Introduction

In 1998 the Tribal Council of the Navajo Nation approved Title 26, the *Navajo Nation Local Governance Act (LGA),* of the Navajo Nation Code. The purpose of the LGA is to recognize governance at the local level and thereby give Navajo Chapters the authority to adopt ordinances, make decisions regarding local matters, and develop land to meet community needs.

By giving each Chapter local control over land and community development decisions, the Navajo Nation wishes to reduce the level of bureaucracy so that services are provided at a community level and under community control.

To receive autonomy under the LGA, the Navajo Nation Auditor General's Office recommends governance-certification for Chapters after they have fulfilled specific requirements.

In order to administer land issues at the local level a Community-based Land Use Plan must be approved by the Transportation and Community Development Committee (TCDC) of the Navajo Nation Council.

The Aneth Chapter is one of many Navajo Chapters that chose to pursue LGA certification. The Chapter established a Community Land Use Planning (CLUP) Committee to oversee development of a land use plan, and also requested the assistance of a planning consultant.

PAIKI, a Native American-owned Planning, Engineering and Architecture firm from Albuquerque, New Mexico was selected to provide assistance.

1. Scope of Work

On February 21, 2002, the Transportation and Community Development Committee of the Navajo Nation Council adopted guidelines for use by Navajo Chapters in developing Community-based Land Use Plans. The guidelines are included in this report as Appendix 1.

Since funding for the Community-based Land Use Plans was provided by the Navajo Housing Authority under the Native American Housing and Self Determination Act (NAHASDA), the Scope of Work specified that planning efforts should focus on affordable housing and coordinating related infrastructure development. However, during the course of developing the Land Use Plan, PAIKI found it prudent to go beyond the contractual scope of work and include general recommendations for designating commercial areas, locating community and public facilities, and protecting open spaces.

The process used to develop the Aneth Community-based Land Use Plan was divided into six phases, which were completed in the following order:

Phase 1: Community Participation Plan

This first phase established a process by which Chapter members would be educated about the uses and benefits of land use planning, learn how the plan would be developed, and understand the importance of having Chapter-wide participation in the planning process. During this phase, a schedule for CLUP Committee meetings and community participation activities was established.

Phase 2: Community Assessment

Phase 2 identified the principles and vision of Aneth Chapter members that would guide local land use planning and development. Community information was gathered on both human and physical resources within the Chapter. A variety of sources were used to collect data on demographics such as per capita income, median age, employment, population, and education attainment. Public meetings and a survey generated information on the existing status of land throughout the Chapter and an evaluation of existing and future needs within the areas of housing, grazing, agriculture, commercial

development, industrial development, community facilities, and public facilities.

Phase 3: Land Suitability Analysis

The CLUP Committee and Chapter officials identified specific areas within the Aneth Chapter as potential development sites (refer to the Land Suitability Maps for the location of these sites.) An analysis of the physical characteristics of the sites and the Chapter as a whole served to evaluate the suitability of Chapter land for development. The analysis included reviewing water resources, soils, slopes and topography, vegetation and wildlife, culturally significant areas, traditionally sensitive areas, environmentally sensitive areas, and site accessibility.

Phase 4: Infrastructure Analysis

A number of infrastructure resources were identified and evaluated for the Aneth Chapter as a whole, and for each of the potential development sites: road access, and the availability of electrical service, water, sewer, natural gas, and telecommunication services.

Phase 5: Land Use Plan

The highest and best use of land within the potential development sites was determined using data gathered for the preceding phases.

It is interesting to note that no single factor played a dominant role in determining recommended land uses for the potential development sites. For example, physical characteristics lent some sites to one type of development, the location of some sites were their strongest asset, while surrounding development determined the most appropriate use for other sites.

Phase 6: Comprehensive Report

The Comprehensive Report compiles the previous five phases into a single Land Use Plan for the Aneth Chapter. Additional components included in the Comprehensive Report that were not addressed in previous phases include presenting outstanding issues and concerns that were identified during the project, recommending possible means of addressing these issues and concerns, recommending implementation strategies, and suggesting governing principles for guiding future development.

2. The Aneth Chapter

On March 10, 1905, Aneth was added as a Chapter of the Navajo Nation. "The construction of Glen Canyon Dam and the City of Page, Arizona led to a land exchange between the Navajo government and the United States Park Service. The City of Page land site and the eventual land which would be covered by Lake Powell were exchanged for McCracken Mesa and other land referred to as the 'Aneth Extension'[1]."

The Chapter is located in San Juan County in the south eastern corner of Utah. It encompasses 183,780 acres, although a portion north of Montezuma Creek is interspersed with Indian Allotments, State and federal land, and a small amount of private land.

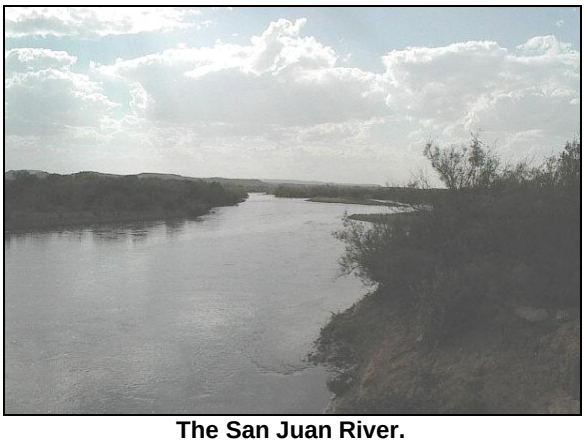
The Navajo name for Aneth, "Táábíích´íídii," translates to "just like the devil". The name was derived from a term which was applied to the business practices of the community's first Anglo trader.

View of Caruso Mountain and characteristic landscape within the Aneth Chapter.

[1] *Community Profile of the Aneth Chapter*. Date unknown.

The communities of Aneth and Montezuma Creek lie at an elevation of approximately 4,500 feet, while Cajon and McCracken Mesas lie at and elevation of approximately 5,300 feet. The area is characterized by high elevation desert scrub, and juniper woodlands.

A number of ephemeral washes drain from the surrounding mesas into the San Juan River, which is the southern border of the Aneth Chapter. Numerous springs are located throughout the area.



The San Juan River.

The Chapter is surrounded by several tourist attractions: Arches National Park, Mesa Verde, Natural Bridges National Monument and Hovenweep National Monument.

The Vicinity and Location Map depicts the general location of the Aneth Chapter relative to other Navajo Nation Chapters, natural features, and state highways.

3. Community Participation Plan Phase 1

This phase describes the process by which Chapter members shall be educated about the uses and benefits of land use planning, the approach being used to develop the Aneth Community-based Land Use Plan, and the importance of having Chapter-wide participation in developing the plan. A schedule for public meetings, CLUP Committee meetings and community participation activities is also presented.

3.1 Community Education Process

The success of the Plan depends on active participation by informed community members. Without attending community participation activities, individuals may be uninformed about the development ideas of other Chapter members. If these uninformed individuals desire development types or patterns that directly conflict with the ideas expressed by the Aneth community, conflict and mistrust may result. Discussion and debate at community participation activities encourages community members to work together to find mutually acceptable solutions to complex issues.

> *When widely divergent interests, ages, temperaments, and histories are represented from the beginning, citizens become better informed about community issues. Participants have a better chance to understand one another's concerns and appreciate the complexities of real life community decision-making.*
>
> *- Rocky Mountain Land Institute*

The CLUP Committee and PAIKI are responsible for educating the Aneth community about the plan. To encourage community participation, the CLUP Committee and PAIKI will offer a wide variety of opportunities for community members to participate and share their development ideas and dreams. A total of 18 meetings shall be conducted throughout the planning process. Although the CLUP Committee and PAIKI strive to remain flexible, this Community Participation Plan recommends nine CLUP Committee meetings, four Chapter meetings, and five community meetings. Each meeting is designed to answer one of three questions about the Chapter. These three questions are:

- **Where are we today?**

The CLUP Committee and community members will participate in activities that are designed to identify the current resources, trends, and issues related to community development and land use within Aneth. These meetings will take place between April 2002 and August 2002. Also during this time period, PAIKI will complete the Community Assessment and the Land Suitability Analysis to provide an inventory of resources and identify community issues.

- **Where are we going?**

Community members will be asked to provide their vision for the community's future. In other words, Chapter members will be encouraged to look into the future and describe their ideal community. These visioning activities will take place between September 2002 and November 2002. Also during this time, PAIKI will work closely with the CLUP Committee to complete the Land Use Plan and the Infrastructure Analysis. The maps and information within these elements will further define how land use and development within the Chapter is being influenced, and where future development can be implemented.

- **How do we get there?**

These meetings will encourage community members to discuss an implementation strategy for the Plan. Specifically, community development

projects should be identified and their development prioritized. The Comprehensive Report will follow with implementation strategies. PAIKI will present the Comprehensive Report, with the assistance of the CLUP Committee, to members of the Aneth Chapter at a public Chapter meeting.

The Proposed Meeting Schedule, presented in Appendix 2, outlines the three planning questions, the element of the plan that each meeting will address, the month that the meeting shall take place, the activities involved, the objectives for the activity and the participants who will be invited.

3.2 Community Benefits of Land Use Planning

The root of land use planning is decision making. During the planning process, community leaders are asked to make decisions about a wide variety of development issues and the factors that influence development. Some of the issues that confront Navajo communities include unemployment, poverty, social and health problems, litter and illegal dumping, natural and cultural resource protection, and the lack of Chapter control over local development decisions. While each Chapter must address its own specific issues and priorities, land use planning assists in defining these issues and establishing priorities for resolving them.

Additional benefits to land use planning include the following:

- A consensus regarding land use and development issues. Involving more people in developing a land use plan provides the opportunity to gather important information which can be used to determine the needs, opportunities, goals, and limitations to development. Consensus also ensures that that the plan is less likely to be sabotaged during the implementation phases.
- An accurate inventory of existing natural resources. Maps will illustrate developable land, environmental issues, the location of existing infrastructure, the extent of non-Indian control over reservation land, grazing boundaries, and a variety of other data relevant to the developing the community.
- The ability to identify an appropriate use of presently vacant or undeveloped land in order to meet the future needs of the community.
- A better understanding of the impacts of land use decisions, including traffic impacts, erosion, privacy, compatible land uses, and many others.
- Criteria for evaluating development proposals.
- A sense of community that is articulated in a vision statement, and community goals and objectives for developing (or preserving) the community.

An important benefit of land use planning is that it provides a means for land and financial resources to be used in an orderly and efficient manner. Land resources are used more efficiently because each land use is designated after considering the location and supply of natural resources, existing infrastructure, potential impacts on surrounding land uses, and future needs of the community. Financial resources are used more efficiently because development is encouraged in areas that are cost effective, and infrastructure is adequately sized and suitably located.

A benefit that Navajo Chapters will gain from completing a land use plan is that Chapters will be one step closer to receiving certification under the LGA.

3.3 Individual Benefits of Land Use Planning

It is clear that there are many broad benefits for communities that prepare land use plans. Additionally, there are many benefits to individuals who participate in land use planning activities. These are:

- The opportunity to learn about planning, land use, and community development issues;
- A sense of personal accomplishment and ownership in the plan;
- An opportunity to discuss and debate important issues confronting the community;
- A vehicle to build trust and mutual respect among community members.

3.4 Planning Approach

The Aneth Chapter is using a collaborative approach to develop a land use plan. This approach asks community members to work together to identify common issues, collect facts, share their vision for the future, and seek reasonable solutions to complex problems. Community members are asked to participate in all phases of the plan and thereby regularly attend meetings, inform others of the plan, consider the ideas and opinions of other participants, and share the responsibility of implementing the plan.

A collaborative approach is most suitable for the Aneth Chapter because:

- Land use issues are complex and affect many people;
- Many people are interested in and will be affected by the plan;
- No single agency or authority has complete control over the process or the content of the plan;
- The issues are negotiable (there is more than one answer to the complex questions raised in the process);
- Community support is vital for implementing the plan.

The remaining sections of this Community Participation Plan will identify potential stakeholders and identify different activities that can be conducted throughout the planning process. Also included are recommendations for including community members in the process through media resources, and a proposed meeting schedule for conducting community participation activities.

3.5 Potential Stakeholders

It is very important to the success of the plan that all members of the community have the opportunity to participate in its development. All stakeholders in the community should be involved, thereby increasing the quality of the plan and a general understanding of the complexity of land use issues. Some of the stakeholders include the following:

- Spiritual representatives;
- Bureau of Indian Affairs staff;
- Federal and tribal agency staff;
- Grazing Official;
- Law Enforcement;
- Health care providers;
- Regional Business Development Office;
- Teachers and students;
- Farmers and ranchers;
- Elders and children;
- Chapter officials;
- Council delegates;
- The business community;
- Community organizations.

Important stakeholders in the Plan are also those individuals who are unaware of it. The CLUP Committee and PAIKI must search for every opportunity to inform community members about the plan and provide an environment where all stakeholders can participate.

3.6 Participation Activities

There are many activities that can be conducted throughout the planning process to increase community participation. Collaborative planning requires positive interaction and communication between stakeholders. Therefore, the types of activities recommended for Aneth are those that encourage community members to work together, share their perspectives, and

reach a common understanding of issues, facts, and alternatives. Some appropriate community participation activities include the following:

- Facilitated community meetings. Sometimes called "Town Halls," community forums, or public workshops, these meetings are designed to encourage political leaders and community members to exchange ideas and issues in an open forum.
- Focus group meetings. These are designed to invite different stakeholder into the process to discuss common issues and perspectives.
- Field trips such as driving to areas within the Chapter to evaluate the landscape and discuss issues related to existing and future land use.
- Visioning activities. These are similar to facilitated community meetings and focus group meetings. However, the primary focus is to ask participants about their vision for the future of their community. The discussions at a visioning activity could evolve around particular questions, such as:
  - *How would you convince a relative to move to Aneth if they have never been there?*
  - *If you could return to Aneth in another 100 years, what would you like to see?*
  - *What kind of community do you want your children to grow up in?*
- Community mapping activities. Community members are asked to draw images, maps, or other graphics that represent the community.
- Public Hearings. A public hearing is limited to a one-way flow of information from citizens to the hearing officials. These are similar to, but more formal than, facilitated community meetings and community members provide comments on someone else's ideas. The main purpose of a public hearing is for elected leaders to reach a decision.

3.7 Media Outreach

The media is an important tool that will be used to inform the community about the proposed dates, times, and locations of public participation activities and meetings. Radio broadcasts, written announcements, and invitations during community meetings and events will be used. Schools, the Chapter House and other popular areas within the community will be targeted as locations to advertise the activities.

3.8 Proposed Meeting Schedule

Several CLUP Committee meetings and community participation activities will be necessary to develop the plan. This Community Participation Plan includes a combination of meetings and presentations to educate the Aneth community about the plan, encourage community participation, and provide opportunities to present preliminary findings and recommendations to the community. Once the final plan is complete, the document will be presented to the Chapter at a public meeting, during which community approval will also be requested.

A chart of proposed meetings and community participation activities is presented in Appendix 2.

4. Community Assessment Phase 2

The Community Assessment provides critical information on three elements. It identifies the vision of Aneth community members for local land use planning and development, it assesses social characteristics and economic conditions of the Aneth community, and it provides an inventory of existing and proposed development for selected areas within the Chapter.

The Community Assessment also identifies and describes several land use issues that affect current land use patterns and which are likely to impact the potential for future development.

Unless noted, Census 2000 was used to collect data on per capita income, median age, employment, population, and education. This information is used to determine social and economic conditions within the Chapter and estimate future needs for residences, commercial and industrial facilities, and community and public facilities.

To facilitate ease of analysis, the Chapter was divided into six Development Planning Areas: Cajon Mesa, McCracken Mesa, Diwoozhibikooh, Ismay, and the communities of Aneth and Montezuma Creek.

Land Status Maps for each area illustrate the current land use, existing and proposed land withdrawals, range management areas, agricultural permit areas, and selected natural features that will guide future development of the Chapter.

4.1 Demographics

i. Population

Census 2000 counted 2,139 residents of the Aneth Chapter. Of this figure, 98 percent are Indian/Alaska Native.

Twenty six percent of the Chapter population lives in the community of Aneth, which has a population of 563. The second largest community is Montezuma Creek, which has a total population of 524. All of these individuals are Native American/ Alaska Native.

To establish population projections for the Aneth Chapter, growth rates for several populations were used: Aneth Chapter, the Navajo Nation, San Juan County, and registered voters in Aneth. The average annual growth rate of these populations was applied to the 2000 Aneth population to estimate the population in 2020. The average annual growth rate between 1990 and 2000 for the Chapter was 0.1 percent, 1.84 percent for the Navajo Nation, and 1.42 percent for San Juan County. Voter registration grew by an average of 5.2 percent between 1997 and 2002. The average of these annual growth rates is 2.14, which was applied to the 2000 Aneth population to establish the projected populations in 2010 and 2020. This data is presented in Table 1.

Table 1: Population and Projections

Decade	Population
1980[2]	1,641
1990	2,040
2000	2,139
2010	2,185
2020	2,232

The population of Aneth is young, with 47 percent below the age of 19. As this high percentage of youth grows older they will require education, housing, health care, employment, and other community services. However, the low level of employment opportunities and housing within the Chapter could reduce the impacts of this maturing age group as they seek housing and employment in surrounding urban areas such as Blanding, Cortez, Farmington, and Durango. In the absence of aggressive economic development or housing programs, the Chapter can expect many youth to move away from Aneth as they get older.

Table 2 presents the distribution of the total population according to age groups[3].

[2] *Community Profile of the Aneth Chapter*. Date unknown.
[3] Based on a total population of 2,219 from Census 2000 Tract 9420, Block Group 1.

Table 2: Percent of Total Population by Age Group

Age	People	Percent
Under 5	244	11 %
5 to 9	306	14 %
10 to 14	286	13 %
15 to 19	209	9 %
20 to 24	125	6 %
25 to 29	161	7 %
30 to 34	158	7 %
35 to 39	149	7 %
40 to 44	133	6 %
45 to 49	92	4 %
50 to 54	87	4 %
55 to 59	80	4 %
60 to 64	55	2 %
65 to 69	47	2 %
70 to 74	38	2 %
75 to 79	21	1 %
80 to 84	13	1 %
85 and over	15	1 %

Although only 21 percent of Chapter residents are between the ages of 35 and 54, these individuals will be retiring within the next one or two decades and will require health care, transportation, and a wide variety of community services. Consequently, the Comprehensive Land Use Plan should identify locations for future health care and transportation facilities, and establish programs for the elderly.

ii. Income

Income statistics for Aneth residents indicate that per capita, household, and family income levels are low, while the poverty rate is high.

The average income per capita is $6,120 for all Chapter residents, while residents of the communities of Aneth and Montezuma Creek have an average annual income of $10,556 and $6,920 respectively. Chapter residents earn significantly less than the average per capita income of the State of Utah, which is $18,185. Aneth Chapter residents earn slightly less than the average per capita income of the Navajo Reservation, which is $7,578.

The average annual household income for the Aneth Chapter is $12,721. This is lower than that of the communities of Montezuma Creek and Aneth, which are $29,375 and $17,292 respectively. The average annual household income for the Aneth Chapter is also significantly lower than that of Utah at $45,726, San Juan County at $26,723 (in 1997), and the Navajo Nation at $21,136.

Data presented in Table 3 shows that 68 percent of Aneth Chapter families earn an income of less than $25,000; and 36 percent earn less than $10,000 a year. Comparatively, 20 percent of Montezuma Creek households earn an income of less than $10,000 a year.

Table 3: Annual Family Income for the Aneth Chapter

Annual Income	Number of Families	Percent
less than $10,000	158	36
$10,000 to $14,999	68	16
$15,000 to $19,999	45	10
$20,000 to $24,999	25	6
$25,000 to $29,999	23	5
$30,000 to $34,999	18	4
$35,000 to $39,999	21	5
$40,000 to $44,999	33	8
$45,000 to $49,999	5	1
$50,000 to $59,999	7	2
$60,000 to $74,999	15	3
$75,000 to $99,000	11	3
$100,000 to $124,999	0	0
$125,000 to $149,000	0	0
$150,000 to $199,999	0	0
$200,000 or more	8	2
TOTAL	437	100

Thirty six percent of all households in the Aneth Chapter live without a wage or salary income. Approximately 14 percent of all households receive public assistance while 16 percent receive income from unidentified sources. Table 4 illustrates that the poverty statistics for Chapter residents are bleak.

Age	Number Living Below Poverty	Number Living at or Above Poverty	Percent Living Below Poverty
Under 5	178	86	67
Age 5	15	19	44
6 to 11	218	127	63
12 to 17	147	133	53
18 to 64	616	484	56
65 to 74	64	16	80
75 and over	27	9	75

Table 4: Poverty Levels

As a percentage of the total population, those over age 65 have the highest poverty rates. Additionally, 67 percent of children under age 5 live in poverty. These figures are more than double the 1997 poverty statistics for San Juan County, 30 percent of all county residents and 32 percent of children living below the poverty level.

iii. Employment

The Chapter has an unemployment rate of 32 percent, with a higher unemployment rate for females, at 35 percent, than that of males, at 29 percent. The Chapter unemployment rate is greater than that of Utah at 3.4 percent, San Juan County at 8.0 percent, and the Navajo Nation at 25.2 percent. However, the Chapter unemployment rate does not take into account the 64.5 percent of Chapter residents who are over the age of 16 who do not participate in the labor force.

iv. Education

Men and women living within the Chapter have low education attainment. Of the females over the age of 25, 16 percent have no schooling. Of the males in this same age group, only four percent have no schooling. However, the difference in education attainment evens out for individuals over 25 who have graduated from high school or beyond (including equivalency), with females at 47 percent and males at 48 percent. These high school graduation rates are well below those of Utah at 87.7 percent, San Juan County at 69.6 percent, and the Navajo Nation at 56.3 percent.

School enrollment for the Aneth Chapter is presented in Table 5.

Table 5: Type of School Enrollment

Type of School	Number Enrolled
Nursery or Preschool	62
Kindergarten	31
Grades 1 to 8	466
Grades 9 to 12	245
College	74
Professional Degree	5
Total	883

v. Housing

Most Chapter residents live in the communities of Aneth and Montezuma Creek. Other residents live in scattered home sites or clustered housing throughout the Chapter. There are 663 housing units in the Chapter with an average household size of 3.91. Of the total housing units, 143 (21.5 percent) are vacant. There are 186 housing units in Aneth, 40 of which are vacant. Montezuma Creek has 163 housing units and a vacancy rate of 29 percent. Housing occupancy rates for the Chapter are illustrated in Chart 1.

Chart 1: Housing Occupancy

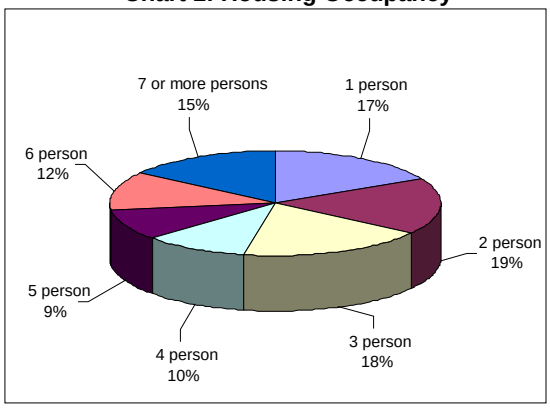


Chart 1 illustrates that 15 percent of all households have 7 or more persons. Additional housing statistics reveal a housing stock that is in need of rehabilitation or replacement, such as:

- 43 percent lack complete plumbing facilities;
- 32 percent lack complete kitchen facilities;
- 43 percent of households use wood for heating fuel;
- The median value of all owner occupied housing units was $12,600;
- 30 percent of households in Montezuma Creek have seven or more occupants.

4.2 Land Use and Development Issues

Land ownership within the Chapter consists of several private and public land owners including the Navajo Nation, individual Navajo allotments, the state of Utah, private non-Indian owners, mining claims, and the United States government (Bureau of Land Management and National Parks Service). Lands ownership is identified on the Land Status Map.

The Chapter has been struggling to resolve many issues that limit its development potential, including the availability of affordable housing, inadequate infrastructure and utility services, environmental impacts of the petroleum industry, range management issues, economic development, access to community services, and land conservation. During community meetings, Chapter members expressed specific development needs:

- Housing;
- Community services such as law enforcement, emergency services, and day care.
- Public facilities such as a community center, and youth recreation center.
- Business services such as a motel and a pawn shop.
- Water resources development.
- Improvement of the land withdrawal process.
- Infrastructure and utility improvements.

Some of these and other land use and development issues are described below in further detail.

i. Housing

Population projections estimate an additional 93 residents by 2020. Using the present average household size of 3.91, this indicates an estimated demand for 24 new housing units. According to Chapter representatives, there is also an existing need for 250-300 housing units. For purposes of this planning document, the demand for additional housing is assumed to be 300 units, which accounts for the existing demand as well as future needs based on population growth.

Although housing statistics reveal a high percentage of residents living in crowded housing, there is also a very high housing vacancy rate. The Chapter has established housing as a top priority for future development, and during a community meeting held on October 23, 2002, many residents expressed the need for additional housing. Specifically, community residents desire the following:

- Residences for the elderly;
- More scattered housing;
- Utility services to remote residences;
- Back up system for drinking water;
- Road improvements to residents;
- Housing renovations.

ii. Petroleum Industry

The Aneth oil field is one of the largest in the lower forty eight states[4]. The Chapter has an extensive coverage of oil wells, distribution and collection lines, and access roads. Oil and gas enterprises within the Chapter include Chevron/Texaco, Exxon/Mobil, RIM Southwest, Navajo Petroleum, and ISMAY (Crystal Energy).

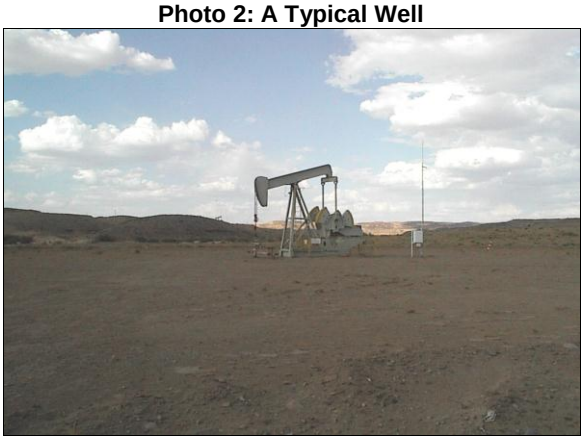
The oil and gas industry has drawn attention from environmentalists concerned with the industry's impacts to air and water quality, range land, wildlife habitat, and archeological resources. For example, the Cajon Canyon Group of the Hovenweep

[4] *Montezuma Creek Commercial Center Feasibility Study*. David N. Sloan & Associates. September 1999. p. 1.

National Monument is threatened by the Aneth oil fields. In one incident in 1991, a valve malfunctioned and 4,000-5,000 gallons of oil flowed onto Cajon Mesa. The National Park Service is monitoring the plant and animal communities at the site[5]. Surface disturbance from access roads is also an environmental concern.

However, the oil and gas industry provides huge benefits to the Navajo Nation. "In fiscal year 1998, oil and gas revenues for the Navajo Nation were approximately $17 million and contributed 20 percent to the Navajo Nation's General Revenue[6]." Unfortunately, revenues have declined about 40 percent since 1996.

Photo 2: A Typical Well



iii. Range Management

Perhaps the greatest threat to grazing and agriculture is the drought that has devastated range land throughout the Navajo Reservation. In response to the drought, Chapter members have expressed an interest in a grazing rotation program to protect forage, increase the productivity of range land, and provide for livestock health.

iv. Economic Development

With an overall unemployment rate of 32 percent, it is clear that economic development is needed to provide employment and income to Chapter residents. A community-wide survey, conducted between April and May 1999, was completed as part of the Montezuma Creek Commercial Center Feasibility Study. Survey responses clearly indicate the following types of business development projects and services desired by Chapter residents:

- Grocery store;
- Department store;
- Clothing store;
- Car wash;
- Laundromat;
- Fast food restaurant;
- Auto repair shop;
- Consignment store/flea market;
- Restaurant;
- Gas station;
- Hardware store;
- Feed store.

During a community meeting held on October 23, 2002, many residents expressed the need for additional commercial development projects not identified in the 1999 survey. They include:

- Optometrist;
- Tourist campground;
- Pharmacy;
- Local Utah Power and Light office;
- Bank.

Without these and other goods and services, the estimated economic leakage to border towns is between 75 and 80 percent[7].

v. Community Services

The Utah Navajo Trust Fund provides a variety of community services to Chapter residents and other Navajo residents of Utah. These services include higher education scholarships, the San Juan Endowment Fund (education scholarships),

[5] National Park Service. Hovenweep National Monument information pamphlet. Date unknown.

[6] *Water Resource Development Strategy for the Navajo Nation*. The Navajo Nation Department of Water Resources. July, 17. 2000. p. 38.

[7] *Montezuma Creek Commercial Center Feasibility Study*. David N. Sloan & Associates. September 1999. p. 22.

college work study programs, vocational-technical support programs, student enrichment programs, and the outstanding senior award program. Several other programs are administered at the Chapter level and include housing, water development, power/electrical wiring, and an equipment purchase and repair program. Special projects sponsored by the Utah Navajo Trust Fund include the Dineh Committee Contingency Fund, economic development, and business investments for small business start-ups.

Additional community services are available in nearby communities. The Shiprock District of the Navajo Nation Police Department provides police services from Shiprock, New Mexico. Medical services are available at the San Juan Hospital in Monticello and the Northern Navajo Medical Center in Shiprock. The Tec Nos Pos Chapter also offers medical services at the Tec Nos Pos Health Center. Other medical clinics are located in Cortez, CO and Blanding, UT[8].

Many of the elderly are moving away from the Reservation to urban areas. Consequently, these elderly are living without the support of their families and younger generations are growing up without the benefit of cultural education. In response to this trend, the Chapter is entertaining a proposal for a multi-purpose elderly facility that provides inter-generational education and recreation programs. The facility is planned to include cultural education, farming, and art activities. Health care services provided at the facility are anticipated to include home health care, assisted living, physical therapy, and a 50-bed nursing home. The Chapter is considering a feasibility study to identify the potential demand, location, and cost for this facility.

Respondents to the Montezuma Creek Commercial Center Feasibility Study survey expressed a need for a day care facility and gymnasium. During a community meeting held on October 23, 2002, many residents expressed the need for additional community services and public facilities, such as:

- Community college;
- Public library;
- Waste transfer station;
- Animal control and veterinarian office;
- New Chapter house;
- Mortuary and cemetery;
- Job training center.

vi. Land Conservation

A portion of the San Juan River basin lies within the Aneth Chapter, and several ephemeral washes feed into the San Juan River. Chapter members have expressed the need to protect these natural resources from inappropriate development. In particular, locations with historic, scenic, environmental or recreational value should be protected under an open space or conservation land use, which would allow limited development activity. The Chapter is interested in taking appropriate measures to protect culturally significant sites. Potential sites with cultural significant include:

- Ceremonial spaces;
- Offering areas;
- Herb gathering areas;
- Sweat lodges;
- Burial sites;
- Mission buildings;
- Anasazi sites.

Photo 3: Cajon Canyon Group of Hovenweep National Monument

[8] *Community Profile of the Aneth Chapter*. Date unknown.

The Cajon Canyon Group of the Hovenweep National Monument is located within the Chapter and is open to the public. This site is a hamlet of Pueblos that were inhabited during the Pueblo III period (A.D. 1100-1300). The ruins are situated at the southern end of Cajon Mesa at the head of Allen Canyon.

4.3 Land Status Maps

The Land Status Maps illustrate current land use, existing and proposed land withdrawals, and other political, historical, and natural features that will guide future development of the Chapter. Land Status Maps are provided for the Chapter as a whole, and for each of the six development planning areas. Below is an outline and description of the existing and proposed development within each area.

i. Aneth

A considerable number of community services and public facilities are located in the community of Aneth. Education institutions include Aneth Elementary School (a BIA boarding school), and a head start facility. A post office is located in the Red Mesa Express convenience store. Other facilities include the Chapter House, Utah Navajo Commission, Navajo Nation Land Administration, the Regional Business Development Office (RBDO), and the Women, Infants, and Children (WIC) program.

Religious institutions include the Navajo Bible Church and the House of Prayer.

Recreational facilities include a ball field located north east of the Aneth subdivision.

The Chapter rents heavy equipment to Chapter residents, and the equipment is stored to the immediate south of the Chapter Administration office.

The Chapter is interested in developing a new Chapter house located at the same site as the existing structure. However, no specific plans have been developed. A new Head Start facility is also being considered.

Existing housing includes two subdivisions and employee housing for employees at the boarding school. Seven new homes are currently being constructed north of the Aneth subdivision, which lies on north side of Highway 262 and east of County Road 402. Other ongoing housing projects include:

- East Aneth bathroom addition (47 units);
- Phase III of an IHS water line extension project in Rockwell Flats, which is located southeast of Aneth.

The small subdivision immediately north of the boarding school is being demolished and the Chapter has not identified a future use for this location.

The Chapter is interested in developing a multi-purpose community center with recreation amenities that include a park, ball field and a sand volleyball court. A location has not yet been identified. A site under consideration is immediately north of the Aneth subdivision on the north side of Highway 262.

Commercial enterprises in the vicinity of Aneth include the Red Mesa Express convenience store and gas station, the central facility of the Aneth Unit of Chevron/Texaco, and the Rockwell Flat Farm.

A small cemetery is located north of Highway 262 and east of the Aneth Chapter House.

Open grazing styled cattle ranching takes place throughout the Aneth vicinity.

ii. Montezuma Creek

Residential development within Montezuma Creek includes a trailer park, housing for employees of White Horse High School, two subdivisions, and several scattered home sites.

Commercial enterprises include the following:

- Texaco gas station;
- Red Mesa Express;
- Jean's Café;

- Tire shop in the old Benco Foods building;
- Construction contractors:
  - Landsing,
  - Maryboy,
  - Whitehorse.

The sewing factory located on the northeast corner of the intersection of Highways 262 and 163 is vacant. However, the Chapter hopes to find a tenant in the near future. The Chapter is also planning to develop of a truck stop, a 12,000 square foot shopping center, a grocery store, car wash, and Laundromat. These projects are planned to be located at the northwest corner of the intersection of Highways 262 and 163.

The Aneth Unit of Exxon/Mobil is located north of Montezuma Creek, and Navajo Petroleum owns and operates pipelines at the Questar Petroleum facility.

Montezuma Creek is also the home to several community services and public facilities, which include:

- Montezuma Creek Community Health Center;
- Montezuma Creek swimming pool;
- White Horse High School, with football and base ball fields;
- United States Post Office;
- Montezuma Creek Elementary School, with a school bus maintenance facility;
- Fire and EMT facility;
- Navajo Nation Office of Workforce Development.

Religious institutions include the LDS Church, Cavalry Baptist Church, and Church of Christ, all of which are located along Highway 262.

An abandoned air strip is located on the southwest corner of the intersection of Highways 262 and 163.

Irrigated agriculture is limited to an area along the banks of the San Juan River. However, Chapter residents have expressed an interest in expanding irrigated agriculture.

Open grazing styled cattle ranching takes place throughout the Montezuma Creek vicinity.

iii. Cajon Mesa

Residential development in Cajon Mesa consists of scattered single housing units, and small clusters of housing which are generally occupied by members of an extended family group.

The most significant archaeological resource in the area is the Cajon Canyon Group of Hovenweep National Monument.

The only commercial development is the northern portions of the Exxon/Mobil Unit, which stretched into the southern portions of the Cajon Mesa area.

Open grazing styled cattle ranching takes place throughout Cajon Mesa.

iv. McCracken Mesa

Land ownership on McCracken Mesa includes Navajo allotments, private interests, and state land.

Residential development consists entirely of scattered single housing units and small clusters of housing. Recently completed housing improvement projects include the McCracken Mesa bathroom addition (25 units) and an IHS water line project.

Residents of the McCracken Mesa area are interested in developing a 20-acre subdivision on the southwest corner of the intersection of County Road 414 and Highway 262.

Open grazing styled cattle ranching takes place throughout McCracken Mesa.

v. Diwoozhibikooh

Land ownership in the Diwoozhibikooh vicinity is characterized by fragmented tribal land, mining claims, tribal allotments, and private land owners.

As with the other rural areas of the Aneth Chapter, residents live in scattered single housing units, and small clusters of housing.

Commercial development includes the Hatch Trading Post which is located at the intersection of County Roads 401 and 414. An auto repair shop is located immediately north of Diwoozhibikooh. The owner is planning to develop a gas station at the same location.

The only religious institution in the area is the Full Gospel Church of the United Methodist Church, which is located on County Road 401.

Open grazing styled cattle ranching takes place throughout the Diwoozhibikooh area.

vi. Ismay

Residential development in the Ismay area is characterized by scattered single housing units and small clusters of housing.

The closest commercial enterprise is the Ismay Trading Post which is located just outside the Reservation boundary on County Road 402. Oil wells and drill holes associated with the Ismay Oil Field are scattered across the landscape.

The only customary use area within the Chapter is located in the Ismay area. Cattle ranching practiced outside the customary use area takes place as open grazing.

5. Land Suitability Analysis Phase 3

The Land Suitability Analysis identifies areas that are physically suitable for development. Analysis of the Chapter as a whole, and the six development planning areas includes an inventory and analysis of natural and cultural resources that affect land use decisions within the Chapter: water resources, soils, slopes and topography, vegetation and wildlife, culturally significant areas, traditionally sensitive areas, environmentally sensitive areas, and accessibility.

Land Suitability Maps illustrate the overall development potential of the Chapter as well as the seven development planning areas. Topographic quadrangle maps produced by the United States Geological Survey (USGS) are used to illustrate topography and slopes. *Note: The Aneth CLUP Committee requested that specific sites with cultural significance or archeological not be mapped in order to protect the privacy of Navajo cultural resources.*

5.1 Water Resources

Water resources of the Navajo Nation include rivers, washes, and aquifers.

Water issues are managed by the Water Management Branch of the Department of Water Resources which is under the Division of Natural Resources.

All water resources within the Navajo Nation are under the jurisdiction of the Navajo Nation Water Code and are subject to the water management practices of the Navajo Nation. The Navajo Nation has enacted the Navajo Nation Clean Water Act, Water Quality Standards, and the Discharge Elimination System to protect the quality of water resources on the reservation. The Navajo Water Code prohibits any development within a half mile of a well or windmill.

Aneth is located in the San Juan River Basin. The San Juan River is a tributary of the Colorado River.

"The average undepleted flow of the San Juan River below Shiprock, New Mexico is approximately 1.7 million acre-feet per year and the average gage flow is approximately 1.3 million acre-feet.[9]"

Water rights of the San Juan have not been quantified. "By any standard, the Navajo Nation retains the paramount, but not yet fully quantified water right in the San Juan River. This unquantified right has cast a cloud over Indian and non-Indian development in the basin.[9]"

Three aquifers provide water for wells and springs throughout the Navajo Reservation: the Coconino (C), Navajo (N), and Dakota (D) aquifers. They are all composed of permeable sedimentary rock (mainly sandstone) and the quality of water within each aquifer varies greatly within their structures. In the deeper portions of the groundwater basins, water is generally too saline for consumption by humans or livestock. The highest quality water is generally found in the N-aquifer.

Water resources for the Aneth Chapter are presented on the Water Resources Map.

5.2 Soils

The soil data illustrated in the Soils Maps was developed as part of a reservation-wide study of soil conditions and water resources conducted by Morrison Maierle, Inc. in February 1981. Soil Map 1 and Soil Map 2 identify the soil units for the entire Chapter. Map 1 depicts soil classifications by climate code, which includes average annual precipitation, elevation, and vegetation type. Map 2 depicts soil classifications by slope group and erosion class. The soils data depicted in Maps 1 and 2 are described below.

[9] *Avoiding a Train Wreck in the San Juan River Basin*. John W. Leeper. Navajo Nation Department of Water Resources. Date unknown.

i. Soils 1 Map

The number and letters before the dash (-) represent the physical profile units and parent material codes for the soil. The number after the dash (-) represents the climate zone code. While only the climate zone data is described below, the physical profile and parent material codes can be found in the Morrison Maierle study.

11Q-1

- Receives between five and eight inches of precipitation per year;
- Found at elevations of less than 5,000 feet;
- Vegetation includes semi-desert grasslands.

11Q-2

- Receives between eight and 12 inches of precipitation per year;
- Found at elevations between 5,500 and 6,400 feet;
- Vegetation includes mixed grasslands.

46EM-2

- Receives between eight and 12 inches of precipitation per year;
- Found at elevations between 5,500 and 6,400 feet;
- Vegetation includes mixed grasslands.

50SAX-1

- Receives between five and eight inches of precipitation per year;
- Found at elevations of less than 5,000 feet;
- Vegetation includes semi-desert grasslands.

5SAX-1

- Receives between five and eight inches of precipitation per year;
- Found at elevations of less than 5,000 feet;
- Vegetation includes semi-desert grasslands.

6FM-1

- Receives between five and eight inches of precipitation per year;
- Found at elevations of less than 5,000 feet;
- Vegetation includes semi-desert grasslands.

6FM-2

- Receives between eight and 12 inches of precipitation per year;
- Found at elevations between 5,500 and 6,400 feet;
- Vegetation includes mixed grasslands.

ii. Soils 2 Map

The first two characters before the dash (-) represent the slope group class. The number after the dash (-) represents the erosion class.

AC-2

- Slopes between zero and five percent;
- Moderate erosion class.

AC-4

- Slopes between zero and five percent;
- Gullied erosion class.

BD-2

- Slopes between one and eight percent;
- Moderate erosion class.

BE-3

- Slopes between one and 12 percent;
- Severe erosion class.

FH-2

- Slopes between 12 and 55 percent;
- Moderate erosion class.

FH-7

- Slopes between 12 and 55+ percent;
- Undifferentiated erosion class.

The soil unit classifications are also depicted on maps for each of the six development planning areas.

5.3 Slopes and Topography

Topography ranges between 4,500 feet in the valley floor to approximately 5,400 on the mesa-tops.

As stated above, each soil unit is coded according to a slope group class, which is presented in the Soils 2 Map. This Land Suitability Analysis also includes a USGS topographic map of each planning area. The USGS topographic maps include either 20 or 40 foot topographic contour intervals.

5.4 Vegetation and Wildlife

Several federal laws are designed to protect vegetation and wildlife resources within the Navajo Reservation. These laws include the National Environmental Policy Act, the Endangered Species Act, the Eagle Protection Act, and the Migratory Bird Treaty Act.

Vegetation and wildlife resources are also protected by the Navajo Nation Department of Fish and Wildlife which is within the Division of Natural Resources. The Resources Committee has oversight responsibility of the Department. Accordingly, the Resources Committee developed *Biological Resources Land Clearance Policies and Procedures*. The purpose of these Policies and Procedures is to ensure compliance with federal and Navajo Nation laws which protect plant and animal species and their habitat. The Policies and Procedures include maps that designate six Wildlife Areas across the Navajo Reservation. Various restrictions apply to each area with regard to development activity and the protection of biological resources. The Wildlife Area Map included in this plan presents the Wildlife Areas within the Aneth Chapter.

The Policies and Procedures also determine if a development project will require a Biological Evaluation. According to the Policies and Procedures, a Biological Evaluation:

- Documents impacts that a proposed project may have on biological resources;
- Must consider direct, indirect, short-term, long-term, and cumulative impacts from actions that are dependent on, or are clearly related to the proposed development;
- Must have Department concurrence that the evaluation of the impacts to wildlife resources is accurate;
- Contains accurate information about the location of development, including but not limited to legal description, distance to landmark, and a 7.5' USGS topographic quadrangle map.

Additional information regarding a Biological Evaluation is available from the Navajo Nation Department of Fish and Wildlife and should be consulted prior to any development.

Each of the six Wildlife Areas are outlined and described below. Development criteria for each Area are available in the Policies and Procedures and can be obtained at the Department of Fish and Wildlife.

Area 1: Highly Sensitive Area

This area contains habitat for endangered and rare plant, animal, and game species, and contains the highest concentration of these species on the reservation. The purpose of this Area is to protect these valuable and sensitive biological resources to the maximum extent possible.

Little or no development is recommended. A Biological Evaluation must be performed for any proposed development in this Area.

Area 2: Moderately Sensitive Area

Buffering and location restrictions are placed on development in this Area due to the high concentration of rare, endangered, sensitive, and game species.

A Biological Evaluation must be performed for any proposed development in this Area.

Area 3: Low Sensitive Area

The fewest restrictions are placed on development due to the low and fragmented concentration of species.

Small scale development to serve the private needs of individuals, such as home site development and utility lines can proceed without a Biological Evaluation. All other development requires a Biological Evaluation.

Area 4: Community Development

This Area refers to developed communities that do not support sensitive habitat.

A Biological Evaluation is only required if the proposed development could have significant impacts outside of the community or if a certain species is known to exist in the community.

Area 5: Biological Preserve

These Areas contain excellent, or potentially excellent, wildlife habitat and are recommended by the Department for protection from most human-related activities, and in some cases recommended for enhancement. The Department may designate additional Biological Preserve Areas in the future; however, only a few currently exist.

Any development within this Area must be compatible with the purpose of the management plan for the Area, if available.

Area 6: Recreational

These Areas are used for recreation and include fishing lakes, camping and picnicking areas, and hiking trails.

The San Juan River is home to two endangered species: the Colorado Squawfish and the Razorback Sucker. According to the U.S. Fish and Wildlife Service, several physical changes to the San Juan River have eliminated these species from the upper reaches of the river. In particular, construction of the Navajo Dam and several diversion structures have taken a toll on the two species, while exotic fish such as trout, bass, and catfish have also displaced the native fish[9].

The Navajo Nation Department of Fish and Wildlife established a quarter-mile buffer along the San Juan River upstream from Bluff and a half-mile buffer along the river downstream from Bluff. The purpose of the buffer is to protect wildlife habitat. Species of concern upstream from Bluff include the Southwest Willow Flycatcher, Yellow-billed Cuckoo, Northern Leopard Frog, Southwestern River Otter, Mottles Sculpin, Colorado Pikeminnow, Razorback Sucker, Bluehead Sucker, Belted Kingfisher, and wintering Bald eagles.

A half mile buffer downstream from Mexican Hat was established to protect all river species, including desert bighorn sheep and raptors.

The Navajo Nation Department of Fish and Wildlife recommends a program to remove livestock from the San Juan River belt and has requested Chapter support. Additionally, feral burros and horses are abundant in the area and compete with permitted livestock.

No camping is permitted and no dogs are allowed along the San Juan River from Eight-foot Rapids to Soda Basin.

Wildlife Areas 1 and 2 are designated to protect various plant species in the San Juan River area including Perityle specuicola, Carex specuicola, Cirsium rydbergii, Primula specuicola, Phacelia

indecora, Platanthera zothecina, and Asclepias cutleri.

5.5 Cultural Resources

The Navajo Nation and the Aneth Chapter are committed to protecting cultural resources. The Navajo Nation Historic Preservation Department is responsible for the protection, preservation, and management planning for the Navajo Nation's traditional cultural properties.

According to the Navajo Nation Policy to Protect Traditional Cultural Properties, a traditional cultural property is defined as property "that is eligible for inclusion in the National Register because if its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community[10]."

The Navajo Nation maintains a Register of Cultural Properties to protect cultural resources. The Navajo Nation has also adopted several policies and procedures to supplement the numerous Navajo, state, and federal laws that protect cultural resources of the Navajo Nation and other Native American tribes. Many types of material objects and physical places are considered cultural resources, such as sweat lodges, prayer offering sites, burial sites, ceremonial sites, and other landmarks.

As mandated by the National Historic Preservation Act, a cultural resource inventory is required for all proposed development. Furthermore, the policies outlined in the Navajo Nation Policy to Protect Traditional Cultural Resources apply to projects proposed on Tribal, federal and state jurisdictions (public land). The policies also apply to private land with the consent and cooperation of the land owner. In all cases, any proposed development should include consultation with the Navajo Nation Historic Preservation Department to review the applicable policies and procedures to avoid damaging the cultural resources of the Navajo Nation.

Representatives of the Aneth Chapter identified the location and significance of several traditional cultural resources within the Chapter. However, the Navajo Nation Historic Preservation Department does not reveal the locations of sensitive sites due to the potential for vandalism, robbery, and the need to protect privacy. Hence the specific locations are not illustrated on maps.

The Aneth Chapter contains numerous sites where traditional cultural properties are found. The Historic Preservation Department has surveyed and mapped the locations of several sites but the entire Chapter has not been surveyed.

The locations of known cemeteries are identified in the Land Suitability Maps.

5.6 Environmental Resources

Several environmental resources can be found in the Aneth Chapter, the most significant of which is the San Juan River. The river contributes to the aesthetic beauty of the Chapter and provides habitat for wildlife. McElmo Creek and Montezuma Creek are also considered environmental resources worth protecting from inappropriate development.

The greatest environmental threats are associated with the numerous petroleum facilities located throughout the Chapter. In response to the potential environmental and human hazards, the Chapter has expressed an interest in developing an evacuation plan in the event of an oil spill, release of hazardous gases such as Hydrogen Sulphide, or flooding from the San Juan River.

5.7 Accessibility

State Highways 262 and 163 provide access to Aneth, Montezuma Creek, and residential communities in the Chapter. Several County roads traverse the Chapter and provide additional access to the more

[10] Navajo Nation Policy to Protect Traditional Cultural Properties. Navajo Nation Historic Preservation Department. 1991. p.1.

remote communities of Ismay, Cajon Mesa, and Diwoozhibikooh.

5.8 Development Planning Areas

i. Aneth

Aneth is accessible via Highway 262 from the east and west, and County Roads 402 and 407 from the north.

The San Juan River is located immediately south of Aneth, and McElmo Creek flows into the San Juan immediately west of Aneth. Smaller ephemeral washes also cross the community.

The topography of Aneth is characterized by steep-sided mesas to the immediate north of the community, a flat plain adjacent to the San Juan River, and steep slopes adjacent to water courses.

Soil units include 43EM-1 / EG-7 which is found along the San Juan River, 50SAX-1/AC-4 which is mostly found south of Highway 262, 46EM-2 / FH-7 on top of the mesas to the north of the community, and 11Q-2 / BE-3 which is also on the mesa tops at the extreme north of the Aneth area.

A buffer along the San Juan is protected by Wildlife Area 1, where little or no development is recommended. McElmo Creek is protected by Area 2, where fewer restrictions are placed on development, but a high concentration of rare, endangered, sensitive, and game species is likely to be found. The remainder of the Aneth area is located in Wildlife Area 3, where the least amount of restrictions are placed on development due to the low and fragmented concentration of species.

Cultural resources include the Navajo Bible Church, the House of Prayer, and a small cemetery.

Several sites in the Aneth vicinity have potential for future development. However, the primary focus should be adjacent to existing development due to the limitations caused by the topography, the San Juan River floodplain, and existing petroleum facilities.

Infill development is recommended at locations where it will not overburden existing infrastructure and utilities, where road circulation will not be interrupted, and where new development will present minimal impacts to existing development.

ii. Montezuma Creek

Montezuma Creek is accessible via Highway 262 from the east and north, Highway 163 from the west, and N-35 from the south.

The San Juan River is located immediately south of the Montezuma Creek community, and Montezuma Creek flows into the San Juan immediately west of the community. Smaller ephemeral washes also cross the community.

The topography of Montezuma Creek is characterized by steep-sided mesas to the immediate north of the community, a flat plain adjacent to the San Juan River, and mild slopes adjacent to the water courses.

Soil units include 50SAX-1 / AC-4 which is found throughout most of the community, 46EM-2 / FH-7 which is found immediately below and on top of the mesas to the north of the community, and 11Q-1 / BE-3 which is also found immediately adjacent to the San Juan River.

A buffer along the San Juan is protected by Wildlife Area 1, where little or no development is recommended. Montezuma Creek is protected by Area 2, where fewer restrictions are placed on development, but a high concentration of rare, endangered, sensitive, and game species is likely to be found. The remainder of the Montezuma Creek area is located in Wildlife Area 3, where the fewest restrictions are placed on development due to the low and fragmented concentration of species.

Cultural resources include the LDS Church, Cavalry Baptist Church, and the Church of Christ.

The greatest limitations to development in Montezuma Creek include the vast network of oil and gas pipe lines and the floodplains of the San Juan River and Montezuma Creek. The intersection of State Highways 262 and 163 creates potential for future commercial development; however,

there are a number of oil and gas pipeline easements in this area.

Infill development is recommended at locations where it will not overburden existing infrastructure and utilities, where road circulation will not be interrupted, and where new development will present minimal impacts to existing development.

iii. Cajon Mesa

Cajon Mesa is accessible via by County Road 401 from the east and west, County Road 405 from the south, and County Road 413 from the north.

A spring is located adjacent to the Cajon Canyon Group of Hovenweep National Monument.

Soil units include 46EM-2/FH-7 throughout most of the development planning area, and 6FM-2 / BD-2 in the central portion.

The topography is characterized by the flat mesa top of Cajon Mesa, and steep sided canyons to the north and south.

The mesa top of Cajon Mesa is designated as Wildlife Area 3 where the fewest restrictions are placed on development due to the low and fragmented concentration of species.

Cultural resources include a church and the Cajon Canyon Group of Hovenweep National Monument.

Several sites along County Road 401 are suitable for development due to their easy road access, mild topography, minimal impacts to water resources, and location within Wildlife Area 3.

iv. McCracken Mesa

McCracken is accessible via Highway 262 from the south and west, and County Road 414 from the east.

McCracken Wash and other small drainage features cross the mesa top.

Soil units include 46EM-2 / FH-7 and 6FM-2 / BD-2 which are both interspersed throughout the mesa top in the central portion.

The topography is characterized by the flat mesa top of McCracken Mesa, and steep sided canyons to the east and west.

The mesa top of McCracken Mesa is designated as Wildlife Area 3 where the fewest restrictions are placed on development due to the low and fragmented concentration of species.

McCracken Mesa possesses several potential development sites adjacent to State Highway 262 and County Road 414. The development potential of these sites is a result of mild slopes, views of surrounding mountains, and access from Highway 262 and County Road 414. However, the greatest limiting factor to developing these sites will be the cost of expanding infrastructure and utility services.

v. Diwoozhibikooh

Diwoozhibikooh is accessible via County Road 414 from the east and west, and County Road 401 from the south

Alkali Creek joins Montezuma Creek in the middle of the Diwoozhibikooh area. Numerous other small drainages are found throughout the area.

Slopes within the area are generally mild.

The two most prevalent soil units are 46EM-2 / FH-2 and 6FM-2 / BD-2, which are both interspersed throughout the area. There is a small portion of 5SAX-1 / AC-2 in the area of Hatch Trading Post.

The portion of Montezuma Creek south of Diwoozhibikooh is designated as Wildlife Area 2, where fewer restrictions are placed on development, but a high concentration of rare, endangered, sensitive, and game species is likely to be found. The remainder of the area is located in Area 3, which is an area with low impacts on wildlife resources.

Cultural resources include the Full Gospel Church of the United Methodist Church.

The confluence of several washes and the lack of infrastructure make few sites suitable for future development.

vi. Ismay

Ismay is accessible via County Road 413 from the north, County Road 402 from the west and east, and the area is bisected by County Road 401.

McElmo Creek runs through the eastern portion of the area, and several small washes drain the remainder of the area.

Slopes within are generally flat, and are interspersed by steep sided mesas.

There are two soil units within the Ismay area: 46EM-2 / FH-7 and 6FM-3 / BD-2 which are both interspersed throughout the area.

Ismay contains Wildlife Area 3, where the fewest restrictions are placed on development.

Potential development sites in the Ismay vicinity are clustered along the county roads. The abundance of petroleum facilities in this area is the most significant limiting factor to development.

6. Infrastructure Analysis Phase 4

The infrastructure analysis describes the existing infrastructure and utility services within the Aneth Chapter. A chapter-wide summary of utilities is provided, followed by an in-depth inventory of the infrastructure within the seven development planning areas. Maps illustrate the location and type of existing infrastructure and utility services for each development area.

6.1 Utility Service Providers

Several government agencies provide infrastructure and utility services within the Aneth Chapter.

i. Indian Health Service (IHS)

IHS is authorized under P.L. 86-121 to provide essential water supply and storage facilities for communities and homes on the Navajo Reservation. IHS typically does not provide services for commercial or industrial water users[11].

At current funding levels, IHS has a significant backlog of projects.

ii. Navajo Tribal Utility Authority (NTUA)

Created in 1966, the mission of NTUA is to provide its customers with electricity, natural gas, water, wastewater treatment, and related services at competitive prices, while contributing to the economy of the Navajo Nation, consistent with the improvement of the health and welfare of the residents of the Navajo Nation and the employment of Navajo people.

NTUA is managed by a management board with the oversight of the Navajo Nation Economic Development Committee. Utility prices are determined by an operating tariff and are set by the board. Rates are applied reservation-wide without regard to the specific system operation or maintenance costs[11].

NTUA typically assumes ownership and the operations and maintenance responsibilities for IHS water facilities after they have been constructed. NTUA also accepts operation of sewer lagoons constructed by IHS that serve housing developments of 25 or more homes.

NTUA owns, operates, and maintains the electrical, water, wastewater, and gas utilities throughout the Chapter.

iii. Utah Power and Light

Electric service within the Aneth Chapter is provided by Utah Power and Light, which is owned by PacifiCorp. PacifiCorp is one of the lowest-cost electricity producers in the United States and services more than 1.5 million customers. The company merged with ScottishPower in 1999.

iv. Quest Communications

Quest Communications, which claims one of the largest, most technologically advanced networks in the world, provides telephone service to the communities of Aneth and Montezuma Creek. There is no landline telephone service available within the rest of the Aneth Chapter.

v. Bureau of Indian Affairs (BIA)

The BIA provides numerous services to residents of the Navajo Nation, some of which include transportation planning, road and bridge design, and construction.

The Navajo Indian Reservation Roads (IRR) Program is administered by the BIA Navajo Area Branch of Roads as part of the federal government's trust responsibility with the Navajo Nation. Indian Reservation Roads are public roads which provide access to and within Indian reservations, Indian trust land, restricted Indian land, and Alaska native villages. Major IRRs within the Aneth Chapter include State Highways 163 and 262, and County Roads 401, 402, 405, 413, 414.

[11] *Water Resource Development Strategy for the Navajo Nation*. Navajo Department of Water Resources. July 17, 2000. p. 21.

The Navajo IRR Program's primary source of funding is the national Highway Trust Fund, an interest bearing account funded by gas taxes, state assessments, cross-country trucking levies, and other sources. IRR funds are allocated for construction and improvements to IRRs on the Navajo Reservation[12].

Road maintenance is funded separately from IRR construction funds. The source of maintenance funding is the Department of the Interior Appropriations – Tribal Priority Allocations (TPA); however, road maintenance has a low priority under the TPA allocations. "The Navajo IRR maintenance funds have never been adequate and are sufficient for only about one-third of actual maintenance needs"[13]

The Navajo Nation is very active in transportation planning and road improvements on the reservation. The Transportation and Community Development Committee (TCDC) of the Navajo Nation Council has oversight responsibility for all road and transportation matters. The TCDC oversees the coordination of all transportation activities on the reservation and has the final approval of the Transportation Improvement Plan and the long range transportation improvement plan.

The Navajo Department of Transportation oversees road and aviation development projects and is under the supervision of the TCDC. Five Agency Road Committees, whose members are elected at the Chapter level, oversee local road development needs and recommend road construction priorities to the TCDC.

vi. Utah Department of Transportation (UDOT)

UDOT Region 4 manages and maintains a number of state highways and county roads that cross the Navajo Reservation. Region 4 seeks to support the UDOT mission by providing a quality, safe, and efficient transportation system to meet the needs of the large geographical, and culturally diverse areas of Southern Utah.
The Price District Office of Region 4 maintains county roads and shoulders, signing, pavement markings, lighting, and provides snow removal services.

vii. U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers is authorized by Congress to provide flood protection, environmental stewardship, and civil works construction on the reservation.

Although flooding often occurs on the Navajo Reservation, no federally sponsored flood control projects using the authority granted to the U.S. Army Corps have been constructed.

The Navajo Nation Department of Water Resources is 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.

6.2. Infrastructure within the Aneth Chapter

State Highways 262 and 163 cross the Aneth Chapter, as well as a number of county roads. All of these roads are under the jurisdiction of UDOT's Region 4, Price District. County Roads 413, 401, 414, and 402 are paved, and County Roads 493 and 407 are unpaved. The unpaved county roads are maintained between four and five times annually, depending on local moisture. CR 407 was improved in 2002 by widening the road, adding base material and laying gravel for six miles beginning at Highway 262.

There are two water systems within the Aneth Chapter: the Aneth Community Water

[12] *Navajo Nation Long Range Comprehensive Transportation Plan*. Transportation Planning Program of the Navajo Nation Department of Transportation. September, 1998. pp I-1 – I-5.
[13] *Navajo Nation Long Range Comprehensive Transportation Plan*. Transportation Planning Program of the Navajo Nation Department of Transportation. September, 1998. p. I-4.

System and the Montezuma Creek Community Water System. The rural communities of Cajon Mesa, Diwoozhibikooh, McCracken Mesa, and Ismay are all served by the Aneth Community Water System.

The Aneth Community Water System consists of approximately 85 miles of waterline. It serves 415 homes, a school, a store, and the Aneth Chapter House and administrative offices. IHS plans to extend water service to at least 100 additional homes in the next two years. Eighty existing homes were also identified as lacking water and sewer service, and IHS plans to secure funding within the next few years to serve 50 of these homes. The remaining 30 homes are too remote to receive waterline extensions.

With plans to add another 100 homes onto the Aneth CWS within the next two years, there is need for another well. IHS has already secured funds for this well and plans to drill it approximately half a mile east of the Aneth South well. It is anticipated that the new well will be operational by the end 2003. With the addition of this well, the Aneth system will have a combined capacity of at least 180,000 gallons per day. Assuming an average household usage of approximately 225 gallons per day, the system should be able to supply at least 800 homes.

There are presently five water storage tanks on the Aneth Community Water System with a combined capacity of 420,000 gallons. There is sufficient excess storage capacity to accommodate the 100 homes IHS expects to add to the system within the next two years, and there are no plans to construct additional tanks. IHS uses the guidelines established by NTUA – that there should be at least one and a half days of storage on the system – to determine when a new tank is needed.

Only one of the five water storage tanks on the Aneth Community Water System is not within a development planning area. The Aneth Point Tank has a capacity of 100,000 gallons and can support a total of 267 homes. It supplies the areas of Aneth Point, Lansing Mesa, Rockwell Flats, and development near the Colorado state line. There are 66 homes in the pressure zone of this tank, and IHS plans to add approximately 45 homes within the next two years.

The Montezuma Creek Water System is much smaller than the Aneth system. It consists of approximately four miles of water line, three wells, one storage tank, and one three-cell total retention lagoon. Eighty-five homes, an elementary school, a high school, clinic, store, restaurant, Laundromat, and offices are connected to this system.

There are a number of alluvial wells along the San Juan River but they have poor water quality. IHS has no plans to develop wells near the river and three wells along the river that were operated by NTUA were all abandoned. Water from the San Juan River or alluvial wells near the river is not considered by IHS to be viable for domestic use because of the extensive treatment required to make it potable.

Most of the wastewater generated by the communities of Aneth and Montezuma Creek is disposed in sewer lagoons. Residences not served by the sewer lagoons, and development throughout the rest of the Chapter, dispose of wastewater in individual septic systems.

Electricity, natural gas, and telephone lines serve the communities of Aneth and Montezuma Creek. The majority of residences throughout the rest of the Chapter are served by electricity lines but telephone service is limited. Although these is an extensive network of natural gas transmission lines throughout the area, individual homes outside the communities of Montezuma Creek and Aneth rely on above ground propane tanks for their gas needs.

6.3 Infrastructure Within the Six Development Planning Areas

i. Aneth

Main road access to Aneth is provided by Highway 262. Four of the six potential

development sites within Aneth are directly accessible from this road. County Road 402, which heads north from Highway 262, is a well maintained gravel road and provides access to a potential development site. County Road 493 intersects 402 approximately one and a half miles north of Highway 262. CR 493 heads west along the top of a mesa and provides indirect access to a potential development site. Local unpaved roads provide access to institutional and public facilities, and residences throughout the area.

Within Aneth there is one spring, five community wells, and a number of private alluvium wells along the San Juan River.

Three water storage units are located within the community. A 120,000 gallon elevated storage tank is on the campus of the Aneth Community School. This tank is owned by the school and supplies the school compound only. The two remaining tanks supply Aneth and homes east and west of town. The Superior Tank has a capacity of 100,000 gallons and the East Aneth Tank has a capacity of 70,000 gallons. There are 155 homes in the pressure zone of these tanks, and IHS plans to add approximately 25 homes in the next two years. These tanks can support a total of 453 homes.

Water distribution lines within Aneth are generally six-inch PVC pipe, with four-inch and two-inch laterals for short extensions.

Some Aneth residents haul water for their livestock from a river-well west of the Aneth store and McElmo Creek bridge. This well is owned by Exxon-Mobil which plans to abandon it and replace it with a well closer to the Chapter House.

There are two total-retention sewer lagoons in Aneth, both of which are maintained by NTUA. The west facility is a two-cell lagoon located southwest of the Aneth store. It serves 44 homes, the store, and the Chapter offices. Improvements are currently being made to the lagoon due to concern about its proximity to the San Juan River. When complete in April 2004, the reconfigured lagoon will have three cells and will be able to accommodate an additional 20 homes.

The east two-cell lagoon is located southwest of the Aneth Community School and serves 34 homes. Land on the northwest side of the lagoon has an approved right-of-way should future expansion to the lagoon be necessary in the future.

All other homes within Aneth use septic systems for wastewater disposal.

Electricity, natural gas and telephone lines serve the entire Aneth community.

ii. Montezuma Creek

Main road access to Montezuma Creek is provided by Highways 262 and 163. All of the seven potential development sites within Montezuma Creek are directly accessible from these roads. Local unpaved roads provide access to institutional and public facilities, and residences throughout the community.

The Montezuma Creek Community Water System is supplied by three wells near the San Juan River. These wells meet EPA's primary standards for water quality, but exceed the secondary standard for total dissolved solids.

Sky High #1 Well (#9T-599) pumps 40 gallons per minute, Sky High #2 Well (#9T-599A) pumps 36 gallons per minute, and Well #3 (#9T-631) pumps 45 gallons per minute. The combined production rate of 121 gallons per minute is sufficient to supply approximately 260 homes, as well as the schools and businesses presently on the system. The wells can support an additional 173 homes before an additional water source is needed.

A 120,000 gallon storage tank presently serves the Montezuma Creek water system. The tank stores sufficient water for approximately 230 homes, the schools and the businesses on the system. IHS plans to construct a new 20,000 gallon storage tank to service an additional 19 homes northeast of Montezuma Creek. The capacity of the new tank will be sufficient to support a total of 60 homes.

Water distribution lines within Montezuma Creek are generally six-inch PVC. IHS plans in the spring of 2004 to begin constructing a five mile waterline extension to serve 19 homes northeast of town.

Sewage from the community is collected in a three-cell, 12-acre total retention lagoon. A few homes are not serviced by this lagoon and their waste water is collected in individual septic tank and drainfield systems.

Electricity, natural gas and telephone lines serve the entire Montezuma Creek community.

iii. Cajon Mesa

Main road access to the Cajon Mesa Area is provided by County Roads 401 and 405. One of the three potential development sites is directly accessible from CR 401 and 415, and the remaining sites are all directly accessible from CR 401. Local, unpaved roads provide access to residences throughout the area.

The two wells which supply the Aneth Community Water System are located on Cajon Mesa, near the intersection of CR 401 and the turn-off to Hovenweep National Monument. Both wells were abandoned oil/gas wells which were developed into water wells by IHS in the 1980s. They are presently operated and maintained by NTUA.

The Aneth North Well (#12T-702) has a current pumping rate of 80 gallons per minute, and the Aneth South Well (#12T-700) has a current pumping rate of 100 gallons per minute.

With plans to add another 100 homes to the Aneth CWS within the next two years, there is need for another well. IHS has secured funds to drill a third well approximately half a mile east of the Aneth South well. IHS expects to complete drilling the well before the end of 2003. Once complete, it is anticipated that the Aneth wells will have a combined capacity of more than 250 gallons per minute, or 180,000 gallons per day. Assuming an average household consumption of approximately 225 gallons per day, the system can supply approximately 800 homes.

Both of the wells pump water to the Superior North Tank.

Water distribution lines within the Cajon Mesa Area are generally six-inch PVC which run along the county roads.

All homes within the area use individual septic tank/drainfield systems for wastewater disposal.

Electricity is available to home sites on Cajon Mesa from distribution lines that run along the main roads.

There is no telephone or natural gas service within the area.

iv. McCracken Mesa

Main road access to the McCracken Mesa Area is provided by County Road 414 and Highway 262. The highway provides direct access to four of the six potential development sites. County Road 408 provides direct access to a fifth site, and CR 411 provides direct access to the remaining site. Local, unpaved roads provide access to residences throughout the area.

Water from the Aneth Community Water System is supplied to McCracken Mesa by two pumps located along CR 414. They provide a flow rate of 15,840 gallons per day which can support approximately 70 homes. At present, only 28 homes on McCracken Mesa are connected but it is likely that IHS will connect another 25 homes within the next five years.

The McCracken Mesa Tank has a storage capacity of 50,000 gallons and can support a total of 133 homes. Presently, 28 homes are on the water system and IHS plans to add at least six homes within the next two years, and possibly another 19 homes within the next five years.

Water distribution lines within the area are generally six-inch PVC and they generally run along the county roads. IHS plans in the near future to extend a waterline south along Highway 262 from the intersection of Highway 262 and CR 414, but funding is not yet available.

All homes within the McCracken Mesa Area use individual septic tank/drainfield systems for wastewater disposal.

Electricity is available to home sites on McCracken Mesa from distribution lines that run along the main roads.

There is no telephone or natural gas service within the area.

v. Diwoozhibikooh

Main road access to the Diwoozhibikooh Area is provided by County Roads 414 and 401. Two of the three potential development sites are directly accessible from CR 401, and the remaining site is directly accessible from CR 414. Local, unpaved roads provide access to residences throughout the area.

Water from the Aneth Community Water System is piped to Diwoozhibikooh from the Superior North Tank. It has a storage capacity of 100,000 gallons and can support 267 homes. This tank presently supplies water to 191 homes and IHS plans to add approximately 25 homes in the next two years.

Water distribution lines within the Diwoozhibikooh Area are generally six-inch PVC and they run along the county roads.

All homes within the Diwoozhibikooh Area use individual septic tank/drainfield systems for wastewater disposal.

Electricity is available to home sites in Diwoozhibikooh from distribution lines that run along the main roads.

There is no telephone or natural gas service within the area.

vi. Ismay

Main road access to the Ismay Area is provided by County Road 413, 401 and 402. One of the three potential development sites is directly accessible from CR 401 and 413, a second site is directly accessible from CR 401 and 402, and the remaining site is directly accessible from CR 402. Local, unpaved roads provide access to residences throughout the area.

Water from the Aneth Community Water System is piped to Ismay from the Superior North Tank.

Water distribution lines within the Ismay Area are generally six-inch PVC and they run along the county roads.

All homes within the Ismay Area use individual septic tank/drainfield systems for wastewater disposal.

Electricity is available to home sites in Ismay from distribution lines that run along the main roads.

There is no telephone or natural gas service within the area.

7. Land Use Plan
Phase 5

Phase 5 uses data gathered for Phases 2, 3 and 4 to determine the highest and best use of land throughout the Aneth Chapter. General recommendations are made for the Chapter as a whole, followed by specific land use recommendations for the potential development sites. Maps identify both the existing land uses and the recommendations for each potential development site.

7.1. General Land Use

i. Open Space/Grazing

This plan recommends that most of the land throughout the Chapter remains open space/grazing. This is consistent with the present use of undeveloped land, and supports the expressed desire of Chapter members to protect their natural resources from inappropriate development.

The only development that should be allowed within open space/grazing areas is very low density, scattered housing; infrastructure; agriculture, parks and outdoor recreation.

ii. Resource Protection

Resource protection buffers are recommended for environmentally or culturally sensitive areas. For all buffered areas, any new development must come to the Chapter for approval.

The resource protection buffer is recommended along all major water courses within the Chapter. These include the San Juan River, McElmo Creek and its major tributaries, and Montezuma Creek and its major tributaries.

Resource protection buffers are also recommended around cultural/religious areas, historic sites, gathering areas, critical wildlife habitat, springs, and any wetlands or riparian areas that would not receive protection under a buffer designated along a watercourse. Cultural/religious areas include, but are not limited to, sites used for the Enemy Way, YeiBiChei and Fire Dance ceremonies.

Family Burial sites are located throughout the Chapter and due consideration should be given to these areas when sites are being reviewed for their development potential.

iii. Commercial Areas

Easy access and visibility are key to the success of most commercial endeavors. It is recommended that a strip of approximately 100 feet adjacent to the main roads throughout the Chapter be reserved for future commercial development.

iv. Scenic View Points

The topography within the Aneth Chapter provides many roadside locations that can be developed as scenic viewpoints. Such locations can include picnic facilities, cultural, environmental and area information boards for tourists, and vending facilities from which local entrepreneurs can market their wares to tourists. It is recommended that scenic viewpoints are designated as soon as possible to prevent other development from encroaching on desirable scenic locations.

v. Development Planning Areas

There are six development planning areas of the Aneth Chapter: Cajon Mesa, McCracken Mesa, Diwoozhibikooh, Ismay, and the communities of Aneth and Montezuma Creek.

To achieve a sound balance between open space and community development, all commercial, industrial and higher density residential development should take place within the development planning areas. It is recommended that in the future, Chapter members establish borders around these areas. These borders are not fixed structures or fences, but are similar to city limits around towns. They designate the development planning areas as growth

points and protect the adjacent open space/grazing areas from encroachment.

7.2. Potential Development Sites

Specific land use recommendations are made for a number of sites which were identified by Chapter members as potential development sites. These sites are clustered within the six development planning areas.

An on-site review was performed to determine the availability of infrastructure, ease of site access, level of potential soil compaction, drainage, amount of earthwork necessary for leveling the site, and the environmental sensitivity of the area. Potential obstacles to site development were also identified. Sites that were determined to be suitable for development were designated a recommended land use.

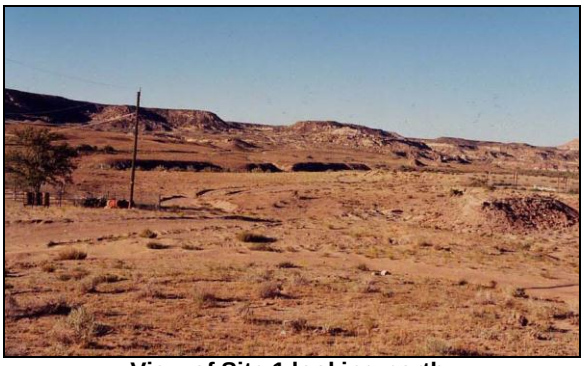
The recommended land use for each development site, which is numerically identified within the six development planning areas, is presented on maps of these areas.

i. Aneth

There are six potential development sites within Aneth. The four sites adjacent to Highway 262 are approximately 4,000 feet in elevation. Sites 3 and 6 are approximately 4,800 feet in elevation. There are no culturally significant or traditionally sensitive areas within any of the sites.

Site 1 is located to the east of the housing subdivision adjacent to McElmo Creek and a little to the north of Highway 262.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- There is no direct access from Highway 262 but good access can be secured.
- The soil type is 50SAX-1 AC-4, which is subject to gullied erosion. Soil throughout the site is suitable for compaction.

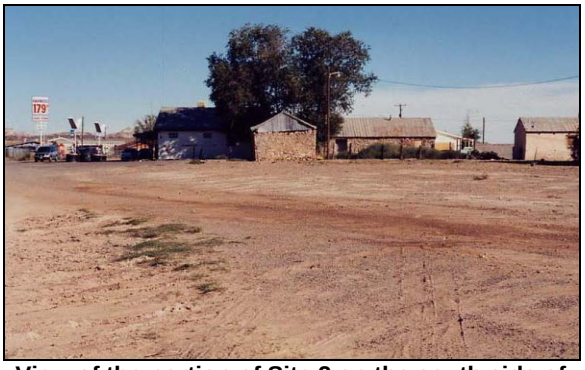


View of Site 1 looking north.

- The site is flat and minimal earthwork will be necessary to prepare it for construction.
- There are no potential drainage concerns.
- The site is located within Wildlife Area 2, which is a moderate level of environmental sensitivity. However, existing development in the immediate vicinity suggests that no threatened or endangered species inhabit this particular area. A Biological Evaluation must be conducted before the site can be developed.
- The moderate level of environmental sensitivity indicates that endangered or threatened wildlife species may be found within the vicinity of the site.
- This site has been significantly disturbed and minimal vegetation is present.
- No potential obstacles to construction were observed.

The central location of this site within the community of Aneth, and the chapter as a whole, makes it desirable for a public or community facility. In particular, the adjacent housing and ball field makes this an excellent location for a multi-purpose center. This center should serve as a general community center, cater to the elderly and youth, accommodate a day care facility, house a library, and include recreational features such as a gymnasium, volleyball court, additional ball fields, and walking trails within a park.

Site 2 is located east of McElmo Creek and is bisected by Highway 262.



View of the portion of Site 2 on the south side of Highway 262, looking south east.

View of the portion of Site 2 on the north side of Highway 262, looking east.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- Access is excellent from Highway 262.
- The soil type is 50SAX-1 AC-4, which is subject to gullied erosion. Soil throughout the site is suitable for compaction.
- The soil is rocky and some imported fill may be necessary to make it suitable for compaction. The site is located in a soil group that is susceptible to gulley erosion.
- The site is flat and minimal earthwork will be necessary to prepare it for construction.
- A portion of the site drops into the floodplain of the San Juan River and it is recommended that no development takes place in this area. There are no potential drainage concerns for the remaining portion of the site.
- The site is located within Wildlife Area 1, which is a high level of environmental sensitivity. However, existing development within the site suggests that no threatened or endangered species inhabit this particular site. A Biological Evaluation must be conducted before the site can be developed further.
- The high level of environmental sensitivity indicates that endangered or threatened wildlife species may be found within the vicinity of the site.
- This site has been significantly disturbed and minimal vegetation is present.
- No potential obstacles to construction were observed.

It is recommended that development be limited to low-impact, infill commercial along the road frontage to minimize potential impacts to the environment. The north side of Highway 262 has more vacant land available than the south side of the road and development should be concentrated here. Suitable activities include a bank, a hardware store, a feed store and a fast food restaurant.

Site 3 is located on top of a ridge which is north of Highway 262 and a cemetery. The site is enclosed by a loop formed by County Road 493.

View of Site 3 looking west.

- There are no utilities available in the immediate vicinity.
- Access to the site is poor via rocky and rough dirt roads that extend from County Road 493.

- The soil type is 46EM-2 FH-7, which has an undifferentiated erosion class. The soil is rocky and some imported fill may be necessary to make it suitable for compaction.
- The site is flat and minimal earthwork will be necessary to prepare it for construction.
- There are no potential drainage concerns.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation includes desert shrubs such as snakeweed, and grasses.
- No potential obstacles to construction were observed.

The site is not immediately accessible from a paved road and it is too far from Highway 262 to be a suitable location for commercial activity. There are more suitable locations along within Aneth for a community or public facility. This site is highly suitable for a housing subdivision.

Site 4 is located on the south side of Highway 262, between an existing housing subdivision and a large drainage.

View of Site 4 looking south east.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- Access is difficult from Highway 262. It will be more cost effective to access the site from the existing subdivision to the west.
- The soil type is 50SAX-1 AC-4, which is subject to gullied erosion. Soil throughout the site is suitable for compaction.
- The site has fairly steep slopes and significant earthwork will be necessary to prepare it for construction.
- Drainage is a concern because of the steep slopes and a wash that runs along the east side of the site.
- The site is bisected by two wildlife areas. The south side of the site adjacent to the San Juan River is located within Wildlife Area 1, which is a high level of environmental sensitivity. However, the existing subdivision to the west suggests that no threatened or endangered species inhabit this particular area. The north side of the site adjacent to Highway 262 is located in Wildlife Area 3, which is a low level of environmental sensitivity. A Biological Evaluation must be conducted before the site can be developed.
- The high level of environmental sensitivity indicates that endangered or threatened wildlife species may be found within the vicinity of the site.
- Vegetation includes desert shrubs such as rabbitbrush, snakeweed, and grasses.
- A natural gas line crosses the north side of the site adjacent to Highway 262 which may affect development.

The difficulty of accessing the site from the highway and the higher cost of site development makes it an undesirable location for road-side commercial endeavors and public or community facilities. This site is most suitable for low density, scattered housing.

Site 5 is located on the south side of Highway 262, between the road and the boarding school.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- Access is good from Highway 262.

View of Site 5 looking east.

- The soil type is 50SAX-1 AC-4, which is subject to gullied erosion. Soil throughout the site is suitable for compaction.
- The site is on a gentle slope and minimal earthwork will be necessary to prepare it for construction.
- There are no potential drainage concerns.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation includes desert shrubs such as rabbitbrush, snakeweed, and grasses.
- A natural gas line crosses the north side of the site adjacent to Highway 262 which may affect development.

The road frontage is an excellent location for road-side commercial endeavors. In particular, the proximity of this site to sewer lagoons makes this an excellent location for a Laundromat and a carwash. The central location of this site within the community of Aneth, and the chapter as a whole, and the ease of access from Highway 262 makes it an excellent location for law enforcement and emergency service facilities. This area is also highly suitable for an elderly care/nursing home or a housing subdivision.

Site 6 is located on the west side of County Road 407 and a little to the north of the intersection of County Roads 407, 461 and 493. This area lies on top of a ridge approximately 2 miles north of Highway 262.

View of Site 6 looking north west.

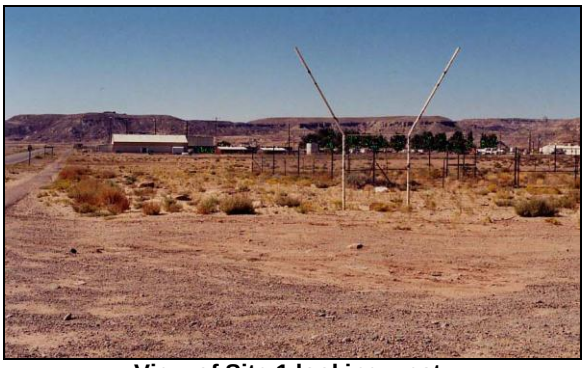
- Only electricity is available in the immediate vicinity. Evidence of water, sewer, natural gas and telephone lines was not observed.
- Access is excellent from County Roads 407 and 461.
- The soil type is 11Q-2 BE-3, which is subject to severe erosion. Soil throughout the site is suitable for compaction.
- The site is flat and minimal earthwork will be necessary to prepare it for construction.
- There are no potential drainage concerns.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation includes desert shrubs such as rabbitbrush, snakeweed, and grasses.
- No potential obstacles to construction were observed.

The site is not immediately accessible from a paved road and it is too far from Highway 262 to be a suitable location for road-side commercial endeavors. There are more suitable locations within Aneth for a community or public facility. This site is highly suitable for a housing subdivision.

ii. Montezuma Creek

There are seven potential development sites within Montezuma Creek. The five sites within the center of Montezuma Creek are approximately 4,500 feet in elevation. Site 7 is approximately 4,600 feet in elevation. There are no culturally significant or traditionally sensitive areas within any of the sites.

Site 1 is located on the north west corner of the intersection of Highways 262 and 163.



View of Site 1 looking west.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- Access is excellent from both Highways 163 and 262.
- The soil type is 50SAX-1 AC-4, which is subject to gullied erosion. Soil throughout the site is suitable for compaction.
- The site is flat and minimal earthwork will be necessary to prepare it for construction.
- Drainage is a minor concern because the site sits a little below the grade of both Highways 163 and 262. It appears that ponding in a small depression in the middle of the site occurs during precipitation events. Imported fill may be necessary to construct slightly elevated building pads.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation includes Russian thistle, desert shrubs such as rabbitbrush, snakeweed, and grasses.
- Natural gas lines cross the east and west sides of the site which may affect development.

This is an excellent location for the proposed shopping center. Due to the industrial nature of the surrounding development, housing is not recommended for this site.

Site 2 is located on the south west corner of the intersection of Highways 262 and 163.

View of Site 2 looking west.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- Access is excellent from both Highways 163 and 262.
- The soil type is 50SAX-1 AC-4, which is subject to gullied erosion. Soil throughout the site is suitable for compaction. Evidence of an abandoned airstrip indicates that soil throughout the site is already compacted.
- The site is flat and minimal earthwork will be necessary to prepare it for construction.
- There are no potential drainage concerns, although imported fill may be necessary to construct slightly elevated building pads.
- The northern portion of the site adjacent to Highway 163 is located within Wildlife Area 3, which is a low level of environmental sensitivity. The southern portion of the site is located within

Wildlife Area 1, which is a high level of environmental sensitivity. There is existing development in the vicinity and the abandoned airstrip indicates that this area was significantly disturbed in the past. It is unlikely that any endangered or sensitive species inhabit this particular area. A Biological Evaluation must be conducted before the site can be developed.

- The high level of environmental sensitivity indicates that endangered or threatened wildlife species may be found within the vicinity of the site.
- The site was previously used as an airstrip and minimal vegetation is present.
- A natural gas line crosses the west end of the site which may affect development.

A long strip of land adjacent to Highway 163 was previously used as an airstrip. It is presently abandoned but Chapter members expressed a need for an airstrip for medical evacuations. This is an inappropriate location for an airstrip for a number of reasons: Montezuma Creek Elementary School and a housing subdivision are located under the takeoff and landing path of aircraft; the airstrip is located too close to Highways 262 and 163 and poses a potential hazard to traffic on these roads; there are numerous surface storage tanks in the immediate vicinity which contain highly flammable and toxic materials; and this is a highly sensitive wildlife area. Additionally, the abandoned airstrip is constrained to its existing size and cannot accommodate any expansion. It makes more sense to locate an airstrip at a site that will be able to accommodate expansion should the Chapter choose to develop a tourism program that offers scenic air tours.

The site would be better suited to a truck stop or other road-side commercial endeavors such as an auto repair shop, fast food restaurant or a motel.

Site 3 is a small area located on the south east corner of the intersection of Highway 262 and Route 35.

View of Site 3 looking north west.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- Access is excellent from both Highway 262 and Route 35.
- The soil type is 50SAX-1 AC-4, which is subject to gullied erosion. Soil throughout the site is suitable for compaction.
- The entire site lies on a slope and has small hills. A large amount of imported fill and extensive earthwork will be necessary to prepare it for construction.
- Drainage is a major concern because the site sits a little below the grade of both Highways 262 and Route 35. A small wash crosses the east side and a large wash is located at the southern end of the site. The southern portion of the site is located in the floodplain of the San Jan River.
- The site is located within Wildlife Area 1, which is a high level of environmental sensitivity.
- The high level of environmental sensitivity indicates that endangered or threatened wildlife species may be found within the vicinity of the site.
- Vegetation includes Russian thistle, desert shrubs such as rabbitbrush, snakeweed, and grasses.
- There are many potential development obstacles which will significantly increase construction costs. Two power

poles and two natural gas lines are located in the middle of the site and there are two small structures which appear to be wells.

Development of this site is not recommended.

Site 4 is located on the east side of the intersection of Highways 262 and 163.

View of Site 4 looking south east.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- Access is excellent from both Highways 163 and 262.
- The soil type is 50SAX-1 AC-4, which is subject to gullied erosion. The soil is silty and some treatment may be necessary to make it suitable for compaction.
- The site has a few small hills but minimal earthwork will be necessary to prepare it for construction.
- Drainage is a concern because the site sits a little below the grade of Highway 262. Additionally, the silty soil and vegetation indicate that water from upstream properties drains to this area during precipitation events. Imported fill may be necessary to construct slightly elevated building pads.
- A small strip along Highway 262 is located within Wildlife Area 1, which is a high level of environmental sensitivity. However, existing development in the immediate vicinity suggests that no threatened or endangered species inhabit this particular area. The bulk of the site is located within Wildlife Area 3, which is a low level of environmental sensitivity. A Biological Evaluation must be conducted before the site can be developed.
- The high level of environmental sensitivity indicates that endangered or threatened wildlife species may be found within the vicinity of the site.
- Vegetation includes Russian thistle, desert shrubs such as rabbitbrush, snakeweed, and grasses.
- A natural gas line crosses the site from the southwest to northeast corner which may affect development.

The road frontage is an excellent location for road-side commercial endeavors such as an auto repair shop, a fast food restaurant and a motel. The northern and eastern portions adjacent to the existing subdivision are suitable for infill housing.

Site 5 is located on the north side of Highway 262, on the west side of the entrance road to the housing subdivision.

View of Site 5 looking north west.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- Access is excellent from Highway 262.
- The soil type is 50SAX-1 AC-4, which is subject to gullied erosion. The soil is silty and some treatment may be necessary to make it suitable for compaction.
- The site is approximately 20 feet below the surrounding area and significant

earthwork will be necessary to prepare it for construction. A large amount of imported fill will be necessary to elevate the site to an acceptable grade.

- Drainage is a major concern. The site is significantly below the surrounding area and all runoff from the surrounding area is diverted here. A culvert directs water under Highway 262 but evidence of ponding was observed. The road frontage along Highway 262 is located in the floodplain of the San Jan River.
- The site is bisected by two wildlife areas. The southern portion of the site along Highway 262 is located within Wildlife Area 1, which is a high level of environmental sensitivity. The northern portion of the site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- The high level of environmental sensitivity indicates that endangered or threatened wildlife species may be found within the vicinity of the site.
- Vegetation includes Russian thistle, tamarisk trees desert shrubs such as rabbitbrush, snakeweed, and grasses.
- A natural gas line crosses the site on the north side which may affect development.

The significant level of site preparation that will be necessary to make this site suitable for development makes it cost prohibitive. This site is not recommended for development.

Site 6 is located on the north side of Highway 262, immediately east of the main access road into the housing subdivision.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- Access is excellent from Highway 262.
- The soil type is 50SAX-1 AC-4, which is subject to gullied erosion. Soil throughout the site is suitable for compaction.
- The site has a few small hills adjacent to the road, but approximately 300 yards from the highway and further north it flattens to a gentle slope. Some earthwork will be necessary to prepare this flatter portion for construction.

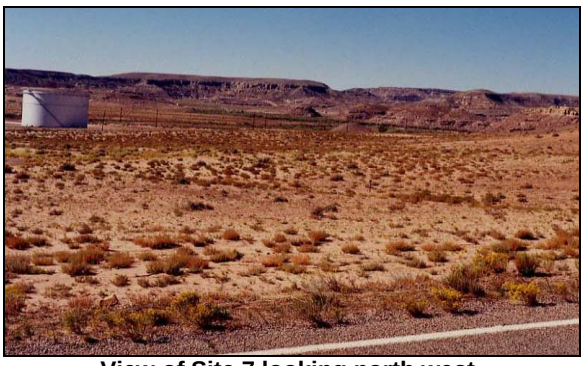
View of Site 6 looking east.

- Drainage is a major concern in the northwest portion of the site. Silt was observed on the entrance road to the housing subdivision, indicating significant water flow west into site 5. Additionally, the road frontage along Highway 262 is located in the floodplain of the San Jan River.
- The site is located within Wildlife Area 1, which is a high level of environmental sensitivity. However, existing development in the immediate vicinity suggests that no threatened or endangered species inhabit this particular area. A Biological Evaluation must be conducted before the site can be developed.
- The high level of environmental sensitivity indicates that endangered or threatened wildlife species may be found within the vicinity of the site.
- Vegetation includes Russian thistle, desert shrubs such as rabbitbrush, snakeweed, and grasses.
- A petroleum line crosses the site from the southeast to northwest corner which may affect development.

The topography of this site will require moderate site preparation and increase construction costs. It is recommended that the northern portion of the site be used for housing and the road frontage be given a

low priority for road-side commercial development.

Site 7 is located on the west side of Highway 262, immediately below the ridge that lies to the north of Montezuma Creek.



View of Site 7 looking north west.

- All utilities: water, sewer, electricity, natural gas and telephone are available in the immediate vicinity.
- Access is excellent from Highway 262.
- The soil type is 46EM-2 FH-7, which is an undifferentiated erosion class. Soil throughout the site is suitable for compaction.
- There are no potential drainage concerns.
- The site slopes upwards slightly to the north, and minimal earthwork will be necessary to prepare it for construction.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation includes Russian thistle, desert shrubs such as rabbitbrush, snakeweed, and grasses.
- A 30 inch crude oil pipeline crosses the site from north to south, parallel to Highway 262.

The proximity of this site to the Questar Petroleum facility and the industrial nature of surrounding development makes it an undesirable location for housing. The road frontage is suitable for a variety of light industrial uses, in particular a waste transfer station and an animal control facility. This would also be an appropriate location for a veterinary office.

iii. Cajon Mesa

There are five potential development sites within the Cajon Mesa area. All of the sites are approximately 5,200 feet in elevation. There are no culturally significant or traditionally sensitive areas within any of the sites. There are no culturally significant or traditionally sensitive areas within any of the sites.

Site 1 is located on the south side of County Road 401, to the west of County Road 462.

View of Site 1 looking south west.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is excellent from County Road 401.
- The soil type is 46EM-2 FH-7, which is an undifferentiated erosion class. Soil throughout the site is suitable for compaction.
- The site slopes upward gently to the south and minimal earthwork will be necessary to prepare it for construction.
- Drainage is a minor concern because there is a slight downward slope towards a small depression in the center of the site.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.

- Vegetation includes desert shrubs such as snakeweed, and grasses.
- No potential obstacles to construction were observed. Wolfberry, which can be indicative of archaeological sites, was observed in the area.

Although the road frontage at this site is suitable for road-side commercial endeavors, it is too remote to support commercial activity. The site is most suitable for a housing subdivision.

Site 2 is located on the north side of County Road 401, to the west of County Road 462.

View of Site 2 looking west.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is excellent from County Road 401.
- The soil type is 46EM-2 FH-7, which is an undifferentiated erosion class. Soil throughout the site is suitable for compaction.
- The site slopes downward gently to the north and minimal earthwork will be necessary to prepare it for construction.
- Drainage is a minor concern because there is a slight downward slope towards the road and a small depression in the center of the site.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.

- Vegetation includes desert shrubs such as snakeweed, and grasses.
- No potential obstacles to construction were observed. Wolfberry, which can be indicative of archaeological sites, was observed in the area.

Although the road frontage at this site is suitable for road-side commercial endeavors, it is too remote to support commercial activity. The site is most suitable for a housing subdivision.

Site 3 is located on the north side of County Road 401, approximately one mile west of the turnoff to Hovenweep National Monument.

View of Site 3 looking west.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is excellent from County Road 401.
- The soil type is 46EM-2 FH-7, which is an undifferentiated erosion class. Soil throughout the site is suitable for compaction.
- The site slopes downward gently to the north and minimal earthwork will be necessary to prepare it for construction.
- Drainage is a minor concern because there is a downward slope towards a small drainage that crosses the center of the site.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.

- There are no wildlife issues associated with this site.
- Vegetation includes desert shrubs such as snakeweed, and grasses.
- No potential obstacles to construction were observed. Wolfberry, which can be indicative of archaeological sites, was observed in the area.

Although the road frontage at this site is suitable for road-side commercial endeavors, it is too remote to support commercial activity. The site is most suitable for a housing subdivision.

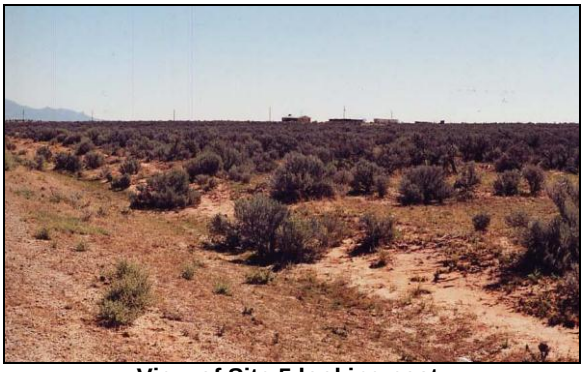
Site 4 is located on the north side of County Road 401, approximately 1 mile west of the turnoff to Hovenweep National Monument.

View of Site 4 looking east.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is excellent from County Road 401.
- The soil type is 46EM-2 FH-7, which is an undifferentiated erosion class. Soil throughout the site is suitable for compaction.
- The site slopes downward gently to the north. Minimal earthwork and some imported fill will be necessary to prepare the site for construction.
- Drainage is a minor concern in portions of the site because of a slight downward slope to the north.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation on the site is dominated by sagebrush.
- No potential obstacles to construction were observed. Wolfberry, which can be indicative of archaeological sites, was observed in the area.

The proximity of this site to the turnoff to Hovenweep National Monument, which is a major tourist destination, makes the road frontage at this site highly suitable for road-side commercial endeavors, such as a gas station and convenience store. The remaining portion of the site is highly suitable for a housing subdivision.

Site 5 is located on the west side of the junction of County Roads 401 and 405, approximately 1 mile west of the turnoff to Hovenweep National Monument.



View of Site 5 looking east.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is excellent from County Roads 401 and 405.
- The soil type is 46EM-2 FH-7, which is an undifferentiated erosion class. Soil throughout the site is suitable for compaction.
- The site is flat and minimal earthwork and some imported fill will be necessary to prepare the site for construction.
- Drainage is a minor concern in portions of the site.

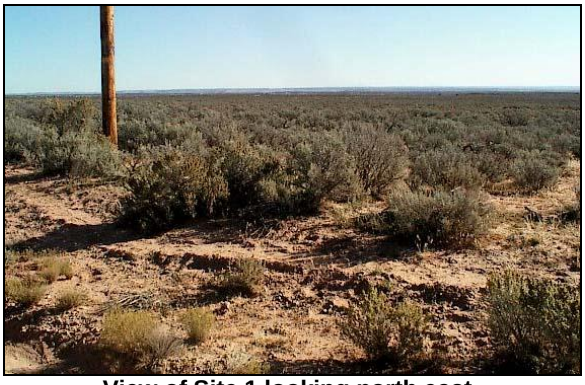
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation on the site is dominated by sagebrush.
- No potential obstacles to construction were observed.

The proximity of this site to the turnoff to Hovenweep National Monument, which is a major tourist destination, makes the road frontage at this site highly suitable for road-side commercial endeavors, such as a gas station and convenience store. The remaining portion of the site is highly suitable for a housing subdivision.

iv. McCracken Mesa

There are six potential development sites within the McCracken Mesa area. All of the sites are approximately 5,200 feet in elevation. There are no culturally significant or traditionally sensitive areas within any of the sites.

Site 1 is located on the east side of County Road 408 and half a mile north of County Road 414.



View of Site 1 looking north east.

- Only electricity is available in the immediate vicinity. A water line lies half a mile to the south along County Road 414. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is excellent from County Road 408.
- The soil type is 6FM-2 BD-2, which is subject to moderate erosion. Soil throughout the site is suitable for compaction.
- The site slopes downward gently to the east and minimal earthwork will be necessary to prepare it for construction.
- There are no drainage concerns.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation on the site is dominated by sagebrush and grasses.
- A natural gas line and a petroleum line cross the middle of the site from north to south.

The road frontage of this site is too far from County Road 414 to make it a suitable location for small road-side commercial endeavors. The site is most suitable for housing.

Site 2 is located on the east side of Highway 262, half a mile south of the junction of Highway 262 and County Road 414.

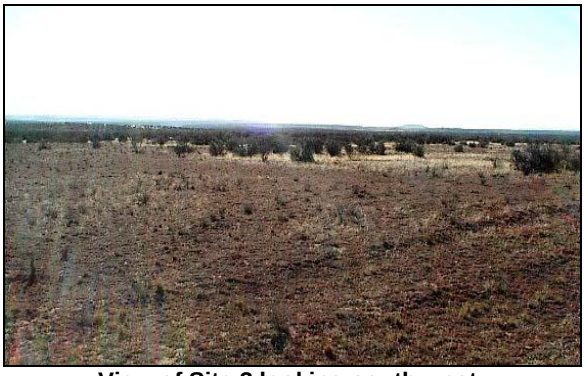
View of Site 2 looking south east.

- Only electricity is available in the immediate vicinity. A water line lies half a mile to the north along County Road 414. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is good from Highway 262.

- The soil type is 6FM-2 BD-2, which is subject to moderate erosion. Soil throughout the site is suitable for compaction.
- The site slope downwards gently to the east and minimal earthwork will be necessary to prepare it for construction.
- There are no potential drainage concerns.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation on the site is dominated by sagebrush, and it also contains grasses, snakeweed, and prickly pear.
- A natural gas line crosses the middle of the site from north to south which may affect development.

The road frontage of this site is highly suitable for small road side commercial endeavors, such as a gas station and convenience store. Housing is recommended for the remaining portion of the site.

Site 3 is located on the west side of Highway 262, half a mile south of the junction of Highway 262 and County Road 414.

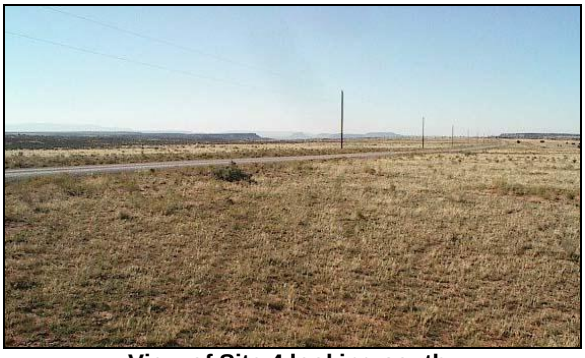


View of Site 3 looking south west.

- Only electricity is available in the immediate vicinity. A water line lies half a mile to the north along County Road 414. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is good from Highway 262.
- The soil type is 6FM-2 BD-2, which is subject to moderate erosion. Soil throughout the site is suitable for compaction.
- The site slopes downwards gently to the west to a flat area. Minimal earthwork will be necessary to prepare it for construction.
- Drainage is a minor concern on the eastern portion of the site because it slopes to approximately 10 feet below the grade of the road. A culvert diverts water under Highway 262 from the east side of the road and it appears that some ponding may occur during precipitation events. Imported fill may be necessary to construct slightly elevated building pads.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation on the site is dominated by sagebrush and grasses.
- No potential obstacles to construction were observed.

The road frontage at this site is highly suitable for small road-side commercial endeavors such as a gas station and convenience store. Housing is recommended for the remaining portion of the site.

Site 4 is approximately half a mile south of Highway 262, and is bisected by County Road 411.

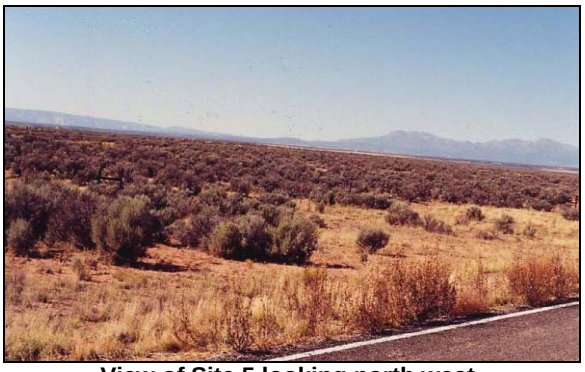


View of Site 4 looking south.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is good from County Road 411.
- The soil type is 6FM-2 BD-2, which is subject to moderate erosion. Soil throughout the site is suitable for compaction.
- The site slopes gently downwards from the road to both the east and west. Minimal earthwork will be necessary to prepare the site for construction.
- There are no drainage concerns.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation on the site includes rabbit brush, snakeweed, grasses and sagebrush.
- No potential obstacles to construction were observed.

This site is too remote for road-side commercial endeavors and is most suitable for housing.

Site 5 is located on the west side of Highway 262, approximately one and a half miles south of the junction of Highway 262 and County Road 414.



View of Site 5 looking north west.

- Water is available from a line that runs parallel to Highway 262 and County Road 414, approximately one and a half miles north of the site. Electricity is available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is good from Highway 262.
- The soil type is 6FM-2 BD-2, which is subject to moderate erosion. Soil throughout the site is suitable for compaction.
- The site is on a gentle slope and minimal earthwork will be necessary to prepare it for construction.
- There are no potential drainage concerns.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation on the site is dominated by sagebrush.
- No potential obstacles to construction were observed.

Although the road frontage at this site is suitable for road-side commercial endeavors, it is too remote to support commercial activity. The site is most suitable for a housing subdivision.

Site 6 is located on the east side of Highway 262, approximately three miles south of the junction of Highway 262 and County Road 414.

View of Site 6 looking east.

- Water is available from the line that runs parallel to Highway 262 and County Road 414, approximately three miles to the north of the site. Electricity is available in the immediate vicinity.

Evidence of sewer, natural gas and telephone lines was not observed.
- Access is good from Highway 262.
- The soil type is 6FM-2 BD-2, which is subject to moderate erosion. Soil throughout the site is suitable for compaction.
- The site is on a gentle slope and minimal earthwork will be necessary to prepare it for construction.
- There are no potential drainage concerns.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation on the site is dominated by sagebrush.
- No potential obstacles to construction were observed. Wolfberry, which can be indicative of archaeological sites, was observed in the area.

Although the road frontage at this site is suitable for road-side commercial endeavors, it is too remote to support commercial activity. The site is most suitable for a housing subdivision.

v. Diwoozhibikooh

There are three potential development sites within Diwoozhibikooh. Sites 1 and 2 are approximately 4,600 feet in elevation, and Site 3 is approximately 4,800 feet in elevation. There are no culturally significant or traditionally sensitive areas within any of the sites.

Site 1 is located on the south side of County Road 414, approximately 2 miles west of Alkali Creek.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is good from County Road 414.
- The soil type is 6FM-2 FH-7, which is an undifferentiated erosion class. Soil throughout the site is suitable for compaction.

View of Site 1 looking south.

- The site is flat and minimal earthwork will be necessary to prepare it for construction.
- There are no potential drainage concerns.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation on the site is dominated by sagebrush.
- No potential obstacles to construction were observed.

Although the road frontage at this site is suitable for road-side commercial endeavors, it is too remote to support commercial activity. The site is most suitable for a housing subdivision.

Site 2 is located on the west side of County Road 401, approximately 1 mile south of the bridge over Montezuma Creek.

View of Site 2 looking south west.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is good from County Road 401.
- The soil type is 6FM-1 BD-2, which is subject to moderate erosion. Soil throughout the site is suitable for compaction.
- A portion of the site is flat and minimal earthwork will be necessary to prepare it for construction. The remaining portions are hilly and some earthwork will be required to prepare these areas for construction.
- There are minor drainage concerns in the area adjacent to Montezuma Creek. Evidence of some ponding was observed in the flat areas adjacent to the creek.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- There is minimal vegetation on the flat portions of the site adjacent to Montezuma Creek. Tamarisk and desert shrubs are found on the remaining portions.
- No potential obstacles to construction were observed.

This site is too remote to support commercial activity. It is recommended that a no-build buffer area is established along Montezuma Creek. Scattered housing is recommended for the remaining portion of the site.

Site 3 is located on the north side of County Road 401, approximately 2 miles south of the bridge over Montezuma Creek.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is good from County Road 401.
- The soil type is 6FM-2 BD-2, which is subject to moderate erosion. Soil throughout the site is suitable for compaction.

View of Site 3 looking north west.

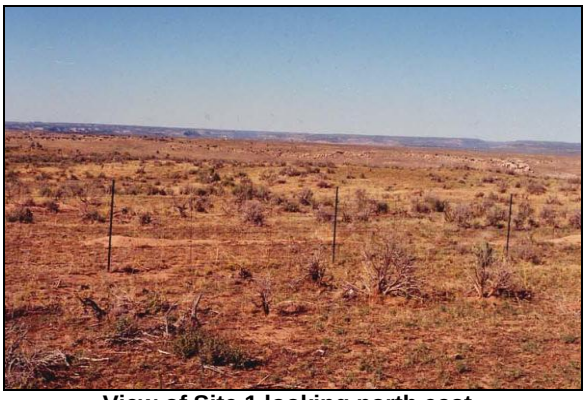
- A portion of the site is flat and minimal earthwork will be necessary to prepare it for construction. The remaining areas are hilly and rocky. Significant earthwork will be necessary to prepare these areas for construction.
- Drainage is a concern because it appears that significant runoff is generated by the rocky hills. Imported fill will be necessary to construct slightly elevated building pads.
- Most of the site is located within Wildlife Area 3, which is a low level of environmental sensitivity. A small portion of road frontage is located in Wildlife Area 2, which is a moderate level of environmental sensitivity. A Biological Evaluation must be conducted before the site can be developed.
- The high level of environmental sensitivity indicates that endangered or threatened wildlife species may be found within the vicinity of the site.
- Vegetation includes desert shrubs such as snakeweed, and grasses.
- No potential obstacles to construction were observed. Wolfberry, which can be indicative of archaeological sites, was observed in the area.

This site is too remote to support commercial activity. It is most suitable for scattered housing.

vi. Ismay

There are four potential development sites within the Ismay area. All of the sites are approximately 4,800 feet in elevation. There are no culturally significant or traditionally sensitive areas within any of the sites.

Site 1 is located in the north west corner of the junction of County Roads 401 and 413.

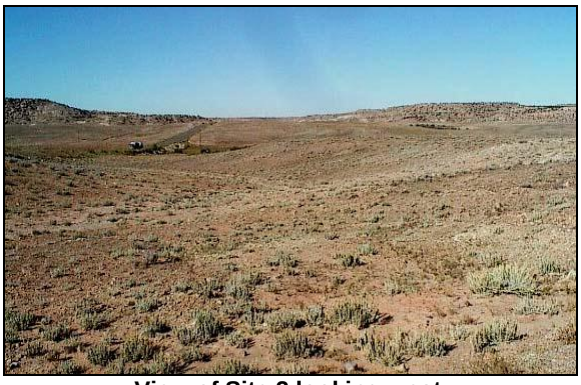


View of Site 1 looking north east.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is excellent from County Roads 401 and 413.
- The soil type is 46EM-2 FH-7, which is an undifferentiated erosion class. Soil throughout the site is suitable for compaction.
- The site is flat at the roadside but it drops steeply downward to the northeast. Some earthwork will be necessary to prepare the site for construction.
- There are potential drainage concerns because of the slope.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation includes desert shrubs such as snakeweed, sagebrush and grasses.
- No potential obstacles to construction were observed.

County Road 413 is the only paved access to Hovenweep National Monument, a major tourist destination. It is recommended that a gas station and conveniences store be located at this site, as well as a small arts and crafts market, with outside vending facilities for local entrepreneurs to sell their wares.

Site 2 is located on the north west corner of the intersection of County Roads 401 and 402.



View of Site 2 looking west.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is excellent from County Roads 401 and 402.
- The soil type is 6FM-2 BD-2, which is subject to moderate erosion. The soil is rocky and appears to have a high clay content. Some imported fill may be necessary to make it suitable for compaction.
- The site is hilly and some earthwork will be necessary to prepare it for construction.
- There are major drainage concerns because of the hilly nature of the site. A small drainage crosses the center of the site from east to west.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.

- Vegetation includes grasses, rabbit brush, shadscale, and snakeweed.
- A gas line crosses the site from north to south.

The level of earthwork that will be necessary to prepare the site for construction will increase development costs. This site is not recommended for development, although flatter portion of land to the immediate north and east appear to be suitable for commercial and housing development.

Site 3 is located on the south side of the intersection of County Roads 401 and 402.

View of Site 3 looking south east.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is good from County Road 402.
- The soil type is 6FM-2 BD-2, which is subject to moderate erosion. The soil is rocky and some imported fill may be necessary to make it suitable for compaction.
- The portion of the site adjacent to the road is hilly and drops approximately 20 feet below the grade of the road. Significant earthwork and imported fill will be necessary to prepare this area for construction. The southern portion of the site has gentle slopes and is rocky. Some earthwork will be necessary to prepare this area for construction.
- There are potential drainage considerations in the lower areas of the site. A drainage feature crosses the site adjacent to the road and evidence of ponding was observed. There are minor drainage considerations in the southern portion of the area.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation includes desert shrubs such as snakeweed, and grasses.
- A natural gas line crosses the south side of the site which may affect development.

The road frontage at this site will require extensive earthwork and increase the cost of construction. It is recommended that this portion be left vacant. Scattered housing is recommended for the remaining portion of the site.

Site 4 is located on the south side of County Road 402, approximately one and a half miles west of the intersection of County Roads 401 and 402.

View of Site 4 looking south west.

- Only electricity and water are available in the immediate vicinity. Evidence of sewer, natural gas and telephone lines was not observed.
- Access is excellent from County Road 402.
- The soil type is 46EM-2 FH-7, which is an undifferentiated erosion class. Soil throughout the site is suitable for compaction.

- The site slopes upwards gently to the south and minimal earthwork will be necessary to prepare it for construction.
- There are no potential drainage concerns.
- The site is located within Wildlife Area 3, which is a low level of environmental sensitivity.
- There are no wildlife issues associated with this site.
- Vegetation includes desert shrubs such as snakeweed, and grasses.
- No potential obstacles to construction were observed.

Although the road frontage at this site is suitable for road-side commercial endeavors, it is too remote to support commercial activity. The site is most suitable for a housing subdivision.

vii. Bluff

A January 30, 1997 memorandum from the United States Department of the Interior, Office of the Solicitor in Salt Lake City, Utah, provided a title opinion that a tract of land between the meander line of the San Juan River and St. Christopher's Mission the is part of the Navajo Reservation. This tract is considered part of the Aneth Chapter. It was not identified as a potential development area during the Land Suitability Analysis, but the Aneth CLUP Committee later requested a site analysis of this area.

This site is located south of Highway 163, between St. Christopher's Mission and the San Juan River and is approximately 4,000 feet in elevation.

- Only electricity and telephone are available in the immediate vicinity. Evidence of water, sewer, and natural gas lines was not observed. The proximity of this area to the San Juan River makes drilling a well into alluvium a feasible option for water. The proximity of this site to the San Juan River may preclude the use of septic systems.

View of Site looking south.

- Access is excellent from Highway 163.
- The soil is silty and some imported fill may be necessary to make it suitable for compaction.
- The site is flat and minimal earthwork will be necessary to prepare it for construction. Imported fill may be necessary to construct slightly elevated building pads.
- Drainage is a major concern. The soil surface throughout much of the site was cracked after drying out from a previous precipitation event, and the riparian vegetation within the site indicates frequent events of surface water flow.
- The site is located within Wildlife Area 1, which is a high level of environmental sensitivity. A Biological Evaluation must be conducted before the site can be developed.
- The high level of environmental sensitivity indicates that endangered or threatened wildlife species may be found within the vicinity of the site.
- Vegetation includes cottonwood trees and desert grasses.
- No potential obstacles to construction were observed.

The high level of environmental sensitivity and the proximity of this site to the San Juan River make it undesirable for development. It is recommended that development be limited to low density, scattered housing.

8. Implementation

8.1 Undeveloped/Grazing

In order to maintain land as undeveloped or for grazing use, the only development that should be allowed within undeveloped/grazing areas is very low density, scattered housing; parks and outdoor recreation; infrastructure; agriculture and livestock grazing.

Very low density, scattered housing is defined as a maximum of one homesite per one square mile. It is recommended that each homesite be designated one acre for residential use, and four adjacent acres for agricultural use, livestock corrals, and other development that is not residential, industrial or commercial. It is also recommended that each homesite be restricted to one access road that links the homesite to the closest collector road. Hence the typical "spider-web" of roads leading to remote homesites should be discouraged.

It is recommended that range management techniques are applied to all grazing areas throughout the Chapter. These include such measures as fencing pastures to allow for rotational grazing, and providing man-made watering points in each pasture to ensure that there is water available that is not associated with springs, washes and riparian areas. The Chapter should also consider implementing an ordinance that establishes a range carrying capacity which is periodically reviewed in accordance with prevailing weather conditions. The ordinance should also designate how many head of livestock a grazing permit authorizes an individual to have on the range, and provide authority for livestock reductions during periods of drought.

Agricultural operations within undeveloped/grazing areas should be limited to growing crops that do not require irrigation, intense use of pesticides or herbicides, or any other practice that is harmful to the fragile desert environment.

Appropriate recreation and outdoor facilities within undeveloped/grazing areas include low-impact features such as hiking/bicycle/horseback riding trails, picnic and tent-camping facilities, scenic overlooks, and other recreation facilities that do not negatively impact the environment. Motorized vehicles such as ATV's, motorbikes and off-road vehicles should be restricted to carefully located trials and roads that are specifically designated for their use.

8.2 Resource Protection Buffer

Resource protection buffers are recommended for environmentally or culturally sensitive areas. For most buffered areas, no new development of any type should be permitted under any circumstances. However, certain areas within this buffer may be determined to be suitable for low-impact recreation such as walking/riding trails. No high impact recreation such as off-road vehicles, motor bikes and ATV's should be permitted within buffered areas. For all buffered areas, any new development must come to the Chapter for approval.

The resource protection buffer is recommended along all major water courses within the Chapter.

Resource protection buffers are also recommended around cultural/religious areas, historic sites, gathering areas, critical wildlife habitat, springs, and any wetlands or riparian areas that would not receive protection under a buffer designated along a watercourse.

A minimum of a quarter mile buffer is recommended around each site or along each water course.

No livestock grazing or watering, and no agriculture should be permitted within a resource protection buffer.

8.3 Development Planning Areas

To achieve a sound balance between open space and community development, all commercial, industrial and higher density residential development should take place

within the development planning areas. It is recommended that in the future, Chapter members establish borders around these areas. These borders are not fixed structures or fences, but are similar to city limits around towns. They designate the development planning areas as growth points and protect the adjacent open space/grazing areas from encroachment.

8.4 Residential

Higher housing densities are recommended for residential development within the development planning areas. Benefits to this type of development are:

- It is more cost effective to provide utilities to dense development, which increases the attraction for utility companies to provide services.
- Federal agencies are mandated to provide services to eligible individuals, but these mandates generally only apply when the service population reaches a specific threshold. For example, IHS only provides wastewater treatment facilities for housing clusters of 25 units or more.
- Other public services such as police, fire protection and public transport are only cost effective when they service larger concentration of people.
- Concentrated development leaves land available for other community uses such as recreation and sports facilities.

It is therefore recommended that subdivisions are built with a minimum density of one house per half acre, and that a minimum of 25 units are built in each housing development project.

For areas where the terrain makes only scattered housing appropriate, the density is recommended at one house per acre serviced by individual septic systems.

8.5. Commercial Areas

Easy access and visibility are key to the success of most commercial endeavors. It is recommended that a strip of approximately 100 feet adjacent to the main roads throughout the Chapter be reserved for future commercial development.

8.6. Burial Sites

Family Burial sites are located throughout the Chapter and due consideration should be given to these areas when sites are being reviewed for their development potential.

9. Outstanding Issues and Recommendations

9.1 Policies and Procedures

This Land Use Plan recommends where specific types of development in the Aneth Chapter should take place. However, this plan does not provide policies and procedures to guide the process by which the development pattern will be achieved. For the Land Use Plan to be fulfill its intent, it is key for the Aneth Chapter administration to define specific land use policies, procedures and guidelines and formally adopt them. Adopted policies enable land use decisions to be made in an impartial manner, provide consistent guidelines for everyone engaged in any form of development, and clearly lay out what acceptable development is.

Most counties and incorporated urban areas across the United States define their development policies and procedures in zoning ordinances. Generally, zoning ordinances support the visions expressed in land use plans, and the one is an integral part of the other.

Once the Aneth Chapter is governance-certified under the LGA, Chapter officials should establish a set of policies and procedures to guide Chapter-wide development.

9.2 Development Patterns

The most desirable pattern of development is when it takes place within a core area. Such a development pattern is highly desirable for a number of reasons:

- Larger populations enjoy lower prices and a greater variety of services, consumer goods, entertainment, and housing;
- Concentrated populations attract businesses because they offer a large labor pool;
- Concentrated development leaves the remainder of the Chapter as open space.

Chapter officials should consider adopting growth management policies that promote concentrated development and control sprawl.

9.3 Infrastructure

Providing infrastructure to scattered housing and other sparse development is expensive and difficult to maintain. Scattered development lessens the ability of utility providers to keep up with changes in technology, maintenance and repairs are more costly and take longer, and the range of services is generally limited.

Growth management policies that promote concentrated development will also serve to keep the cost of providing utilities down, and thus enable utility providers to better serve their customers.

Chapter officials should also investigate alternatives to traditional infrastructure and utility services, such as:

- Solar and wind power for electricity;
- Composting toilets;
- Recycling to reduce the amount of solid waste generated;
- Promote water-saving measures such as the use of low flow and low flush fixtures;
- Proactively encourage telecommunication companies to provide cellular telephone service;
- Establish a local shuttle service to provide transportation service to individuals without vehicles.

9.4 Range Management

On the whole, range conditions throughout the Aneth Chapter are medium to poor. The combined effects of an extended drought throughout the Southwest and overgrazing have reduced the ability of grazing land to support both domestic animals and wildlife.

Sheep are an integral part of Navajo culture, and protecting this traditional heritage will require range management practices that protect natural resources

while allowing them to be used in a sustainable manner.

Additionally, livestock businesses provide an important source of income to many families. This is particularly important because of the limited number of available employment opportunities in the area.

The Navajo Nation has for a number of years tried to establish a grazing ordinance, but has met with strong resistance across the Navajo Reservation. Chapter officials should actively participate in education efforts to gain Chapter-wide support for a grazing or range management ordinance.

Alternatively, once certified under the LGA, the Aneth Chapter can establish its own grazing or range management ordinance. A crucial component of this will be establishing effective enforcement measures to ensure that the ordinance achieves its goals.