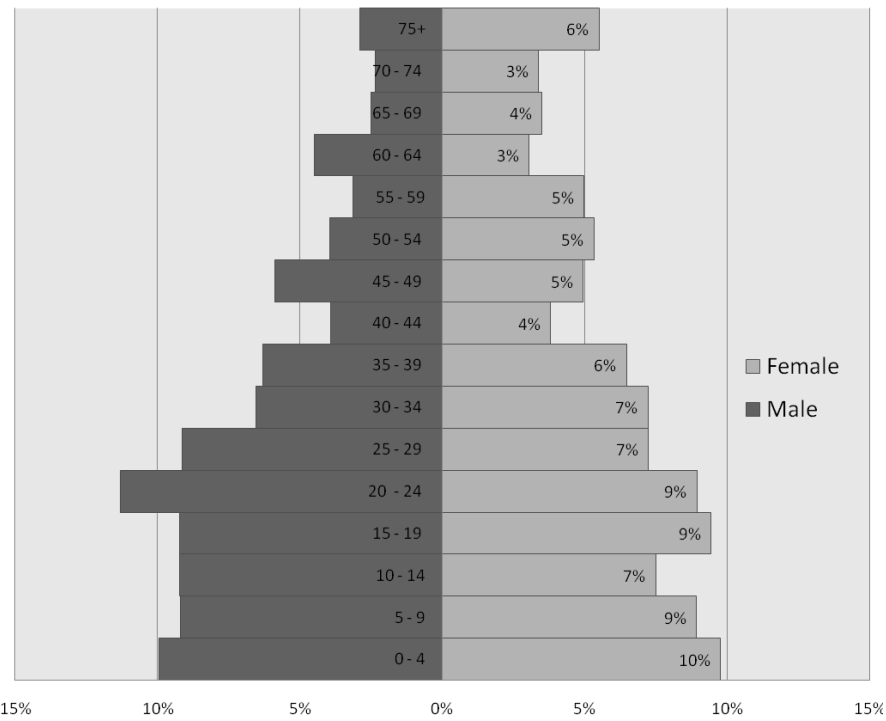


Figure 6: Tolani Lake Population by Age and Gender 2010

Source: U.S. Census

Tolani Lake Chapter- Population by Age and Gender 2020

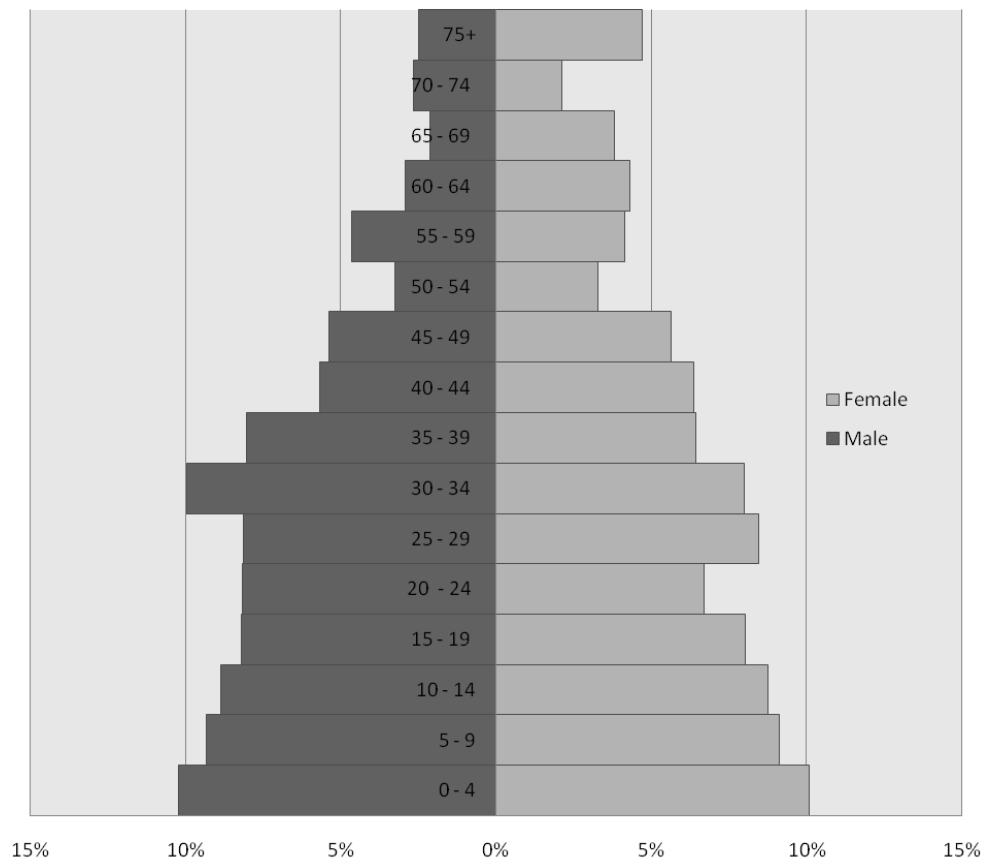


Figure 7: Tolani Lake Population by Age and Gender 2020

Source: U.S. Census

The population projections predict that the Chapter will experience population growth in the future. The Chapter can expect a 10 percent population increase from the year 2000 to the year 2010. Overall, the Chapter is expected to grow by 22 percent by 2020, a slight lower rate than the Navajo Nation overall.

Tolani Lake Chapter-Population Growth by Percentage

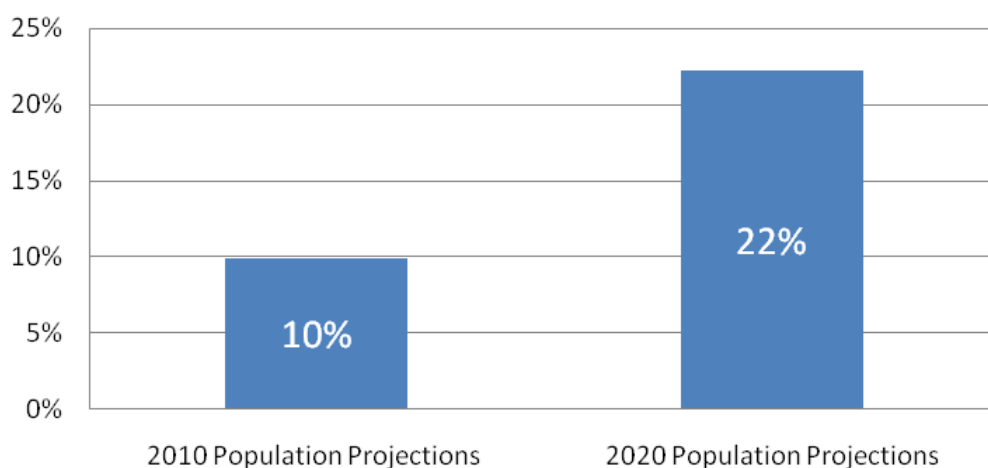


Figure 8: Tolani Lake Chapter Population Growth

The Navajo Nation is also likely to expect a population growth in the future, including a 14 percent population increase from the year 2000 to the year 2010. Overall, the Navajo Nation is expected to grow by 31 percent by 2020.

Navajo Nation- Population Growth

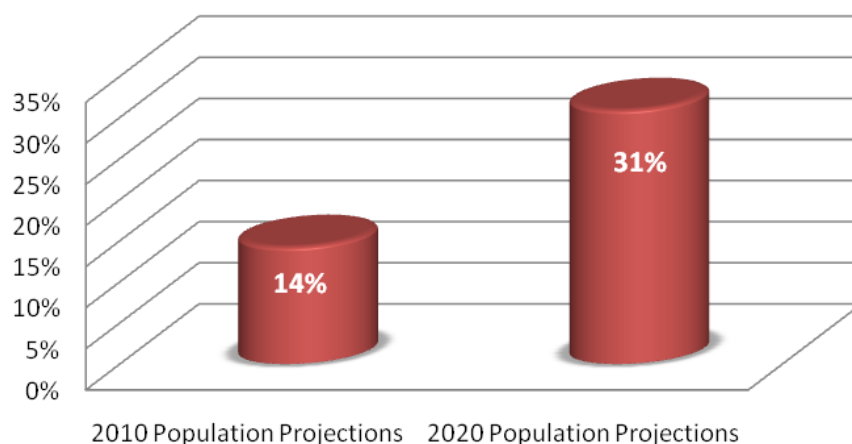


Figure 9: Navajo Nation Population Growth

In the Chapter, 48 percent of the population is composed of individuals 24 years or younger. This indicates that the Chapter is and will continue to experience a surge of young individuals and families in the future.

The Chapter's youth will be a sizeable cohort for the next 15 years. Young people are entering the work force and beginning their lives as adults. This cohort will place a greater demand on

housing, employment, and social services than the existing demand. It is imperative that this matter be reviewed and addressed; if it is not, it could lead to more out-migration of youth to other locations with better housing, employment, and social services.

The Chapter's median age for both sexes is 27 years. The Chapter's median age for males is a year older than that of the Navajo Nation, but younger than Arizona's. The Chapter's median age for females is older than the Navajo Nation's, but younger than Arizona's.

Table 1: Median Age

Median age	Tolani Lake Chapter	Navajo Nation	Arizona
Both sexes	27	24	34
Male	24	23	33
Female	29	26	36

Source: 2000 U.S. Census

The majority of households in the Chapter consists of family households and are comprised mostly of married couples. The Chapter's average household and family size (3.9 and 4.5) are larger than Arizona's (2.6 and 3.2) and the Navajo Nation's (2.6 and 4.4).

Table 2: Types of Households

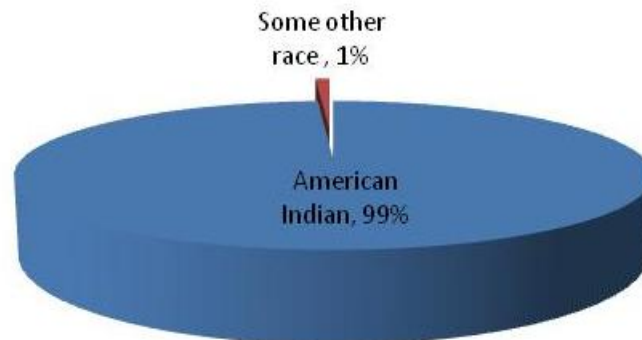
	Tolani Lake Chapter		Navajo Nation		Arizona	
	Number	% Total	Number	% Total	Number	% Total
2000 Estimated Households	209	100%	47,761	100%	1,901,625	100%
Family Households	159	76%	38,162	80%	1,296,593	68%
Married-Couple Family, own children	64	31%	14,810	31%	445,990	34%
Married-Couple Family, no own children	38	18%	8,033	17%	559,911	43%
Male Householder, own children	8	4%	1,890	4%	50,020	4%
Male Householder, no own children	8	4%	1,373	3%	38,897	3%
Female Householder, own children	19	9%	6,566	14%	124,158	10%
Female Householder, no own children	22	11%	5,490	11%	77,617	6%
Nonfamily Households	50	24%	9,599	20%	605,032	32%
Single Male Householder	28	13%	4,831	10%	211,154	35%
Single Female Householder	22	11%	3,991	8%	259,997	43%
Nonfamily, Male Householder	0	0%	366	1%	80,042	13%
Nonfamily, Female Householder	0	0%	411	1%	53,839	9%
Average Household Size	3.9		2.6		2.6	
Average Family Size	4.5		4.4		3.2	

Source: 2000 U.S. Census

According to the 2000 U.S. Census, the majority of Chapter members are American Indian (Figure 10). The Chapter's race and ethnicity demographic is comparable to the Navajo Nation's (Figure 11).

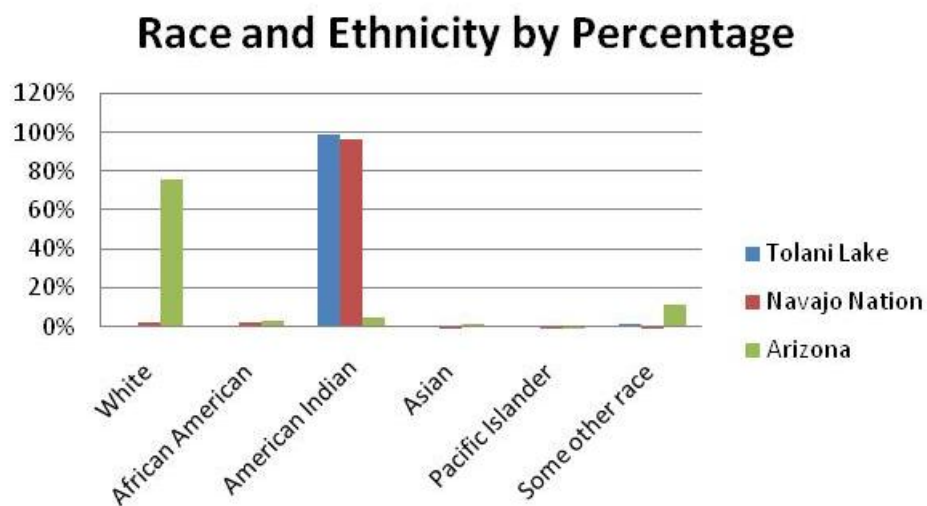
Figure 10: Tolani Lake Chapter Race and Ethnicity

Tolani Lake Chapter Race and Ethnicity



Source: 2000 U.S. Census

Figure 11: Race and Ethnicity by Percentage



Source: 2000 U.S. Census

2.1.2 Income

Compared to the Navajo Nation, median household income in the Chapter is about \$8,000 higher and per capita income is slightly lower. Household and per capita income in the Chapter is significantly lower than in the State of Arizona.

Table 3: Income

	Tolani Lake		Navajo Nation		Arizona	
	Number	% of Total	Number	% of Total	Number	% of Total
2000 Household Income	209	100.0%	47,761	100.0%	1,901,625	100.0%
Less than \$15,000	78	37.3%	19,825	41.5%	283,991	14.9%
\$15,000 to \$24,999	20	9.6%	7,762	16.3%	264,392	13.9%
\$25,000 to \$34,999	55	26.3%	6,215	13.0%	265,645	14.0%
\$35,000 to \$44,999	20	9.6%	4,656	9.7%	233,959	12.3%
\$45,000 to \$59,999	24	11.5%	4,240	8.9%	271,492	14.3%
\$60,000 to \$74,999	12	5.7%	2,543	5.3%	192,430	10.1%
\$75,000 to \$99,999	0	0.0%	1,695	3.5%	184,026	9.7%
\$100,000 or more	0	0.0%	825	1.7%	205,690	10.8%
Median Household Income	\$28,125		\$20,005		\$40,558	
Per Capita Income	\$6,749		\$7,269		\$20,275	

Source: 2000 U.S. Census

2.1.3 Poverty Status

About 41 percent of households in the Tolani Lake Chapter are living below the poverty line, which is similar to the Navajo Nation (43.8 percent) and significantly higher than the State of Arizona (11.8 percent).

Table 4: Poverty Status

	Tolani Lake		Navajo Nation		Arizona	
	Number	% Total	Number	% of Total	Number	% Total
2000 Households by Poverty Status*	209	100.0 %	47,761	100.0%	1,901,625	100.0%
Income At or Above Poverty Level:	123	58.9%	26,824	56.2%	1,677,517	88.2%
Family	110	89.4%	22,868	85.3%	1,168,275	69.6%
Married-Couple Family	63	57.3%	15,576	68.1%	943,550	80.8%
Male Householder	12	10.9%	1,632	7.1%	74,967	6.4%
Female Householder	35	31.8%	5,660	24.8%	149,758	12.8%
Non-family	13	10.6%	3,956	14.7%	509,242	30.4%
Male Householder	0	0.0%	2,148	54.3%	248,283	48.8%
Female Householder	13	100.0%	1,808	45.7%	260,959	51.2%
Income Below Poverty Level:	86	41.1%	20,937	43.8%	224,108	11.8%
Family	49	57.0%	15,294	73.0%	128,318	57.3%
Married-Couple Family	39	79.6%	7,267	47.5%	62,351	48.6%
Male Householder	4	8.2%	1,631	10.7%	13,950	10.9%
Female Householder	6	12.2%	6,396	41.8%	52,017	40.5%
Non-family	37	43.0%	5,643	27.0%	95,790	42.7%
Male Householder	28	75.7%	3,049	54.0%	42,913	44.8%
Female Householder	9	24.3%	2,594	46.0%	52,877	55.2%

Source: 2000 U.S. Census

2.1.4 Housing

According to the 2000 census, there are 305 housing units in the Chapter. The majority of homes are owner occupied (85 percent). A little over one-third (36 percent) of housing units are vacant. The Chapter's owner-occupancy rate (85 percent) is higher than that of the Navajo Nation (76 percent) and Arizona (68 percent).

Table 5: Housing Occupancy

Housing Units	Tolani Lake Chapter	Navajo Nation	Arizona
Total	305	68,744	2,189,189
Occupancy			
Occupied	64%	69%	87%
Vacant	36%	31%	13%
Owner/Renter			
Owner occupied	85%	76%	68%
Renter occupied	15%	24%	32%

Source: 2000 U.S. Census

All the homes in the Chapter are single detached homes (100 percent). The Chapter has a higher rate of detached homes than in the Navajo Nation (68 percent) and Arizona (60 percent).

Table 6: Types of Units

	Tolani Lake Chapter		Navajo Nation		Arizona	
	Number	% Total	Number	% of Total	Number	% of Total
2000 Tenure by Units in Structure	223	100%	47,824	100%	1,901,327	100%
Owner Occupied	198	89%	36,292	76%	1,293,637	68%
1, detached	198	89%	24,742	52%	993,841	52%
1, attached	0	0%	1,962	4%	79,254	4%
2 or more units attached	0	0%	386	1%	32,790	2%
Mobile home	0	0%	9,133	19%	177,206	9%
Boat, RV, van, etc.	0	0%	69	0%	10,546	1%
Renter Occupied	25	11%	11,532	24%	607,690	32%
1, detached	25	11%	7,427	16%	143,431	8%
1, attached	0	0%	1,241	3%	33,682	2%
2 or more units attached	0	0%	1,734	4%	387,192	20%
Mobile home	0	0%	1,114	2%	42,144	2%
Boat, RV, van, etc.	0	0%	16	0%	1,241	0%

Source: 2000 U.S. Census

The majority of homes (68 percent) were built between 1960 and 1989, which is similar to the Navajo Nation (64 percent) and Arizona (60 percent). Home construction in the Chapter has fluctuated, which is not similar to the trends for the Navajo Nation and Arizona.

The median year for a structure to be built in the Chapter is 1985, which means homes on average are slightly newer than in the Navajo Nation (1981) and Arizona (1982).

The majority of Chapter homes (34 percent) were built before 1980. In comparison, a little less than half of Navajo Nation (48 percent) and Arizona (46 percent) homes were built before 1980.

Table 7: Year Structure Built

	Tolani Lake Chapter		Navajo Nation		Arizona	
	Number	% Total	Number	% of Total	Number	% of Total
2000 Year Structure Built	333	100%	69,154	100%	2,189,189	100%
1999 to 2000	0	0%	2,237	3%	111,389	5%
1995 to 1998	68	20%	9,204	13%	299,679	14%
1990 to 1994	41	12%	8,772	13%	230,230	11%
1980 to 1989	112	34%	16,351	24%	540,122	25%
1970 to 1979	53	16%	16,512	24%	517,059	24%
1960 to 1969	59	18%	10,736	16%	231,071	11%
1950 to 1959	0	0%	3,199	5%	159,653	7%
1940 to 1949	0	0%	1,106	2%	51,192	2%
1939 or earlier	0	0%	1,037	1%	48,794	2%
Median Year Structure Built	1985		1981		1982	

Source: 2000 U.S. Census

The Chapter's three major heating sources are wood (81 percent), bottled, tank, or LP gas (11 percent), and fuel oil, kerosene, etc. (5 percent); whereas the Navajo Nation depends on wood (52 percent), bottle, tank, or LP gas (23 percent), and utility gas (13 percent); and Arizona depends on electricity (54 percent) and utility gas (37 percent).

Table 8: Household Heating Fuel

	Tolani Lake Chapter		Navajo Nation		Arizona	
	Number	% Total	Number	% of Total	Number	% of Total
2000 House Heating Fuel	223	100%	47,824	100%	1,901,327	100%
Utility gas	0	0%	6,316	13%	712,868	37%
Bottled, tank, or LP gas	25	11%	11,052	23%	98,536	5%
Electricity	0	0%	3,648	8%	1,033,095	54%
Fuel oil, kerosene, etc.	12	5%	136	0%	1,813	0%
Coal or coke	6	3%	1,005	2%	993	0%
Wood	180	81%	24,942	52%	39,842	2%
Solar energy	0	0%	23	0%	1,226	0%
Other fuel	0	0%	551	1%	2,642	0%
No fuel used	0	0%	151	0%	10,312	1%

Source: 2000 U.S. Census

The majority of Chapter members (83 percent) do not have telephone service available, similar to most of the individuals in the Navajo Nation (60 percent), whereas most of the individuals in Arizona (96 percent) do have telephone service.

Table 9: Telephone Service

	Tolani Lake Chapter		Navajo Nation		Arizona	
	Number	% Total	Number	% of Total	Number	% of Total
2000 Telephone Service	223	100%	47,824	40%	1,901,327	96%
With telephone service available	38	17%	19,084	40%	1,831,006	96%
No telephone service available	185	83%	28,740	60%	70,321	4%

Source: 2000 U.S. Census

Slightly less than half (43 percent) of Chapter members do have plumbing facilities. Similarly, only 54 percent of Navajo Nation have plumbing facilities, compared with 98 percent in Arizona.

Table 10: Plumbing Facilities

	Tolani Lake Chapter		Navajo Nation		Arizona	
	Number	% Total	Number	% of Total	Number	% of Total
2000 Plumbing Facilities						
Total	333	100%	69,154	100%	2,189,189	100%
Complete plumbing facilities	144	43%	37,460	54%	2,149,557	98%
Lacking complete plumbing facilities	189	57%	31,694	46%	39,632	2%

Source: 2000 U.S. Census

Around the year 2000, the Chapter conducted a housing survey to determine the overall housing needs and issues facing Chapter members.

The survey found that individuals who responded had mixed feelings about Chapter housing conditions. When residents were asked to describe the condition of their own home, less than one third reported their home was adequate, and 60 percent stated their home was sub-standard.

In the same survey, only 35 percent of the individuals who responded believed housing was inadequate in the Chapter.

The survey also found that out of the individuals who responded, 54 percent reported that their home was overcrowded, while 43 percent reported it was not.

The survey also found that 70 percent of the respondents prefer living in scattered housing, and 14 percent prefer to live in clustered housing. In general, younger generations prefer to live in clustered housing, whereas older generations prefer living in scattered housing.

In 2008 there is still a need for housing. The housing that is available is not affordable, which suggests the need for rental units or mobile home parks. New housing tends to be clustered, which may not provide adequate housing options for those wanting to live in remote areas on scattered homesites. There is also a need for homes for the elderly and disabled and staff housing for teachers.

The Navajo Nation and Tolani Lake Chapter are in the process of identifying housing developments and areas for supporting community services, facilities, and activities. Proposed housing would be supported by complementary projects in the land use plan for commercial,

industrial, recreational, and tourist enterprises that would provide jobs for residents and increase the opportunities for homeownership throughout the community.

According to field data conducted by WHPacific in 2008, 44 percent of homes in the Chapter are in poor to very poor condition and 32 percent are in good to very good condition (see Table 11). Figure 12, on the following page illustrates homes in good and very good condition and homes in poor to fair condition.

Table 11: House Conditions

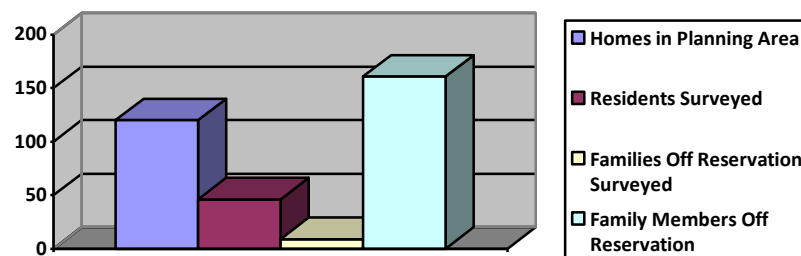
	Tolani Lake Chapter	
	Number	% of Total
Homes Surveyed:	110	
Very Good	7	6%
Good	29	26%
Fair	25	23%
Poor	31	28%
Very Poor	18	16%

Naataanii Households

Homes in Planning Area	120
Residents Surveyed	46
Families Off Reservation Surveyed	9
Family Members Off Reservation	161

Based on the 55 surveys, there are 192 household family members.

Family members living off the reservation are counted separately.



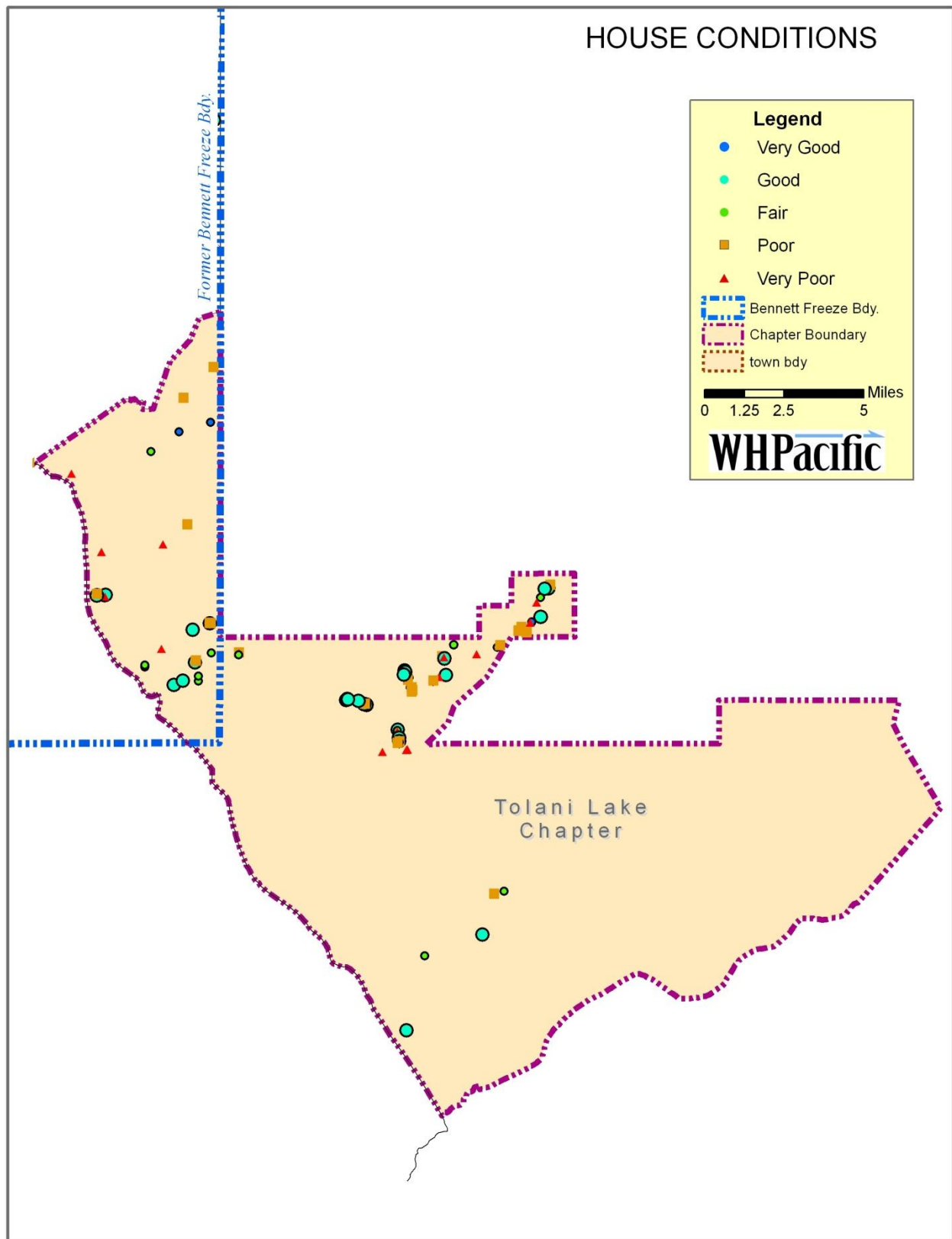


Figure 12: House Conditions

2.1.5 Employment and Unemployment

The unemployment rate in the Chapter is 12.7 percent, which is slightly higher than in the Navajo Nation. About 39 percent of the population over 16 years old participates in the labor force.

Table 12: Employment Status

2000 Population Age 16+ by Employment Status	Tolani Lake		Navajo Nation		Arizona	
	Number	% of Total	Number	% of Total	Number	% of Total
	574		114,966		3,907,229	
In Labor Force	226	39.4%	51,363	44.7%	2,387,139	61.1%
Employed	153	26.7%	38,465	33.5%	2,233,004	57.2%
Unemployed	73	12.7%	12,865	11.2%	133,368	3.4%

Source: 2000 U.S. Census

2.1.6 Education

Compared to the Navajo Nation, residents of the Tolani Lake Chapter have a similar level of educational attainment, and compared to the Arizona, their educational attainment is low.

Table 13: Educational Attainment

2000 Population Age 25+ by Educational Attainment*	Tolani Lake		Navajo Nation		Arizona	
	Number	% of Total	Number	% of Total	Number	% of Total
	405	100	88,662	100	3,256,184	100
Less than 9th grade	125	30.9	21,612	24.4	254,696	7.8
Some High School, no diploma	61	15.1	17,457	19.7	364,851	11.2
High School Graduate (or GED)	116	28.6	23,333	26.3	791,904	24.3
Some College, no degree	62	15.3	15,048	17.0	859,165	26.4
Associate Degree	30	7.4	4,748	5.4	219,356	6.7
Bachelor's Degree	5	1.2	4,135	4.7	493,419	15.2
Graduate or Professional Degree	6	1.5	2,329	2.6	272,793	8.4

Source: 2000 U.S. Census

Almost 46 percent of Tolani Lake residents do not have a high school diploma, which is slightly higher than in the Navajo Nation (44.1 percent) and significantly higher than in Arizona (19 percent). Only 2.7 percent of Tolani Lake residents have a bachelor's degree or higher.

Table 14: Summary of Educational Attainment

2000 Population Age 25+	Tolani Lake	Navajo Nation	Arizona
Percent without high school diploma	45.9	44.1	19.0
Percent high school graduate or higher	51.4	48.6	57.4
Percent bachelor's degree or higher	2.7	7.3	23.5

Source: 2000 U.S. Census

The Chapter does have a day school for elementary students. Other students must travel to Leupp for middle and high school, although bus service is inadequate. There are no pre-school facilities in the Chapter.

Chapter residents would benefit from an adult education facility, which could support a GED program for individuals who want to finish high school, Navajo culture and language classes,

technology training, distance education for community college and university courses, vocational training, and range and livestock management classes.

Scholarships with requirements for a certain number of years of service in the community after graduation might help address the need for financial assistance to receive a higher education degree, while also filling the need for more professional services at the Chapter.

2.1.7 Health and Public Safety

The Chapter does not have any type of health facilities or services available. The nearest hospitals are located in Winslow (43 miles), Tuba City (94 miles), and Keams Canyon (72 miles). The nearest clinic is in Leupp, which is 16 miles away.

Even with medical services so far away, there is no ambulance service. In order to improve the safety of its residents, the Chapter would benefit from a local emergency clinic or trauma center. Mobile health care and dental care would help provide preventative and necessary care in remote areas and to those without transportation to nearby communities. The Chapter also needs a nearby group home or convalescence center for the elderly, as well as housing for disabled individuals, in order to care for an aging population and residents who need more living assistance.

While the community does have medicine men, there are fewer opportunities to pass their knowledge on to younger generations. The Chapter could help to provide and encourage cross-generational training, perhaps even sponsoring guided tours for youth to gather herbs and medicines and learn more about sacred sites and ceremonies, or providing scholarships for apprenticeships.

The Chapter does not have public safety services or facilities. There is no police station, police officers to patrol the area, or fire station to protect homes or individuals. The nearest fire station is located in Leupp, which is 16 miles away. The housing subdivision does not have fire hydrants or security lights for protection and safety.

The Chapter does not have an emergency preparedness plan developed or an emergency shelter to house victims. In addition, there is no way to locate emergencies because there is no rural addressing system, which increases response time and poses additional danger to those in need.

2.1.8 Community Facilities, Parks, and Recreation

There is a lack of community facilities in the Chapter. The Chapter House, built in the 1950s, and the Recreation Center are the primary community facilities. The Chapter House has recently been remodeled and the Recreation Center is now open for the youth. The Chapter would benefit from a new multi-purpose center with computer facilities and meeting and conference rooms.

Besides the Chapter House and the Recreation Center, there are no other facilities where Chapter members can congregate. The Chapter has no pool, sport facilities, golf course, youth center, or parks. Chapter members enjoy rodeo-type sports, but there are no rodeo grounds or sports arenas where they can practice. Chapter members also enjoy riding their horses, but there are no

horseback trails in the community. Chapter elders are highly regarded in the community, but there is no place for them to congregate. The Chapter does not have a house of worship.

There are also no facilities to house needed community services. The Chapter lacks a post office, Head Start program, legal services, and social services. The Chapter would benefit from creating a peace-making center where community, family, and personal conflicts can be resolved. The Chapter also wishes to host a sub-office for FBFA issues that need to be resolved in the future.

The following is a list of community facilities in Tolani Lake.

Table 15: List of Existing Chapter Facilities

Facility	Square Footage
Chapter House	2,070
Chapter Office – Hogan	710
Multi-Purpose Building	10,000
New Pre-school Building	3,353
Old Pre-school Building	4,270
Teacher’s Quarters	900
Two Warehouses	1,805
Old Trading Post	2,400

2.2 Local Economy

The Chapter has 209 households with a median household income of \$28,125, which is about \$8,000 higher than in the Navajo Nation. The per capita income in the Chapter is \$6,749, which is slightly lower than in the Navajo Nation.

There are no businesses in the Chapter. At one time, the Chapter had a trading post that offered convenience goods, but after the business site lease expired, the store closed. Chapter members would like to see local economic development, in particular a gas station with a convenience store. The annual expenditure potential of the Chapter for convenience goods, which include food, drugs, gasoline, and tobacco, is \$914,625.

2.2.1 Jobs by Sector

The majority of the Chapter’s workforce works in the services industry (59.5 percent), primarily in educational, health, and social services in Tuba City and Flagstaff. The second largest industry is transportation and utilities (15.9 percent), followed by construction (10.7 percent) and public administration (5.6 percent).

Table 16: Employment by Industry

2000 Population Age 16+ Employment by Industry	Tolani Lake		Navajo Nation		Arizona	
	Number	% of Total	Number	% of Total	Number	% of Total
	252	100	61,119	100	3,409,149	100
Agriculture & Mining	0	0.0	3,002	4.9	65,352	1.9
Construction	27	10.7	4,759	7.8	193,464	5.7
Manufacturing	6	2.4	1,702	2.8	228,590	6.7
Wholesale Trade	0	0.0	448	0.7	73,441	2.2
Retail Trade	7	2.8	3,201	5.2	273,864	8.0
Transportation & Utilities	40	15.9	4,624	7.6	222,372	6.5
Information	0	0.0	321	0.5	62,577	1.8
Finance, Insurance, & Real Estate	8	3.2	1,570	2.6	350,622	10.3
Services	150	59.5	37,425	61.2	1,817,249	53.3
Public Administration	14	5.6	4,067	6.7	121,618	3.6

Source: 2000 U.S. Census

2.2.2 Major Employers

Employment opportunities in the Chapter are limited. The major employer is the Navajo Nation, currently employing 14 Chapter members. Due to lack of employment in the Chapter area, most people work in Leupp, Flagstaff, or Winslow.

2.2.3 Class of Workers

Most workers in the Chapter work for private companies (49.7 percent), and another 41.8 percent work for the government.

Table 17: Class of Workers

2000 Class of Workers Age 16+	Tolani Lake		Navajo Nation		Arizona	
	Number	% of Total	Number	% of Total	Number	% of Total
	153	100	38,465	100	2,233,004	100
Employee of Private Company	76	49.7	17,171	44.6	1,546,865	69.3
Employee of Non-profit Company	13	8.5	2,470	6.4	119,598	5.4
Government Workers	64	41.8	17,042	44.3	339,554	15.2
Self-Employed Workers	0	0.0	1,716	4.5	220,878	9.9
Unpaid Family Workers	0	0.0	66	0.2	6,109	0.3

Source: 2000 U.S. Census

2.2.4 Commute Time

The highest percentage of workers commute 30 to 39 minutes to work (35.4 percent), while 17 percent of workers commute 40 to 59 minutes, and 31.9 percent of workers commute 60 minutes or more to work. These commute times correspond to workers driving to Leupp, Flagstaff, or Winslow.

Table 18: Commute Time

2000 Commute Time for Workers 16+	Tolani Lake		Navajo Nation		Arizona	
	Number	% of Total	Number	% of Total	Number	% of Total
	147	100.0%	37,008	100.0%	2,210,395	100.0%
9 minutes or less	5	3.4%	8,020	21.7%	289,937	13.1%
10 to 19 minutes	6	4.1%	8,591	23.2%	642,566	29.1%
20 to 29 minutes	12	8.2%	3,222	8.7%	453,395	20.5%
30 to 39 minutes	52	35.4%	6,289	17.0%	377,273	17.1%
40 to 59 minutes	25	17.0%	3,863	10.4%	237,317	10.7%
60 to 89 minutes	34	23.1%	2,644	7.1%	85,177	3.9%
90 minutes or more	13	8.8%	3,602	9.7%	43,572	2.0%
Work at home	0	0.0%	777	2.1%	81,158	3.7%

Source: 2000 U.S. Census

2.2.5 Local Businesses

There is no commercial or industrial activity in Tolani Lake. The trading post closed when the business lease expired, and uranium mining operations that formerly located north of the community are now abandoned.

2.2.6 Household purchases

Table 19 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.

Table 19: Average Annual Expenditures in the Western U.S, 1999-2000

1999 Household Income	Food	Housing	Apparel and Services	Transportation	Health care	Entertainment
Less than \$5,000	\$2,781	\$7,560	\$1,017	\$2,772	\$822	\$1,358
\$5,000 to \$9,999	\$2,805	\$6,264	\$933	\$2,741	\$1,202	\$809
\$10,000 to \$14,999	\$3,182	\$8,119	\$895	\$3,983	\$1,652	\$1,114
\$15,000 to \$19,999	\$4,267	\$9,081	\$1,507	\$5,333	\$1,955	\$1,070
\$20,000 to \$29,999	\$4,642	\$10,216	\$1,698	\$5,956	\$1,772	\$1,514
\$30,000 to \$39,999	\$5,002	\$12,394	\$1,881	\$7,240	\$1,798	\$1,699
\$40,000 to \$49,999	\$5,929	\$14,764	\$2,009	\$9,211	\$2,043	\$2,202
\$50,000 to \$69,000	\$6,530	\$16,750	\$2,164	\$8,870	\$2,362	\$2,697
\$70,000 and over	\$9,171	\$25,482	\$4,054	\$14,997	\$2,805	\$4,402

Source: 2000 U.S. Census, U.S. Department of Labor Consumer Expenditure Survey

Table 20 estimates the expenditure potential (or local buying power) for convenience goods, shopper's goods, and entertainment of households within the Tolani Lake Chapter. Households in the Tolani Lake Chapter are estimated to spend about \$2.5 million per year at the major store types listed in the table below.

These figures were derived from 1999 household income data for the Tolani Lake Chapter and regional data on typical household expenditure patterns by income level. The analysis considers the number of households by income range and typical expenditures for households at each income level. The total purchasing potential of the Chapter is the collective potential of all households. The methodology used to derive these estimates is explained further in Appendix 5.3.

These figures indicate there may not be enough food expenditures at the local level to support a store within the community.

Table 20: Expenditure Potential

	Expenditure Potential
Convenience Goods	\$914,625
Food	\$572,125
Drugs	\$67,788
Gasoline and Motor Oil	\$223,896
Tobacco Products and Services	\$50,817
Shopper's Goods	\$795,440
Apparel and Services	\$329,545
Personal Care Products and Services	\$101,137
Household Supplies	\$89,972
Furniture and Equipment	\$274,787
Entertainment	\$701,680
Restaurants	\$360,258
Entertainment	\$341,423
Total	\$2,411,745

Source: 2000 U.S. Census, U.S. Department of Labor Consumer Expenditure Survey

2.2.7 Tourism

Tourism is a major contributor to the economy of the region surrounding the FBFA. Visitors to the region's spectacular cultural and natural attractions provide economic development opportunities for the Tolani Lake Chapter and the other chapters affected by the former Bennett Freeze. This section includes a description of regional tourism, describing the general characteristics of visitors to and attractions on the Navajo Nation and regional destinations surrounding the Chapter.

Cooperation and coordination with neighboring chapters with existing tourism opportunities will be necessary for Tolani Lake to begin its own efforts to maximize the benefits of tourism nearby.

While visitors and tourists do travel through Tolani Lake, the Chapter does not have facilities geared toward enticing them to stop, such as an arts and crafts store.

Navajo Nation Tourism

According to the 2002 Navajo Nation Visitation and Economic Impact Study, the tourism industry on the Navajo Nation has an economic impact of \$100 million and supports 3,507 jobs.

The primary reasons that visitors come to the Navajo Nation are for its scenic attractions and beauty and to engage in outdoor recreation. The seclusion of the Navajo Nation is ideal for visitors to get away for sightseeing, hiking, and boating, as well to shop for arts and crafts. The number one activity for visitors is general sightseeing, followed by visiting Tribal/National Parks and visiting historic sites.

In the following tables, 1st Quarter includes the months from January through March, 2nd Quarter from April through June, 3rd Quarter from July through September, and 4th Quarter from October through December.

Table 21: Trip Activities

Trip Activities	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
General Sightseeing	90.0%	87.1%	88.0%	89.0%
Visit Tribal/National Parks	56.6%	55.5%	53.1%	60.4%
Visit Historic Sites	51.1%	50.9%	47.3%	52.8%
Visit Museums	24.7%	24.9%	23.0%	24.5%
Hiking/Walking	35.3%	34.5%	32.7%	39.3%
Camping	9.5%	15.5%	15.4%	13.3%
Wildlife/Bird-watching	9.3%	11.5%	11.2%	11.8%
Shopping	39.8%	35.8%	40.4%	42.0%
Looking/Buying Arts & Crafts	37.1%	38.1%	39.8%	48.0%

Source: Navajo Nation Visitation and Economic Impact Study, 2002

The highest expenditure for visitors to the Navajo Nation is on lodging and camping. While tourists are vacationing on the Navajo Nation and spending a great deal of time outdoors, 79 percent of lodging is taken in hotels.

Table 22: Average Visitor Expenditures

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lodging/Camping	\$200	\$233	\$214	\$201
Restaurant/Grocery	\$125	\$151	\$142	\$133
Recreation/Entertainment/Sports/Entry Fees	\$136	\$101	\$102	\$87
Shopping	\$156	\$170	\$175	\$209
Transportation/Gasoline	\$141	\$134	\$161	\$171
Other Expenditures	\$164	\$130	\$262	\$190

Source: Navajo Nation Visitation and Economic Impact Study, 2002

The average length of stay for visitors ranges from 4.3 days to 6.5 days, depending on the time of year. Tourists who visit the Navajo Nation between July and December tend to stay up to two days longer than those who visit from January to June.

Table 23: Length of Stay

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Average Length of Stay	4.3 days	4.6 days	5.2 days	6.5 days
Day Visitors, Average Stay	3.3 hours	3.9 hours	6.6 hours	6.4 hours

Source: Navajo Nation Visitation and Economic Impact Study, 2002

The study also revealed that domestic visitation to the reservation consisted of 80 percent of the Navajo Nation's visitors. Visitors from Arizona accounted for 15.1 percent of that number, followed by California with 14.5 percent and Colorado with 6.8 percent. Secondary domestic markets include Massachusetts, New York, and Texas. International visitation represents the other 20 percent. Primary international markets include Britain, Germany, and France.

Regional Tourist Destinations

Figure 13, below, shows tourist destinations in the region.

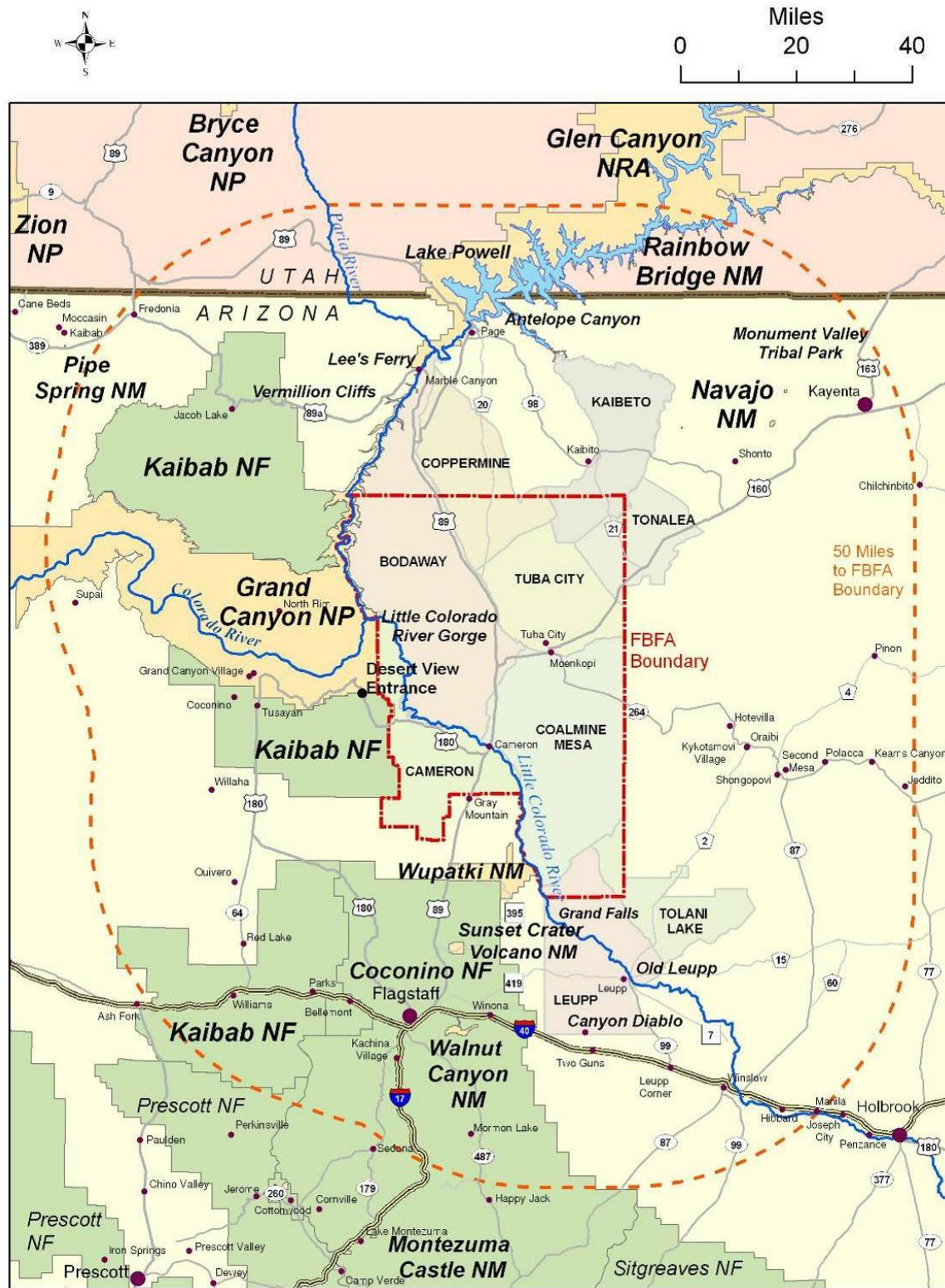


Figure 13: Regional Tourist Destinations

Coconino National Forest

Coconino National Forest is one of six National Forests in Arizona and covers more than 1.8 million acres. The Peaks District of the Coconino Forest is located north of Flagstaff between I-40 and the Navajo Reservation. The Peaks District includes the 12,643-foot San Francisco Peaks, the highest mountain in Arizona. Visitors come to the forest for hiking, sightseeing, wildlife watching, and skiing. The forest provides extensive hiking trails, including backcountry opportunities, scenic drives, camping facilities, cabin rentals, and picnic areas.

Sunset Crater National Monument

Sunset Crater Volcano was born in a series of eruptions sometime between 1040 and 1100. Powerful explosions profoundly affected the lives of local people and forever changed the landscape and ecology of the area. Lava flows and cinders still look as fresh and rugged as the day they formed. The National Monument has hiking trails and nearby camping facilities in the National Forest. The visitor's center offers interpretive exhibits, and the staff provides guided hikes and interpretive talks. In 2007, 231,855 people visited the National Monument. Sunset Crater National Monument is located about 14 miles north of Flagstaff off of Highway 89.

Wupatki National Monument

Wupatki was a major trading center, and less than 800 years ago it was the tallest, largest, and perhaps the richest and most influential pueblo. It was home to 85 to 100 people, and several thousand more lived within a day's walk. The pueblo was built in one of the lowest, warmest, and driest places on the Colorado Plateau.

The park features a visitor's center, interactive museum exhibits, bookstore, and picnic areas, and guided discovery hikes and ranger talks take place throughout the year. Self-guided trails and backcountry hiking are available. There are no camping facilities at the park. In 2007, 239,603 people visited the National Monument. Wupatki National Monument is located off of Highway 89, about 33 miles from Flagstaff.

Kaibab National Forest

The Kaibab National Forest is part of the largest contiguous pine forest in the U.S. Bordering both the north and south rims of the Grand Canyon, the 1.6 million acres of the Kaibab offer breathtaking views, outstanding forest scenery, and unusual geologic formations. The Tusayan Ranger District of the Kaibab National Forest is located south of Grand Canyon National Park and is accessible from Highway 64. Recreation activities in the Forest include hiking, trail rides, mountain biking, sightseeing, cross-country skiing, wildlife viewing, and camping. The Tusayan Ranger District also features archeological sites from the Kayenta Anasazi culture.

Little Colorado River Gorge & Scenic Drive to Grand Canyon

Visitors to the South Rim of the Grand Canyon can take a scenic drive from Cameron to Grand Canyon Village along U.S. Highway 64. This 57-mile paved drive climbs from Cameron up the eastern flank of the Kaibab Plateau to the Desert View Entrance of Grand Canyon National Park, where it continues along the Canyon's South Rim to the Grand Canyon Village.

The scenic drive follows the Little Colorado River Gorge, passing through the Little Colorado River Tribal Park, which is run by the Navajo Parks and Recreation Department. At Cameron, the Little Colorado River no longer meanders and is confined within the canyon. Here it begins

a rapid 2,000 feet descent to the Colorado River, 30 miles away. Two overlook areas along the scenic road from Cameron to the Grand Canyon provide amenities such as rest areas, ramadas, fireplaces, and tables. Numerous Native vendors sell their handmade crafts at each overlook.

The Little Colorado River Gorge also offers difficult hiking trails for experienced hikers. The most popular trails are the Hopi Salt Trail and the Blue Springs Trail. Other routes are infrequently used. Long drives on rough dirt roads are required to reach the trails in the area,, and roads can become impassable in wet weather.

Grand Canyon National Park

Located in northwestern Arizona, the Grand Canyon is one of the most famous natural sites in the USA and is a World Heritage Site. Most visitors to the Grand Canyon National Park visit the South Rim, which is easily accessible from Flagstaff.

The South Rim of the Canyon provides extensive services for visitors, including a visitor's center, scenic overlooks, free shuttle service, ranger programs, bookstore, museum, and educational programs. Hiking trails at the South Rim range from paved, easy walks to steep, strenuous hikes. There are several lodging options at the South Rim, including six hotels and three campgrounds, including sites with hookups. Other services at the South Rim include a bank, laundry, kennels, garage services, child daycare, and a community library. Dining options at the South Rim are also extensive and include several restaurants and two grocery stores.

The South Rim has two entrances. Most visitors enter through the South Entrance, which is located on Highway 180, 75 miles from Flagstaff. The Desert View Entrance (East Entrance) is located on Highway 64, 30 miles from Cameron.

In 2007, a total of 4,413,668 people visited the Grand Canyon, and almost all of them visited the South Rim (94 percent). Of these visitors to the South Rim, 82 percent used the South Entrance and 18 percent used the Desert View Entrance.

Vermillion Cliffs National Monument

The 3,000-foot escarpment of the Vermillion Cliffs reveals seven major geologic formations in layer-cake fashion. This remote, unspoiled 294,000-acre national monument is a geologic treasure of towering cliffs, deep canyons, and spectacular sandstone formations, containing the Paria Plateau, Vermillion Cliffs, Coyote Buttes, and Paria Canyon. Elevations range from 3,100 to 6,500 feet. Activities at the National Monument include scenic driving, geologic sightseeing, hiking, backpacking, bird-watching, photography, and wildlife and plant viewing.

Permits, which are available on the Internet, are required for hikes in Paria Canyon and the Coyote Buttes area. Visits to the area require special planning and awareness of potential hazards such as rugged and unmarked roads, venomous reptiles and invertebrates, extreme heat, deep sand, and flash floods. Vermillion Cliffs National Monument is located approximately 30 miles southwest of Page, Arizona.

Antelope Canyon – Lake Powell Navajo Tribal Park

Located in the Lechee Chapter, Antelope Canyon is a breathtaking slot canyon with narrow passages just large enough for a small group to walk the sandy floor. The canyon is dry most of

the year, but it sometimes floods after rains, draining into Lake Powell and slowly wearing away the sandstone grain by grain.

Visitors must have an authorized guide to the Upper and Lower areas of Antelope Canyon. The entrance station is located along Highway 98 near Page, Arizona. The entrance station is open during the summer (March – October) from 8:00 a.m. to 5:00 p.m. The entrance station is closed for the winter season, but the canyon is still open. The entry fee is \$6.00 for general admission. Visitors must hire a guided tour to enter the canyon, and tour fees are not included in admission.

Lee's Ferry, Marble Canyon, Navajo Bridge

Lee's Ferry is a small settlement on the Colorado River about five miles southwest of Page, Arizona and the Glen Canyon Dam. It is the former site of a ferry established by John D. Lee, a Mormon settler. Today, this site is used for fishing and is the principal launching point for rafting and float trips through the Grand Canyon. In 2007, 63,897 visitors entered the Glen Canyon National Recreation Area at Lee's Ferry. The National Park Service runs a campground at Lee's Ferry with modern bathrooms and potable water.

Lee's Ferry is officially the beginning of the Grand Canyon as the land slopes gently down to the west side of the river. There are several buildings at the site that were built beginning in 1874, along with a steamboat abandoned in 1913 by a mining company.

A short distance downstream from Lee's Ferry, there are cliffs on both sides that become steadily higher as the Colorado River flows south. This initial section is known as Marble Canyon, named for its colorful rocks.

Lee's Ferry is located near the Navajo Bridge, the only bridge to cross the Colorado River for a stretch of 600 miles. The original bridge was built in 1929 and remains a pedestrian bridge today. The National Park Service runs an interpretive center at the bridge with a bookstore, outdoor exhibits, and a self-guided walk across the bridge.

Glen Canyon National Recreation Area and Lake Powell

Encompassing over 1.2 million acres, Glen Canyon National Recreation Area offers unparalleled opportunities for water-based and backcountry recreation. The recreation area stretches for hundreds of miles from Lee's Ferry in Arizona to the Orange Cliffs of southern Utah, encompassing scenic vistas, unusual geologic formations, and a panorama of human history.

Rainbow Bridge National Monument, the world's largest natural bridge, is accessible from Lake Powell in the Glen Canyon National Recreation Area. Rainbow Bridge can be visited by boat from Lake Powell or by foot through rough canyon country for experienced hikers.

The National Recreation Area has three visitor centers, five designated campgrounds and primitive camping along the shore of Lake Powell, and hotel rooms at Wahweap and Bullfrog.

In 2007, 1,894,114 people visited the National Recreation Area, which is a major recreation and tourist destination for the surrounding states.

Navajo National Monument

Navajo National Monument preserves three of the most intact cliff dwellings of the ancestral Puebloan people (Hisatsinom). The Navajo people who live here today call these ancient ones Anasazi. The monument is high on the Shonto Plateau, overlooking the Tsegi Canyon system. The monument features a visitor's center, three short self-guided mesa-top trails, two small campgrounds, a picnic area, and backcountry hiking. In the summer, rangers guide visitors on tours of the Keet Seel and Betatakin cliff dwellings. Tours are usually available during the spring and fall months as well.

In 2007, 69,445 people visited the Navajo National Monument. The National Monument is located at the end of State Highway 564 off of Highway 160. The Navajo Arts and Crafts Enterprise operates a gift shop in the visitor's center, specializing in Navajo silverwork.

Monument Valley Tribal Park

Monument Valley is one of the most iconic and photographed images of the American Southwest. The valley boasts sandstone masterpieces that tower at heights of 400 to 1,000 feet. The fragile pinnacles of rock are surrounded by miles of mesas and buttes, shrubs, trees, and windblown sand, all comprising the magnificent colors of the valley.

The Monument Valley Navajo Tribal Park Visitor Center provides the world-famous panorama of the Mitten Buttes and Merrick Butte. The Visitor's Center provides a venue for tourists to purchase guided tours from Navajo tour operators. During the summer months, the Visitor's Center also features Haskenneini Restaurant and a souvenir shop. Near the center, numerous Navajo vendors sell arts, crafts, souvenirs, and food at roadside stands. The Visitor's Center is open 7:00 a.m. to 7:00 p.m. in the spring (March – April) and 6:00 a.m. to 8:00 p.m. in the summer (May – September). The Monument Valley Navajo Tribal Park Scenic Drive is open year-round.

The first hotel ever built inside the Monument Valley Navajo Tribal Park, The VIEW Hotel, is scheduled to open in late summer 2008. The VIEW Hotel is situated adjacent to the park visitor center. Every guest at The VIEW will have an unobstructed view of the famous Mitten formations.

The VIEW Restaurant and Store are open as of 2008. The store offers an array of Indian arts and crafts, which are certified and licensed as authentically handmade by Native Americans. The store proudly showcases one of the largest Navajo rug collections, bought directly from the weavers who made them. Visitors will find arts and jewelry along with memorabilia of Monument Valley, from one-of-a-kind artifacts to souvenirs of Hollywood movies shot on location within view of the hotel. The VIEW will offer park tours ranging from partial-day to full-day tours guided by certified Navajo guides.

2.3 Land and Water Resources

The Chapter land mass consists of the community of Tolani Lake, rangeland, open space, and agriculture. The community consists of housing, scattered and clustered housing, a school, and Chapter House. There is one 170-acre community farm. The remainder, and majority, of Chapter land is rangeland and open space.

2.3.1 Land Status

The Chapter is comprised of trust land with no private holdings. The northwestern portion of Chapter is located in the former statutory Bennett Freeze Area, which involves parts of the 1934 extension of the Navajo Nation. Because these lands were in dispute between the Navajo and Hopi Tribes, Interior Secretary Bennett placed a hold on construction, development, and the maintenance of structures in 1966.

In 1980 the Hopi Tribe succeeded in getting an amendment to the Relocation Act (P.L. 93-531), which enacted the former Bennett Freeze into law. The law required the approval of both tribes for any construction in the 1.4 million acres located west of the Hopi Reservation. As a result of the “freeze,” over 50 percent of the population was deprived of housing improvements, waterlines, and power line development for over 30 years. In 1992, a U.S. District Court judge ordered the former Bennett Freeze lifted, but a subsequent appeal by the Hopi Tribe resulted in only portions of the former Bennett Freeze being lifted. The Arizona District Court ruled that the Hopi Tribe had legal title to 64,000 acres in the freeze area and awarded the balance to the Navajo Nation. Navajo and Hopi residents finding themselves on the “wrong side” of the dividing line were forced to relocate, affecting mostly Navajo residents.

In 1995, the freeze was reinstated when the Ninth Circuit Court of Appeals reversed the Arizona District Court’s decision on the question of whether Hopi religious practices gave rise to rights of occupancy. In 1997, a Federal District Court approved an agreement between parties lifting half of the former Bennett Freeze Area. Litigation continued regarding the status of the remaining area.

In 2006, Navajo and Hopi leaders signed an Intergovernmental Compact, which was approved by a federal court in 2007, lifting the former Bennett Freeze. The compact clarifies the boundaries of the Navajo and Hopi reservations in Arizona and ensures that access to sacred sites of both tribes is protected.

Grazing and Agriculture

Of the 157,240.40 acres in Tolani Lake, the majority is grazing land. Small gardens and cornfields are cultivated close to some residences. There is no commercial farming in the Chapter area, but there is one 170-acre community farm, Sand Springs Farm.

Ranching and sheep herding have been a major occupation and, more importantly, a way of life in Tolani Lake for many years. These activities have strong connections to the customs and cultural heritage of Chapter members. A majority of the land in the Chapter is utilized for grazing, and it is also where homesites and family clusters are located.

The Chapter is in Grazing District 5 of the Navajo Nation. 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 also have the following objectives:

- Adjust the number of livestock to the carrying capacity of the range to preserve the health and sustainability of livestock on the Navajo Nation

- Secure increasing 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 practices and the maintenance of a sound culling policy
- Establish range units to promote conservation, manage development, and guide effective use of range resources

The ranching way of life needs to be protected by assuring that land is set aside for grazing, developing a range management plan, securing District 5 Grazing Permits, constructing a water windmill for animals, and building cattle guards in needed locations. In addition there is no animal veterinarian to tend to the animals and no livestock yard to sell or process the animals.

Farming

Farming, similar to ranching and sheep herding, has been a major occupation and, more importantly, a way of life in Tolani Lake for many years. Its rich basin suitable for farming was one of the major reasons for its settlement. These activities have strong connections to the customs and cultural heritage of Chapter members. Improved irrigation capabilities, the construction of a man-made lake, and knowledge regarding dryland farming would improve the capabilities of the Chapter's farming industry.

2.3.2 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 erodibility, habitats of endangered species, and scenic and cultural areas.

Topography

USGS topographic maps were used to show topography and resultant slopes in the area identified for development. The housing sites are relatively flat and lie at an elevation near 5,030 feet above mean sea level. The slope of the sites varies from 5 percent to 2 percent, which is good for development.

Flood Plain

Historical surface water flow data are not available for most of these areas, nor are flood plain maps. 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 flood plain 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 seven growth areas, and prepare a flood design manual. The Chapter should continue to follow this plan development and incorporate its findings in the CLUP as they become available.

Surface Water

The Dinnebeto Wash crosses the chapter (Figure 14). There are no bridges over this wash. Some rural unpaved roads cross this wash but are impassable when water is present. Other major surface water features include the Polacca Wash and the Oraibi Wash, which can be found on the Surface Water Map, Figure 5.



Figure 14: Dinnebeto Wash

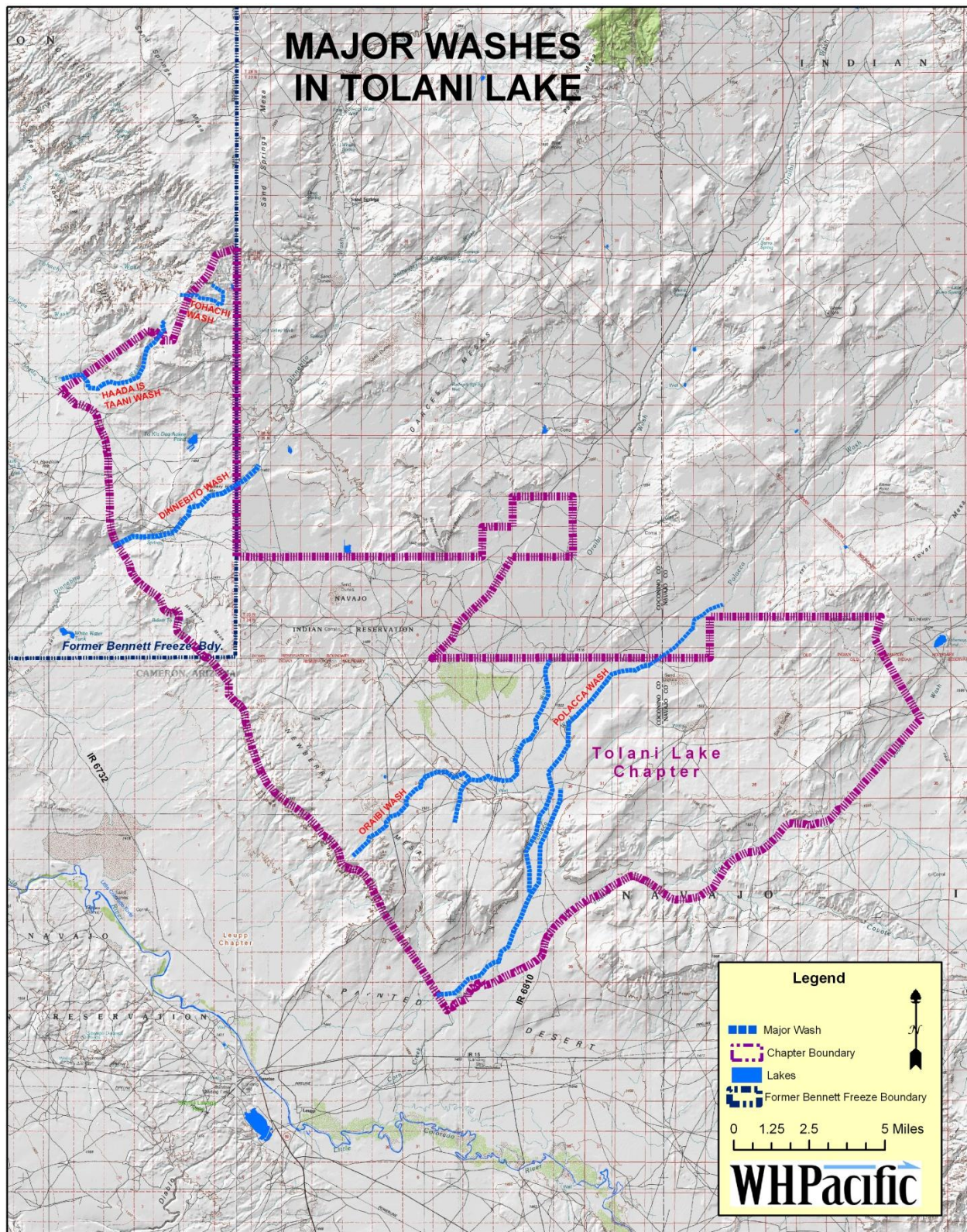


Figure 15: Surface Water

Fault Areas

Faults are generally caused by earthquakes. The Colorado Plateau, which includes the Navajo Nation, lacks recent faulting or volcanic activity. The Plateau interior is defined by a thick crust and a general lack of seismic activity. According to a Bausche and Brumbaugh report from 1994, the projected maximum earthquake ground accelerations are far below a level that would warrant earthquake-proof designs. Since this region is not considered fault-prone, the chances for earthquakes are minimal.

Soils

Soil composition in the Chapter ranges from sand to loamy sand soils. The following are characteristics of these soil types:

Soil Profile:	
0-18 inches	Light reddish-brown sand: reddish-brown; single grain: loose, very friable, non-sticky; diffuse boundary; very fine roots; no observable pores.
18-36 inches	Light reddish-brown sand: reddish-brown; single grain: loose, very friable, non-sticky; diffuse boundary; very fine roots; no observable pores. Increase of lime with progressive increase in depth.

Vegetation

The Chapter's vegetation is composed of the Great Basin Desertscrub plant community. Co-dominant shrubs include rabbitbrush (*Chrysothamnus nauseosus*), Mormon tea (*Ephedra* spp.), and snakeweed (*Gutierrezia sarothrae*). Common grasses are muhly grass (*Muhlenbergia* spp.) and galleta grass (*Hilaria jamesii*). None are endangered species.

Wildlife

Wildlife that occupies the Chapter is typical of Great Basin Desertscrub habitat. For instance, coyotes, foxes, rabbits, lizards, snakes, small rodents, and birds of prey are common to the area.

According to the Navajo Natural Heritage Program, there are four species of concern that may reside within the Chapter boundaries. Species of concern include animals, native species, and species of economic or cultural significance that have been placed or are pending placement on the endangered species lists. For each species, the following tribal and federal statuses are indicated: Navajo Endangered Species List (NESL), Federal Endangered Species Act (FESA), Migratory Bird Treaty Act (MBTA), and, Eagle Protection Act. Neither FESA-candidate nor NESL-group 4 status provides legal protection.

Table 24: Species of Concern

Common Name	Scientific Name	Status
Black-footed Ferret	<i>Mustela nigripes</i>	NESL group 2, FESA endangered
Ferruginous Hawk	<i>Buteo regalis</i>	NESL group 3, MBTA
Golden Eagle	<i>Aquila chrysaetos</i>	NESL group 4, MBTA, EPA
Pronghorn	<i>Antilocarpa americana americana</i>	NESL group 3

The following descriptions provide additional information regarding the aforementioned species:

The **Black-Footed Ferret** is usually found in association with prairie dog towns in grassland plains and surrounding mountain bases up to 10,500 feet above sea level. A survey for black-footed ferrets is required if a prairie dog town is present and larger than 80 acres (for black-tailed prairie dogs) or 200 acres (for white-tailed and Gunnison's prairie dogs).

Ferruginous Hawks are found in open habitats, such as grasslands, shrub steppes, sagebrush, deserts, saltbush-greasewood shrublands, and outer edges of piñon pine and other forests. It nests in small trees or rock outcrops or on the ground or haystacks if no other site is available. Generally, they avoid high elevations, narrow canyons, and interior regions of forests. Trees, utility poles and towers, fence posts, rocky outcrops, cliffs, and the ground are perching substrates used by ferruginous hawks (Johnsgard 1990 and Phillips et al 1964).

The **Golden Eagle** inhabits open country from barren areas to open coniferous forests. It is primarily found in hilly and mountainous regions, but also in rugged deserts, on the plains, and in tundra (Farrand 1988). The golden eagle prefers cliffs and large trees with large horizontal branches for roosting and perching. The golden eagle nests on cliff ledges, preferably overlooking grasslands; 10 to 100 feet above ground in dead or live trees; in artificial structures; or on the ground. In western mountains, golden eagles nest at elevations of 4,000 to 10,000 feet. Pairs may use the same nest year after year or use alternate nests in successive years. Golden eagles are most likely to use trees for nesting if cliff sites are unavailable. The golden eagle generally forages in open habitats where rabbits and small rodents are available. During the nesting season the golden eagle usually forages within 4.4 miles (7 km) of the nest (Johnsgard 1990 and Phillips et al 1964). Trees, live or dead, are often used for perches if they are near open areas where prey can be easily seen.

Pronghorn prefer grassland-desert scrub habitat wherever high densities of food can be found. In Arizona, pronghorn antelope are found primarily in the northern plains. They also inhabit high elevation meadows between forested areas, and scattered herds are found in the grasslands of southeastern Arizona. The endangered Sonoran pronghorn occurs in Mexico and southwestern Arizona.

Scenic Areas, Cultural Resources, and "Areas of Avoidance"

The Navajo's traditional subsistence lifestyle expresses resourcefulness, ingenuity, and strong connection and understanding of the land. The major means of subsistence consists of grazing sheep and cattle, farming crops such as corn, squash, and beans. The Navajos also use the land to gather a variety of plants/herbs for medicinal and ceremonial purposes and materials for arts and crafts. The areas that provide these resources are considered "areas of avoidance" – traditionally and culturally sensitive areas to be protected from development in perpetuity to preserve their historic significance or ongoing ceremonial use.

While these areas are well-known by many elders and traditional Navajo residents, the younger generation does not necessarily share this knowledge and understanding. There is currently a lively debate about whether these special areas should be mapped or not. Proponents say that mapping helps preserve and pass on this important cultural and spiritual knowledge across generations and into the future; opponents say this information should be passed orally and

personally from generation to generation. In either case, it is important for the Chapter to establish a policy and procedure for how to assure that lands planned for development are not areas to avoid. The Navajo Historic Preservation office does have maps of some of these areas that it can check site by site as project proposals move forward for development. Recognized archeological sites, shrines, eagle nests, and burial sites should be protected from development or preserved.

2.3.3 Land Suitability and Resources

The Chapter's final land use map should be assessed on a project-by-project basis to examine whether each site proposed for development is at risk due to any of the above environmental factors. This analysis determines the suitability of land for the development proposed.

This analysis should describe each site's characteristics, accessibility, and availability to infrastructure. It also needs to discuss any applicable environmental laws and requirements and the likelihood that there may be environmental constraints due to the protection of endangered species and archaeological or cultural resources.

Infrastructure

The current infrastructure for Tolani Lake includes water, wastewater, electric, telecommunications, and road systems in the main community area. These systems are generally available to developed areas of the Chapter and limited to areas in the outskirts of the community, particularly in the FBFA. More detail can be found about infrastructure in Section 2.4. In general, infrastructure and utilities need to be upgraded before new development occurs.

Groundwater

Groundwater in this area is found in the Coconino (C) Aquifer. According to information in the Water Resource Development Strategy for the Navajo Nation, in draft form as of 2008, this aquifer has a total storage of 413 million acre-feet. The C-aquifer underlies most of the reservation in the Little Colorado River Basin. It is recharged from outcrops on the Defiance Plateau, the Mogollon Rim, and the San Francisco Mountains. The communities of Cameron, Leupp, Ganado, and Chinle, among others, also depend on the C-aquifer for much of their municipal water supply. It is also a major source of industrial water for non-Indian communities in the Little Colorado River Basin.

The 2008 draft of the Water Resource Development Strategy for the Navajo Nation includes a project for a major water transmission line from Leupp to Dilcon that would potentially pass through Tolani Lake and provide a major opportunity for improved water service. The project is in the planning stage and should be monitored by the Chapter for progress. A copy of an initial feasibility and cost assessment is included in the Appendix 5.4. More detail can be found about water resources in Section 2.4.2. In general, water availability and systems need to be improved before new development occurs.

2.4 Infrastructure and Utilities

Infrastructure is a basic element of community, because it provides individuals access to basic services that are needed to survive. Those services include electricity, water, wastewater, and roads. Other services, which may not be necessary to survive but provide a great deal of comfort, are telephone, Internet, public and air transportation, and railroad.

2.4.1 Electricity

Currently, the Chapter has electrical power, but it is not sufficient for its use. The current power available is single phase, whereas three-phase power is needed to support current and future development. Due to the great abundance and unobstructed access to the sun, solar power should be developed. This power should be provided to all families in remote areas.

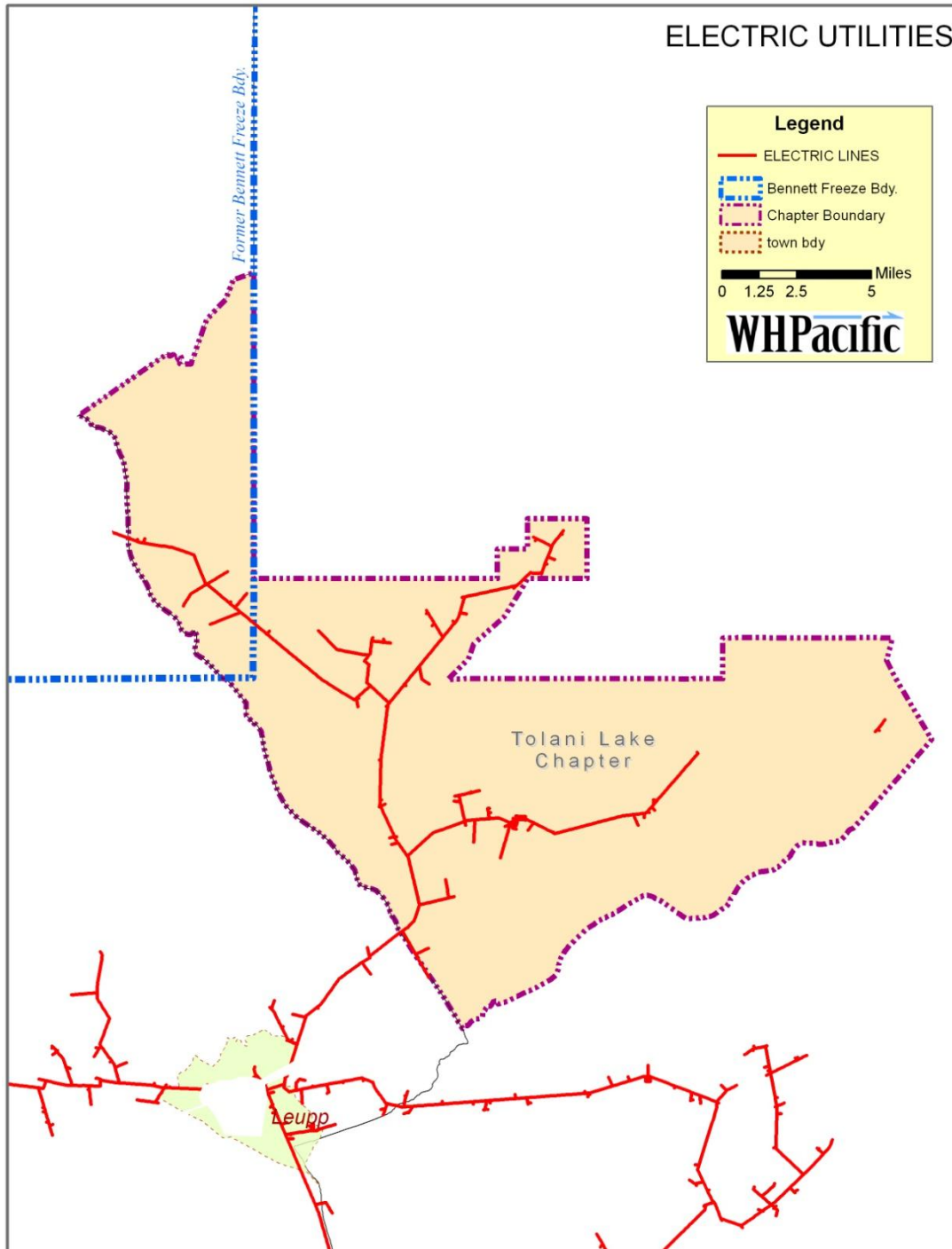


Figure 156: Existing Power Infrastructure

2.4.2 Water Systems

Groundwater in some parts of the Chapter can be found at 137 feet below the surface. The Chapter acquires its water from the C-aquifer. Water can be provided in the form of underground waterlines or in safe, tested, and monitored nearby watering points, which are locations to which individuals travel to in obtain their water. It is assumed that one or more water storage tanks would suffice.

The 2008 draft of the Water Resource Development Strategy for the Navajo Nation includes a project for a major water transmission line from Leupp to Dilcon that would potentially pass through Tolani Lake and provide a major opportunity for improved water service. The project is in the planning stage and should be monitored by the Chapter for progress. A copy of an initial feasibility and cost assessment is included in Appendix 5.4.

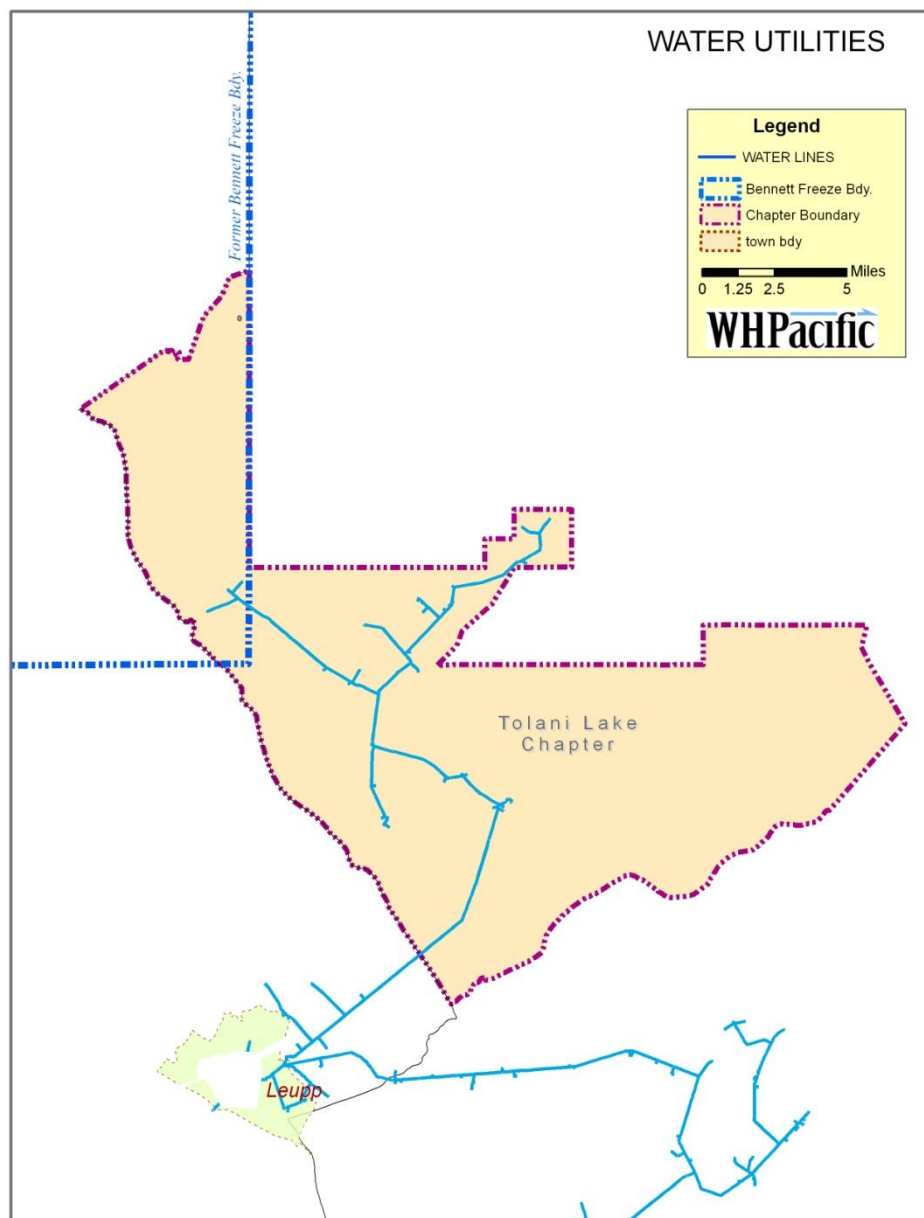


Figure 167: Water Infrastructure

Figure 178: Water Sources for Homes, below, illustrates which homes are connected to a municipal water system, which homes use water that is stored in cisterns and tanks, and water hauling locations.

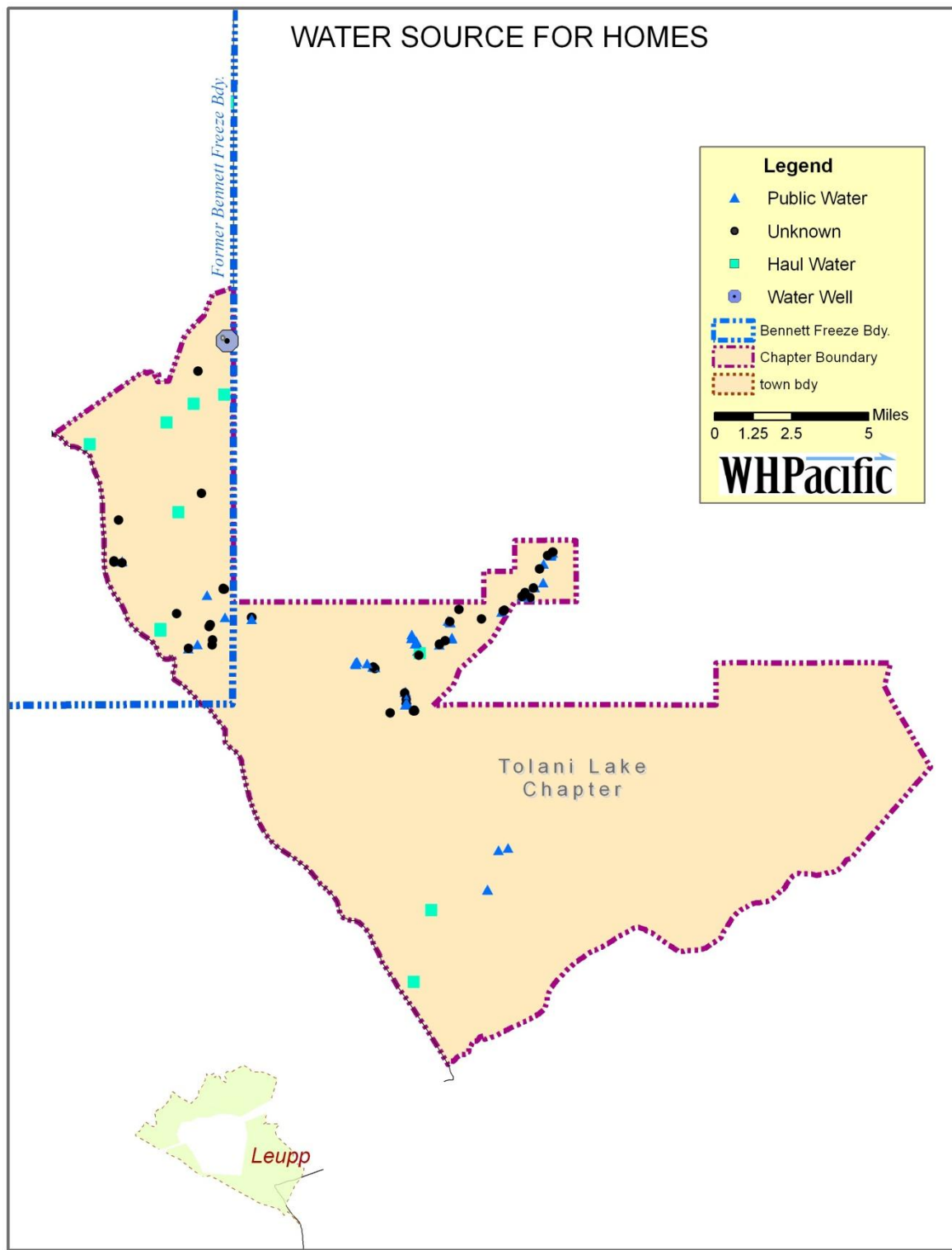


Figure 178: Water Sources for Homes

Figure 18, below, illustrates water sources including windmills and earthen dams for livestock in the Chapter's grazing areas.

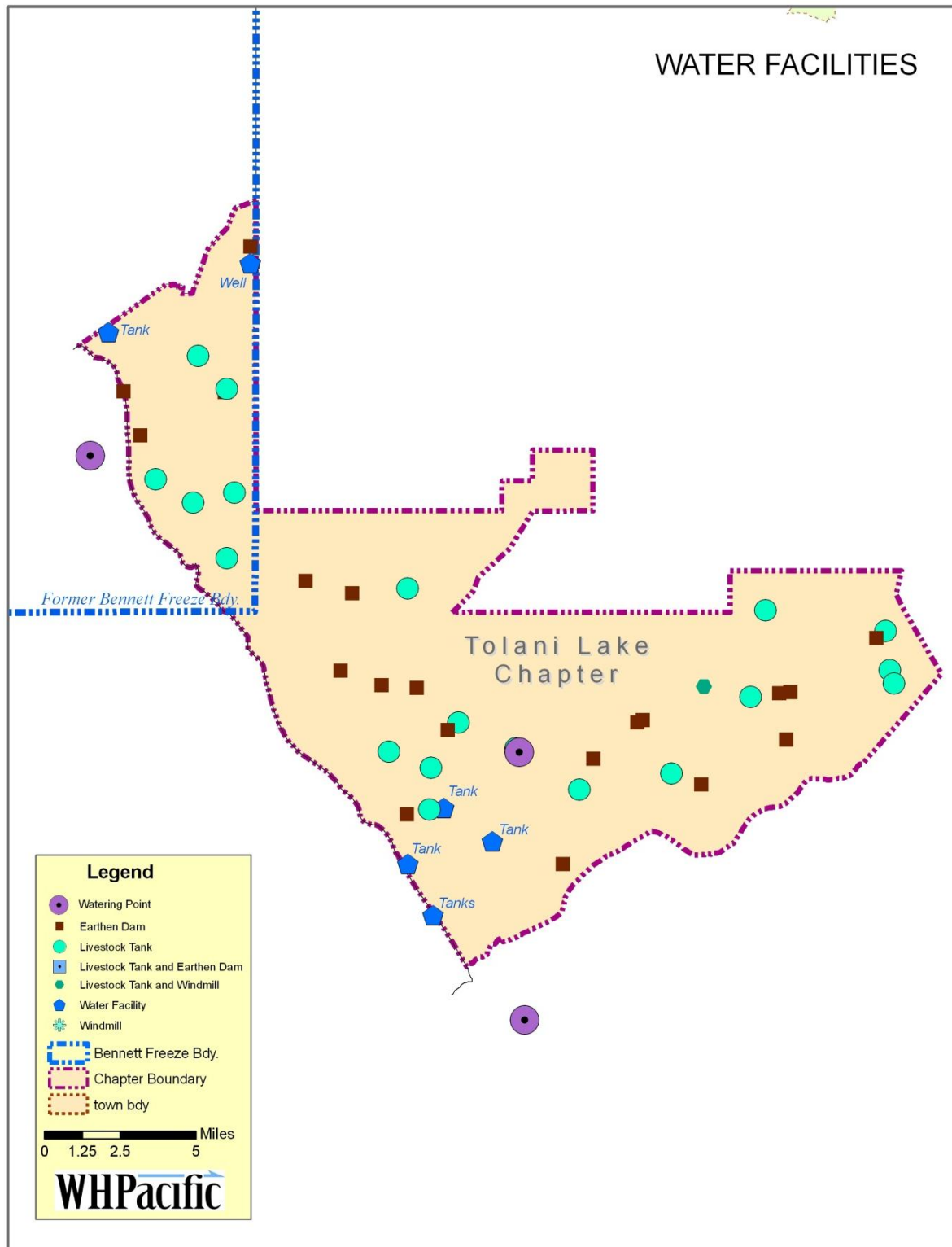


Figure 189: Water Sources

Due to the remoteness of some scattered site housing, there is an ongoing issue of people drinking water from windmills, which are at risk for bacterial contamination and air-borne contaminants, due to the presence of livestock, and vandalism, due to their remote, unsupervised locations. 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.

2.4.3 Wastewater

A wastewater system is important because it removes human waste from homes. A wastewater system is needed in the community. There is a preference that a low-cost system be provided to residents located away from a major wastewater line, with assistance for periodic servicing if it is a septic system.

2.4.4 Solid Waste

A solid waste transfer station is needed so individuals can dispose of waste in a proper and safe manner. Unsanctioned dumping sites are common in the chapter and create a health hazard.

2.4.5 Natural Gas

Natural gas infrastructure is not present in the Chapter. Most people in the chapter use wood as their primary heating source. Propane is also widely used throughout the Chapter. Propane distributors are available in nearby towns.

2.4.6 Communications

Telephone

According to the 2000 U.S. Census, 17 percent of Chapter residents have access to phone lines. More residents need access to these lines.

Cellular

Because there is a lack of land-line telephone service in the area, more Chapter residents have come to rely on their cell phones for worldwide communication. A Cellular One tower has recently been added to the chapter's communication system and the majority of people - both young and old - use Cellular One as their primary source of communication.

Internet

The Internet provides individuals the ability to communicate with others regardless of distance. Though Internet service is available in the Chapter, it is unreliable and insufficient and needs to be improved.

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 and KMGH, KAFF, KVNA, and KOLT from Flagstaff, Arizona (Rodgers 2004). One television channel is received from KNAZ in Flagstaff. Some residents access satellite television.

Newspaper

Newspaper distributions include the *Flagstaff Daily Sun* on a daily basis and the *Navajo Times* and the *Navajo/Hopi Observer* on a weekly basis. Internet service is available via modem and satellite connections.

2.5 Transportation, Roads, and Accessibility

This transportation element provides information about the existing road and proposed road network in relation to the Chapter's current and proposed land use as well as the surrounding area. The road system is designed to contribute to the quality of life for residents, provide safe and adequate public access to and within the community, and support the movement of goods and services throughout the region. To meet the essential needs of the Chapter's current transportation system and keep pace with the demands of tomorrow, state, federal and tribal routes must be evaluated for the necessary improvements that will successfully support the Chapter's CLUP.

2.5.1 Roads

Roads connect individuals to one another and to jobs, medical services, shopping, and other community amenities. A number of roads in the Chapter need to be relocated, renovated, or constructed. Navajo Road 6720 that connects the Chapter to Tuba City needs to be relocated west of its current position, thus avoiding Hopi land. Navajo Road 6720 needs to be paved, and a bridge crossing Dinebito Wash needs to be constructed. A bridge that remains passable in all weather conditions and seasons also needs to be constructed across Grand Falls and Black Falls.

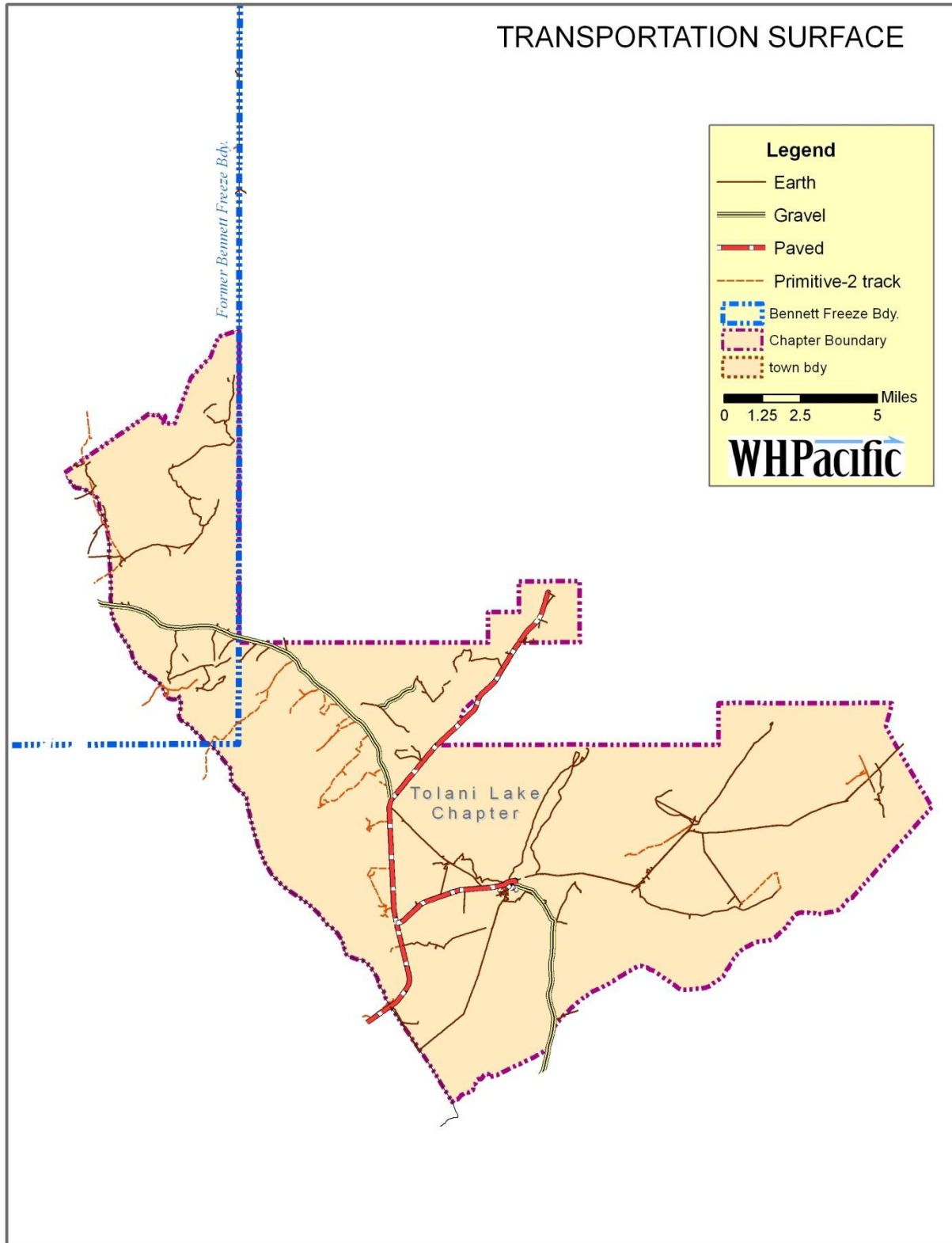


Figure 20: Road Surfaces

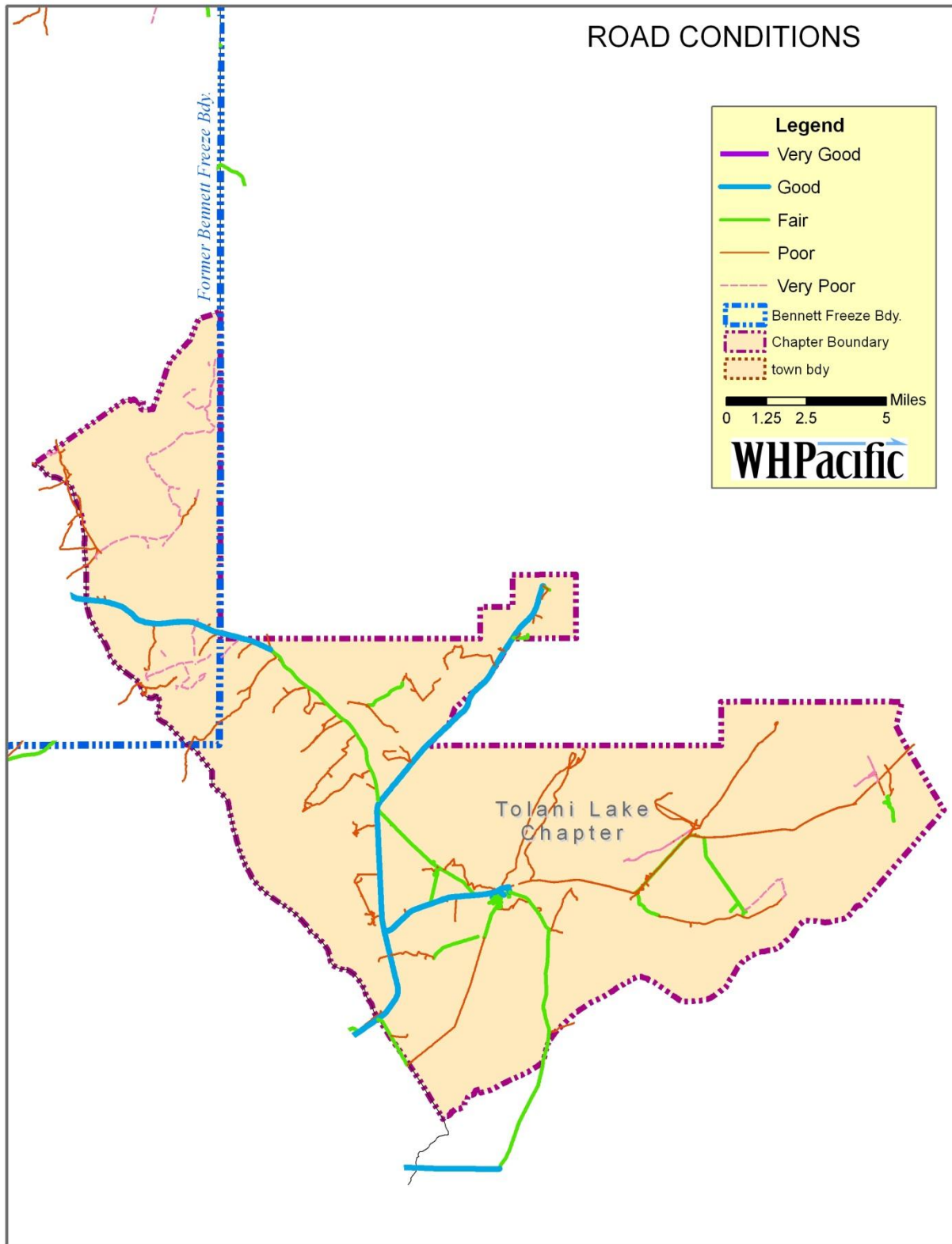


Figure 191: Road Conditions

2.5.2 Public Transportation

Limited regional public transportation has recently come to the Western Agency to help people without a vehicle travel to places within the region. Bus service is now provided by Hopi Transportation along Route 2 from Oraibi to Tolani Lake/Leupp Junction and on to Flagstaff. Owning a car is a necessity for people who live in the most remote portions of the Chapter because water has to be hauled in by the resident. Regional transport is especially important in Tolani Lake, as all shopping and services are located in neighboring chapters or nearby cities such as Winslow and Flagstaff. An improved shuttle service could help elderly and low-income residents access medical services, shopping, regional recreational events, and opportunities.

2.5.3 Air Transportation

The Navajo Nation currently has nine primary airports serving smaller, commercial-size planes and is currently planning to develop six additional sites as secondary airports. The Tuba City airport located near the intersection of Highways 89 and 160 is one of the nine primary airports serving Tuba City and surrounding communities. In 2005 the Navajo Nation developed a five-year capital improvement master plan for the Navajo Nation airports. This plan has been submitted to the Arizona Department of Transportation and the FAA, Western Pacific Region headquarters, for review and approval.

Emergency air transportation is needed in the area because of the remoteness of the community and long distances between neighboring communities. If an emergency occurs, air transportation is the most reliable and efficient way to travel. The nearest airstrip is inadequate and too far away. An airstrip and helicopter services are needed in the Chapter.

3.0 The Development Plan

The Chapter's land use plan should serve as a roadmap to where the community wants to go. The land use map should capture the community's 15-year vision, and the plan should outline the actions needed to get there, the roadblocks the community may encounter along the way, and the strategic actions needed to remove, resolve, or avoid them.

The Development Plan is presented in the following sections:

- The community's 15-year vision
- Development issues the Chapter may encounter
- Strategic directions to take to avoid, minimize, or remove these issues
- Development principles to follow
- A community needs assessment
- Actions to take, including priority projects and a phasing plan

Many of the projects focus on development within the FBFA, in order to address the stark needs for improvement required for recovery.

3.1 Vision

The Chapter vision captures how Chapter members would like to see their community grow over the next 15 years. In the long term, Chapter members want to maximize the benefits of modern opportunities but at the same time maintain the integrity of traditional Navajo culture. Chapter residents want to preserve their rural atmosphere but bring in modern amenities such as telephones, electricity, and plumbing to all residents who desire them. The following statement reflects the Chapter's vision:

Tolani Lake Chapter will ensure that all residents have homes in a safe, livable condition, including basic infrastructure such as electricity, telephone, and plumbing. Members of the Chapter will have access to shopping, health services, employment, education, and recreational opportunities to improve the quality of life for all residents.

During the community workshops held during Summer 2008, community members outlined goals for the Chapter that will aid in reaching the vision. These goals include community policies, capital projects, and community service.

Access to safe and adequate housing is an important aspect of human and community development. All housing in the Chapter will have adequate water, wastewater, electrical power, and phone services; and a range of housing options will be available to match all income ranges and location preferences, whether homes are located in clustered housing developments, mobile home parks, or scattered housing in remote sites. Sufficient housing will be available for teachers and other professionals who serve the community. Elderly and disabled residents will have access to independent living centers in the community, where they will have additional assistance with preparing food, social opportunities, and medical care while remaining close to their families. A nearby or combined senior center will provide elders a place to congregate.

Improved access to health care is needed by all Chapter members. A local clinic with triage or emergency care and space for visiting nurses and dentists will provide basic medical and dental services to those who can travel to it, and a mobile health clinic and dental clinic will provide services to those in remote areas or without transportation. Ambulance and regional helicopter service will transport patients to larger facilities in Tuba City, Winslow, or Flagstaff. All homes will be assigned addresses for emergency response and within range of reliable cell phone service.

Chapter members, both young and old, will have places to gather and meet, share ideas, and develop and strengthen friendships. A multi-purpose center provides Chapter members a space to interact with other youth and seniors and engage in recreational facilities. A post office, renovated Chapter House, Head Start, and social service office will be added over time to form a center for community activity.

As the community grows and develops, a rodeo grounds will be added near a major intersection for easy access to regional visitors, and eventually a retail center with a grocery store, other shops, gas station, convenience store, fast food, trading post, tire shop, auto garage, pet store, pawn shop, and automobile dealership will crop up to support each other and the community. A man-made lake will be built as a regional tourist opportunity, attracting outsiders and residents of other chapters.

Students of all ages will have educational opportunities that support their curiosity, learning needs, and life circumstances. Culture and language are incorporated at all levels to strengthen the integrity of this Navajo community. Training and educational opportunities will support the working needs for professionals, ranchers, and laborers that make up the community, so that no one has to travel farther than the next community to complete the education they need.

Additional economic and industrial development will provide employment opportunities for all Chapter members. Ranching and farming continue to be respected ways of life, with ongoing training for better management and productivity. A regional livestock yard will provide a place to sell animals and wool, receive veterinary care, and perform yearly animal maintenance such as dipping. Additional cattle guards and fencing will protect animals and agricultural fields. An improved water system will provide safe water for livestock and irrigation.

All residents will have adequate public safety, including police and fire protection. Fire hydrants, security lights, directional signs, and crosswalks will keep the community safe. An emergency preparedness plan and emergency shelter will be ready, and the community will be educated about it and ready to implement it. All homes will be addressed for emergency response and within range of reliable cell phone service.

Solid waste will be collected safely and reliably at a Chapter transfer station.

Archeological sites, eagle nests, and burial sites will be preserved and protected. Cross-generational exchanges of knowledge will ensure that sacred, cultural, and medical knowledge are passed on through every generation.

The community will be connected with a functional and reliable road system. A paved Navajo Road 6720 will be relocated west to skirt Hopi tribal lands. A new paved road crossing Dinebito

Wash will provide safe access in all weather conditions and seasons. A new road will connect to Cameron along the east side of the Little Colorado River, and a bridge will cross the Black and Grand Falls. An airstrip will be added as the community develops over time.

3.2 Development Issues

In working to achieve the community's vision over time, the Chapter will experience a variety of challenges and obstacles, based on current conditions. Success in implementing projects will require that these obstacles be addressed, resolved, or avoided over time. The following obstacles represent the community wisdom from Workshop 1 about the challenges the Chapter faces in the future as it moves toward the vision. They are a snapshot in time and will need to be updated, since new obstacles invariably replace the old as they are resolved. The following section addresses potential actions to be taken to address these development issues.

3.2.1 Need to Define Land Use and Status

The Chapter will need to develop some of its land to provide for the community and commercial facilities included in the vision. The Chapter will need to define the land use and status of each parcel of land. Although there is an abundance of land, not all is suitable for construction, and much is considered good grazing land. In general, ranchers do not want to release land for development unless they are compensated, which is legally complicated and has only happened a few times in the history of the Nation. Because ranching is part of the community's vision for the future, the Chapter will need to balance the protection of grazing land with the development of facilities to improve the quality of life of all residents. This negotiation will require much public education and ongoing discussion.

3.2.2 Need to Conduct a Community Assessment

The Chapter needs basic infrastructure, basic facilities, and housing to function properly; however, the small population does not necessarily warrant additional development. A suitability or feasibility study needs to be conducted to determine where and how future growth will take place.

3.2.3 Diversity of Perspectives

The Chapter's needs are so great that having "buy-in" from community members is difficult to achieve. Over the years, as basic services began to deteriorate, some residents relocated to other areas and only visited the Chapter during the weekend, whereas others stayed. Chapter members who stayed learned to live with what was provided or accessible to them, which meant in some cases, basic survival. Over the years, there have been a number of studies to determine the needs of the Chapter, but no buildings or tangible results have ever come of those studies. Chapter members need to see progress to believe in planning or to have reasons to get involved. In the end, while there are many different perspectives, a consensus needs to be achieved among Chapter members for the process to move forward.

3.2.4 No Support for Former Bennett Freeze Area and Local Priorities

There have been a number of studies conducted to determine the needs of the Chapter. Those studies have proposed a number of alternatives to address the Chapter needs, but many Chapter members feel they have not received the support of tribal leaders and the Navajo Nation's central government.

3.2.5 Limited Resources

Even when a study is conducted and there is support for a project, there are not enough resources to complete it. Federal funding is the major source of funding, but very few individuals know how to successfully access it. Federal funds allocated to the Chapter come with guidelines that are difficult or impossible to meet or achieve. Often, they are not sufficient to cover the full cost of the project, so more funding sources are needed to complete a project.

3.2.6 Legal and Procedural Constraints

There are a number of policies and legal restraints that prevent projects from being completed. The Chapter tries to work within the process, but there are political obstacles from Navajo Nation departments, other agencies, and politicians that prevent the project from being completed. In the end, the process becomes so long that it become too burdensome to continue or the deadline to spend or encumber funding passes, and funds are lost.

3.2.7 No Local Structure for Water and Utilities

There are two main problems when it comes to developing infrastructure. One, waterlines and other utilities are often not constructed until there are structures or development planned. At the same time, development is only planned for areas that currently have infrastructure that can support them. This results in a kind of “chicken and egg” problem when trying to determine which should come first. In Tolani Lake, existing structures in remote areas have not been connected to water or utilities because they are not available in those areas.

In some areas, water systems have had to be abandoned because of contamination. New water rights are very difficult to obtain since they are, for the most part, fully appropriated; and those who currently have rights to clean water are reluctant to sell or part with them.

3.2.8 Absence of Housing Development Plan

The Chapter is experiencing a greater need for housing than there is supply. This problem is compounded because people are unable or unwilling to pay for housing. As a result, individuals from other areas who are willing to pay are able to find homes for occupancy, which engenders resentment from local people. Much of the recently built housing has been constructed in subdivisions, which are perceived to produce more crime and drug activity.

3.3 Strategic Directions

The following categories represent strategic directions the Chapter can take in addressing the obstacles summarized above in order to achieve the community vision. Some are specific actions; others can form the basis of goals that may need more exploration to find the actions that will move the Chapter in those directions.

3.3.1 Public Awareness through Outreach and Education

A public participation plan needs to be developed. It needs to have a community participation process that stakeholders are familiar with, an educational component that informs people about the process, community outreach, and an approach to involve all stakeholders, including grazing permittees, Coconino County officials, State of Arizona representatives, community leaders, and community members.

3.3.2 Certifying of Comprehensive Land Use Plan

A comprehensive land use plan (CLUP) needs to be completed and adopted because it presents problems and a set of solutions. The CLUP will determine that, for example, there is a need for housing and recommend locations where housing should be placed; but it does not conclude what type of housing, who should live there, and the type of construction.

Because it was not included in the 2008 update of the CLUP, a complete, comprehensive community assessment needs to be conducted to calculate the exact need and best locations for housing. The needs assessment should also include a community survey and evaluation. An environmental assessment should be conducted for each proposed project in the CLUP, including research about laws and regulations that pertain to the suggested sites and information to start the process of withdrawing land. A parallel effort needs to continue to work toward consensus among residents and local officials in terms of the kinds of development needed and in what locations. Tribal leaders and the Community Land Use Planning Committee should lead this public involvement and communication effort.

3.3.3 Achieving Results through Collaborative Partnerships

The Chapter has a number of needs, but it also understands that some of those needs cannot be addressed alone. The scope and number of projects needed will require a sustained effort and productive collaborations with a wide range of partners. Meeting the water and utility demand will require a regional approach that must include neighboring chapters, federal agencies, and multiple Navajo Nation departments, including the OEH, RCS, USDA, BIA, SWCD, and NTUA. The BIA, Realty Office, and Navajo Nation Council will be vital to development efforts. Leaders need to recognize the need for water development and obtain the support of the Regional Water Authority.

3.3.4 Recognizing Existing Laws, Protocols, and Policies

The Chapter needs to be informed about the federal and tribal mandates and planning processes that need to be followed. There may be pressure from residents for the Chapter to request that certain legislation and procedures be amended or waived, because of the great need that exists, particularly in the FBFA.

3.3.5 Securing Alternative Resources

The Chapter needs to identify alternative funding sources in order to implement and complete projects, maintain and operate facilities, and create and sustain needed programs. The Chapter budget and federal resources will not cover the full range of what is needed in Tolani Lake. The Chapter should seek Navajo Nation, county, federal, and state funds. Relationships with private and outside funders may be necessary to achieve the community's vision.

3.3.6 Strengthening Local Governance

The Chapter needs to be certified and recognized as a legal entity. By completing and adopting the CLUP, the Chapter can complete the next step in acquiring Local Governance Act (LGA) certification. LGA certification recognizes governance at the local level by granting local authority to negotiate contracts and receive funds directly, without requiring approval from the Navajo Nation Council. After updating and adopting this CLUP, the Chapter must continue training in financial management as the next step in certification.

Ongoing training in leadership, financial management, public financial management, public service, and project management will help build community development and local governance at the Chapter level.

3.4 Development Principles

Chapter members outlined the following principles that should guide development and protect culturally and environmentally sensitive land over the next fifteen years.

3.4.1 High Quality Construction

The building blocks of the community need to be made from quality construction and materials that meet or exceed professional standards. These products need to be adaptable to local weather conditions, which in the region are harsh, and adhere to all laws, mandates, and policies.

Sustainable construction should be required for all new buildings. These buildings should be energy-efficient and designed to last many generations. Structures should be designed to work with the land in order to provide passive solar energy to further reduce energy costs. These structures should provide optimal protection from the elements with high-quality insulation to better regulate indoor temperatures and raised floors to protect against flooding.

3.4.2 Hoozho lina, Respectful Balance

During the planning, construction, and development of the community Hoozho lina needs to be followed. In general, this means a respectful balance among the community's health and safety, the environment, and the culture and history of the Navajo People. Ké, or Navajo common law, a system of respecting one another, will be the guiding principal.

3.4.3 Preservation and Protection

The environment and culture need to be protected and preserved for generations to come. Ranching is an important and vital part of community. During community development, ranching needs to be recognized and protected as a way of life.

New developments should not harm the natural environment or negatively impact traditional ways of life. It is important to protect water quality and groundwater for future generations. Other natural resources such as mineral deposits should also be used wisely to ensure sustainability. Any cultural sites within the Chapter should also be preserved.

3.4.4 Future

The community is family based, which means that extended families live together. The community will continue to grow, and planning efforts today should seek to create the community that future chapter members envision for tomorrow.

3.5 Community Needs Assessment

3.5.1 Infrastructure and Utility Needs

In general, Tolani Lake needs significant improvement of infrastructure and utility service to residents and to prepare for future commercial and industrial growth.

Many scattered-site homes are not connected to municipal water systems, due to their remoteness and to the cost and inefficiency of extending these systems to isolated locations. At the same time, the Chapter's vision includes each home having adequate plumbing and access to safe water for drinking and domestic use. Those homes located close to existing water systems should be hooked up. Those too far from existing systems should be retrofitted for plumbing and provided nearby watering points, where safe water for drinking and domestic use can be collected and hauled.

As part of the FBFA Recovery Plan, a system of residential zones is being proposed to distinguish among those homes close enough to hook up to existing municipal water systems, those homes already in proximity to safe watering points, and those homes in remote locations that must haul water from long distances. There are two major issues facing those in remote homes. One is the cost, stress, and labor of hauling the water from far away to their homes – a particular burden for elderly residents living alone and their families who help care for them. Another is the risk that many people in these remote areas resort to using water from nearby windmills or earthen dams instead of traveling long distances to a safer water source. Water from windmills and earthen dams, intended for livestock use, is not tested for water quality and is at risk for airborne and bacterial contamination from contact with animals.

Improving access to safe domestic and drinking water, as well as water for livestock and irrigation, will rely on policy decisions about how best to provide water in remote locations. Providing more safe watering points is one approach; providing a regional system of water delivery might be another. Technology exists to solve any number of problems, once the community decides on what problem to solve and what a successful solution will look like. Some solutions will be more costly or more efficient than others, but strong leadership and clear decision-making, starting at the Chapter level, will still need to set the parameters of what solutions the community demands.

Similarly, a system with a range of power source solutions based on distance from existing power lines could provide electricity to all residences in the Chapter. Those closest to existing or planned power lines would be hooked up. Those in more remote areas could be retrofitted or built to use solar power with wind-powered backup generators.

Water storage and wastewater systems are in dire need of improvement for remote and scattered-site homes. One simple improvement that could have major benefits for all residents is adding a water harvesting or catchment system to each home to capture rain from the roof and other buildings for domestic use – although specifically *not* for drinking water – livestock, or irrigation. Although many homes currently have septic systems, they were either not correctly installed or they are in need of servicing, which can be prohibitively expensive, especially in remote areas, when the private companies that clean out the septic tanks must travel from Page or Flagstaff. Many residents revert to using outhouses once the septic tank is full and no longer

works. Again, the solutions to these issues are less technological than they are policy and governance decisions. The Chapter must decide whether and how it wants to assist people. Paying the initial cost of buying a truck that could service the septic tanks may be one way to address the issue, which would reduce the cost to each resident for service. Providing a stipend to pay for some portion of private service may be another approach, whether the funds come from the Chapter budget or from a grant or ongoing partnership with a private funder.

Cellular communications also need improvement throughout the Chapter. Most homes do not have telephone landline service, yet cellular service is incomplete in the area and reception spotty. They are at greater risk during emergency situations because residents are dependent on cellular phones. Many people have to drive to locations where cell phone service is available in order to place an emergency call, which adds precious time to emergency response. Improved cellular communications infrastructure will improve quality of life for all residents. In addition to spotty cellular communications, Internet access is also sparse.

Trash collection is limited and unreliable in the Chapter. Because there is no dedicated solid waste collection area, unofficial dumping happens in numerous locations, which creates a health hazard and negatively impacts the beauty of the area and pride in its residents. A solid waste transfer station could be added to provide a centralized area for trash collection. The Chapter would need to coordinate with a neighboring chapter with an existing landfill to agree to take the waste collected in Tolani Lake and negotiate who would pay for the operation to move it.

3.5.2 Transportation Needs

Poor road conditions are common throughout the Chapter. According to Chapter members who attended the planning workshops, many roads are washed out after storms or when snow-melt crosses the road. Navajo Road 6720, which connects with Tuba City, is heavily traveled but unpaved. Chapter members suggested this road be moved west, away from Hopi tribal land and the FBFA. Workshop participants also recommended constructing a road to Cameron along the east bank of the Little Colorado River.

During the workshops, participants asked for an airstrip and helicopter service to be added in the Chapter to improve connections to neighboring communities, strengthen the opportunity for economic development and tourism, but also to improve public safety by providing faster access to emergency and medical services. Land has not been withdrawn, nor has a site been selected for this purpose. If the Chapter moves forward with these projects, funds need to be set aside for a feasibility study to recommend the scope and location for these projects.

Also, at the workshop Chapter member suggested that three bridges be built, crossing the Black Falls, Grand Falls, and Dinebito Wash. Building these bridges will take collaboration and partnerships with Cameron and Leupp Chapters.

3.5.3 Housing Needs

At the planning workshops, participants identified the top needs to improve housing in the Chapter. Chapter members desire new homes to be constructed of quality materials and built to meet professional standards.

A diversity of housing types is needed within the Chapter. Group homes for the elderly and disabled are needed to house the aging and disabled population who need more living assistance. Clustered housing is a good option for those wanting to live in more social locations in closer proximity to neighbors, community services, employment opportunities, and organized recreational activities. Because clustered housing is typically located near the center of the community, it can also be easily hooked up to municipal utilities. Scattered-site housing in remote locations is needed for those wishing to live a more rural, traditional, or subsistence lifestyle, particularly those who farm or ranch. Affordable and rental housing is needed for students, new families, teaching and other support and professional staff, low-income households, and others in life transitions. Mobile home sites can also meet the needs of low-cost and immediately available housing. Mobile home sites are ideal for residents who do not have time to acquire a homesite lease or who plan to move elsewhere in the future.

The planning team analyzed the housing needs mentioned above and decided which projects will have the strongest benefits at the chapter level. Some projects mentioned above would benefit the entire region and are best funded at the regional level. Projects funded at the regional level are explained in the ICIP section (Section 4.1). Table 25 below explains several immediate housing needs that should be funded at the Chapter level over the next 15 years.

Table 25: Housing Needs

Housing
Project
5 new multifamily units in FBFA
New Cluster Residential in FBFA (40 homes @ 1,200 sq. ft. each)
Power & Water upgrades for 13 existing houses in FBFA
New Cluster Residential outside of FBFA(25 homes @ 1,200 sq. ft. each)
New Scattered Residential in FBFA (64 homes @ 1,200 sq. ft. each)
3 new multifamily units outside of FBFA
Repair Residential to 33 existing houses in FBFA
Power & Water upgrades for 30 existing houses outside of FBFA
New Scattered Residential outside of FBFA (40 homes @ 1,200 sq. ft. each)
Repair Residential to 79 existing houses outside of FBFA
Emergency Shelter
New Elderly Group Home

3.5.4 Health and Public Safety Needs

Response time to emergencies throughout the Chapter is too long to assure public safety. Chapter members have expressed a need for a police substation and fire station within the Chapter. The nearest emergency health facilities are in Winslow, Leupp, Dilkon, and Tuba City. A quick-responding ambulance and helicopter medical emergency response unit is needed to provide expedited response to medical emergencies. A small local trauma center or satellite health clinic could also respond quickly to many small emergency medical needs and provide triage service before sending patients to larger medical facilities. Participants at the community workshop expressed the need for a full-time community nurse.

The Chapter's elderly population would benefit from access to more medical attention. Many elders rely on friends or family to transport them to medical facilities. A group home and convalescence home for the elderly are needed in the Chapter to attend to these individuals. A mobile van for health and dental care would also help to serve elderly and other residents who live in remote locations or who may not be able to travel to a local clinic.

Many homes within the Chapter do not have physical addresses. These homes need to be assigned addresses in order to help emergency personnel locate a site. As of 2008, the Navajo Nation has been working on a rural system for 911 emergency response. This project will map and assign an address to all homes in the Chapter.

The Chapter needs to prepare a comprehensive emergency preparedness plan to be able to respond to hazards and other emergency situations, which should involve public participation, education, and even readiness drills. In many cases, an emergency shelter may be necessary to complete readiness for all situations that could arise.

There are also smaller pieces of emergency preparedness that need to be addressed. Workshop participants identified the need for security lights and fire hydrants to be placed in housing clusters. Traffic signs and pedestrian safety measures need to be incorporated in the community to avoid traffic accidents. Cattle guards need to be added to many roads to protect animals and people.

The planning team analyzed the health and public safety facility needs mentioned above and decided which projects will have the strongest benefits at the chapter level. Some projects mentioned above would benefit the entire region and are best funded at the regional level. Projects funded at the regional level are explained in the ICIP section (Section 4.1). Table 26 below explains several immediate health and public safety facility needs that should be funded at the Chapter level over the next 15 years.

Table 26: Health and Public Safety Needs

Health
Project
New Health Clinic
New Urgent Care Facility
Public Safety
Project
New Police Facility
New Fire Station

3.5.5 Community Facilities, Parks, and Recreation Needs

Community facilities and services are an important part of the community vision. Other than the Chapter house, there are no community facilities for Chapter members to use. The Chapter wishes to construct a number of facilities where young and old can congregate, share ideas, and pass on traditions and culture.

A multi-purpose community center would provide a place for community members to congregate for recreational activities or community meetings. This facility could potentially meet the needs

for a senior center, youth center, and recreation center. Youth in the Chapter would benefit from an indoor and outdoor pool and playground equipment.

While there are a number of social services needed by Chapter residents, there is currently no office space to house them. A new Chapter House could provide space for a post office, social services, sub-office to assist FBFA residents, and legal services, including a peace and conflict-resolution center.

Community workshop participants also requested space for a church.

There were also a number of outdoor recreational facilities requested by community workshop participants, including parks, outdoor basketball courts, baseball fields, a man-made lake, and horseback trails.

The planning team analyzed the community facility needs mentioned above and decided which projects will have the strongest benefits at the chapter level. Some projects mentioned above would benefit the entire region and are best funded at the regional level. Projects funded at the regional level are explained in the ICIP section (Section 4.1). Table 27 below explains several community and recreational facility that should be funded at the Chapter level over the next 15 years.

Table 27: Community Facility Needs

Community Facilities
Project
Multipurpose Center
Chapter House improvement
New Post office
New Recreation center, New Youth center
New Veterans Center
Veterinarian
New Church Development
New Livestock yard
Recreation
Project
Outdoor Recreation
New Golf course
New Horseback trails
New Playground
New Rodeo grounds

3.5.6 Educational Needs

Because the Chapter has only a day-school for elementary students, the nearest educational facilities for middle and high school are in Leupp. Participants in the community workshop identified the need for additional buses and/or a closer pre-school through high school facility.

Many of the Chapter's lifelong learning needs could be met with an adult education facility, which could support a GED program for individuals who want to finish high school, Navajo culture and language classes, technology training, distance education for community college and university courses, vocational training, law-enforcement and drug and alcohol awareness

programs, community development and leadership training, and range and livestock management classes.

Scholarships with requirements for a certain number of years of service in the community after graduation might help address the need for financial assistance to receive a higher education degree, while also filling the need for more professional services at the Chapter.

The planning team analyzed the educational facility needs mentioned above and decided which projects will have the strongest benefits at the chapter level. Some projects mentioned above would benefit the entire region and are best funded at the regional level. Projects funded at the regional level are explained in the ICIP section (Section 4.1). Table 28 below explains several educational facilities that should be funded at the Chapter level over the next 15 years.

Table 28: Education Facility Needs

Education
Lifelong Learning Center
New Headstart
New K-12

3.5.7 Economic Development Needs

There are no retail or commercial facilities in the Chapter. The nearest shopping is located in Tuba City, Winslow, or Flagstaff.

Tolani Lake's small population and limited traffic counts may not support much commercial activity. Regional strategies may work better to improve the accessibility and nearness of needed services. Community workshop participants identified the needs for a convenience store, laundromat, restaurants, and a gas station with an automobile mechanic, perhaps as part of a trading post complex to attract tourists. A golf course, horseback riding trails, rodeo grounds, and a domed sports arena could also be part of a regional approach to increase tourism. Some participants were eager to see a casino developed for the employment opportunities it could provide. A regional activity center with a flea market, agricultural complex and produce cooperative, feed store, and livestock option yards might work best in coordination with neighboring chapters.

All economic development, whether within Tolani Lake or nearby, will help provide employment opportunities for residents and students and support the quality of life in the Chapter.

One unique suggestion made at the community workshop was to create a man-made lake, which, if found to be feasible, could be a regional tourism draw that also provides recreational opportunities for residents.

3.5.8 Open Space, "Areas of Avoidance," Grazing, and Agricultural Needs

Raising grazing animals is a way of life for many residents in the Chapter and should be protected and strengthened. Much of the Chapter's land is leased to grazing-permit holders. The Chapter needs to complete and enforce a range management plan to address overgrazing and

protect grazing areas. A plan to introduce fencing and find locations where cattle guards are needed should be included in the range management plan to protect animals and people.

Regional projects included in the description of economic development above, such as a livestock yard, could also help to provide veterinary services and facilities for seasonal maintenance of livestock animals, such as dipping and shearing.

Agriculture is also an honored and respected occupation and way of life in the community. Workshop participants specifically noted that more dry farming can be added, and irrigation infrastructure should be developed for larger community and commercial farming opportunities.

The Chapter landscape is delicate. The Chapter needs to create policies and programs to protect water quality, wildlife, and minerals in the area. During the Chapter workshops, participants identified several “areas of avoidance,” such as shrines, eagle nests, burial sites, archeological sites, and Dinebito Wash. These areas need to be inventoried, perhaps mapped, and protected from development and its impacts. If necessary, sites should be fenced in order to keep grazing animals away from sites that could be damaged, or to protect them from inappropriate poaching.

3.6 Actions

3.6.1 Priority Capital Improvement Projects

As part of the introduction of the second workshop, the facilitation team asked participants to re-examine the list of priority projects generated at the first community workshop and subsequently by Chapter officials. Participants were invited to add to the list and vote for their top five priority projects.

Over the course of the two workshops, participants nominated and voted on the following items as the most important capital projects from the vision:

Priority	Actions	Votes in Workshop 1	Votes in Workshop 2	Total Votes
1	Scattered housing	9	5	14
1	Power line in Grand Falls and other areas	7	7	14
2	Paved road to Cameron along Little Colorado River	6	1	7
2	Bridge and Grand Falls	5	2	7
3	Affordable grocery store	6	0	6
3	Humane society (cats/ dogs)	3	3	6
3	Trash collection	3	3	6
3	Casino	2	4	6
4	Hospital	4	1	5
4	Elder care/Nursing home	4	1	5
4	Water development in Grand Falls and other areas	4	1	5
4	Waterline Extensions for all Areas	N/A	5	5
5	Increased computer use and facilities	4	0	4
5	Salvage and Recycling	4	0	4
5	Veterans Memorial Park	3	1	4
5	Cellular tower/reception	3	1	4
5	Laundromat	2	2	4
5	Life Skills/Communication	N/A	4	4
6	Alfalfa farm/ field	1	2	3
6	Multi-purpose center with Library	N/A	3	3
6	Police Department	0	3	3

7	Improved health care	2	0	2
7	Grand Falls development	2	0	2
7	Opportunities for lifelong learning	2	0	2
7	Wastewater treatment	2	0	2
7	Church	2	0	2
7	Airstrip	2	0	2
7	Radio station	2	0	2
7	Skill Center/VoTech	N/A	2	2
7	Rural Addressing System	N/A	2	2
7	Earthen dam	1	1	2
8	Windmill for livestock	1	0	1
8	Daycare	1	0	1
8	Thoroughfare (Road) plan	1	0	1
8	Bullpen	1	0	1
8	Septic Tanks for all Areas	N/A	1	1
8	Ambulance Service (helipad)	N/A	1	1
8	Gas Station	0	1	1
8	Solar Panels	0	1	1

3.6.2 Proposed Infrastructure Projects to Support the Community Vision

Whenever additional infrastructure or infrastructure improvements are being considered, a feasibility study needs to be conducted. After a successful finding of feasibility, the project should then be included in the current year's Infrastructure and Capital Improvements Plan (ICIP) for consideration by the Chapter, and once approved, by the Navajo Nation Council. No infrastructure projects shall be developed until they have been approved and are listed in a fiscal year within the ICIP. All infrastructure projects will be coordinated with tribal and federal infrastructure plans. Public facilities shall be based on approved facilities within the Comprehensive Land Use Plan. Additional public facilities will require an amendment to this Comprehensive Land Use Plan.

3.6.3 Priority Project Phasing Plan

This section outlines the phasing of the projects that received the most individual votes from participants at the second community workshop. Participants voted on phasing for each of the projects. Phase 1 would be constructed in five years or less, Phase 2 would be constructed in five to ten years, and Phase 3 projects would not be completed for another ten to fifteen years.

Phase 1 Projects: 1-5 Years

The following represent the projects identified as part of Phase 1 Developments:

Public Safety

- Police Officers in Tolani Lake (increase #)
- Emergency Clinic/Trauma Center (make accessible)
- Community Nurse – reestablish through CHR
- Mobile Van for Healthcare, 1 time per month
- Mobile Van for Dental Care (continue present arrangement/available upon request)
- Security Lights – work on individual basis with NTUA; replace sensor lights on individual homes
- Direction Signs
- Cattle Guards at identified locations
- Emergency Preparedness Plan

- Rural Addressing System

Health

- Medicine Men (NAC, traditional, licensed)
- Health care Clinic; Dental; Disabled Clinic
- Mobile Van for Health Care/Mobile Van for Dental Care – Expand Mobile Services to FBFA
- Community Health Representative
- Disease Prevention
- Family Counseling
- Alcohol/Tobacco/and other Drug Programs
- Peace-making Center
- Educational Programs
- Veteran Center – reestablish at Tolani Lake

Community Facilities

- Group Home for Elderly
- Senior Center
- Recreation Center
- Church
- Multi-purpose Recreation Center with Computer Center, Meeting Rooms, Conference Room
- Sub-office for Bennett Freeze issues – regional office
- Social Services Office
- Post Office
- Chapter House Improvement
- Health Care Clinic
- Veterinarian
- Head Start
- Livestock Yard
- Peace-making Center/Conflict Resolution
- Veteran Center

Infrastructure Utilities

- Increased Carrying Capacity – 3 phase electric lines
- Waterline; Drinking Water and Emergency Use
- Power lines to Workers, Al McCabe, Cal Nez, Williams; tied with waterline
- Drinking Water for Workers, McCabe, Nez, Williams
- Watering Point
- Livestock Waterline – need feasibility study; possible source is Beaver Farm
- Water Storage Tanks; 2-3; tied with drinking water for Workers, watering point, and water for livestock
- Solid Waste Transfer Station
- Wastewater system; low cost to residents
- Internet
- Landline Phone Lines; Tied with Internet
- Cell Phone Tower/Service
- Solar System
- Earthen Dam

- Water User Association
- Livestock Association
- Water Hauling
- Firewood

Economic Development

- Feed Store; Horseback riding (trail rides)
- Flea Market; agriplex
- Activity Center
- Tolani Lake Enterprise
- Hay

Transportation

- Move Road to Tuba City west to avoid Hopi Lands through BF, #6720 to Coalmine
- Road to Tuba City
- Y-west (Hopi managed?) maintain 6730
- New Paved Crossing for Dinebito Wash, especially during snow on 2-year plan – culvert, bridge, feasibility study
- Maintain Existing Roads
- Helicopter Service

Open Space, Cultural Sites, and Grazing

- Protection of Grazing Areas
- Protection of Shrines, Eagle Nests, Burial Sites, Archaeological Sites
- Dryland Farming
- Probate – 190 Days
- District 5 Grazing Permits
- Dinebito Wash
- Black Falls

Housing

- Scattered Homes; Individual Homes at Own Site
- Affordable Housing
- Elderly Living Homes/ Disabled Group Homes

Education

- Navajo Language School
- Head Start; Elementary School; High School; Middle School; Buses
- Law Enforcement Programs (DARE)
- Financial Assistance for College/Scholarships

Phase 2 Projects: 5-10 Years

The following represent the projects identified as part of Phase 2 Developments:

Public Safety

- Fire Station located with Chapter Tract
- Ambulance Service in Tolani Lake, make accessible

Health

- ER/Trauma Center

- Ambulance

Community Facilities

- Convalescence Center for Elderly
- Youth Center
- Legal Services/Office

Economic Development

- Laundromat
- Trading Post/Convenience Store/Gas
- Garage/Mechanics/Tire Store
- Coop, Produce
- School Employment
- Gravel Pit Development
- Casino
- Conduct feasibility studies

Parks and Recreation

- Parks located on Chapter Tract (land withdrawn)
- Playground (Black Falls Church Area)
- Recreation Center; basketball outside, baseball fields

Open Space, Cultural Sites, and Grazing

- Irrigation Farming

Education

- Community Training Center

Phase 3 Projects: 10-15 Years

The following represent the projects identified as part of Phase 3 Developments:

Public Safety

- Fire Hydrants for Cluster Homes within Total Community
- Crosswalks – safety issue for 6720
- Emergency Shelter within Community

Economic Development

- Fast Food/Restaurant
- Mobile Home Park
- Wal-Mart, pet store, pawn shop; auto dealership
- Man-made Lake

Transportation

- Airport

Parks and Recreation

- Tourist Center
- Rodeo Grounds
- Domed Sports Arena Center
- Horseback Trails
- Golf Course
- Outdoor Pool

- Pool Inside

Open Space, Cultural Sites, and Grazing

- Range Management Units, Range Management Plan
- Man-made Lake

Housing

- Rent-to-Own Housing and Programs
- Rentals
- Mobile Home Park
- Staff Housing (schools)
- NHA Residential Organization

Education

- Distance Learning; Higher Education; Livestock Programs
- Vocational School; Technology Center; GED programs

Vision for Naataanii Community Planning and Development Physical Plans

INFRASTRUCTURE

Roads
5 Bridges
Water development and better quality water
Electrical Power
Telephone
Solid Waste Transfer Station
Soil and Water Conservation
Protect Grazing Areas
Develop Agriculture and Farming Projects
Develop Master Plans

BUILDINGS

Recreation Center
New Homes and Renovation
Police Station
Fire Station

SOCIAL

Elderly Group Homes
Contract with Adult in Home Care Services
Clinic
Mobile Clinic

ECONOMIC

High Unemployment - need to conduct business feasibility studies.

The proposed development sites for housing near the Black Falls Bible Church, has some opposition from the local grazing permit holders, and their family members. Their concerns are, "what type of impact will the housing sub-division bring to the rural area"? The following list is the nature of their concerns:

- Crime, substance abuse, and security issues

- Environmental impact
- Water
- Wastewater
- Maintaining Roads
- Lack of employment in the area
- Possible "outsiders" may move into the housing units
- Animal Control

The families are in favor of locating the housing subdivision near the Tolani Lake Chapter area. They also support the scattered site home program under Navajo Housing Authority.

Other sites are also being considered for the subdivision.

Community planning is about having a choice. If there are some concerns regarding the development of a housing sub-division, it is recommended that more community meetings be scheduled to obtain some sort of compromise.

3.7 Preferred Development Sites

Local officials were asked for direction for site locations for housing within the Tolani Lake Chapter. Two sites were readily identified: the Tolani Lake Community and the Junction of Indian Routes 2 and 24. Subsequent meetings were held to develop a consensus for the developments. Housing site study evaluation criteria were used to determine if the sites met the minimum standards used by the Navajo Housing Authority. The preferred site is located in Coconino County, Arizona and is about five miles west of Red Lake. Table III-1 is a summary of the land suitability analysis.

Table 29: Tolani Lake Chapter Land Suitability Analysis

	Site #1	Site #2
Location	Tolani Lake Community	Junction 2/24
Land Status	Grazing, School, Navajo Housing Auth., Business, Chapter	Grazing
Slope	Varies, existing NHA housing site 5%	5% to 2%
Soils	Sand/clay	Sand/clay
Vegetation	Light with grasses	Light sage brush and grasses
Drainage	Fair	Fair
Views	Good	Excellent
Community Services	Yes	Good location for supporting businesses.
Existing Use	Withdrawn by NHA	Grazing
Proposed Uses	12 approx. acres for residential	Residential, Commercial, Industrial, Community Services, Recreation

Community Cohesiveness	Yes	Yes, if developed with proposed adjacent zones.
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Site Infrastructure

Site #1 - Tolani Lake Community

This location is within the boundaries of Tolani Lake Chapter. The proposed housing site itself is 12 acres and is withdrawn by the NHA. In addition to the proposed housing, adjacent sites of similar zones are in the area. Water is available on the site, coming from an existing NHA subdivision west of the site. Road access is poor from a dirt road that is maintained. The slope of the site varies from 5 percent to 2 percent, which is good for development. Drainage is fair because of sandy soils, but this is common for the Navajo Reservation. Electricity is also available at the existing subdivision. Solid waste service does not exist but there is a landfill in the area. This site provides community cohesiveness in that it is within the Tolani Lake community. The existing lagoon at Tolani Lake subdivision will be utilized as the tie-in manhole and is approximately 100 feet away from the site.

Site #2 - Junction Indian Route 2 and Indian Route 24

This location appears to be in the boundaries of Tolani Lake Chapter. The proposed housing site itself is 10 acres, and its existing use is grazing. In addition to the proposed housing, adjacent sites of commercial, industrial, community service, and rodeo grounds have been zoned. Water is available across Indian Route 2 and road access is excellent. The slope of the site varies from 5 percent to 2 percent, which is good for development. Drainage is fair, but this is common for the Navajo Reservation. Electricity is also available across the major roads. Solid waste service is not present; however, there is a landfill in the area. This site provides community cohesiveness in that it is at a junction with a steady traffic count. A new lagoon will have to be constructed for the proposed development.

Figure 20 on the following page is a compilation of sites selected and preferred community by Chapter members during the summer 2008 community workshops.

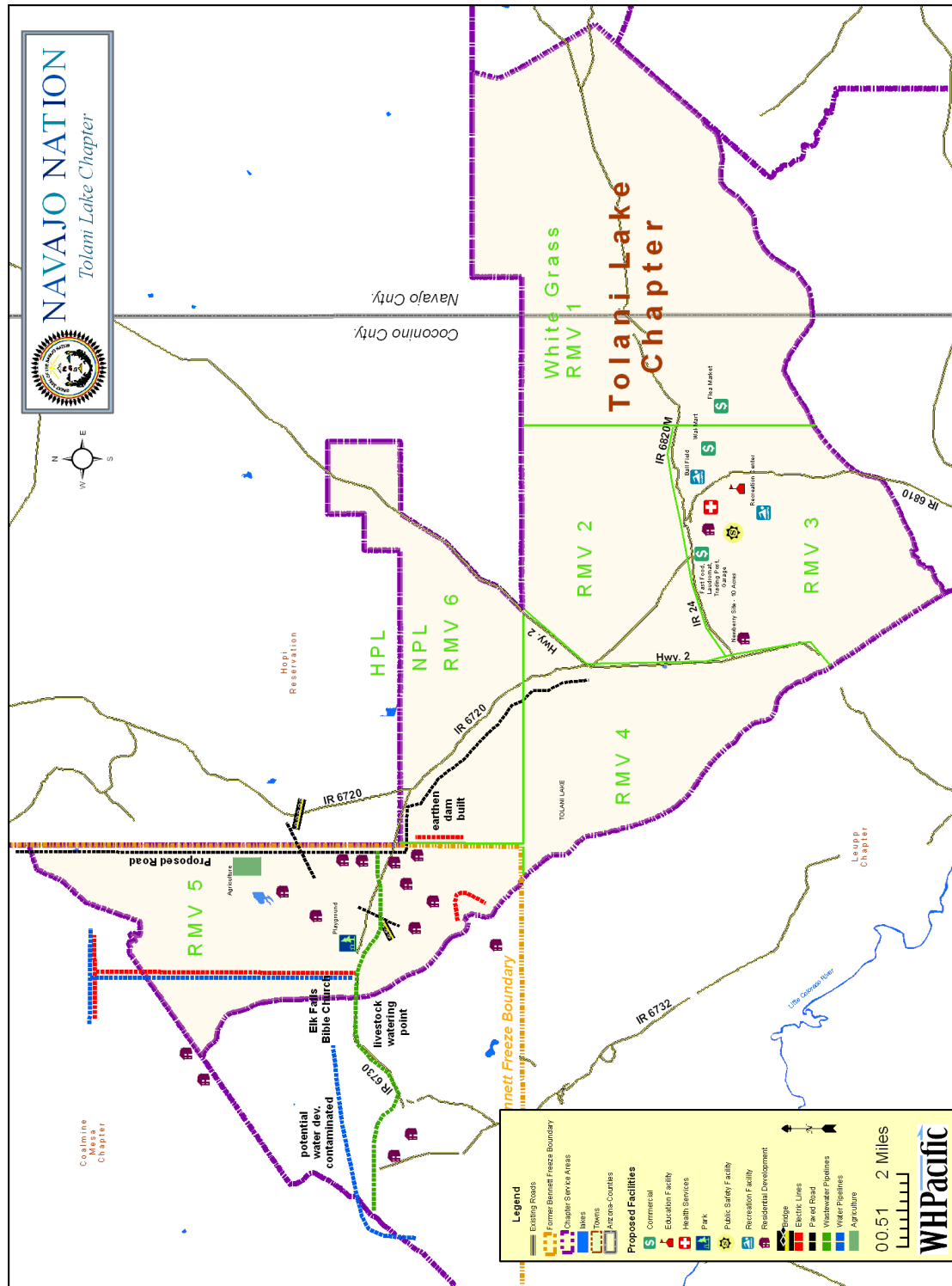


Figure 202: Preferred Development Sites

3.7.2 Preliminary Site Sketches

The following drawing is an existing development plan proposed by the chapter prior to summer 2008 the community workshops.

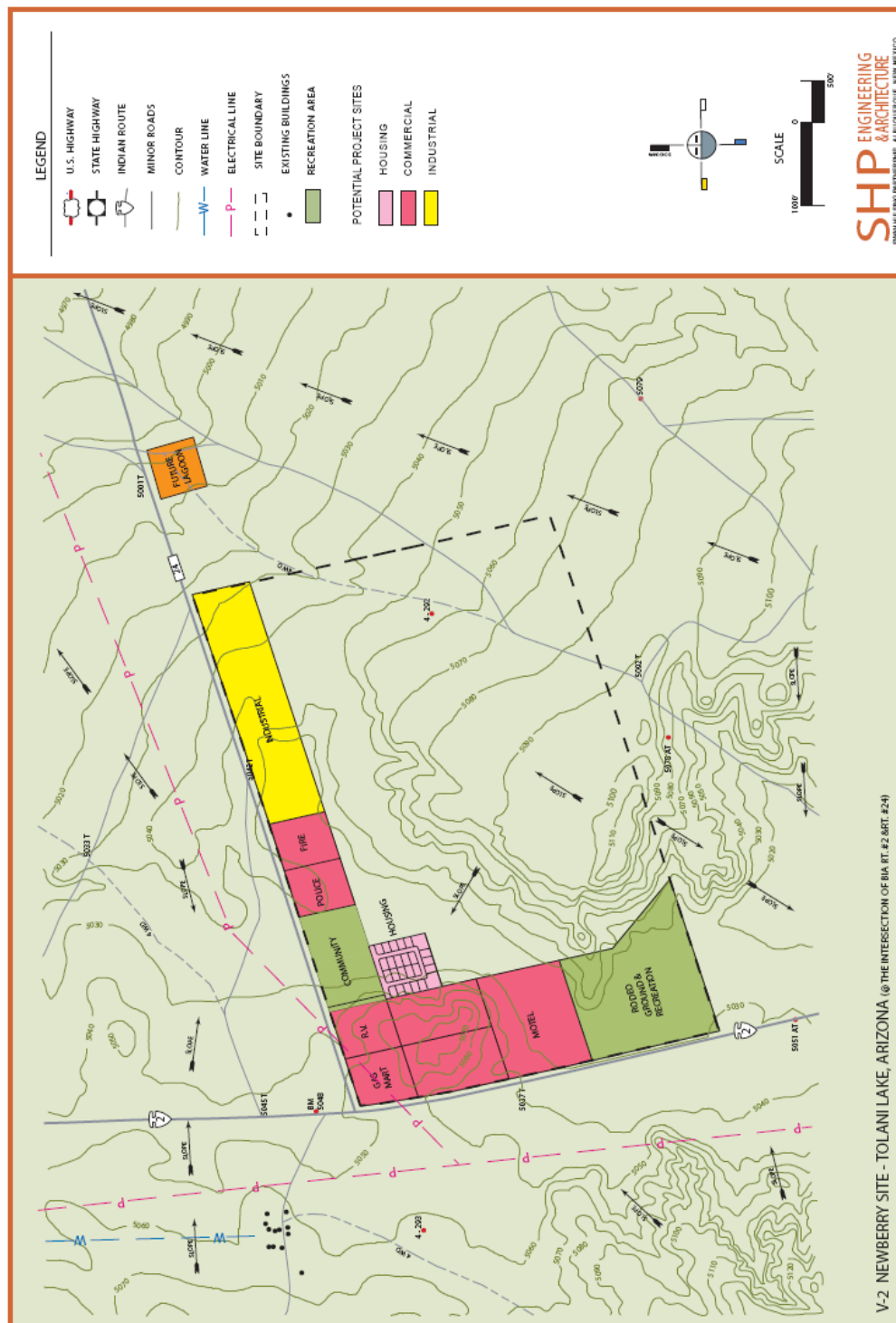


Figure 213: Planned Future Development

4.0 Priority Capital Improvements Summary

4.1 Chapter Infrastructure and Capital Improvement Plan

The primary purpose of the FBFA Recovery Plan effort was to determine what is needed to restore the health, vitality, and viability of the communities in the nine impacted chapters. This includes not only the capital projects needed but also the resources and actions needed to breathe life into the vision of recovery.

In the capacity of assessment tool, the planning effort includes a first-order feasibility of the projects proposed to meet the needs of FBFA residents and other members of the nine chapters. This assessment included comparison and condition information gathered from the field; data, stories, and ongoing planning efforts expressed at community workshops; plans and data gathered from relevant departments and agencies; professional judgment and expertise; current and past Community Land-Use Plans; and other research.

In addition to determining needs for projects, the planning team also looked for signs of progress toward project-readiness. Those projects with land withdrawn, some planning completed, or design started can be prioritized for funding in order to see results on the ground and begin to show success. It is not enough to ask community members to hope for change; it must be cultivated through identifying projects that need more thought or planning and fast-tracking those that are ready to take shape.

Project cost estimates include the following elements, depending on the project category:

Table 30: Approximate Cost Element Percentages

Project Cost Elements	Cost Estimate
Planning – <i>Feasibility studies, land withdrawal, etc.</i>	5% of Construction Cost
Architectural / Engineering (A/E) – <i>Professional fees for design</i>	10% of Construction Cost
Construction	~ 60-75% of Total Project Cost
Project Management – <i>Administration funds for the agency managing the project construction</i>	20% of Construction Cost
F,F,&E – <i>Fixtures, furnishings and equipment</i>	~ 3-30% of Construction Cost

Table 31: Approximate Cost Element Percent of Construction Cost by Project Type

Project Category	Planning Cost	A/E Cost	Constr. Cost	Proj. Mgmt. Cost	F,F,&E Cost
Housing	5%	10%	100%	20%	3%
Infrastructure / Utilities	5%	10%	100%	20%	
Transportation	5%	10%	100%	20%	
Health / Public Safety					
<i>Health Facility</i>	5%	10%	100%	20%	25%
<i>Fire / Police Station or Tribal Court</i>	5%	10%	100%	20%	30%
Community Facilities, Parks, & Recreation					
<i>Indoor</i>	5%	10%	100%	20%	15%
<i>Outdoor</i>	5%	10%	100%	20%	
Education	5%	10%	100%	20%	15%

Those projects that did not include enough information to generate a cost estimate were handled in one of three ways: (1) Funds were provided for a feasibility study to determine the project scope, location, and cost, (2) Similar projects were combined into larger regional studies to be looked at comprehensively, such as environmental and cultural resources, or (3) The project was noted in the capital projects list but not allocated funds until more information can be provided.

Costs were estimated for each project based on a needs assessment for each project category, relying on the following data and sources:

- Data about existing residential buildings and roads gathered by field teams;
- Needs expressed by participants in community workshops;
- Recommendations and results of other plans, documents, and studies; and
- Professional judgment based on past experience and other research.

Field Data

Field teams traveled to each of the FBFA chapters to visit, assess, and document residential buildings in the nine Chapters over the course of nine weeks.

- Judging from the exterior appearance of homes, the conditions of these residences were rated from very poor to very good.
- The location of each home visited was recorded through a Global Positioning Satellite (GPS) system.
- The house's size in square feet and approximate age were estimated.
- Based on signs of occupancy, homes were assumed to be occupied or unoccupied.
- When available, residents were asked a series of questions about ownership and water hauling practices.
- Where possible, teams noted the presence of outbuildings, if any, other livestock structures, conditions of roads, source of water, wastewater system, and availability of power.
- A photograph of each house was taken, unless the owner did not allow it.
- Road locations, type, and condition were gathered as field teams traveled them.

While this information may be used in later assessment efforts on an individual basis, the main emphasis of this study was to determine a regional sense of housing conditions, particularly the condition of those in the FBFA versus those in the Chapter but outside the boundary. This Plan contains a statistical analysis based on the field team data and compared to the U.S. Census and a recent Water Resources study.

The following sections include the descriptions and costs for each of the capital projects by category. In addition, the sections generally describe the method by which the most common projects were assessed and estimated.

4.1.1 Housing

As part of the FBFA Recovery Plan effort, field teams traveled to each of the FBFA chapters to visit, assess, and document residential buildings in the nine Chapters. Judging from the exterior appearance of homes, the conditions of these residences were rated from very poor to very good. As much as possible, field teams noted the presence or absence of power, water, wastewater treatment, telephone service, natural gas, and access. The location of each home visited was recorded through a Global Positioning Satellite (GPS) system, and the house's size in square feet and approximate age were estimated. When available, residents were asked a series of questions about ownership and water hauling practices.

While this information may be used in later assessment and improvement efforts on an individual basis, the main emphasis of this study was to determine a regional sense of housing conditions, particularly the condition of those in the FBFA versus those in the Chapter but outside the

boundary. In order to study this, a statistical analysis was conducted based on the field team data and compared to the U.S. Census and a recent Water Resources study.

Single Family Residences

The field teams visited approximately 4,400 single family residences and counted an additional 2,400 using aerial photography for a total of 6,898 single-family houses. Of those, 2,391 were located in the FBFA. Forty-five percent of all residences met an established standard for a habitable dwelling; however, only 24 percent of homes in the FBFA met the standard for habitable dwellings. Figure 22 illustrates the houses surveyed in the Chapter.

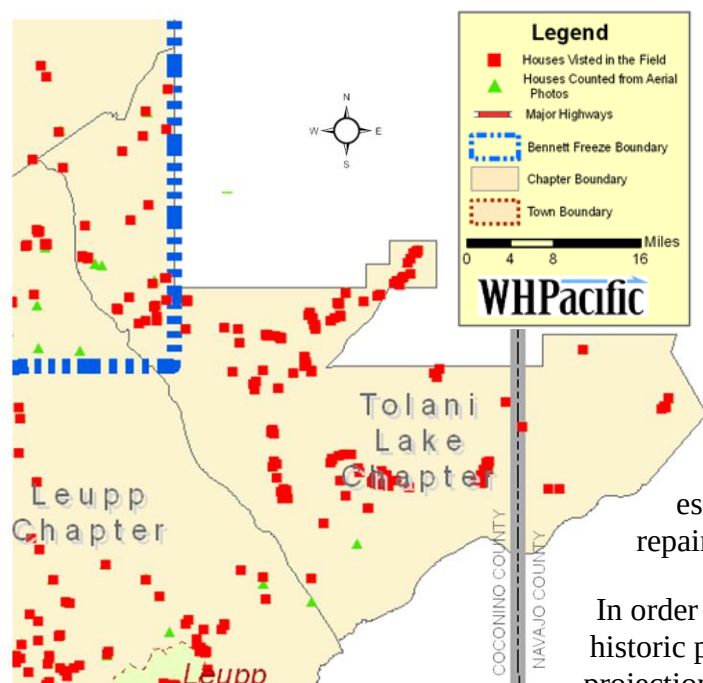


Figure 22: Houses Surveyed

For this study, the standard required that a structure must be rated very good, good, or fair based on the field team's assessment of the exterior. The field team criteria can be found in Appendix 5.1. If the residence was only rated fair, additional criteria were added to ensure habitable conditions. In these cases, the dwelling must have public water, septic or public sewer, and be less than 25 years old. Based on this standard, only 3,110 of the 6,898 dwellings (585 of 2,391 in the FBFA) were estimated to be habitable and worth repairing.

In order to estimate the demand for housing, historic population trends and future population projections were used. Contrary to the observations of many residents, the nine FBFA chapters have shown steady growth in population

since the imposition of the Bennett Freeze. There was no statistical evidence of a significant out-migration. While anecdotal evidence supports the idea that many families moved away because of the freeze, Census data show that they were replaced by others and then some.

Absent the statistical evidence to project potential in-migration, population projections based upon traditional birth and death analysis were used. Projections were calculated for each Chapter to the year 2020. According to the 2000 U.S. Census, the average number of people per household for the Navajo Nation as a whole is 3.77 and 3.99 for the nine chapters. Using the Navajo Nation average of 3.77, the 2020 housing demand for the nine Chapters is 6,995 homes (2,001 in the FBFA).

No data exists that divides Chapter population inside and outside the FBFA; however, the field survey recorded the number of occupied households and their exact location using GPS technology. While not every home may have been visited by a field team, and some houses may have been inaccurately classified as either occupied or unoccupied, a large enough sample was

gathered to be able to produce a statistically meaningful ratio of residents inside and outside the FBFA.

Using the field team data, the analysis applied the ratio of population per household to the number of occupied homes inside and outside the FBFA boundary. This calculation produced an estimate of the percentage of population and homes in and out of the FBFA within each Chapter. These percentages were used to calculate how many homes inside and outside the FBFA boundary would be needed to meet the housing demand by 2020, in each of the housing categories described below.

Using additional statistical information from the field surveys, the 2000 US Census, and other documents, the following assumptions were developed to complete the housing analysis.

- It was estimated that 62 percent of the existing homes are scattered and that this percentage has remained relatively constant for the last few decades. It was therefore assumed that 62 percent of new homes would be scattered. Scattered housing for purposes of this Study is defined as a home without access to a public water system, power or both. The cost estimate for scattered homes contains additional funds to provide water, power, and access.
- The 3,110 homes that meet the standard for being habitable will require a repair and replacement program. A cost estimate is included to fund this program.
- Many existing scattered houses will require water, wastewater treatment, power, and road access. A cost estimate has been developed that represents an average amount per house to provide these essential services.
- Each cost estimate includes an allowance for the fixtures, furnishings, and equipment necessary to make the structure habitable.

The present and future housing inventory has been divided into the categories listed below:

- New Cluster Housing Outside the FBFA
- New Cluster Housing Inside the FBFA
- New Scattered Housing Outside the FBFA
- New Scattered Housing Inside the FBFA
- Repair and Replace Housing Outside the FBFA
- Repair and Replace Housing Inside the FBFA
- Power, Water and Access to Existing Scattered Housing Outside the FBFA
- Power, Water and Access to Existing Scattered Housing Inside the FBFA

It should be emphasized that this is a statistical analysis based upon a brief physical examination of each existing home. Individual homes were not identified for repair or replacement. The purpose of this study is limited to estimating the cost to repair the existing and construct the new houses necessary to meet the future demand. Once funding is obtained, the next step will need to build on the survey data from this planning effort and begin the process of identifying the individual homes and specific actions to make them habitable.

Multifamily Residences

The field survey data and the latest Census indicate that the nine Chapters have approximately the same ratio of multifamily units to single family units as the Navajo Nation as a whole. However, in the nine Chapters taken together, two thirds of the multifamily units are thirty years old or more. It is understood that many of the health and education staff residences are “multifamily” housing, generally duplexes through quadra-plexes. No information was collected that would differentiate between owner-occupied and renter-occupied dwellings or staff and non-staff occupants. The shortage of staff housing claimed during community workshops and other documents may be a problem of suitability and availability. No attempt was made in this Study to analyze this specific issue.

The estimated demand for multifamily units in addition to that for single family units is based upon the Navajo Nation ratio of four percent multifamily to single family. Present and future staff housing is included in both the projections for single and multifamily housing. For the nine Chapters, the Plan recommends that 59 percent of the multifamily units be replaced over the next ten years and 77 percent replaced within the FBFA. For multifamily housing, the following assumptions were made to generate the recommended projects and cost estimates:

- The ratio of multifamily units to other housing types in the nine Chapters should equal the four percent of all housing that exists in the Navajo Nation as a whole
- This housing could be duplexes, triplexes, apartments, or townhouses, but the average size would generally be equal that of a single family residence, which is assumed to be 1,200 sq. ft. for all the categories described above.
- Multifamily in excess of 30 years old will be replaced at some time in the planning horizon of this Study.

Group Residential

Each Chapter requested emergency, temporary housing for individuals in distress. The requests included space for a woman’s shelter, temporary housing for students, a halfway house, or independent living for other individuals with special needs. While the need is very clear, the amount of space and its configuration is difficult to estimate absent specific information on the number of potential residents and their reason for needing temporary housing. It is also clear that in a small community, the reasons driving the need can change. One week the facility may shelter a woman in need and the next a student.

Despite these uncertainties, any facility would be preferable to none. The following assumptions were made to estimate the size of a reasonable group residence:

- Experience suggests that it is unlikely that more than four to six people at a time would be housed in small chapter, eight to twelve in a medium chapter or thirty-two in the large chapter. Using this general guide, the estimated size of the facilities needed for the small chapters is 2,000 square feet; the medium 4,000; and the large 16,000.
- This space could be in one building or several. It could be part of another facility or it could simply be a detached or multifamily residence used for this purpose.

Elder Living Center

The Elder Living Center provides both living quarters and day care for the elderly. The resident rooms would be equipped with showers and toilets. Most rooms would be for individual occupancy, with some big enough for double occupancy. The core of the facility houses the activity rooms – a dining room and lounges for residents and day care users. An on-site kitchen serves meals to the users. There are offices for administrator and visiting medical personnel, and a nurse's station will be centrally located.

- In the small chapters, 15 resident rooms can be constructed for the budget recommended. The medium chapters would have a center with 45 resident rooms, and the large Chapter, 150 rooms.
- The facility is intended to be used as an independent and assisted living and daycare center. It is not intended for users needing intensive physical or mental medical attention such as patients suffering from Alzheimer's.
- In some cases the Chapters requested a Senior Center. A Senior Center cannot provide the services anticipated by an Elder Living Center; however, the Elder Living Center day care and the food service can provide the services provided by a Senior Center. This will be a decision for the community during the feasibility study. For this report, a Senior Center is generally included in the space for a Community or Multipurpose Center.

Table 32 below details the costs of housing projects that should be funded in the Tolani Lake Chapter.

Table 32: Housing Cost Estimates

Tolani Lake Chapter Infrastructure Capital Improvement Plan								
Housing Project	Start Year	Housing Units*	Planning Cost	A/E Cost	Constr. Cost	Project Mgmt	F,F&E	Total
New Cluster Residential in FBFA	2011	40	\$626,400	\$1,252,800	\$12,528,000	\$2,505,600	\$375,840	\$17,288,640
New Cluster Residential	2011	25	\$391,500	\$783,000	\$7,830,000	\$1,566,000	\$234,900	\$10,805,400
New Elder Living	2013	15,000 SF	\$365,000	\$730,000	\$7,300,000	\$1,460,000	\$219,000	\$10,074,000
New Group Residential	2010	2,000 SF	\$32,000	\$63,000	\$634,000	\$127,000	\$19,000	\$875,000
New Multifamily in FBFA	2010	5	\$97,200	\$194,400	\$1,944,000	\$388,800	\$58,320	\$2,682,720
New Multifamily	2010	3	\$58,320	\$116,640	\$1,166,400	\$233,280	\$34,992	\$1,609,632
New Scattered Residential in FBFA	2011	64	\$1,244,160	\$2,488,320	\$24,883,200	\$4,976,640	\$746,496	\$34,338,816
New Scattered Residential	2011	40	\$777,600	\$1,555,200	\$15,552,000	\$3,110,400	\$466,560	\$21,461,760
Power & Water Upgrades in FBFA	2010	13	\$49,140	\$98,280	\$982,800	\$196,560	\$29,484	\$1,356,264
Power & Water Upgrades	2010	30	\$113,400	\$226,800	\$2,268,000	\$453,600	\$68,040	\$3,129,840
Repair Residential in FBFA	2010	33	\$198,000	\$396,000	\$3,960,000	\$792,000	\$118,800	\$5,464,800
Repair Residential	2010	79	\$474,000	\$948,000	\$9,480,000	\$1,896,000	\$284,400	\$13,082,400
*One housing unit is 1,200 square feet.								Total 122,169,272

4.1.2 Education

Most Chapters requested educational facilities for kindergarten through high school students. The population of the chapters fall into three population ranges: small, medium, and large. For each, the educational facility requirements are slightly different. The smaller Chapters have a higher per student cost that does the one large chapter – Tuba City. The medium chapters, of

course, fall in between. This difference occurs because of the fixed size of certain elements of the educational buildings.

A gymnasium, a school library, administrative area and others are basically the same size regardless of the number of students. Classrooms and cafeterias are driven by the size of the student population. In developing this estimate, a core size was assumed for all schools, and the student-driven elements were added on a square foot per student basis. This number was compared to averages from around the U.S. for comparison and verification. Other assumptions including the following were used in this analysis:

- Typically 100 square feet is assumed for elementary students, 125 for mid-school, and 150 for high school students.
- The estimated size of the facilities needed for the small Chapters is 38,000 square feet; the medium is 96,000; and the large, 225,000.
- In determining the number of students from each chapter, a capture rate of 80 percent was used. It is assumed that the other 20 percent of eligible students will be home-schooled, attend private school, or go to a boarding school out of the Chapter.
- Normally, a high school drop-out rate of up to 50 percent is calculated into the formula. For this analysis 100 percent graduation was assumed. This conservative approach was taken because of the strong belief expressed by participants that families left the FBFA partly because of the absence of educational opportunities for the children. Many of those families are expected to return when new schools are available.
- While enough funds are being requested to construct stand-alone schools where requested, there are economic as well as educational advantages in consolidating educational facilities. Larger schools allow for more efficient operation and broader curriculum offerings. It is expected that the feasibility study phase of these projects will examine the regional opportunities for combining student populations into larger schools.

Daycare and Headstart Centers

Daycare and Headstart facilities were requested by all nine Chapters. Using traditional population methods, the number of children eligible for Headstart and potential daycare participants was estimated for the three Chapter sizes. It was assumed:

- Daycare and Headstart facilities for small chapters would require 2,000 and 1,000 square feet; medium chapters will need 4,000 and 2,000; and the large chapter, 8,000 and 4,000 square feet.

Lifelong Learning Centers

All nine Chapters requested some form of community learning center. Suggestions included computer labs, arts and crafts studios, libraries, vocational training, and many other worthwhile activities. These facilities would primarily serve the adult community and should be adaptable to the changing needs and priorities of the community. The importance of adaptability was amply evident by the number of ideas from each community on how to use this type of facility. Rather than try to meet every perceived need, it was decided to designate a budget large enough to

construct a facility that could house several of these functions and leave the specifics to the community to decide during the feasibility study. Other assumptions were:

- This type of facility is not strictly driven by population size. There are certain minimum sizes that must be maintained to have a functional building. Based on professional judgment and experience with similar buildings, it was determined that the small chapters would require a 6,000 square foot building; the medium chapters 8,000 square feet; and, the large chapter 15,000.
- This facility does not necessarily need to be a stand-alone building. It could be constructed in conjunction with a multipurpose building, a senior center or even the school facilities. It is expected that these opportunities will be explored during the feasibility study.

Table 33 below details the costs of education projects, including a lifelong learning center, new headstart facility, and a kindergarten through high school facility, that should be funded in the Chapter.

Table 33: Education Cost Estimates

Tolani Lake Chapter Infrastructure Capital Improvement Plan							
Education							
Project	Year to Start	Square Footage	Planning	Architecture-Engineer	Construction	Other*	Total
Lifelong Learning Center	2017	6000	114,300	228,600	2,286,000	457,543	3,086,443
New headstart	2010	1000	14,950	29,900	299,000	59,845	403,695
New K-12	2010	38000	630,000	1,260,000	12,600,000	4,890,690	19,380,690
*Includes Furniture, Fixtures & Equipment and Project Management fees.						Total	22,870,828

4.1.3 Health and Public Safety Facilities

Health Facilities

Major medical facilities are planned by the I.H.S. for Tuba City, Bodaway, and Leupp. The proposed budgets for these facilities are included in this plan with a recommendation that they be fully funded. Together, these regional facilities are intended to serve the entire population of the nine Chapters for emergency and major health treatment. Small health clinics with urgent care capability were suggested by Chapter members to provide closer triage for emergencies and better access to preventative and maintenance healthcare. For those chapters wanting health clinics and urgent care facilities in addition to the regional medical services, funds have been included.

Table 34 below details the costs of health facility projects that should be funded in the Chapter. The health clinic will provide healthcare services closer to the homes of Chapter residents. The urgent care facility will reduce time and distance to emergency medical help.

Table 34: Health Facility Cost Estimates

Tolani Lake Chapter Infrastructure Capital Improvement Plan							
Health							
Project	Year to Start	Square Footage	Planning	Architecture-Engineer	Construction	Other*	Total
New Health Clinic	2010	6500	182,650	365,300	3,653,000	1,643,850	5,844,800
New Urgent Care	2013	400	13,220	26,440	264,400	118,980	423,040
*Includes Furniture, Fixtures & Equipment and Project Management fees.							Total
							6,267,840

Table 35 details health facilities that will be funded at the regional level. Tuba City will remain the main medical hub for the region. Emergency repairs will address the immediate deficiencies in the Tuba City Regional Hospital. Later, renovations and expansions will help the facility continue to meet the needs of the growing regional population.

Table 35: FBFA Regional Health Projects

Regional Projects Infrastructure and Capital Improvements								
Health								
Project	FBFA (%)	Start Year	Sq. Ft.	Planning	Architecture-Engineer	Construction	Other*	Total
Emergency Repairs to Tuba City Regional Hospital	22	2010	188000	811,250	1,622,500	16,225,000	7,301,250	25,960,000
Renovate & Expand Tuba City Regional Hospital	22	2012	347000	9,756,400	19,512,800	195,128,000	87,807,600	312,204,800

Police and Fire Stations

Fire and rescue, police, and detention were topics of considerable discussion during the community workshops. While these have been included as individual projects as requested by the Chapters, they all must be considered together as a regional plan. Location is critical both because of length of travel and population density. The size of the fire fighting facilities is determined by equipment. The minimum size includes space for one fire and one EMS vehicle plus limited space for equipment storage, administrative functions, and a day room. Similarly, a police station with detention facilities will require a minimum number of functional elements. These will include male, female, and juvenile detention rooms, an office, storage, interview room, and others.

- It was assumed that all Chapters needing new facilities would have the same size fire and police station. All police stations are recommended at 4,000 and fire stations at 9,000 square feet.
- This space can be stand-alone, added to an existing police or fire facility, or in the case of police service, broken into smaller substations.

Table 36 details the costs of the public safety projects that should be funded in the Chapter. Police and fire facilities in the Chapter will reduce the response time to emergencies.

Table 36: Public Safety Facility Cost Estimates

Tolani Lake Chapter Infrastructure Capital Improvement Plan							
Public Safety							
Project	Year to Start	Square Footage	Planning	Architecture-Engineer	Construction	Other*	Total
New Police Facility(ies)	2010	4000	96,400	192,800	1,928,000	964,000	3,181,200
New Fire Station	2015	9000	250,650	501,300	5,013,000	2,506,500	8,271,450
*Includes Furniture, Fixtures & Equipment and Project Management fees.							
Total							11,452,650

Rural Addressing / 911 Emergency Response

Emergency services and other normal activities are severely hampered by the lack of a rural address system. Without a way to identify the location of an individual house, it is difficult if not impossible to find. The field survey conducted as part of this study is a first step in attaching a descriptor to a physical location. This effort should be undertaken while the field survey data is fresh. Funds to continue the rural addressing project have been included in the recommended regional projects in the ICIP. Table 37 shows funding for planning of the 911addressing project.

Table 37: Regional Funding for 911 Addressing

Regional Projects Needs Assessment						
Public Safety						
Description	Year to Start	Planning	Architecture-Engineer	Construction	Other*	Total
Street Address and 911 Service Study	2012	500,000	0	0	0	500,000

4.1.4 Community Facilities, Parks, and Recreation

Community / Multipurpose Center

As the name implies, there were a multitude of uses for a Community or Multipurpose Center. These include meeting space, offices for tribal or federal services, senior and veteran activities, Post Office, museum, cultural center, Boy's and Girl's club, computer lab, and library. As with the Lifelong Learning Center, this is a facility that must adapt to the present and changing needs and wishes of the community and groups that use it.

- For this plan it as assumed that a 4,000 square foot building would provide sufficient space for a small chapter, 6,000 for the medium chapter, and 12,000 for the large chapter.
- This facility can be broken into different structures or combined with other functions such as the senior and veteran centers or the Chapter House.
- It is not intended that this structure will take the place of the Chapter House or the Recreation Building, although these could be combined into one building or complex of buildings.

Table 38 details the costs for community facility projects that should be funded in the Chapter.

Table 38: Community Facility Cost Estimates

Tolani Lake Chapter Infrastructure Capital Improvement Plan Community Facilities							
Project	Year to Start	Square Footage	Planning	Architecture-Engineer	Construction	Other*	Total
Multipurpose Center	2010	6000	106,800	213,600	2,136,000	747,600	3,204,000
Chapter House improvement	2010	2070	20,700	41,400	414,000	144,900	621,000
New Post Office	2012	5000	89,000	178,000	1,780,000	623,000	2,670,000
New Recreation center, New Youth center	2012	27000	538,650	1,077,300	10,773,000	3,770,550	16,159,500
New Veterans Center	2012	2000	35,600	71,200	712,000	249,200	1,068,000
Veterinarian	2014		50,000	0	0	0	50,000
New Church Development	2012		50,000	0	0	0	50,000
New Livestock Yard	2012		50,000	0	0	0	50,000
*Includes Furniture, Fixtures & Equipment and Project Management fees.						Total	23,872,500

Recreation Building

Space for exercise, recreation, youth programs, and organized sports was often mentioned as a need. This study combines the suggestions into one facility that serves both adult and youth programs. A gymnasium with double basketball courts and bleachers will accommodate practice, play, and league sports. A large game room will provide a place for Chapter members to enjoy a variety of games ranging from board games to modern video games. An aerobics room with rubberized flooring and mirrored walls will accommodate a wide array of activities, including dancing, yoga, or spin cycle. Two staff offices, a reception area, and a copy room will be the only administrative spaces. A large arts and crafts room can hold specialize equipment such as potter's wheels, kilns, and weaving equipment. Seating just off the entrance will provide a place for food service from a warming kitchen for children involved in summer and after school programs.

- Most of the rooms in the Recreation Building are of a fixed size; therefore, the size is the same for both the small and medium chapters at 27,000 square feet. For the large chapter, it is assumed that two Recreation Buildings are needed even though they may be combined into one structure.

Table 39 describes recreation facilities that will be funded at the Chapter Level.

Table 39: Recreational Facility Cost Estimates

Tolani Lake Chapter Infrastructure Capital Improvement Plan Recreation						
Project	Year to Start	Planning	Architecture-Engineer	Construction	Other*	Total
Outdoor Recreation	2010	7,500	15,000	150,000	30,000	202,500
New Golf course	2014	50,000	0	0	0	50,000
New Horseback trails	2012	50,000	0	0	0	50,000
New Playground	2012	4,650	9,300	93,000	18,600	125,550
New Rodeo grounds	2014	50,000	0	0	0	50,000
*Includes Furniture, Fixtures & Equipment and Project Management fees.						Total 478,050

Senior and Veterans Centers

Several chapters requested separate Senior Centers and Veteran Centers. In those cases, funds were included for stand-alone buildings. During the feasibility study, careful consideration should be made to combine these spaces with other structures such as the Community / Multipurpose Center. This action could ease the burden of maintenance and security and provide the flexibility to adapt to changing needs.

Open Space

Table 40 details funding for an archeological and historic preservation study. This plan will map and inventory historical and cultural sites, and other “areas of avoidance.” This plan will be an important element in protecting the culture and heritage of the Chapter’s people.

Table 40: Funding for Historic and Archaeological Preservation

Regional Projects Infrastructure and Capital Improvements								
Historic and Archaeological Preservation								
Project	FBFA (%)	Start Year	Sq. Ft.	Planning	Architecture-Engineer	Construction	Other*	Total
Historic and Archaeological Preservation Study (various locations)	n/a	2010	n/a	200,000	0	0	0	200,000

Table 41 details funding for a vegetation and wildlife study. This study will inventory vegetation and wildlife in the region. The study will identify threatened and endangered species as well as environmental hazards that should be rectified.

Table 41: Vegetation and Wildlife Study

Regional Projects Infrastructure and Capital Improvements								
Environmental Protection								
Project	FBFA (%)	Start Year	Sq. Ft.	Planning	Architecture-Engineer	Construction	Other*	Total
Wildlife and Plants Study (various locations)	n/a	2010	n/a	500,000	0	0	0	500,000

Table 42 describes funding for a remediation plan for contamination caused by uranium mining. This study will inventory uranium contamination sites throughout the region and develop a strategic plan to remedy environmental health hazards.

Table 42: Uranium Contamination Remediation

Regional Projects Infrastructure and Capital Improvements								
Environmental Remediation								
Project	FBFA (%)	Start Year	Sq. Ft.	Planning	Architecture-Engineer	Construction	Other*	Total
Uranium Contamination Remediation Plan (various locations)	n/a	2010	n/a	500,000	0	0	0	500,000

4.1.5 Infrastructure & Utilities

Water and Wastewater

To the extent possible within the limitations of this study, the cost of providing water and wastewater to the scattered houses has been included in the estimated cost of the New Scattered Houses and the Power, Water and Access to Existing Scattered Housing discussed in the housing section. Historic information and data from other studies suggest that the average cost for

providing water and wastewater to a scattered house is between \$20,000 and \$30,000. A similar amount has been included for all the new and existing scattered houses in the nine chapters.

In addition, this study recommends as part of its regional projects full-funding for both the Western Navajo Pipeline and the C-aquifer Leupp to Dilcon Pipeline, which will provide a new or additional water source to approximately 60 percent of the people in the nine Chapters.

Power

The field survey indicated that over 40 percent of the residential structures were without electric power. This is considered one of the most critical needs for the nine Chapters. Expansion of the distribution system is the most reliable way of providing power to the underserved area but not the only one. Solar and wind generated power has become a cost effective alternative to overhead power lines in many cases.

- To address this issue it was calculated that a solar, wind and/or fuel generator system sufficient to power a residence, including refrigeration, would cost an estimated \$30,000. This figure was added to the cost of a New Scattered Residence and the cost of repairing an Existing Scattered Residence.
- It was assumed that if the cost for overhead power lines is in excess of that amount, then the alternative would be installed.

Communications

Telephone and cell phone service in the area of the FBFA is unreliable and spotty, which negatively impacts the safety and quality of life of residents. A study should be done to identify the underserved areas, devise a solution, estimate the cost, recommend a solution, and prepare an implementation plan for consideration (Table 43).

Table 43: Communications Improvement Study

Regional Projects Infrastructure and Capital Improvements Communications								
Project	FBFA (%)	Start Year	Sq. Ft.	Planning	Architecture-Engineer	Construction	Other*	Total
Communications Study (Telephone, cell towers, internet for various locations)	n/a	2010	n/a	200,000	0	0	0	200,000

Solid Waste

Table 44 describes funding for a plan to improve solid waste infrastructure. There is a lack of transfer stations and landfill sites throughout the former Bennett Freeze Area. This plan will help the chapters plan for centrally located landfills or transfer stations to handle solid waste disposal needs.

Table 44: Funding for Regional Solid Waste Plan

Regional Projects Infrastructure and Capital Improvements Waste Disposal								
Project	FBFA (%)	Start Year	Sq. Ft.	Planning	Architecture-Engineer	Construction	Other*	Total
Solid Waste Study (various locations)	n/a	2010	n/a	200,000	0	0	0	200,000

4.1.6 Transportation

Roads

The field survey conducted for this survey was not intended to provide a comprehensive evaluation of the roads in the nine Chapters; however, those roads traveled in route to an inspection of a building were documented and rated by the field teams. Many Chapter workshop participants requested specific road repairs and new roads. The Navajo Nation Department of Transportation developed a 2003 Long Range Comprehensive Transportation Plan, which along with the Status Report from the Western Navajo Agency Roads Committee, sets out the priorities for road construction in this area. Given the limited scope and time for this study, it was deemed appropriate to endorse the recommendation of the Navajo DOT and the Roads Committee in this document. The data collected and the specific suggestions for improving the road system will be provided to these agencies for their future consideration.

Transit

Several Chapters identified transportation as an immediate need. This includes scheduled transport as well as in an emergency. The scheduled trips would include shopping, medical appointments and visiting. While the need is real and immediate, there is no evidence that a scheduled transit system would be viable. It is recommended that a shuttle van be purchased for each Chapter to deal with the immediate needs and a more comprehensive solution be sought through a feasibility study.

Table 45 below shows transportation projects that will be funded at the regional level. The planning team believed that these projects should be funded at the regional level because each of these projects benefits the entire former Bennett Freeze area.

Table 45: Regional Road Transportation Projects

Regional Projects Infrastructure and Capital Improvements								
Transportation								
Project	FBFA (%)	Start Year	Sq. Ft.	Planning	Architecture-Engineer	Construction	Other*	Total
Paved Road Inventory (Map, evaluate and develop a road upgrade plan for various locations)	n/a	2012	n/a	300,000	0	0	0	300,000
Tribal Transportation Improvement Program (5.2 mile Chip Seal, Tuba City (Route N101))	In	2024	5.2 miles	26,000	52,000	520,000	104,000	702,000
Tribal Transportation Improvement Program (1 mile rehab - Main Street, Tuba City (Route N101))	In	2010	1 mile	60,000	120,000	1,200,000	240,000	1,620,000
Tribal Transportation Improvement Program (1 mile road - Main Street to N608, Tuba City (Route N101))	In	2010	1 mile	60,000	120,000	1,200,000	240,000	1,620,000
Tribal Transportation Improvement Program (1.5 mile road - Main Street Extension to N608, Birch & Fir, Tuba City (Route N101))	In	2014	1 mile	175,000	350,000	3,500,000	700,000	4,725,000
Tribal Transportation Improvement Program (1.5 mile road - Main Street Extension to N608, Birch & Fir, Tuba City (Route N101, Phase 4))	In	2009	9.3 miles	764,500	0	15,290,000	3,058,000	19,112,500
Tribal Transportation Improvement Program (9.3 mile road - Gap to Coppermine (Route N20, Phase 5))	In	2012	9.3 miles	764,500	0	15,290,000	3,058,000	19,112,500
Tribal Transportation Improvement Program (9.3 mile road - Gap to Coppermine (Route N20, Phase 6))	In	2015	9.3 miles	892,000	0	17,840,000	3,568,000	22,300,000
Tribal Transportation Improvement Program (9.3 mile road - Gap to Coppermine (Route N20, Phase 7))	In	2017	9.3 miles	892,000	0	17,840,000	3,568,000	22,300,000
Tribal Transportation Improvement Program (1.43 mile rehab, Kerly Street & Navajo Blvd (Route N609))	In	2010	1.2 miles	0	226,000	2,260,000	452,000	2,938,000
Tribal Transportation Improvement Program (Route N609/N614)	In	2024	1.43 miles	0	226,000	2,260,000	452,000	2,938,000
Tribal Transportation Improvement Program (2 mile road - Colorado Street, Tuba City (Route N619))	In	2010	2 miles	0	396,000	3,960,000	792,000	5,148,000
Tribal Transportation Improvement Program (2 mile bridge and road (Route N6331/N6330))	In	2010	2 miles	0	240,000	2,400,000	480,000	3,120,000
Identify Needed Traffic Control and Safety Improvements Study (various locations)	n/a	2012	n/a	500,000	0	0	0	500,000
Unpaved Roads Inventory (various locations)	n/a	2012	n/a	300,000	0	0	0	300,000
Shuttles (1 per chapter)	n/a	2010	n/a	0	0	400,000	80,000	480,000

4.2 Economic Development

The economic development strategy was based upon the desires expressed and projects identified during Chapter meetings, interviews with Navajo Nation and regional economic development agencies, policy documents of the Navajo Nation, and the goals of existing Land Use Plans. The ideas presented at these meetings and in the various documents were compiled into a comprehensive list of projects that will contribute to the economic health of the region. The desired locations of the economic development projects were then mapped.

Projects were assessed based on their proximity to other projects on the list, the potential for grouping economic development projects with other types of projects such as community facilities or infrastructure improvements, the potential to benefit multiple chapters, access to existing infrastructure, proximity to tourist attractions and other factors likely to contribute to the project's success.

Clustering the larger projects has four important benefits. First, it minimizes the need to withdraw sites and minimizes the impact on existing site leases and grazing land. Second, it makes the most efficient use of infrastructure investments, keeping infrastructure costs to a minimum while supporting significant facilities for the residents of the Former Bennett Freeze area. Third, the clustering of activities within the chapters creates convenient places for residents to live, work, shop, and conduct day to day business. Fourth, clustering activities in central locations enables businesses and service providers to benefit from the convenience of meeting their needs nearby.

Many residents live and work from their homes, many as ranchers and farmers. For these families, rural economic development projects are intended to support their ability to develop products at home and improve access to markets for their products. These projects include direct support for artists and craftsman, ranchers, and farmers.

In addition to agriculture and arts and crafts, rural development may include resource based business activity. For example, depending upon the desired application, wind farm locations will be selected based upon the reliability of the wind resource and access to the power grid.

Agricultural facilities, such as community corrals or storage and distribution facilities, will be located at sites convenient to both farmers and buyers or distributors.

Tourist centers are located close to or on the way to tourist destinations, so they will not always be within a commercial center. Locating hotels, restaurants and other tourist oriented businesses within centers along major tourist routes increases opportunities for visitors to purchase other goods and services available in the centers. When tourist facilities are located at more remote sites near a visitor attraction, clustering lodging, meals, cultural centers, and retail in these locations will encourage visitors to visit multiple businesses, improving the potential for each to be successful.

Projects were grouped into one of three categories of potential development sites.

- **Business Centers**: Projects that require accessibility and visibility or will benefit from being part of a cluster of activities are grouped into key centers.
- **Rural Development**: Projects that enhance the economy of the region's more remote areas are located where the resources to support them exist. Rural development projects are related to home businesses, agriculture and alternative energy (wind power).
- **Tourism Development**: Projects that support the region's tourism industry are located along routes traveled by tourists or close to visitor attractions.

Table 46 lists projects by Chapter and identifies locations for each project. The locations of potential development sites are shown in Figure 23 (Potential Development Sites map). Projects are generally described below.

Table 46: Project Locations

Site Number	Development Name	Development Description
1	Highway 89 Business Corridor	Business Corridor
2	Vendor Booths	Tourist Oriented Retail
2a	First Overlook	Tourist Oriented Retail
2b	Vendor's Plaza	Tourist Oriented Retail
3	East Gate Grand Canyon Development	Motel and Café
4	Dzil Lichii Sheep Camp Bed and Breakfast	Motel and Café
5	Shadow Mountain Business Park; The Junction	Highway Oriented Retail
6	To Bee Hwiisgani Development	Business Park, Housing, and Community Facilities
7	Wind Farm Development	Wind Farm- Power Generation
8	Hidden springs	Rehabilitation of community corrals
9	The Gap Business Park	Commercial Development
10	Cedar Ridge Business Park	Warehouse/Arts Center/Tourist Based Commercial
11	Bitter Springs Business Park	Business/Retail/ Service
12	Navajo Springs Business Park	Business/Retail/ Service
13	Ranch Resort, W. side of Cedar Ridge	Community Retail
14	Coalmine Canyon Business Park	Community Retail
15	Goldtooth Farm	Agriculture
16	Windmill Industries	Solar and Wind Power Generation
17	Kerley Valley Business District	Business/Retail/ Service
18	Rifle Range Industrial Park Prison	Detention Facility/Landfill
19	Kaibeto Central Chapter Business Park	Business/Retail/ Service
20	Leupp Casino and Gas Station	Highway Oriented Retail
21	Leupp Business Park	Community Retail
22	Leupp Solar Farm	Solar Power Generation
23	Tolani Lake Economic Development Site	Business/Retail/ Service
24	Tolani Lake Community	Business/Retail/ Service
25	Newberry Site Business Park	Business/Retail/ Service
26	Tonalea Central Area	Business/Retail/ Service
27	White Mesa Business Park	Tourist Oriented Retail
28	Cow Springs Business Park	Business/Retail/ Service
29	Tuba City Business Park	Tourist Oriented Retail
30	Moenave/Dinosaur Tracks	Tourist Oriented Retail
31	Airport Business Site	Business/Retail/ Service
32	Coppermine Development Site	Residential, Commercial
33	Rockhead commercial development	Business/Retail/ Service

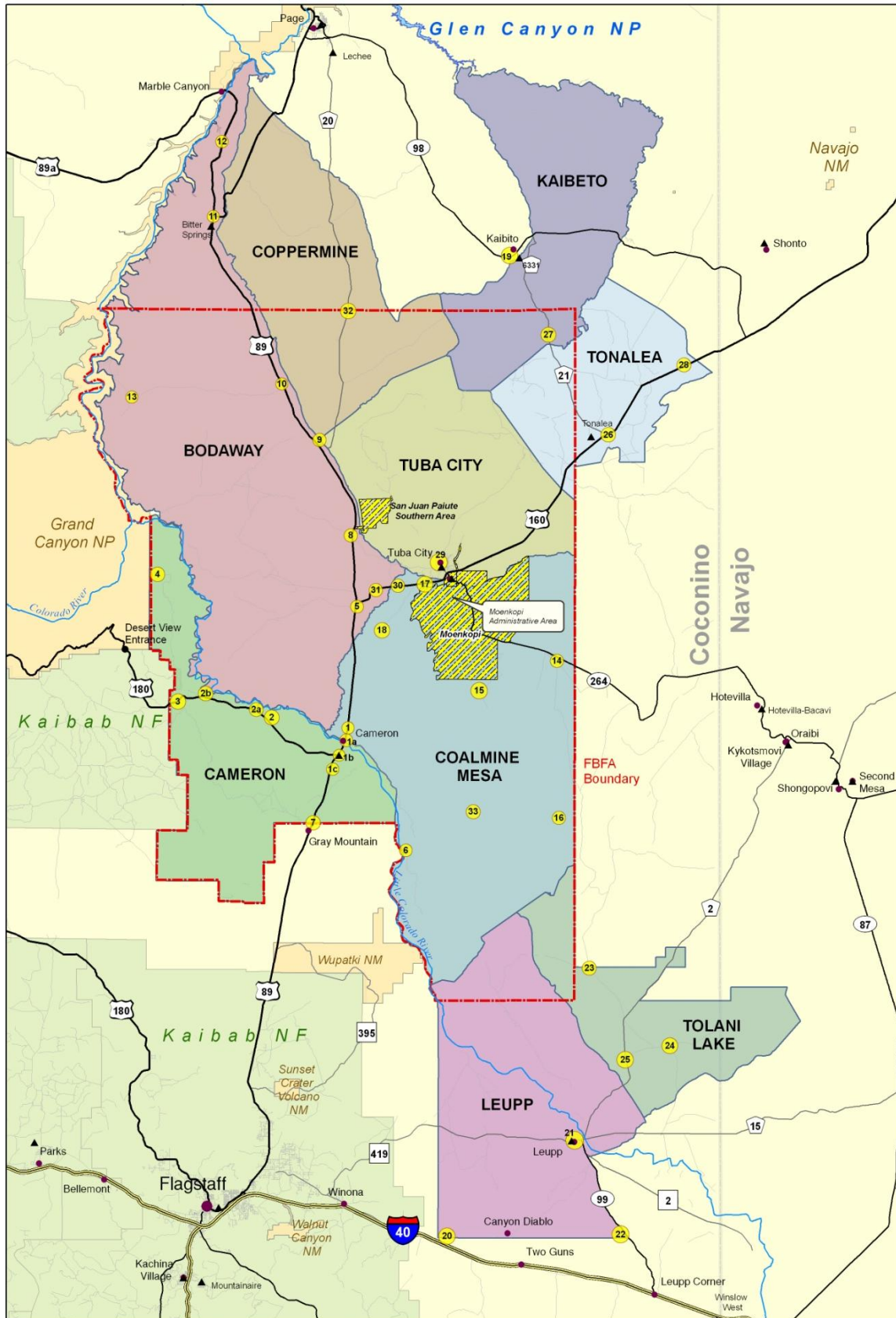


Figure 235: Potential Development Sites

4.2.1 Business Centers

Based on existing infrastructure and population distribution, there are several opportunities for business parks or business districts that enhance economic opportunities by clustering commercial sites with housing, infrastructure improvements, community facilities, and schools. As shown in Figure 23 (FBF Area Potential Development Sites), most of these potential development sites, or business centers, are located along US Highway 89 and US Highway 160. Additional centers are proposed along Arizona Route 99 and Navajo Route 2 in Leupp and Tolani Lake.

The system of highways through the Former Bennett Freeze area provides the transportation network that supports economic development. Some types of economic activity require the access and visibility provided by the roadway infrastructure. Other activities, such as agriculture, home based businesses and wind power generation, may be located based on resources rather than proximity to well traveled highways. The economic development strategy includes projects that will cluster along roads, projects in more remote areas that are located based on the location of resources, and tourism oriented projects that are located near visitor attractions.

For those projects or activities that depend upon roads, Highway 89 serves as the north/south spine through the area, connecting from I-40 and Flagstaff to Page. Much of the region's tourist traffic is along Highway 89, and access to existing business centers is via Highway 89.

In the southeastern portion of the area, which encompasses portions of Tolani Lake and Leupp, access is directly to I-40.

4.2.2 Rural Development

Several potential development sites were identified at locations away from the business centers. These include locations suitable for wind power generation, agricultural development, and home based businesses.

Potential sites for wind farm development are in Cameron just west of Gray Mountain, in Coalmine Mesa along the escarpment of Adeii Echii Cliff. A feasibility study was requested to verify the potential for wind power generation in these locations.

Agricultural projects are geared to on-site improvements, such as earthen dams to create livestock ponds, moveable and permanent fencing, and pasture improvements. These projects are dispersed throughout the region and would benefit individual sites. The appropriate project might be designed as a program of technical and financial assistance.

Facilities that would serve a larger area include community farms, centralized warehousing and distribution for agricultural products, agricultural retail (feed store, sales outlets for agricultural products), a community livestock corrals (new and renovated), a livestock auction yard, and related services (veterinarian).

Improvements in regional communication infrastructure would enable residents to conduct business from remote sites.

Table 47 describes feasibility studies for programs and projects that will improve the long-term viability agriculture throughout the region. Land needs to be withdrawn for water infrastructure and water rights need to be secured to help ensure that the communities can prosper.

Table 47: Regional Agriculture Projects

Regional Projects Infrastructure and Capital Improvements								
Agriculture								
Project	FBFA (%)	Start Year	Sq. Ft.	Planning	Architecture-Engineer	Construction	Other*	Total
Range and Farm Management (various locations)	n/a	2012	n/a	500,000	0	0	0	500,000
Water for Agriculture Study (various locations)	n/a	2012	n/a	500,000	0	0	0	500,000

Table 48 describes a feasibility study for a solar farm in the Leupp Chapter. This project will help provide clean renewable energy to the entire region.

Table 48: Regional Rural Economic Development

Regional Projects Implementation Plan											
Economic Development											
Project	FBFA (%)	Start Year	Sq. Ft.	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Leupp Solar Farm (Southeast corner of Leupp Chapter along Hwy. 99)	Out	2010	n/a	200,000	0	0	0	0	0	0	200,000

4.2.3 Tourism Development

The numerous natural and cultural attractions in the region bring millions of visitors to the region each year. Highway 89 serves as access from I-40 to the Grand Canyon Desert View entrance, Lake Powell and Glen Canyon National Recreation Area, national monuments and national forests, as shown in Figure 24 (FBF Area Regional Tourism map). Potential tourist oriented development sites are located close to the attractions or along roads that access the attractions.

The types of economic development projects that are proposed near visitor attractions include visitor centers; permanent vendor booths; parking, playgrounds, trails, picnic facilities, restrooms, RV parks and other tourist amenities and small-scale retail and food establishments. These projects have minimal infrastructure requirements appropriate to a remote location. Water supply may be a concern, so that water conservation and a safe water source will be important to the design of these facilities.

Projects that require water and wastewater systems and better access are shown in centers that will have infrastructure to support them. These projects include motels, casinos, and larger restaurants. Larger visitor centers and arts and crafts outlets would be part of these projects.

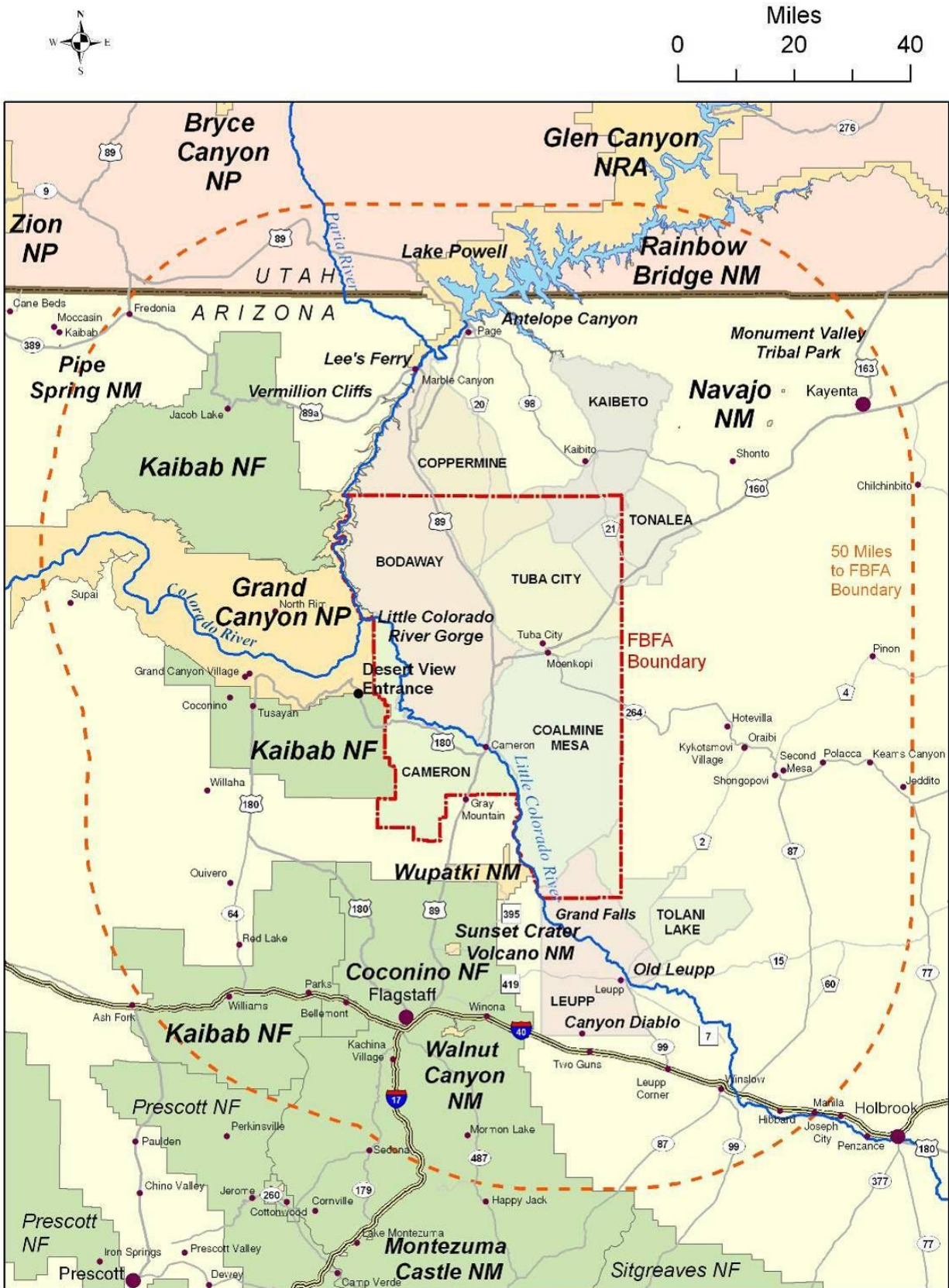


Figure 246: Regional Tourism

4.3 Priority Implementation

The completion of any planning project is the time for decision-making. While a plan lays out a possible course of action, it is up to the people who will be affected by its recommendations to (1) discern their wisdom, (2) assess their own level of motivation to take action, and (3) create the partnerships, policies, and environments through which the plan can succeed. Too often, the plan is the easiest step to achieve and remains the only one accomplished.

While many decisions need to be made by chapters, the Former Bennett Freeze Area Task Force, and Navajo Nation Divisions and Departments, there is a general approach that can be applied to thinking strategically about how to implement multiple projects.

Information was gathered from the participation process, the chapter Community Land Use Plans, and/or other planning documents. These tables will need to be updated with information not available to the planning team as of August 2008.

Strategic Implementation

The responsibility for moving toward the next step in Recovery falls largely to the chapters. Chapter officials, Community Land Use Planning Committees, and community members must work together to decide which projects included in the Plan make sense, which are truly needed, and which the Chapter will agree to sponsor toward implementation.

Agencies and departments, both tribal and federal, have a secondary responsibility to review the projects included in the Plan to determine which may already be included in current planning efforts, which could easily be incorporated into ongoing projects, and which should be included in new efforts because they fall under agency or department responsibility for implementation.

The Navajo Nation Division of Community Development, together with the Former Bennett Freeze Task Force, have responsibility for supporting the efforts of chapters, agencies, and departments to implement sponsored projects. This responsibility could include the creation of new working groups, partnerships, and roles and responsibilities for existing and new entities. These relationships will be instrumental in answering the many thorny questions that arise in the next step of implementation, which are previewed in Section 5.0 of the Recovery Plan.

After chapters prioritize projects, the next step is to identify projects to accomplish through partnerships with other chapters, departments, or agencies. Agencies and departments should eliminate projects from the Recovery Plan already included in ongoing efforts. There may also be projects to add to the Recovery Plan that were missed during data gathering in the summer of 2008.

Any projects taken on by these sponsors should be adjusted for new start years, if necessary, which will affect the six-year spread of funding needs. Adjusted costs can then be subtotaled to identify funding needs and potential funding sources.

Because they are brand-new ideas and therefore not project-ready (i.e. site selected, clearances done, and land withdrawn), many projects will require feasibility studies to determine how best to move forward. As these studies take time, the Recovery Plan recommends beginning house repairs immediately to show progress quickly. As repairs begin, assessments for power and

water access for remote homes should be conducted. Feasibility studies should be conducted next for projects deemed important by chapters, agencies, and departments as funds and project managers are available.

The next step is to think about projects that are project-ready and can be relatively easily and quickly accomplished. These should be prioritized first for funding and staff efforts. Accomplishing these projects helps to show progress, which encourages others to become involved to share in the benefits and proves that it is not foolish to hope for change.

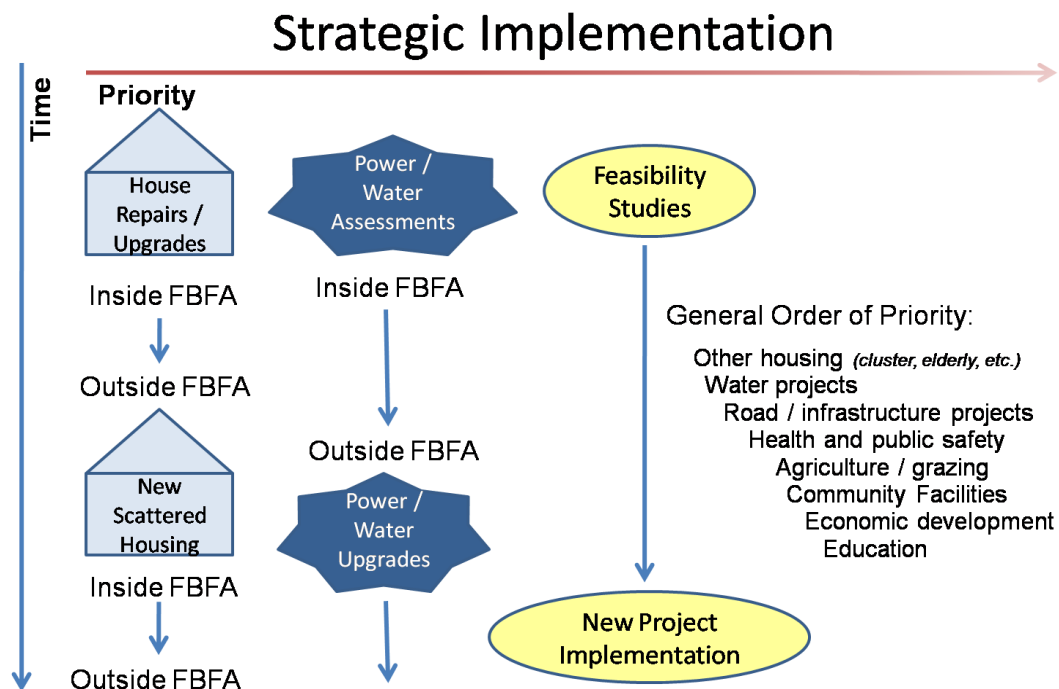


Figure 257: Strategic Implementation

In the FBFA, repairs and upgrades to existing homes are the best candidates for the first project implementation efforts. With some analysis of data collected in the field, repairs can be assessed and completed quickly. In general, this plan recommends beginning with homes inside the FBFA for both repairs and upgrades to water and power service, followed by the same projects for homes in the rest of the chapters.

While repairs are beginning, the power and water assessment can get underway, as it will take longer than assessing repairs but not as long as other studies. Additionally, it makes sense not to upgrade houses for power and water that may not be deemed repairable. IHS has completed many of these assessments, making those homes eligible for immediate assistance with the arrival of funds.

In the meantime, project staff at the relevant departments or chapters should begin feasibility studies for other priority projects. These studies typically take anywhere from six months to two years, depending on their complexity and size. By the time they are complete and generate new

capital projects, project managers and staff should be available as shorter-term projects are completed.

In general, FBFA communities identified housing, including power and water improvements, overwhelmingly as the first priority for projects and funding. Water projects and road projects were the next highest priorities and should be phased accordingly. Health and public safety, including access to medical care and emergency response, was the next most-valued project.

The next priorities varied from community to community, person to person, project to project. Individual chapters must balance community priorities carefully. There were many community facilities that residents care deeply about, including recreational facilities, parks, multipurpose centers, government buildings, and cemeteries. Many residents prioritized economic development as the way to generate funds to invest in further improvements and the means to provide adequate jobs to retain the next generations. Similarly, residents prioritized grazing and agriculture projects to ensure a sustainable, self-sufficient way of life and perpetuate traditional culture. In the same way, other residents prioritized educational projects to sustain and promote the independence and success of the community's youth and residents of all ages.

In deciding the priorities of these other categories, chapters must work with residents, and project staff need to work with chapters to determine the order of projects that makes the best of use time and resources.

There are two very important considerations to keep in mind in deciding the order of future projects.

- 1) Power, water, wastewater, and roads, must be in place before buildings can be designed and constructed. Economic development is particularly dependent on location and access to provide customers and employees to support businesses.
- 2) Economic development projects and vocational training facilities can help generate revenue and activities to fund and support other types of projects.

Priority Implementation by Year

The following sections are organized by the estimated start year of each project. Each section includes two tables that reflect priority projects (housing, then power and water, then roads) and project readiness. These can be matched to project descriptions in the previous sections for more details.

- 1) The first table for each year includes those projects that are considered “priority projects” or have some degree of project readiness.
- 2) The second table for each year includes projects not in the top 10 priorities gathered throughout this planning process that also do not have known progress toward implementation.

Start years were produced first by participants at the second community workshop in each chapter and adjusted using professional judgment based on similar project experience. These

projects must be reassessed by potential project sponsors. Any change in their estimated start years will change the estimated cost, as inflation increases costs each year.

The following tables appear only as a strategic implementation planning tool for Chapters, project managers, and department and agency staff. The list must be updated as conditions change, more information is gathered, and more input is provided about this plan's ability to meet community goals for area recovery.

Because the Recovery Plan includes the biggest list of projects possible, its costs total to billions of dollars. While representing the broadest potential needs in the FBFA, implementing all these projects is not realistic or practical.

The following two sections detail how much funding will be required to implement projects over the next five years. Section 4.3.1 shows projects that are funded at the Chapter level, and Section 4.3.2 shows projects that are funded at regional level.

4.3.1 Chapter Projects

Tolani Lake Chapter Implementation Plan								
Community Facilities								
Project	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Multipurpose Center	192,240	448,560	2,819,520	24,778	0	0	0	3,485,098
Chapter House improvement	37,260	86,940	546,480	4,802	0	0	0	675,482
New Post office	0	168,210	391,600	2,477,760	21,716	341,760	0	3,401,046
New Recreation center, New Youth	0	1,018,049	2,251,557	6,289,996	4,643,881	4,872,269	144,358	19,220,109
New Veterans Ctr	0	37,380	70,488	165,184	1,042,368	9,114	0	1,324,534
Veterinarian	0	0	0	0	0	0	0	50,000
New Church Development	0	0	0	50,000	0	0	0	50,000
New Livestock yard	0	0	50,000	0	0	0	0	50,000
Sub-Total								28,256,269
Education								
Project	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Lifelong Learning Center	0	0	0	0	0	0	5,255,971	5,255,971
New headstart	26,910	62,790	394,680	3,468	0	0	0	487,848
New K-12	1,607,760	4,138,344	9,689,526	7,733,326	298,217	0	0	23,467,173
Sub-Total								29,210,992
Health								
Project	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
New Health Clinic	328,770	767,130	5,223,790	42,375	0	0	0	6,362,065
New Urgent Care	0	0	0	27,603	64,514	439,962	3,543	535,622
Sub-Total								6,897,686
Housing								
Project	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
New Cluster Residential in FBFA	0	1,183,896	2,756,160	15,695,078	152,842	0	0	19,787,976
New Cluster Residential	0	739,935	1,722,600	9,809,424	95,526	0	0	12,367,485
New Elder Living	0	0	0	762,120	1,781,200	5,279,360	5,140,660	12,963,340
New Group Residential	57,060	133,140	753,192	7,354	0	0	0	950,746
New Multifamily in FBFA	174,960	2,449,440	171,072	22,550	0	0	0	2,818,022
New Multifamily	104,976	1,469,664	102,643	13,530	0	0	0	1,690,813
New Scattered Residential in FBFA	0	2,351,462	5,474,304	31,173,673	303,575	0	0	39,303,014
New Scattered Residential	0	1,469,664	3,421,440	19,483,546	189,734	0	0	24,564,384
Power & Water Upgrades in FBFA	88,452	206,388	1,167,566	11,400	0	0	0	1,473,806
Power & Water Upgrades	204,120	2,857,680	199,584	26,309	0	0	0	3,287,693
Repair Residential in FBFA	356,400	4,989,600	348,480	45,936	0	0	0	5,740,416
Repair Residential	853,200	11,944,800	834,240	109,968	0	0	0	13,742,208
Sub-Total								138,689,903

Public Safety								
Project	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
New Police Facility	0	0	0	0	0	222,106	4,215,186	4,437,292
New Fire Station	0	0	0	0	0	577	10,885,730	10,886,307
Sub-Total								15,323,599
Recreation								
Project	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
swimming pool; basketball outside; baseball fields	37,500	173,250	0	0	0	0	0	210,750
New Golf course	0	0	0	0	61,000	0	0	61,000
New Horseback trails	0	0	0	58,000	0	0	0	58,000
New Playground	0	0	0	26,970	124,806	0	0	151,776
New Rodeo grounds	0	0	0	0	61,000	0	0	61,000
Sub-Total								542,526
Total								218,920,976

4.3.2 Regional Projects

Regional Projects Implementation Plan											
Agriculture											
Project	FBFA (%)	Start Year	Sq. Ft.	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Range and Farm Management (various locations)	n/a	2012	n/a	500,000	0	0	0	0	0	0	500,000
Water for Agriculture Study (various locations)	n/a	2012	n/a	500,000	0	0	0	0	0	0	500,000

Regional Projects Implementation Plan											
Communications											
Project	FBFA (%)	Start Year	Sq. Ft.	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Communications Study (Telephone, cell towers, internet for various locations)	n/a	2010	n/a	200,000	0	0	0	0	0	0	200,000

Regional Projects Implementation Plan											
Economic Development											
Project	FBFA (%)	Start Year	Sq. Ft.	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Leupp Solar Farm (Southeast corner of Leupp Chapter along Hwy. 99)	Out	2010	n/a	200,000	0	0	0	0	0	0	200,000

Regional Projects Implementation Plan											
Environmental Protection											
Project	FBFA (%)	Start Year	Sq. Ft.	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Wildlife and Plants Study (various locations)	n/a	2010	n/a	500,000	0	0	0	0	0	0	500,000

Regional Projects Implementation Plan											
Environmental Remediation											
Project	FBFA (%)	Start Year	Sq. Ft.	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Uranium Contamination Remediation Plan (various locations)	n/a	2010	n/a	500,000	0	0	0	0	0	0	500,000

Regional Projects Implementation Plan											
Health											
Project	FBFA (%)	Start Year	Sq. Ft.	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Emergency Repairs to Tuba City Regional Hospital	22	2010	188000	1,460,250	3,236,888	10,767,992	6,650,087	6,994,057	207,680	0	29,316,953
Renovate & Expand Tuba City Regional Hospital	22	2012	347000	0	10,244,220	19,317,672	43,006,211	143,627,217	88,249,890	95,137,909	399,583,118

Regional Projects Implementation Plan											
Historic and Archaeological Preservation											
Project	FBFA (%)	Start Year	Sq. Ft.	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Historic and Archaeological Preservation Study (various locations)	n/a	2010	n/a	200,000	0	0	0	0	0	0	200,000

Regional Projects Implementation Plan											
Transportation											
Project	FBFA (%)	Start Year	Sq. Ft.	2010	2011	2012	2013	2014	2015	Funding after 2015	Total
Paved Road Inventory (Map, evaluate and develop a road upgrade plan for various locations)	n/a	2012	n/a	300,000	0	0	0	0	0	0	300,000
Tribal Transportation Improvement Program (5.2 mile Chip Seal, Tuba City (Route N101))	In	2024	5.2 miles	0	0	0	0	0	0	1,144,260	1,144,260
Tribal Transportation Improvement Program (1 mile rehab - Main Street, Tuba City (Route N101))	In	2010	1 mile	60,000	126,000	1,584,000	0	0	0	0	1,770,000
Tribal Transportation Improvement Program (1 mile road - Main Street to N608, Tuba City (Route N101))	In	2010	1 mile	60,000	126,000	1,584,000	0	0	0	0	1,770,000
Tribal Transportation Improvement Program (1.5 mile road - Main Street Extension to N608, Birch & Fir, Tuba City (Route N101))	In	2014	1 mile	0	0	0	0	213,500	448,000	5,628,000	6,289,500
Tribal Transportation Improvement Program (1.5 mile road - Main Street Extension to N608, Birch & Fir, Tuba City (Route N101, Phase 4))	In	2009	9.3 miles	0	0	0	0	0	0	0	0
Tribal Transportation Improvement Program (9.3 mile road - Gap to Coppermine (Route N20, Phase 5))	In	2012	9.3 miles	0	802,725	0	21,283,680	0	0	0	22,086,405
Tribal Transportation Improvement Program (9.3 mile road - Gap to Coppermine (Route N20, Phase 6))	In	2015	9.3 miles	0	936,600	0	0	0	27,402,240	0	28,338,840
Tribal Transportation Improvement Program (9.3 mile road - Gap to Coppermine (Route N20, Phase 7))	In	2017	9.3 miles	0	936,600	0	0	0	0	30,185,280	31,121,880
Tribal Transportation Improvement Program (1.43 mile rehab, Kerly Street & Navajo Blvd (Route N609))	In	2010	1.2 miles	226,000	2,847,600	0	0	0	0	0	3,073,600
Tribal Transportation Improvement Program (Route N609/N614)	In	2024	1.43 miles	0	0	0	0	0	0	4,788,940	4,788,940
Tribal Transportation Improvement Program (2 mile road - Colorado Street, Tuba City (Route N619))	In	2010	2 miles	396,000	4,989,600	0	0	0	0	0	5,385,600
Tribal Transportation Improvement Program (2 mile bridge and road (Route N6331/N6330))	In	2010	2 miles	240,000	3,024,000	0	0	0	0	0	3,264,000
Identify Needed Traffic Control and Safety Improvements Study (various locations)	n/a	2012	n/a	500,000	0	0	0	0	0	0	500,000
Unpaved Roads Inventory (various locations)	n/a	2012	n/a	300,000	0	0	0	0	0	0	300,000
Shuttles (1 per chapter)	n/a	2010	n/a	480,000	0	0	0	0	0	0	480,000

Regional Projects Implementation Plan											
Waste Disposal											
Solid Waste Study (various locations)	n/a	2010	n/a	200,000	0	0	0	0	0	0	200,000

5.0 - Appendix

5.1 Letter to WHPacific



Dear WHPacific:

The 2008 Tolani Lake Community Land Use Plan (CLUP) manual has been revised by our local Community Land Use Plan Committee. The changes are as follows:

- The description of the change in title, from this being a "Comprehensive Land Use Plan" to it being a "Community-Based" Land Use Plan.
- The delay in publishing the updated manual was due to the fact that 2010 census data was not available (and still isn't available).

Thank you for your assistance in gathering the needed information for our community.

Should you have any questions, please call us at 928-686-3285.

Sincerely,

Valerie Kelly, CSC
Tolani Lake Chapter
928-686-3285