NAHASDA (NATIVE AMERICAN HOUSING ASSISTANCE AND SELF DETERMINATION ACT) CHAPTER LAND USE PLAN AND HOUSING PLANNING PROJECT

COMMUNITY BASED LAND USE PLAN BLACK MESA CHAPTER, NAVAJO NATION

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1.1 Introduction

The Black Mesa Chapter of the Navajo Nation successfully applied to participate in the NAHASDA Chapter Land Use Plan project under sponsorship of the Office of Navajo Government Development. The firm of [illegible], Duane H. Yazzie - Principal, was selected as the Consultant, to provide technical services to the Chapter.

The Black Mesa Chapter and [illegible] began work on the Chapter Land Use Plan project in April of 2002. After a series of meetings, the work was completed on the Chapter Land Use Plan.

Presented herein is the work product that represents a comprehensive description of the various elements that are collectively formulated into the Black Mesa Chapter Land Use Plan document. This document is to be treated as a general guide and planning tool as the community progresses toward realizing its goals of community and economic development. The document should reasonably provide development guidance over the next five years.

1.2 Background

In response to the request for new housing throughout Indian Country by Native American leadership, the United States Congress approved the Native American Housing Assistance and Self Determination Act (NAHASDA). Although the bulk of the NAHASDA funds are intended for the development of new housing, a significant amount of funding has been made available for the planning of potential development sites by interested Navajo Chapters/communities.

The opportunity for communities to learn the planning process for new housing, and other elements of community and economic development is a welcome departure from the practice of the central government planning for the communities and thus dictating the manner of development to the communities.

This opportunity is consistent with the principles of Self Determination, Self Sufficiency, Self Reliance, Decentralization, Local Empowerment and Local Governance. Further this opportunity is consistent with the time honored and paramount Navajo edict of TAA HO A JI TEEGO or "do for yourself" meaning "achieve success through your own efforts, with initiative and determination".

The Navajo Nation through the Office of Navajo Government Development received $1.2M of NAHASDA grant funds. This grant funded the Chapter Land Use Plan and Housing Planning project. The $1.2M is scheduled to fund 30 Navajo Chapters per year at $40,000 each, with a duplicative formula for three succeeding years. The Black Mesa Chapter was selected to be one of the 30 Chapters in the third year of the project.

1.3 Authority

The Navajo Nation Council through Resolution CAP-34-98 enacted the Navajo Nation Local Governance Act (LGA). The LGA is codified at Title 26, Navajo Nation Code. The LGA confers certain authorities upon the Navajo Nation Chapters to engage in a local governance process, including the authority to conduct all manner of local planning for the community.

The Local Governance Act of 1998 contains explicit authorities scheduled to be granted to governance-certified Navajo Chapters to "do for themselves". These provisions include:

Subchapter 1, B. Purpose

1. *The purpose of the Local Governance Act is to recognize governance at the local level. Through adoption of this Act, the Navajo Nation Council delegates to Chapters governmental authority with respect to local matters consistent with Navajo law, including custom and tradition.*

2. *Enactment of the Local Governance Act allows Chapters to make decisions over local matters. This authority, in the long run, will improve community decision making, allow communities to excel and flourish, enable Navajo leaders to lead towards a prosperous future, and improve the strength and sovereignty of the Navajo Nation.*

The Local Governance Act provides specific authorities that give governance-certified Chapters the means to exercise decision-making powers on the following elements that pertain to the regulation and planning-in-general of land. The Chapters would enact ordinances via Chapter resolution to effect these authorities.

Subchapter 3, Section 103, Chapter Authority

1. *To issue home and business site leases or permits.*
2. *To amend the land use plan to meet changing needs of the community.*
3. *To acquire property by eminent domain.*
4. *To adopt zoning ordinances consistent with the land use plan.*

The Local Governance Act further provides the following authorities for governance-certified Chapters to maintain a Comprehensive Land Use Plan.

Subsection 7, Section 2004; Zoning, Comprehensive Land Use Plans, Land Use Variations.

1. *Chapters may enact zoning ordinances.*
2. *Chapters shall enforce zoning ordinances.*
3. *Chapters can approve land use variations.*

The Land Use Plan is developed by the Chapter appointed Chapter Land Use Planning Committee (CLUP) and the CLUP recommends the Plan for consideration and adoption by Chapter resolution.

1.4 Purpose

The purpose of developing the Black Mesa Chapter Land Use Plan is to have in place a document that describes the community's hopes and aspirations for community and economic development based on the stated vision of the CLUP Committee on behalf of the people. The process for the development of the plan results in several benefits for the community, including:

1.4.1 To have the CLUP Committee, the Chapter leadership and the community members learn the community land use planning process. A process that can be applied to other community based planning efforts.

1.4.2 To initiate a community capacity building process by empowering community members.

1.4.3 To generate interest, develop community support and participation of community members in the planning process.

1.4.4 To prevent haphazard unregulated community growth.

1.4.5 To assure availability of infrastructure systems for anticipated community growth.

1.4.6 To insure that future generations have adequate housing and sufficient space to live and grow.

1.4.7 To "leverage" the Community Land Use Plan in identifying and securing the resources necessary to accomplish the desired development.

1.5 Overall Project Planning Process

The process that was used by Rez Star Point and the CLUP Committee involved a series of meetings including regular monthly meetings with the CLUP Committee and community public meetings. List of meetings attached as **Exhibit 1.9.3**.

These were sessions where community members articulated and defined their goals and aspirations for the Community Land Use Plan. There were other meetings held at different locations with the intent of developing data for assessments and to address specific issues regarding infrastructure systems. Some of the specific activities included the following:

1.5.1 Scoping sessions with the Black Mesa CLUP Committee, where the group worked to strategize the specific tasks and overall process of developing the Land Use Plan.

1.5.2 Conducted community assessments with CLUP Committee members to determine the state of the community.

1.5.3 Provided orientation on the community land use planning process elements as a means of community orientation.

1.5.4 Reviewed developed reports and other relevant documents with the CLUP Committee to ensure accuracy and to get concurrence on the substance of the developed documents.

1.5.5 Held public meetings to fully inform the community of the planning process.

1.5.6 Attended meetings with other agencies to determine the most viable strategies to provide adequate utility infrastructure for the planned development sites.

1.5.7 Reviewed the final report with the community.

The following **Exhibits 1.9.1** and **1.9.2** pictorially depict the described Black Mesa Chapter Land Use Plan planning process.

Exhibit 1.9.1 Black Mesa Chapter Land Use Plan Planning Process (general)

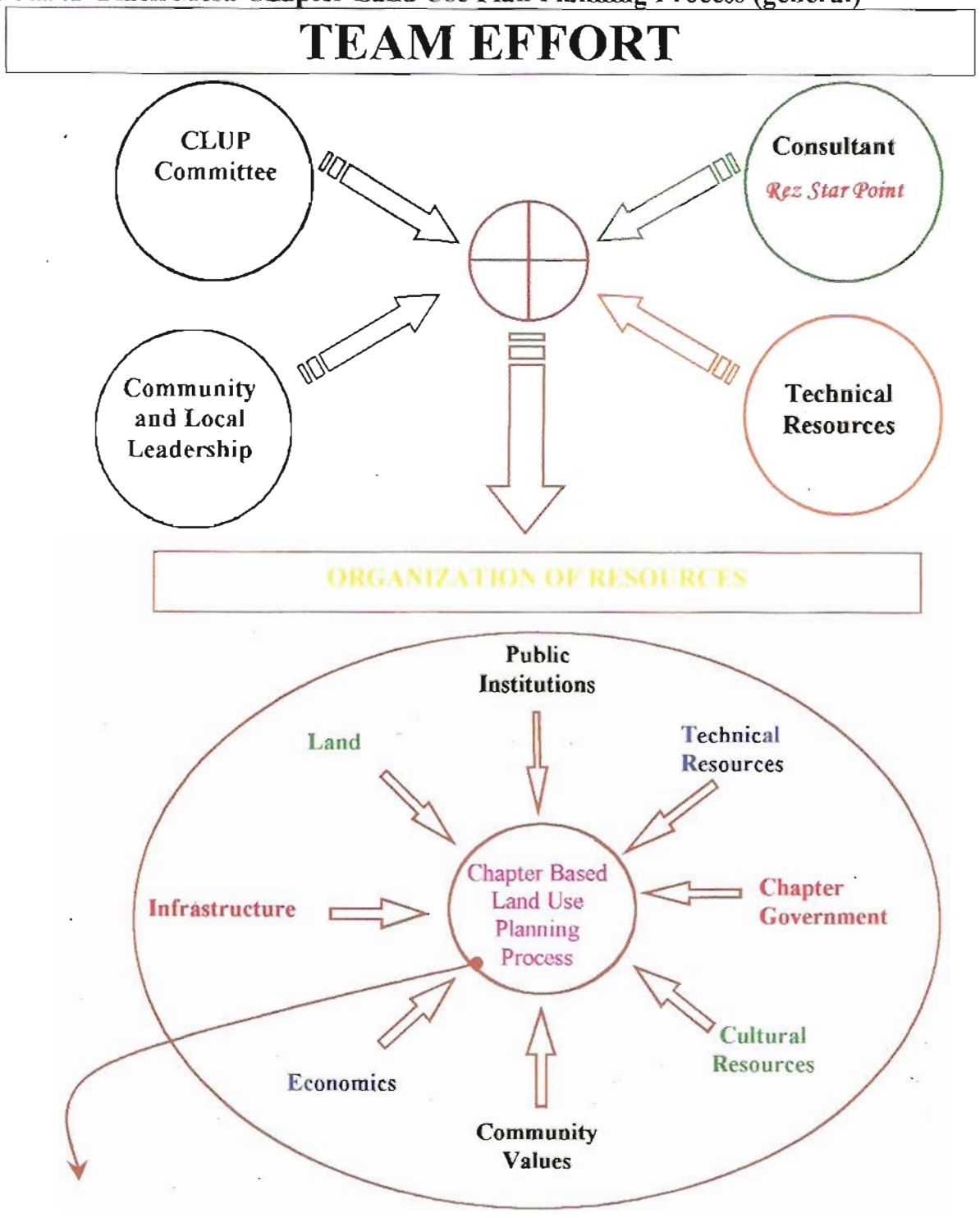


Exhibit 1.9.2 Black Mesa Chapter Land Use Plan Planning Process (specific)

PROJECT APPROACH

Phase I	Phase II	Phase III	Phase IV	Phase V
Community Assessment	Land Suitability Analysis	Infrastructure Analysis	Land Use Plan Corresponding and Maps	Comprehensive Report with Implementation Recommendations

PROJECT OBJECTIVES

1. Orientation and Vision Seeking 2. Goal Setting 3. Data Collection: -Public Presentations -GIS -Surveys and Analysis 4. Compilation of Data 5. Base Mapping	1. Development Sites 2. Determine Land Status 3. Develop Concurrence 4. Identify Potential Collection of Preliminary Biological Survey Data 5. Analyze Data 6. Determine Suitability 7. Alternative Sites or Proceed with Selected Site(s)	1. Collection of Information on Infrastructure 2. Analyze Data in Relation to Current and Future Site Needs 3. Planning New Infrastructure 4. Plan Rural Infrastructure - solar electric - water wells etc. (if needed)	1. Conceptualize Future Land Use Plan 2. Digitize and Computer Format 3. Presentation of Land Use Options 4. Approval of Land Use Plan: -Public Hearings -Chapter Meeting 5. Finalize Land Use Plan -Hard Copies	1. Organize Data and Analysis 2. Develop Options on Implementation 3. Compile Comprehensive Report 4. Final Critique with Community 5. Provide Continued Follow Up and Monitoring

TO ANSWER THE QUESTIONS OF:

What is the Community NAHASDA Vision?	Where Will the Community NAHASDA Vision Be Built?	What Infrastructure Community NAHASDA Vision Will Need?	How Will the Community NAHASDA Vision Look?	How Can the Community NAHASDA Vision Be Realized?

1.6 Community Participation Process

The following articulates the process that was generally followed in the Black Mesa Chapter Land Use Planning effort.

1.6.1 Chapter/community Orientation

At the outset of the project the Consultant began the process of orientation with the Black Mesa Chapter Land Use Plan (CLUP) Committee on the NAHASDA Chapter Land Use Plan and Housing Planning Project. The separate five primary components of the project were covered in detail. The five components being the Community Assessment, the Land Suitability Analysis, the Infrastructure Analysis, the Land Use Plan and the Final Report with Implementation Recommendations.

The Consultant recommended to the Black Mesa CLUP Committee that public meetings needed to be scheduled with the community-at-large to present the project to the Chapter constituency. The Committee took upon themselves the task of explaining to the community membership the purpose of the project, its history and the expectations of the project sponsors, the Office of Navajo Government Development, the Navajo Housing Authority and appropriate Navajo Nation leadership, respectively.

1.6.2 Identification of Potential Development Sites

The community members who are recognized land users of the potential development sites were consulted by the CLUP Committee members and the Grazing Committee Representative when the CLUP Committee and the Consultant commenced with the Phase III portion of the project. There was identification of four potential land sites that were deemed to have potential for the planning of new community development.

Of the four sites considered, the CLUP Committee and Chapter Leadership prioritized the sites and concentrated the community development planning on two priority sites. The other sites were determined to not be available due to the prominent presence of pottery shards and other visible evidence of prior human habitation, thus these sites are declared to be culturally significant areas.

1.6.3 Cultural Significance and Traditional Sensitivity

During the Phase III Land Suitability Analysis, the issues of cultural significance concerns of the proposed development areas were issues that needed to be addressed as the sites 2 and 4 have culturally significant areas. Resultantly these two sites were eliminated as not being available for development. The fourth site reviewed within the Chapter House withdrawn area also had a culturally significant site as documented in the Navajo Department of Cultural Resources report no. NNAD-93-375.

1.6.4 Land Use Plan Concept

The CLUP Committee deliberated on the basic elements that would be incorporated into the land use planning design that was developed by the Consultant. The design concept was presented on hard copy map to show the proposed development plans in full detail.

1.6.5 Comprehensive Report and Implementation Recommendations

The CLUP Committee, Chapter leadership and the Consultant presented the final comprehensive report to the community members upon the completion on the project. The community members were orientated on the project development process and conclusions. With the full review of the Implementation Recommendations, the community understood the steps they will need to proceed with, in order that the desired planning is realized in a timely manner.

1.7 Conclusion

The Consultant realizes the importance of having the CLUP Committee on behalf of the community members; understand the project as much as possible. This assures that there is support for the effort, it protects the integrity of the project and helps the community pursue the project. With these ingredients the potential of the community achieving the desired results becomes practical and achievable.

1.8 Definitions

- **Clustered housing:** housing units developed in a "small" subdivision.

- **Chapter Boundary:** the physical geographic outer boundary of the Chapter area as interpreted by the community.

- **Chapter Membership:** for voting purposes and participation in the Chapter government, all members who are registered to vote. Those members who comprise the quorum at Chapter meetings. For purposes of services and benefits, all Tribal members, young and old, who either reside within or are registered with the Chapter.

- **Chapter Officials:** means the following public officials elected by the Chapter membership; Chapter President, Vice President and Secretary/ Treasurer.

- **Chapter Land Use Planning (CLUP) Committee:** the committee appointed by the Chapter membership in accordance with the LGA to develop the Chapter land use plan.

- **Comprehensive Land Use Plan:** a final document developed by the CLUP Committee and approved by the Chapter Membership that describes the current and the future use of lands within the Chapter area. The document would have provisions for community and economic development, infrastructure, open space, thoroughfare plan, zoning and ordinances, illustrating such uses by map or plat.

- **Cultural and/or Traditional Significance:** elements of cultural and/or traditional Dine' value associated with certain potential development sites, such elements must be considered in view of various Tribal and Federal laws/regulations intended for historic and cultural preservation.

- **Eminent Domain:** the taking of land used by an individual, or legal person or entity, in which an individual, or legal entity has an interest for a governmental purpose. "Just compensation" must be paid to the land user for taking of such land as prescribed by Navajo law.

- **Environmentally Sensitive Areas:** areas that have wetlands, fragile eco-systems or the presence and potential presence of "species of concern" as described by the Federal Endangered Species Act.

- **Future Land Use Maps:** the Land Use Plan maps that describes the present and proposed future uses of land in the Chapter area.

- **Ground Water:** the water contained in underground aquifers or various geologic formations.

- **Infrastructure:** utilities (water, waste water/sewer, gas, electric, solid waste facilities, telecommunications), drainage systems, streets and roads.

- **Land Use Plan:** the document that identifies the current conditions and needs and the proposed future land use goals, priorities, and vision for the community. The plan serves as a guide for the orderly growth and development of the community, illustrated by map or plat. The plan should also contain recommendations for the implementation of the plan. The Land Use Plan must be adopted by Chapter resolution.

- **Land Use Policies:** a set of policies that forms the basis of pertinent Chapter ordinances that prescribe the Chapter's "rules and regulations" governing the process and disposition of land use issues and concerns.

- **LGA:** the Navajo Nation Local Governance Act of 1998. This law grants authority to governance-certified Chapters over local issues. LGA is codified at Title 26 of the Navajo Nation Code.

- **NAHASDA:** the Native American Housing Assistance and Self Determination Act of 1996 recognized the right of Indian Nations to self-determination and tribal self-governance by providing the opportunity for Indian (Dine') communities to determine for themselves all aspects of planning for housing and the development, thereof.

- **Navajo Nation Law:** means Navajo statutes, administrative regulations and Navajo common law.

- **Open Space:** sectors of community land use planning areas that are left in their natural state, free of any development, thus preserving the aesthetic value of these particular land areas.

- **Ordinance:** a local law, rule or regulation enacted by a Chapter pursuant to the LGA.

- **Participation Process:** the process developed by the CLUP committee and the land use planning Consultant to ensure there is community participation and education during the land use plan planning process.

- **Planning Process:** the steps involved in preparation of the community land use plan, including
  - **Community Assessment** - the gathering/assessment of community demographics, inventory of facilities and the defining of community needs for housing, economic development and community facilities.
  - **Land Suitability Analysis** – an evaluation of potential development sites to determine if there exist natural, cultural/traditional resources and/or environmental constraints to the development process.
  - **Infrastructure Analysis** - the assessment and evaluation of data on the transportation and utilities infrastructure, particularly the infrastructure needed for the planned development.
  - **Master Land Use Plan** – the land use plan concepts designed by the CLUP, the community leadership and the Consultant. The plans are presented to the Chapter membership in a public hearing process to ascertain their comments, recommendations and approval.

- **Scattered Housing:** housing units that are built usually on family land outside of the community proper.

- **Service Area:** the planning/service delivery area of a Chapter, members may live outside of the Chapter area and still be eligible for Chapter services.

- **Subdivisions:** a contiguous section of a planned housing area that would contain any number of housing units and supportive amenities.

- **Surface Water:** the waters that are openly on the surface of the Earth.

- **TAA HO A JI TEEGO** – paramount Dine' edict meaning to "do for oneself" or "achieve success through your own efforts, with initiative and determination", equating the concepts of Self-Determination, Self-Reliance, Self-Sufficiency, Local Empowerment and Local Governance.

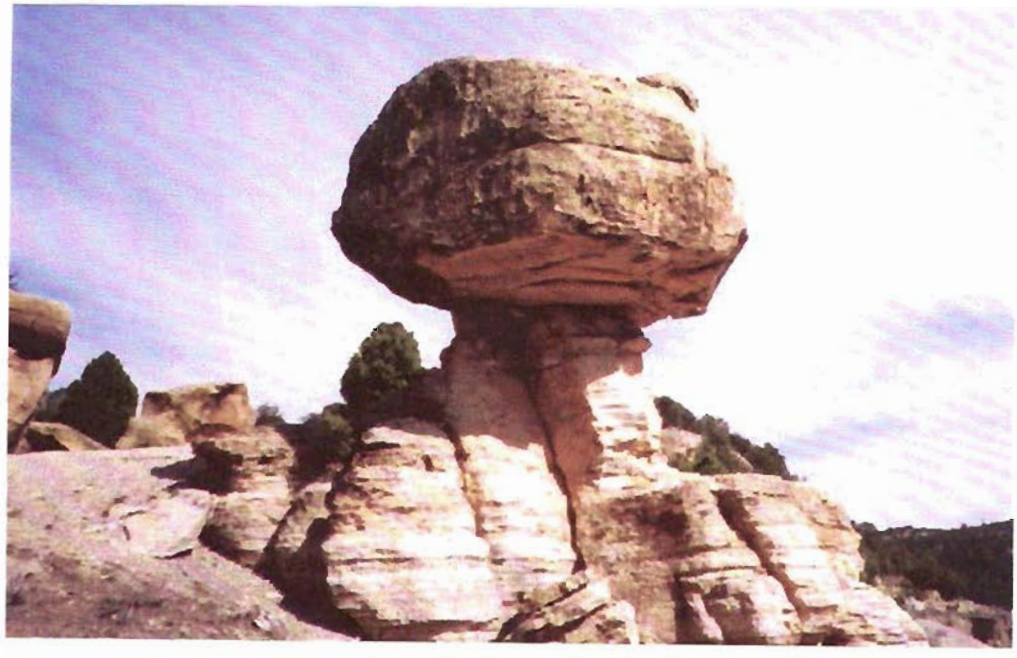
- **Withdrawn Land:** land area sites which are withdrawn for specific development purpose and which need to have surveys/clearances, such as the legal survey, cultural resources survey (archeological) and environmental assessments.

- **Zoning:** the land use planning element that describes areas of planned land use areas for specific uses and purposes. Such zoned lands would have Chapter ordinances that prescribe the intended uses, placement and dimensions of the sites and acceptable buildings, thereon.

BLACK MESA CHAPTER, NAVAJO NATION

LAND USE PLAN

SPECTRUM 2 - COMMUNITY ASSESSMENT



SPECTRUM 2 – COMMUNITY ASSESSMENT

2.1 Vision Statement

The Black Mesa Land Use Planning Committee is committed to the standard of excellence in service to the people of Black Mesa community through land use planning formulated by consensus on common goals; and to develop a comprehensive plan endorsed by public trust to foster orderly social and economic development together with the means of required resources.

Black Mesa
NAHASDA CLUP Committee
May 08, 2000

Andrew Benallie, President
Wilson Gilmore, Vice President
Karen Bahe, Secretary
Louise Nez, Member
Arlinda Greyeagle, Member

Chapter Officials:
Larry Biltah, President
Wilson Gilmore, Vice President
Marlene Biltah, Secretary/Treasurer
Jones Begay, Former Council Delegate
Amos Johnson, Council Delegate

Dennis Begay, Former Chapter Coordinator

Irene Kaye Joe, Local Land Use Planning Assistant

2.1.1 General Chapter Information

The Black Mesa Chapter is one of the northwestern Chapters of the Chinle Agency, 45 miles northwest of Chinle on Navajo Route 8066. The Black Mesa Chapter has approximately 157,320 acres of land within its boundary according to the Navajo Land Department.

The principal area where a majority of the Black Mesa Chapter members reside is amidst and surrounding the Black Mesa community proper. Within the community are a number of facilities including the Chapter House, Senior Citizen Center, Tribal offices and the Black Mesa Community School. There is also the NHA housing and the BIA school housing subdivisions in the vicinity.

2.2 Existing Land Status

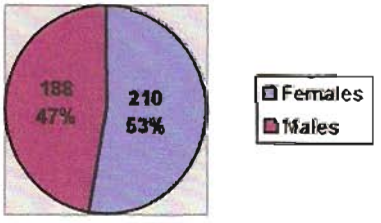
The Black Mesa Chapter shares its borders with the Rough Rock, Chinle, Tachee Blue Gap, Pinon, Forest Lake and Chilchinbeto Chapters. The 157,320 acres claimed by the Black Mesa Chapter is all Navajo Trust Land. Land Status Map attached as **Exhibit 2.9.1 and 2.9.2.**

2.3 Community Demographic

Portions of the following data 2.3.1 through 2.3.14 extrapolated from the 2000 Census data are interspersed with data generated from the survey.

2.3.1 Population

The Black Mesa chapter/community population for the year 2000 is 398 according to the Census count. There were 210 females for 53% and 188 males counted for 47% in gender representation.



Of the 100 surveyed homes there were 47 family members who live out of the area including Phoenix, Albuquerque, Salt Lake City, Flagstaff, San Diego, Colorado Springs, Denver, St. George and other Chapters. These family members may not have been counted in the Black Mesa 2000 Census. Their data is shown as "non-local".

2.3.2 Median Age

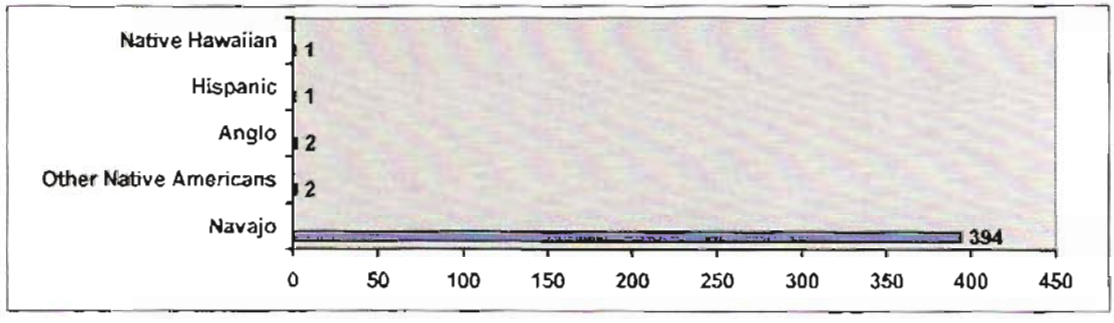
The Census count reported that the median age of the members of the households surveyed is 28 years of age.

2.3.3 Household Members

The 2000 U.S. Census count results show that there is an average of 2.5 persons living in the households.

2.3.4 Chapter Population by Ethnic Group

The 2000 Census reports that of the 398 counted in the Black Mesa Chapter that 394 are Navajo, 2 are of other Native American Tribal descent, 2 Anglos, 1 Hispanic, 1 African American and 1 Native Hawaiian.

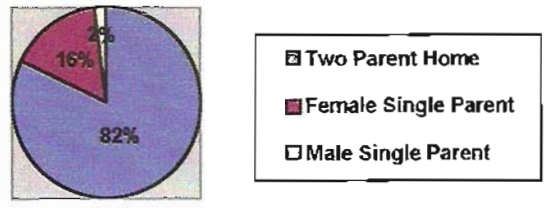


2.3.5 Households

The Census shows that there are 272 houses with 114 vacant leaving 158 occupied households in the Black Mesa community area.

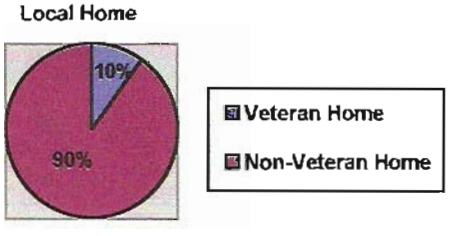
2.3.6 Single Parent Home

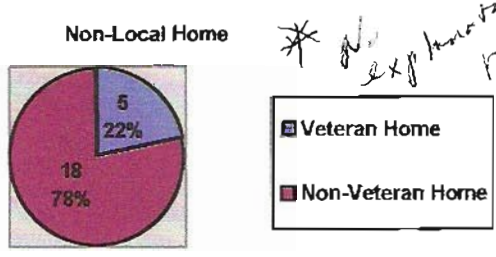
Out of the 100 homes there are 18 homes that are single parent homes for 18% and of which 2 were male single parent for 02% and 16 of the homes were female single parent homes for 16%.



2.3.7 Veterans

There are 10 Veterans that are noted in the 100 homes which suggest that there are 10% of the Black Mesa homes that have Veterans.

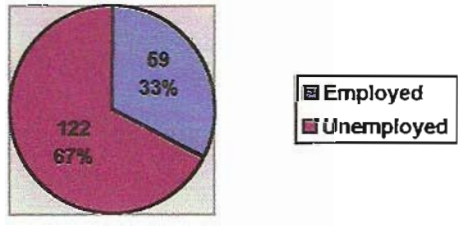




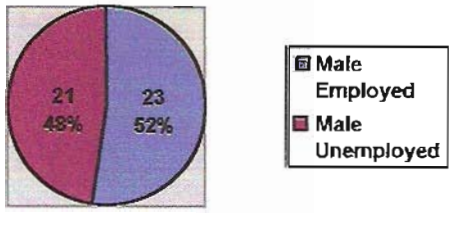
* pg. explanation refer to P. 34 OK

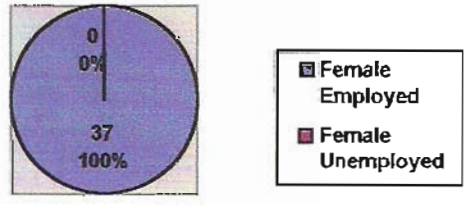
2.3.8 Employed/Unemployed

Of the 181 employable persons over the age of 18 in the 100 surveyed homes there are 59 that are employed for ~~40%~~ 33% and there are 122 that are unemployed or ~~60%~~. 67%

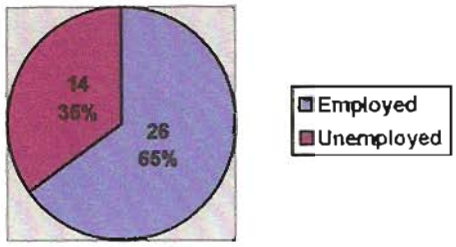


The Employment and Labor Force data the 2000 Census reports are compiled on Black Mesa Chapter members 16 years of age and over who are deemed employable. The first chart is of 150 males of whom 44 are in the labor force and 106 are not. The second chart is of 172 females of whom 37 are in the labor force and 135 are not.



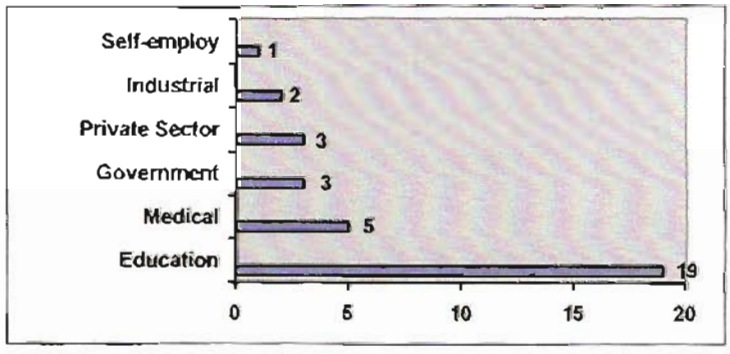


There are a significant number of family members who travel to and live away from home for the sake of obtaining employment and that is the case of the non-local Chapter members who live elsewhere for work, their employment/unemployment data is as follows.



2.3.9 Employment Category

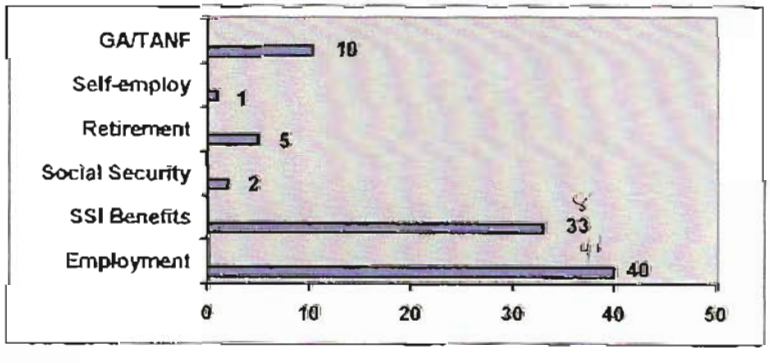
- Of the 34 community members who said that they were employed, these individuals work at a variety of different job categories that include 3 in the private sector, 3 in government, 2 in the industrial field, 5 in the medical field, 19 in education and 1 self-employed.



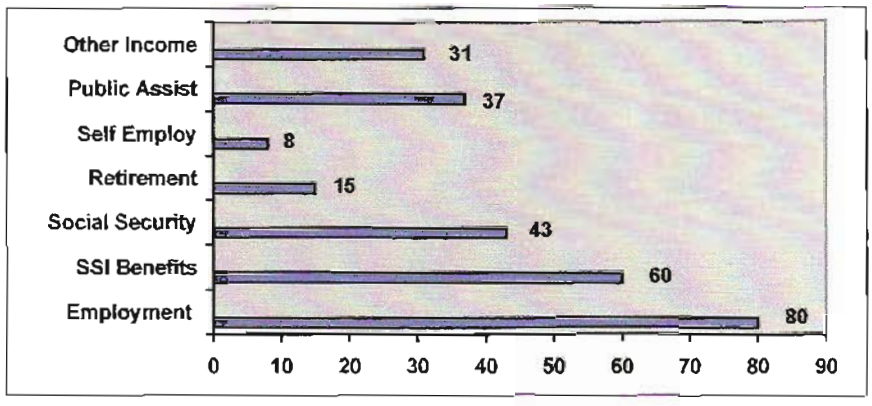
33 accounted for - where is 17?

2.3.10 Sources of Income

Through the survey assessment there are 91 family members who provided Sources of Income information in the 100 homes and they include wage employment, SSI benefits, Social Security, Retirement, Self-employment, Food Stamps and Stocks.

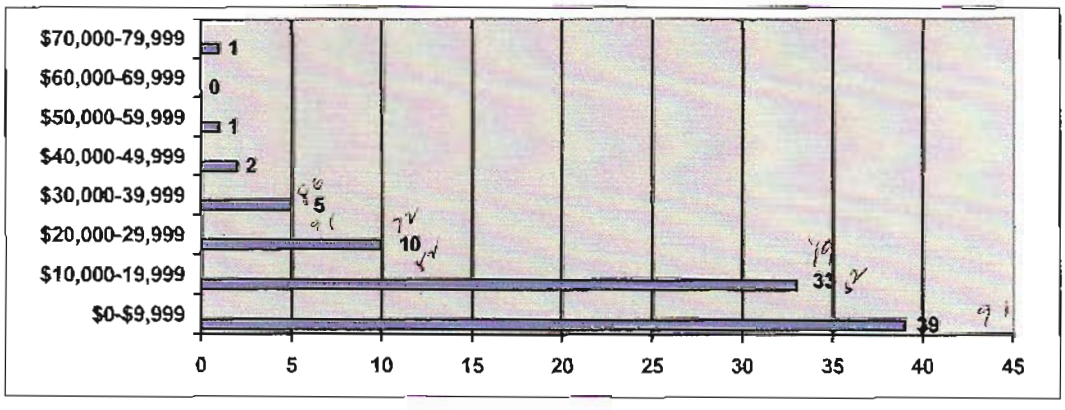


The 2000 Census report provides the following data on the same Sources of Income category, Employment, SSI, Social Security, Retirement, Self-employment, Public Assistance and Other Income.

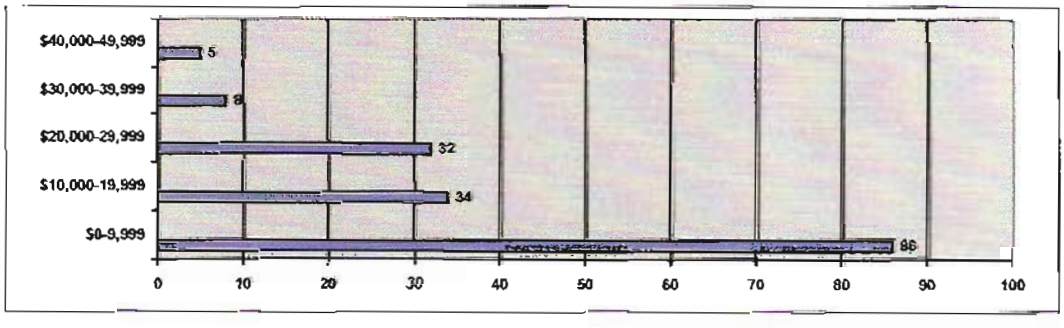


2.3.11 Household Income Levels

Through the survey assessment the following data was ascertained regarding the household income levels of the 100 homes surveyed in the Black Mesa Chapter community.

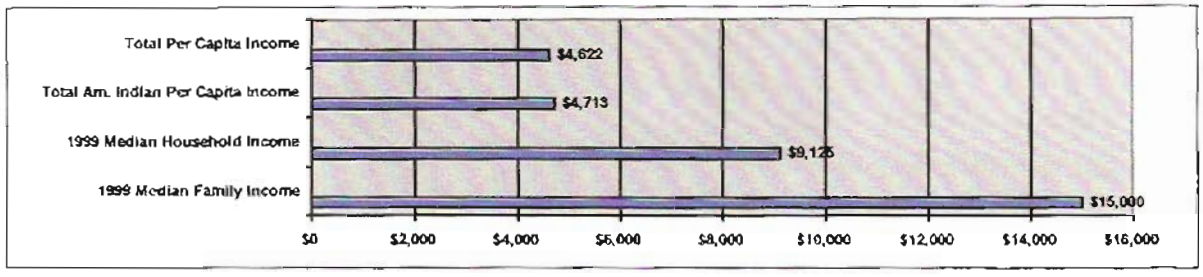


The 2000 Census data concerning the same information on the household income levels of the homes in the Black Mesa Chapter community is provided as follows.



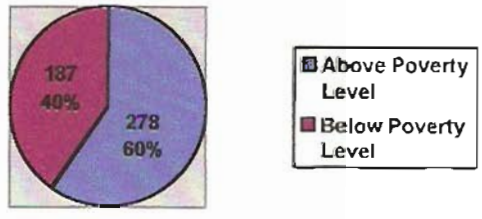
2.3.12 Income

The 2000 Census compiled data reflects that the Per Capita Income for the total Black Mesa Chapter population is $4,622 and the Per Capita Income for American Indians only is $4,713, that the median family income for 1999 was at $15,000 and finally that the median household income for the year 1999 was $9,125.



2.3.13 Poverty Level

The 2000 Census finding on the level of poverty in the Black Mesa community is that of the 465 community members considered, there were 187 determined to be living below the poverty level.

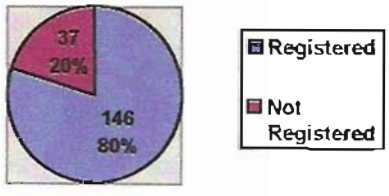


2.3.14 Voter Registration

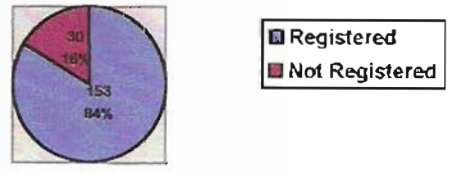
Of the 183 persons who are 18 and over 146 are registered to vote in Tribal elections and 37 are not registered.

Of the 183 persons who are 18 and over 153 are registered to vote in the outside elections and 30 are not registered.

Tribal Voter Registration

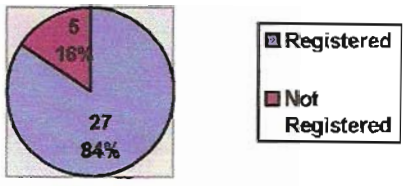


Non-Tribal Voter Registration

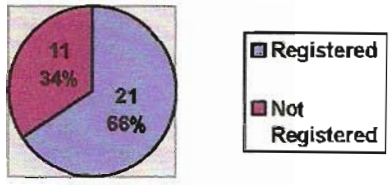


The survey indicates that the family members who live away from home are not registered to vote, perhaps because of the distances involved to get home to register and vote. The following data was provided by the family members at home.

Tribal Voter Registration



Non-Tribal Voter Registration



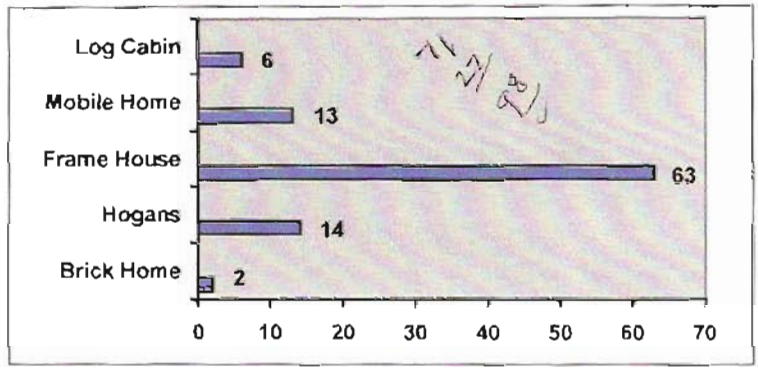
The Consultant designed a survey form that was circulated throughout the community on a limited basis to ascertain data that would provide a description of the demographics of the community. The completed surveys revealed the following information. The survey instrument is at **Exhibit 2.9.3.**

2.4 Housing Data

According to the 2000 Census data, the estimated number of households is 272 households, of which 114 were listed as vacant, thereby leaving 158 as the number of the households that are occupied. The number of surveys that were completed was 100 which are approximately 63% of the total number of occupied households. This base number of 100 is used in the following data tabulations.

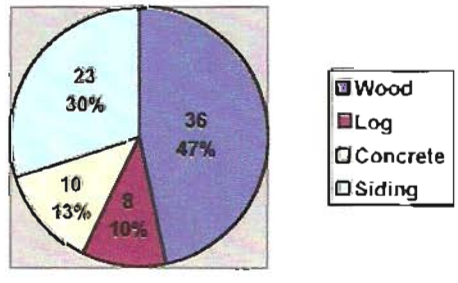
2.4.1 Types of Dwellings

Of the surveyed 100 households, 14 of the homes are hogans, 63 are frame houses, 13 are mobile homes, 6 are log cabins and 2 are brick homes.



2.4.2 Types of Exterior Walls

The exterior walls of the 100 households surveyed have a variety of materials used in the construction of the exterior walls of the homes; these include wood, stone, concrete (cinder blocks), and metal.

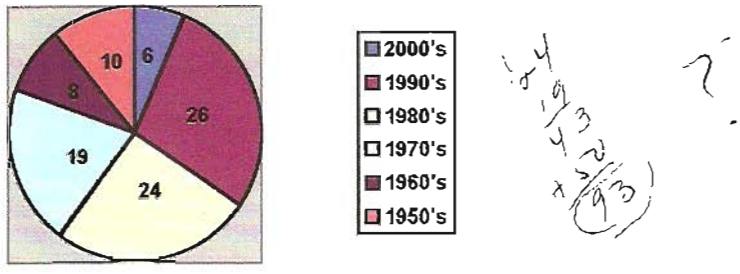


2.4.3 Median Value of Homes

The 2000 Census data states that the median value of the homes in the Black Mesa Chapter area is $24,700.

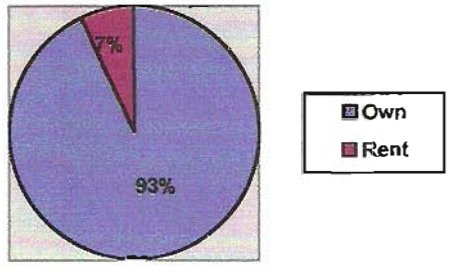
2.4.2 Years of Construction

Of the 100 homes, there is 6 of the houses that was constructed in the year 2000, 26 were built in the 1990's; there are 24 of the homes that were built in the 1980's. There are 19 of the houses that were constructed in the 1970's, there are 8 of the dwellings that were built in the 1960's and there are 10 of the houses that were built in the 1950's or earlier.



2.4.3 Home Ownership

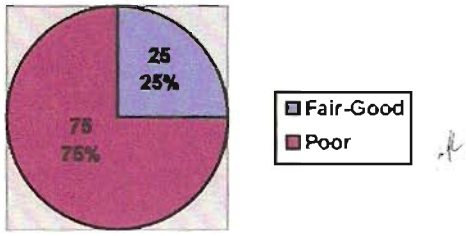
The majority of the respondents said they own their homes, which are 25 households for a total of 73%. There are 5 or 15% who are renting, and 4 or 12% who are in the process of buying their homes.



2.4.4 Condition of Dwellings

There are 25 or 25% who said that their houses were in good condition, with some needing minor repair work. There were 75 households for a total of 75% that stated their houses were in poor condition, they specified a number of problems they were experiencing with their houses.

Some of these reported conditions include; houses being too small, leaking roofs, deteriorating floors and walls, broken doors and windows, water piping breaking down and generally various stages of dilapidation and disrepair.

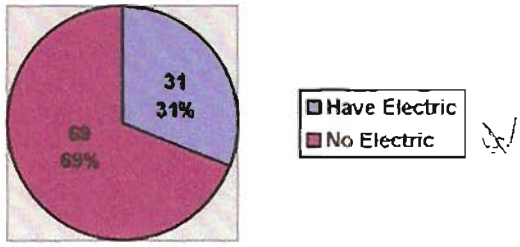


2.4.5 Utilities of Dwellings

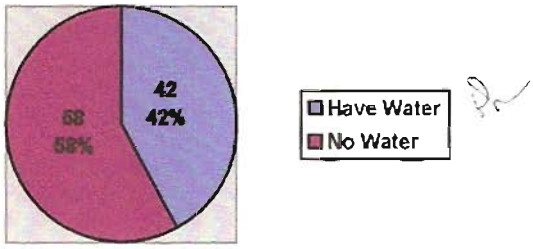
The immediate community area is served by water that is developed from wells maintained by NTUA. The electric systems are operated and maintained by the NTUA

There is no commercial gas in the community. The community has limited telephone service that is a radio tower system based which is operated by the Navajo Communications Co. The following utility data was generated through the survey:

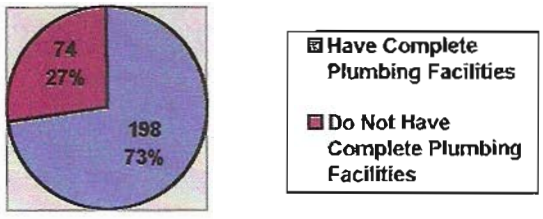
2.4.5.1 Electricity - 31 of the dwellings have electricity and there are 69 of the homes without electricity.



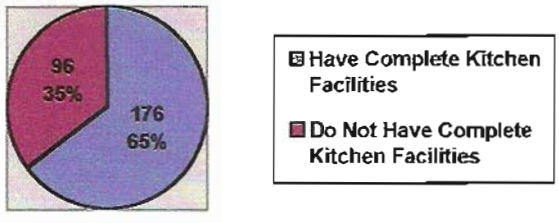
2.4.5.2 Water - There are 42 of the homes that have domestic running water and 58 without water.



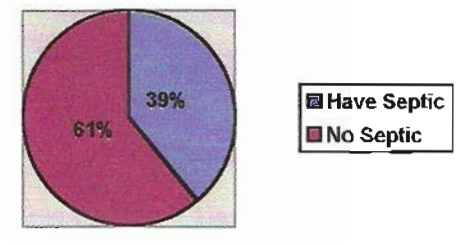
The 2000 Census data states that 74 of the 272 households do not have complete plumbing facilities for 27%, this suggests that 198 homes have complete plumbing facilities or 73%.



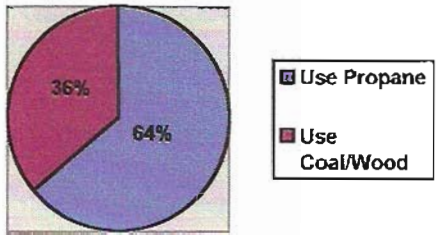
The 2000 Census data further states that 96 of the 272 households do not have complete kitchen facilities for 35%, this suggests that 176 homes have kitchen facilities for 65%.



2.4.5.3 Sewer/Septic - 39 of the homes have septic service and 61 are without septic systems.



2.4.5.4 Gas/Propane - There are 64 of the dwellings that have a propane system and 36 without propane or gas for heating and cooking. These latter households rely on wood/coal burning stoves.



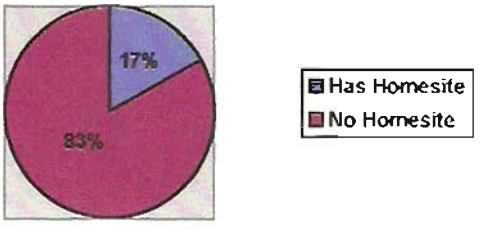
2.4.5.5 Telephone - There are 28 of the surveyed homes that have phones and there are 72 of the homes that do not have phones, the survey did not account for the cell phones which are in significant supply.

The 2000 Census data states that 134 of the 272 households have telephones for 51%; this suggests that 138 or 49% do not have telephones; this number may include cell phones.

2.4.5.6 Solid Waste - At the present time there is no landfill or transfer station within the community. It is not clear how the community-at-large disposes of its solid waste, some families do take their household trash to receptacles in Chinle and Pinon as they travel to those areas.

2.4.6 Homesite Leases and Scattered Housing Sites

Of the 100 households, 17 had approved homesite leases and 83 households said they did not have homesite leases.



2.4.9 Housing Need

2.4.9.1 Background

The Black Mesa Chapter is experiencing a serious housing need; there are too many community families that live in housing with dilapidated conditions. The Chapter and pertinent Tribal programs have limited resources that can be used to help the families get the resources to build new homes or to substantially improve their existing housing.

2.4.9.2 Consequences

Due in part to these conditions, community members are finding their children and other family members relocating to areas away from the community, where these family members have ready access to more resources, including employment, schools and housing.

This is detrimental to the traditionally close-knit Navajo family that is accustomed to living close to each other for family support and the building on, of traditional familial values. This phenomenon of families moving away, is contributing to a breakdown of the Navajo family unit.

In these "modern" times, it is also a disturbing trend that families who live in overcrowded and dilapidated housing conditions experience a high incidence of social ills, including exposure to alcoholism, family abuse and violence. Some of the resulting psychological and physical damage is devastatingly permanent.

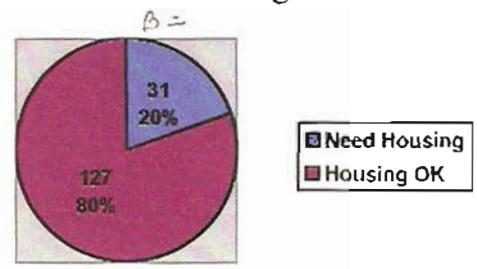
It is essential that families, particularly growing children have adequate living space. They all need their own space. The families who have to live in houses with dilapidated and overcrowded conditions suffer, in terms of the impact the poor housing has on their self-esteem. The younger school age family members would suffer more, perhaps from ridicule and embarrassment.

2.4.9.3 The Housing Need

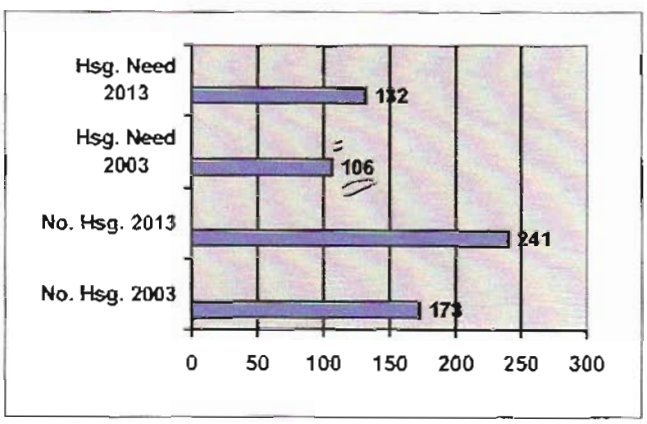
The Black Mesa Chapter Officials have a standing needs list that seldom changes, only in terms of the unfortunate need of adding more names.

There have been 75 families who have stated that they have problems with their housing. From the survey there is indication that a total of 31 who are in dire need of new housing or need substantial work on their housing, many if not all of these families would be on the Chapter housing needs list, so the number of 31 families in need of housing are used in the calculations.

This number is high considering that the reported number of occupied households in the Black Mesa Chapter area is 158. The total number of families needing housing assistance in relation to the total number of occupied households; show that approximately 20% of the community is in need of housing.



The estimated number of occupied households in 10 years or the year 2013 is 241. If the housing needs are not effectively addressed, there could be as many as 132 families in dire need of housing at that time.



2.5 Grazing and Agricultural Information

The Chapter Images, 1996 edition reports that the Chapter has several types of natural resources. The natural resources noted include the Chapter area has sand and gravel and coal.

Although the Chapter has significant natural resources, particularly the coal, the Chapter and community people receive little or no benefit. Some families do receive benefit from personal use of these resources, but collectively the benefit is limited, as there is no commercial/industrial level use or production that the Chapter derives direct benefit from.

2.5.1 Water

The primary source of water for the community is the NTUA water system. There are 4 developed wells, 7 windmills with 1 needing repair and some natural springs throughout the Chapter area. There are 10 reservoirs and livestock ponds that provide water for the livestock of community members and all need some repair.

2.5.2 Agriculture

The Black Mesa area has not had any substantial agricultural activity in recent history, thus there is not any farming that can be reported on. There are few families who have planted small family gardens in the past, although with the current drought conditions there is minimal farming if any.

2.5.3 Grazing

Black Mesa Chapter has approximately 55,000 acres of land that are open to grazing activities. Currently, 35 to 40 families possess grazing permits. The livestock owners rely on the water retained within manmade dams and the windmill drawn water for their animals. The livestock are fed the natural grass forage supplemented with alfalfa and other feed.

The future of the grazing industry is dependent on a variety of factors including the interest of younger family members to carry on the livestock raising traditions, the condition of the land, the availability of water and feed and the economics of the industry. The elderly and traditional community family members have every intent to carry on the tradition.

The problems the livestock owners contend with are the same problems that are universal among livestock owners, including shortage of water and forage and the concerns with overgrazing. The present drought conditions are a severe impediment to any successful livestock raising.

Grazing and Agricultural Information summary survey data appended as **Exhibit 2.9.4**.

2.6 Community and Public Facilities Information

2.6.1 Public Facilities Inventory

The community has its Chapter House and a storage/warehouse building. The Chapter House was built in 1982 and renovated in 1987 and 2002.

2.6.2 Streets - Pavement

The street to the Chapter House and the Chapter parking lot are not paved. There are a number of dirt roads that are heavily used in the community area and roads to the residences of community members that are not paved. The Chapter does have plans to eventually pave the Chapter House parking lot and some of the streets and roads. The streets do not have street names.

2.6.3 Landfill Transfer Station

The community has a 1 acre landfill that was opened in 1984 and is regularly maintained by the Chapter. The community does not have ready access to a Transfer Station. Some residents take their household trash and deposit them in receptacles in Pinon and Chinle and other regional communities.

2.6.4 Police Station/Fire Station

The community does not have a Police Substation or a fire station. The closest Police Substation and fire station are 30 miles away in Pinon and the closest District stations are in Chinle, 45 miles away.

2.6.5 Health/Medical Facilities

There are no health care facilities available in the community and the closest health clinic is the Pinon Health Station and the closest comprehensive health care facility is located in Chinle.

2.6.6 Schools

The Black Mesa Community Controlled School begun in 1972 is a contract school utilizing federal funds and it has an enrollment of 55 students at grade levels K through 8th grade with a staff of 34. The older students attend the Rough Rock and Pinon Schools and many have had to and continue to attend regional boarding schools.

2.6.7 Planned Construction

The community has plans for construction of various facilities, including new Headstart program facilities and also a new Senior Citizens Center.

Community and Public Facilities Information summary survey data appended as **Exhibit 2.9.5**.

2.7 Business and Industrial Development

The Black Mesa Chapter/community because of its isolation, the minimal "outside" traffic and lack of infrastructure do not have any commercial establishments. There are not any active business site leases and there are not any immediate plans for the development of any businesses. As a long range goal the Chapter leadership would like to see a convenience store with a gas pump as a beginning of its commercial endeavors.

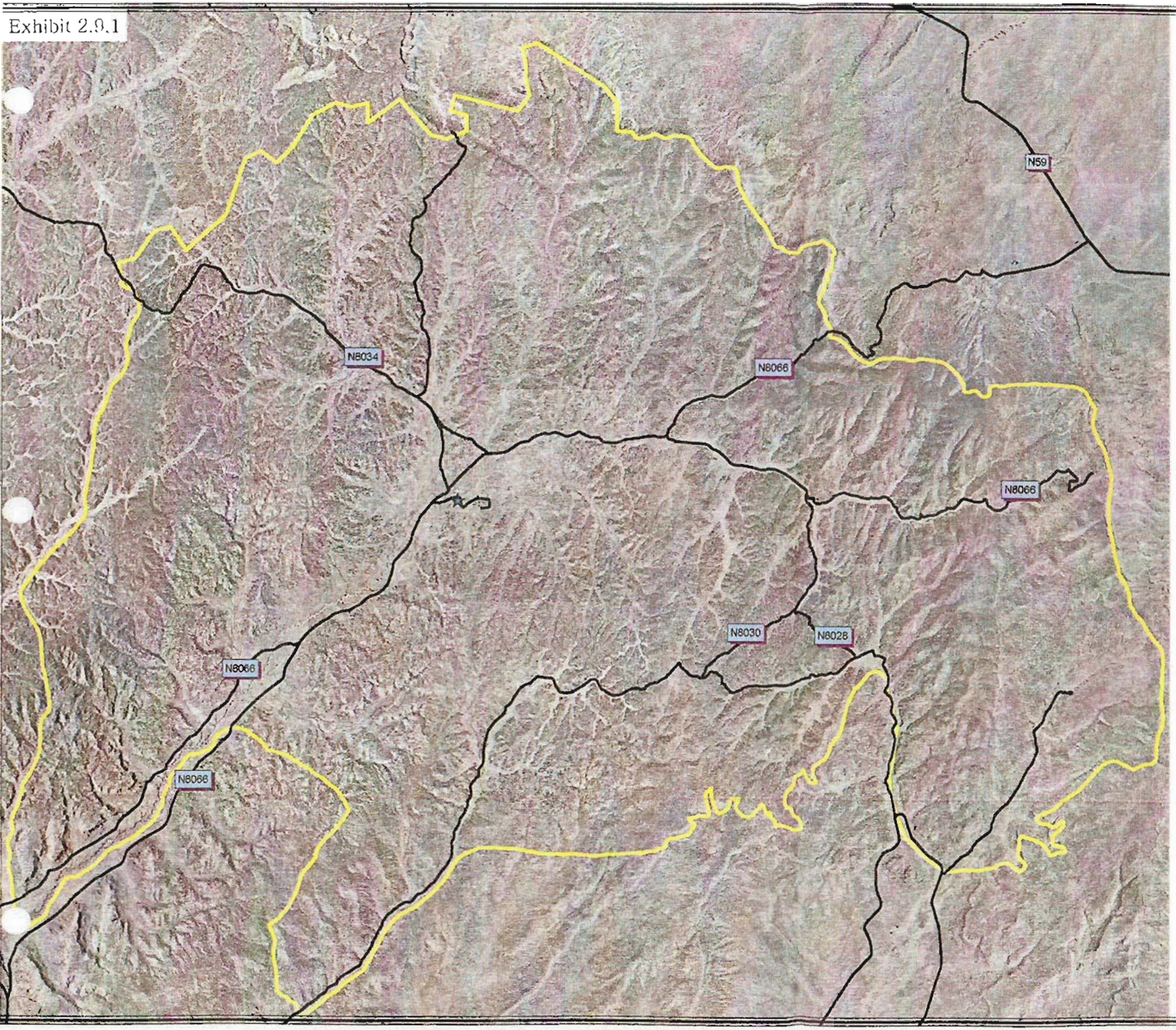
The Business and Industrial Development summary survey data appended as **Exhibit 2.9.6**.

2.8 Conclusion

Through the community survey process the Consultant and the Interviewers also ascertained important information on what the community members felt were their greatest needs, these needs expressed are listed in priority order at **Exhibit 2.9.7**.

The Consultant concludes that the Black Mesa community has the basic resources and the leadership necessary to formulate and implement plans that are intended to provide the community with a blueprint that will guide the community in all aspects of community and economic development.

Exhibit 2.9.1



Black Mesa Chapter Navajo Nation

Rez Star Point

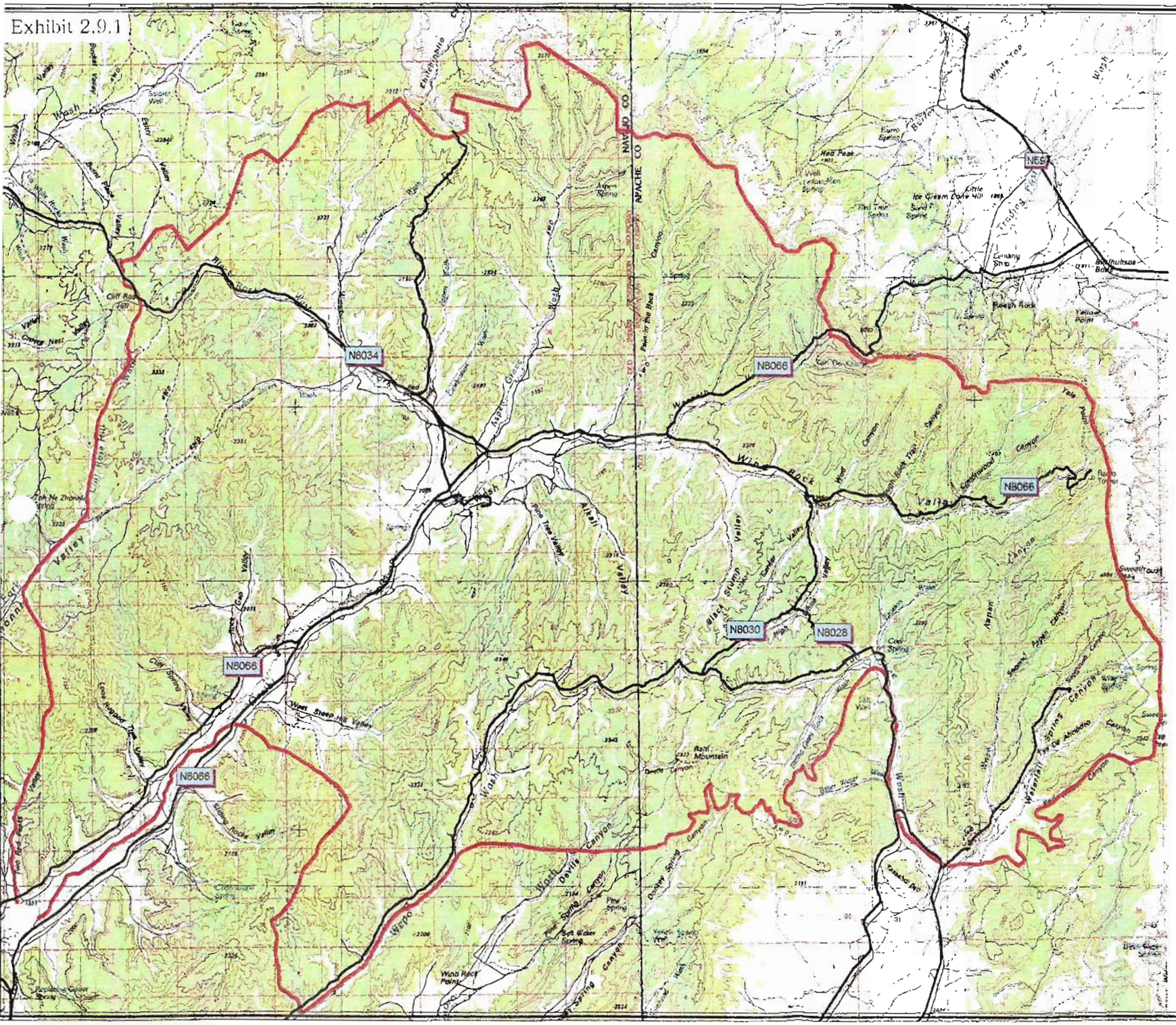
Map Prepared By: Lance H. Yazzie
03 Jan 05

0 2 4 Miles

Legend

- Chapter Line
- Chapter House
- Roads

Exhibit 2.9.1



Black Mesa Chapter Navajo Nation

Map Prepared By: Lance H. Yazzie
03 Jan 05

0 2 4 Miles

Legend

- Chapter Line
- Chapter House
- Roads

Exhibit 2.9.3 Survey Form

NAHASDA Chapter Land Use Plan Project
Phase 1-Community Assessment No: _____
Survey Instrument – Black Mesa Date: _____

Interviewer: _____ Location of Residence: _____

In Home:

No.	AGE	M	F	TRIBE	RACE	EDUC. LEVEL	IN-SCHOOL	VETERAN Y	VETERAN N	EMPLOYED Y	EMPLOYED N	OCCUP SKILLS	VT REGIS NN	VT REGIS ST	CHAPTER
1.															
2.															
3.															
4.															
5.															
6.															
7.															
8.															
9.															
10.															

Out of Home:

NO.	AGE	M	F	CEN. Y	CEN. N	EDUC.	IN-SCH.	VETERRAN Y	VETERRAN N	E.M.P Y	E.M.P N	OCCUP. SKILLS	LIVE WHERE	REGIS NN	REGIS ST	CHAPTER
1.																
2.																
3.																
4.																

A. Where employed? _____ B. How long? _____
C. Total household annual income? _____ D. Source of income? _____
E. Type of home? _____ F. Year built? _____ G. Own or rent? _____
H. Type of exterior wall? _____ I. Problems with dwelling? _____

J. Electricity? _____ K. Water? _____ L. Sewer? _____ M. Gas? _____ N. Phone? _____
O. Grazing permit? _____ P. Land use permit? _____ Q. Homesite Lease? _____
R. Where does family buy food? _____
S. Where does family buy gas? _____
T. Where does family buy clothes? _____
U. Where does family buy vehicles? _____
V. Where does family go for medical care? _____
W. Do family members attend Chapter meetings? _____ X. Civic Organizations? _____
Y. What do you feel are your greatest needs? _____

Notes: _____

Exhibit 2.9.4 Grazing and Agricultural Information

Land Status:

- Amount of Acres in Chapter area? 157,320
- Legal Classification of Land? Trust
- Are any Chapter land areas under lease to Navajo Nation or other? No

Water:

- What is the Community water source? NTUA
- Does Community claim any water rights? No
- Are there any natural springs? Yes
- Are there Wells developed Yes
- How Many? 4
- How many windmills are there? 6
- How many are not working? 1 is not working and needs repair
- Are there any solar powered windmills? No
- Are there manmade dams/reservoirs in Chapter area? Yes
- How many livestock ponds are there in Chapter area? 10
- How many need repair? They all need repair work

Agriculture:

- The community does not have any active farms.

Grazing:

- How many acres are reserved for Grazing? Approximately 55,000 acres
- Are these grazing acres actively used? They are mostly used for grazing
- How many families have Grazing Permits? 35-40
- Does the Chapter assist the permittees? Yes
- Approximate number of sheep in Chapter area? 500 Goats? 500 Cattle? 250 Horses? 160
- Is there a Ranching Cooperative? No
- What is the source of water for Livestock? Water wells/Wind mills
- Feed? Grazing, Grain, Alfalfa
- Primary problems experienced by Permittees? Lack of rain, drought conditions, grazing regulation

Exhibit 2.9.5 Community and Public Facilities Information:

The Black Mesa Chapter community has the following community and public facilities; the Chapter House which was built in 1972 and renovated in 1987 and 2002 and the Storage Warehouse.

Streets- Pavement:

- Is the road to the Chapter House paved? No
- Is Chapter parking lot paved? No
- Does Community have streets? No
- Are there plans to pave parking lot and streets? Yes

Landfill/Transfer Station:

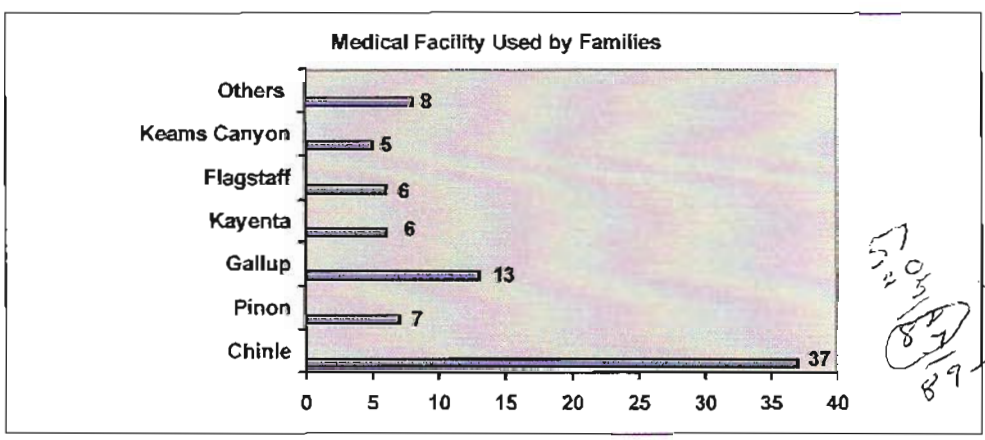
- Is there a Community Landfill? Yes
- Who maintains the Landfill? Chapter
- Does Community have access to Transfer Station? Not locally

Police Station/Fire Station:

- Is there Police Station in Community? No
- If no where is nearest station? Substation in Pinon and District Station in Chinle
- Is there a Fire Station in the Community? No
- If no where is nearest station? Substation in Pinon and District Station in Chinle

Health/Medical Facilities:

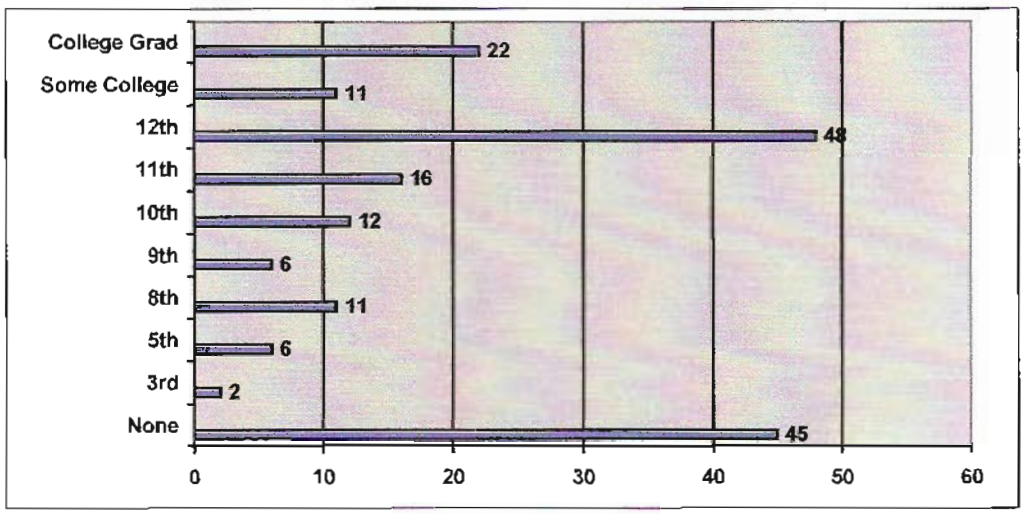
- Is there a Health/Medical facility in the Community? No
- If no where is nearest health facility? Clinic in Pinon and Comprehensive Care in Chinle



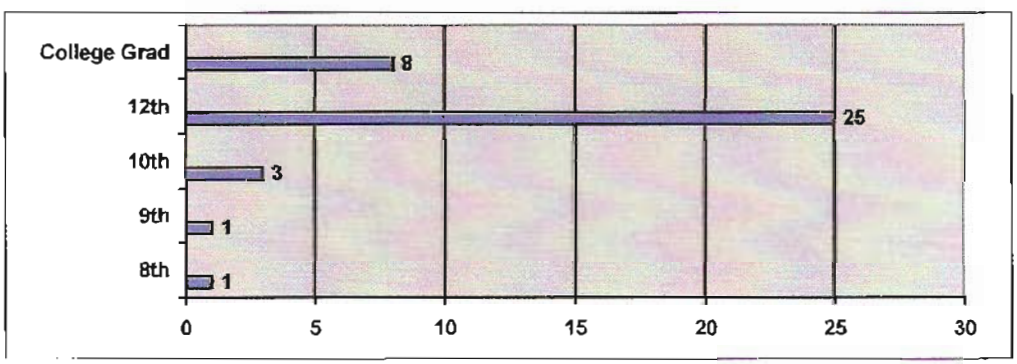
Schools:

Name of School	Type of School	Year Est.	Enrollment	Grades	Staff
1. Black Mesa Com.	Contract School	1972	55	K-8	34

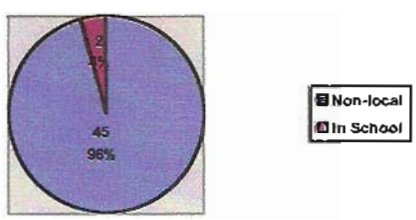
From the survey conducted of the 100 homes, the following information was obtained concerning the level of education completed by the family members.



From the information received about the family members who are non-local, the level of education achieved is significantly different from the previous chart. The data on the non-locals level of education achieved is as follows.



Of the 47 family members who are non-local, there are 2 that are in school.

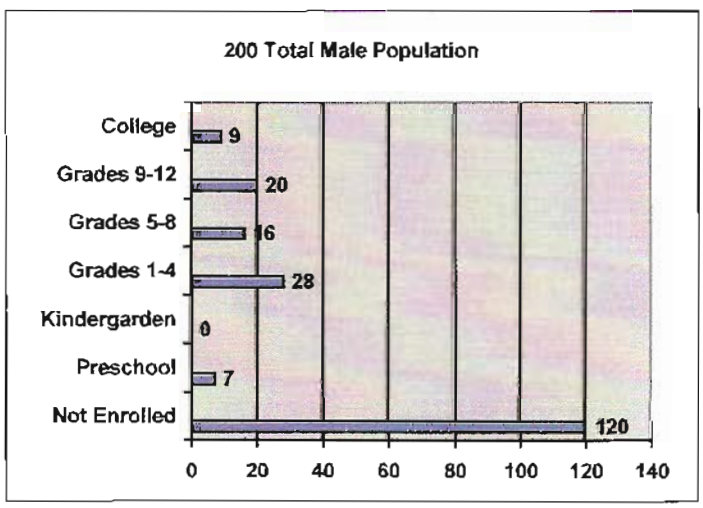


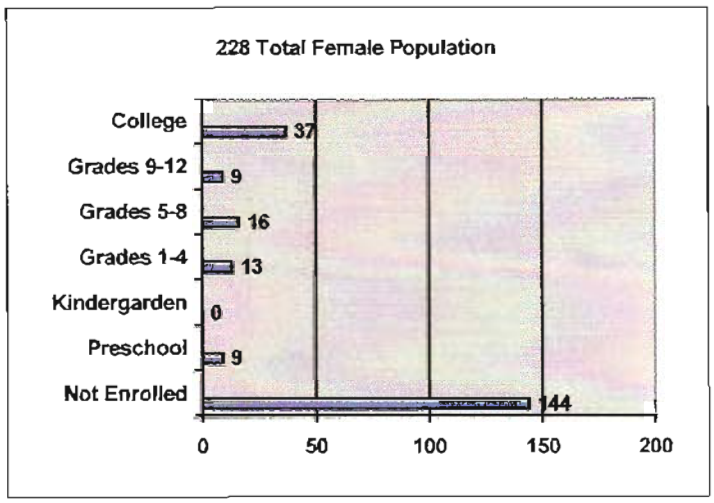
The 2000 Census data describes the Educational Attainment of the Black Mesa Chapter total population using 277 as a base of the 25 years and older group.

The 2000 Census using the base number 277 of the 25 years and older group defines the educational attainment level of 125 males.

The 2000 Census using the base number 277 of the 25 years and older group defines the educational attainment level of 152 females.

The 2000 Census provides a final education specific data on School Enrollment of the Black Mesa Chapter community.





Planned Construction:

Facility	Stage of Project	No. of People to Benefit
1. Head Start	Planning Stage	100
2. Senior Citizens Center	Planning Stage	40

Exhibit 2.9.6 Commercial and Industrial Development Information Data

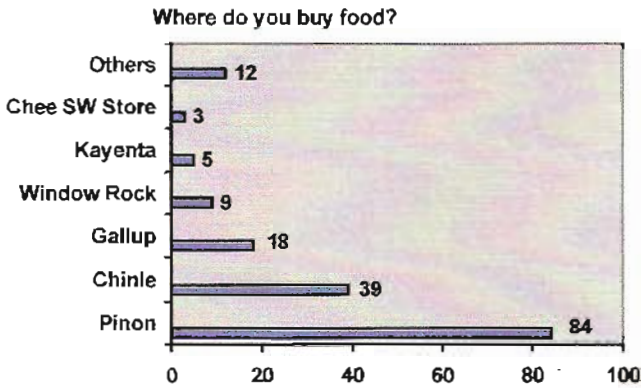
Existing Businesses Inventory:

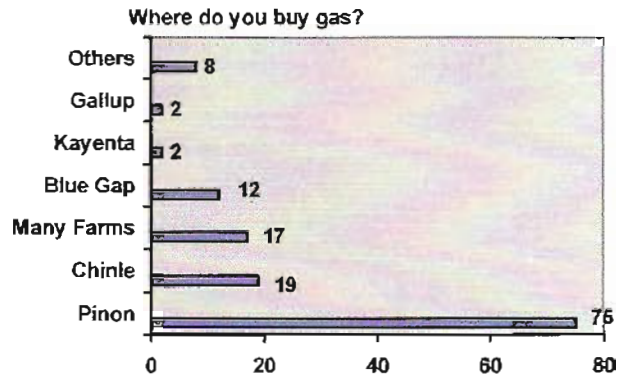
1. There are no commercial businesses in Black Mesa

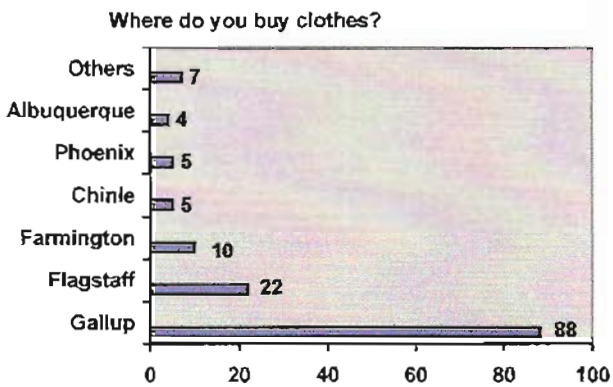
Proposed New Businesses:

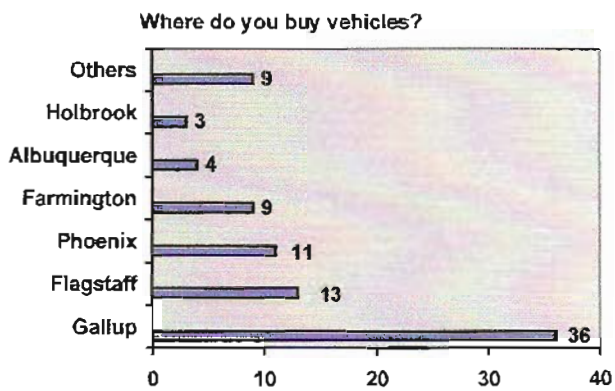
1. The community has plans for a convenience store with gas pump.

The survey of the 100 households recognized the buying trends of the community as the residents described their preferences on where they buy certain items.









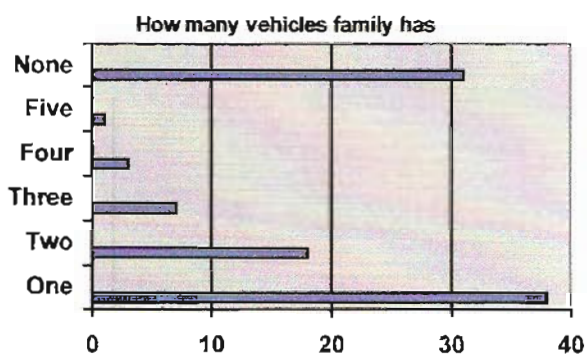


Exhibit 2.9.7 List of Greatest Needs

Through the community survey process the Consultant and the Interviewers also ascertained important information on what the community members felt were their greatest needs, these needs expressed are listed below in priority order. The number in parenthesis indicates the number of respondents who listed the items as their greatest needs of their households.

1. Electric Hook-up (56)
2. Road Improvement (56)
3. Domestic Water (48)
4. Telephone (44)
5. Wastewater (37)
6. New Home (18)
7. Home Improvement (13)
8. Employment (8)
9. Gas Line (7)
10. Medical Clinic (7)
11. Store/Gas Station (7)
12. Senior Citizens Center (7)
13. New School (7)
14. Transfer Station (6)
15. Fuel-Wood/Coal (5)
16. Social Service Visit (5)
17. New Chapter House (3)
18. Safe Ride (2)
19. Cell Phone Tower (2)
20. Live Stock Water (2)

SPECTRUM 3 - LAND SUITABILITY ANALYSIS

TABLE OF CONTENTS

SPECTRUM 3 – LAND SUITABILITY ANALYSIS – SITE 1

3.1 Background

The Black Mesa Chapter selected a site that was considered as the planning site for new development for the Black Mesa Chapter community, including the development of new housing and other facets of community development. The site was biologically assessed and reported on herein is located 9 miles east of the Black Mesa Chapter House, see location map at **Exhibit 3.7.1** and **3.7.2**.

The Black Mesa CLUP Committee advised the Consultant that the community had the potential development site identified and that it was available for the Land Suitability Analysis to commence. Subsequently, the Consultant along with associate Arnold Clifford, GeoBotanist proceeded with the Land Suitability Analysis of the 10-12 acre site, consistent with the Phase III requirements of the NAHASDA Chapter Land Use Plan and Housing Planning Project.

Mr. Clifford did a pedestrian survey to identify all the vegetation and evidence of wildlife and recorded other significant observations of cultural and/or traditional significant value. Mr. Clifford also noted the evidence of surface water, soil and topographic conditions.

3.2. Existing Environment

3.2.1 Climate

The Black Mesa - Yale Point region is situated at approximate 7480 feet elevation, with a semi-arid climate. Temperatures of 100 degrees (F) rarely occur during the summer. Sub-zero temperatures often occur during the coldest parts of winter. The monthly mean annual temperature in the region ranges from 44-46 degrees (F).

Precipitation occurs primarily during two periods in the year from mid to late summer and mid winter through the late minter months. Summer precipitation occurring as rainfall, generally exceeds that of the winter months. The mean annual precipitation is estimated to be about 14-16 inches. Regional prevailing winds blow from the southwest.

3.2.2 Geology

The proposed project tract is located on Quaternary age alluvial deposited sediments derived from Cretaceous age bedrock that is exposed along the escarpment of scattered mesas that sit atop Black Mesa Range. The valleys and talus slope bedrock consists of middle Upper Cretaceous Wepo Formation, an alternating sequence of grayish-yellow sandstone, gray siltstone and coal lens.

The tan-brown sandstone caprock above the Wepo, is the Yale Point Sandstone. Both the Wepo Formation and Yale Point Sandstone are part of the Mesa Verde Group of the Black Mesa Basin. Yale Point Sandstone type section locality is about 4.5 miles northeast of the survey tract.

3.3 Site Analysis Elements

3.3.1 Ground and Surface Water

Surface Water: No surface flowing streams are located within the boundaries of the proposed project area. The southern boundary is bordered by an entrenched emphemeral stream channel that drains northeastward towards the Rough Rock Wash, a large headward erosional drainage. Also along the western edge is a large headward erosional channel that drains northeast. These drainage channels control seasonal rainfall runoff within the study area.

Ground Water: The Yale Point region is considered part of the Black Mesa Hydrologic Basin. Groundwater in the Black Mesa region is a table aquifer, small water yields from the sandstone units of the Wepo and Toreva Formations. Wells are drilled to a depth of greater than 400 feet (Cooley and Others, 1969).

The Yale Point Sandstone yields water along the upper flanks of Black Mesa range where water is released as springs below the Yale Point Sandstone caprock. An existing water well is located in the western edge of the study tract. An existing working water well pump is located next to a water trough and water tank.

Domestic ground water wells are drilled where drilling depth and pumping levels are economically feasible, the wells provides water for domestic and livestock use.

3.3.2 Soils Information

The proposed development site is located on soil complexes derived from alluvial deposited weathered Cretaceous age bedrock. On-site observation of generalized soils type indicates overall texture of clayey to siltyclay soil prevalent throughout the area. Soils observed in areas above the entrenched drainages are silty to siltyclay.

3.3.3 Slopes and Topography

The project area is located on a somewhat disturbed rangeland north-northeast of Black Mesa chapter house. The site is characterized by a broad southwest sloping alluvial terrace valley, in the upper Wind Rock Valley drainage. Yale Point is located about 4.5 miles to the northeast and the Radio tower 4.25 mile to the east.

The north-northeastern edge of the survey boundary is bordered by caprock mesas that sit atop Black Mesa range. Massive sandstone caprock is exposed along the entire upper mesa length. The survey tract is located at the toe of the talus slope coming off the mesas. The area from the toe going northward is forested while the alluvial terrace valley is covered with Grassland-Shrubs.

The southern edge is bound by an existing dirt road that leads to Yale Point. Beyond the southern dirt road edge is a large entrenched headward erosional channel that drain southwest along Wind Rock Valley drainage. The Headward erosional channel dimensions are 25 feet depth and up to 100 feet width at its widest section. Included within the survey block is a livestock coral located near the eastern edge of the block, a water well with water trough and circular concrete water tank are all located at the western edge. An old trailer along with the foundation of another home is centrally located in the middle of the survey tract.

3.3.4 Vegetation and Wildlife

3.3.4.1 Vegetation

Vegetation community cover types were determined by visual observation of the existing flora throughout the project area. Dominant and/or co-dominant plant species, other associated plant species and estimated total percent plant cover were all determined during the initial survey.

Pinyon-Juniper Woodland and Grassland-Shrub vegetative plant community types were observed during the botanical survey. A complete list of the 55 vascular plant species observed within the project area can be found in **Exhibit 3.7.8.**

Pinyon-Juniper Woodland: Plant community dominated by open canopy Pinyon Pine and Utah Juniper with very scattered tall Ponderosa Pine. Shrub associates include Viscid Rabbitbrush, Four-winged Saltbush, Broom Snakeweed, Big Sagebrush and Prickly Pear Cactus. The limited grass cover consists of Blue Grama and Galleta plant species.

Total vegetation cover ranges from 35 to 40%. Soils are generally silty to siltyclay with scattered small boulders. This plant community lies mainly to the north of the surveyed tract along the terminus of mesa talus on hummucky topography.

Grassland-Shrub: Community type determined by Co-dominant Galleta, Blue Grama grass with Viscid Rabbitbrush and very scattered Four Winged Saltbush. Total vegetative cover is up to 20%. Alluvial deposited soils are silty to siltyclay. The majority of the surveyed tract falls within this community type on gentle sloping alluvial deposited swales.

3.3.4.2 Wildlife

Wildlife field data was developed based on field observation of wildlife tracks, droppings, habitat inventory, animal occurrence and other life forms analysis. See **Exhibit 3.7.9** for list of species occurrence or signs of occurrence within the study area.

Rodents: Small rodent activity was noted throughout the project area. Small burrows of Field mice and Kangaroo Rats are noted under dense shrub crowns and rock overhangs. No active or inactive prairie dog burrows were located within the study area.

Carnivores: Signs of carnivore species observed during the survey include: Coyote tracks and droppings. Historically, other carnivores that have been documented include: Black Bears, Gray Wolf, Mountain Lion, Bobcat and several weasel species. However, it is very unlikely any of these species reside in or near the study area at the present time. Good habitat exists for Mountain lions, Bobcats and possibly Black Bears within the wooded slopes and rocky mesas scattered nearby.

Raptors: No bird species of interest were found near the study area. Possible raptors of concern that may occur in the nearby Black Mesa Mountains include: Golden Eagle, Peregrine Falcon and Ferruginous Hawk. Potential raptor utility area past the northern border is situated along the base of a sandstone caprock Mesa and hummucky topographic talus slope.

Another potential raptor utility region lies about 1500 feet to the south-southwest along extensive caprock mesas. The mesas form extensive cliffs that are up to 400 feet in height. No white wash or raptor nest sites were observed. Scattered tall Ponderosa pine and prominent caprock mesas may provide possible raptor utility sites such as nesting, perching and roosting sites within this small region of the proposed development area.

The proposed housing and community development project will have significant impact on wildlife inhabiting the area. However, these impacts should be limited to small rodents and reptiles.

Evidence of domestic and/or feral animal activity within the study area includes tracks made by cattle, sheep, horse and feral dogs occur throughout the survey area.

3.3.5 Culturally Significant Areas

There have not been any Cultural Resources Surveys done in the immediate vicinity of the proposed development site. Thus it is presumed that there are not any cultural resources sites documented within the proposed site.

However, it is recommended that prior to the finalization of any proposed development plans for the area, the entire site be archeologically surveyed to conclusively determine if there are any cultural resources.

The conclusion of the Consultant is that there are not any known cultural resources concerns found in the vicinity of the 10-12 acres.

3.3.6 Traditionally Sensitive Areas

Through interviews with the Chapter leadership, the Consultant ascertained that there are no significant traditionally sensitive areas in the vicinity of the proposed development site, as no traditional ceremonies have been performed there in recent memory or other significant traditional activity. The Consultant concludes there are no traditional sensitive areas that will hinder the proposed development.

3.3.7 Environmentally Sensitive Areas – (Endangered, Threatened and Sensitive species)

Federally funded agencies are prohibited from authorizing or carrying out any development projects or activities that may jeopardize the existence of any federal listed species under the Endangered Species Act of 1973 (as amended). Therefore it is very important to inventory potential habitats for any plants and animals that are Endangered, Threatened and Sensitive before any construction activities are proposed.

3.3.7.1 Endangered, Threatened and Sensitive Flora

Federal, State and Navajo Tribal plant Species of Concern found growing near the proposed Black Mesa Housing and community development project area, Navajo County, Arizona include: ***Aletes macdougalii*** (Macdougal False-carrot) and ***Asclepias cutleri*** (Cutler Milkweed).

- ***Aletes macdougalii*** Coult. & Rose (Macdougal False-carrot)

  Federal Status: Species of Concern

  Navajo Heritage Status: Species of Concern

Description: Acaulescent perennial from a thick caudex; many stems branched from the caudex, 6-25 cm tall; leaves pinnate to bipinnate, 2-6 opposite pairs of lateral, linear to oblong leaflets, entire; inflorescence in solitary umbels; flowers yelloy; fruit 3-8 mm long, oblong with small corky wing ribs; flowers in May to early June.

Known Distribution: A Colorado Plateau Endemic. San Juan and NcKinley Counties, New Mexico. northeastern Arizona, southwestern Colorado and southeastern Utah.

Habitat: Sandstone rimrock, slickrock, ledges, benches, talus slopes and rarely sandy alluvial bottoms. Mainly in the Mesa Verde Group, Entrada Sandstone and Wingate Sandstone Formations. Pinyon- Juniper Woodland community at 2000-2275 meters elevation.

Remarks: Rare throughout its range. Nearest populations occur at Yale Point Area, 1.5 mile to the northeast. Growing on talus slopes and caprock at the locality. Potential habitat exists nearby but not within the surveyed tract area.

- ***Asclepias cutleri*** Woodson (Cutler Milkweed)

Federal Status: Species of Concern

Navajo Heritage Status: Species of Concern

Description: Small slender perennial, single to few branching from the base; stems 6-13 cm long; Leaves linear to filiform, sessile, 3-8 mm long and 1-2 mm wide; Terminal flowers solitary, small; Corolla reflex-rotate, Pale green-rose to pink-purple; Fruit a follicle pendulous to spreading on a weakly ascending pedicel. Flowering period Late April to early June.

Known Distribution: Grand and San Juan Counties, Utah; Apache and Navajo Counties, Arizona.

Habitat: Sand sheets and dunes in mixed Sand desert shrub and Pinyon-Juniper communities. Elevation 4200-4700 feet.

Remarks: A Colorado Plateau endemic that is rarely noted by surveyors. An easily overlooked species due to its small and inconspicuous growth habit. No suitable habitat exists within the vicinity of the proposed tract.

3.3.7.2 Endangered, Threatened and Sensitive Fauna

Animals of concern found in or near the proposed project area Navajo County, Arizona include: ***Aquila chrysaetos*** (Golden Eagle), ***Falco peregrinus*** (Peregrine Falcon), ***Buteo regalis*** (Ferruginous Hawk), ***Asio flammous*** (Burrowing Owl) and ***Mustella nigripes*** (Black-footed Ferret). No active Prairie dog colonies were located therefore, it is highly unlikely that the Burrowing Owl and the Black-footed Ferret are presently located within the study area.

- ***Aquila chrysaetos*** (Golden Eagle)

Federal Status: Federal Sensitive Species

Remarks: Golden Eagles are occasionally reported hunting or hovering overhead within the general area. Good habitat for nesting existst along the top Black Mesa Mountain range where there are scattered tall Ponderosa pine and high sandstone caprock mesas scattered throughout
the top of Black Mesa.

- ***Falco peregrinus*** (Peregrine Falcon)

Federal Status: Federally protected

Remarks: No potential nesting sites were seen in or near the proposed project area. Potential habitat exists within the general area along mesa tops that are scattered across the top of Black Mesa. Where high protruding sandstone caprock forms extensive cliffs. No Peregrine Falcons were observed within the surveyed area.

- ***Buteo regalis*** (Ferruginous Hawk)

Federal Status: Federal Candidate Species

Remarks: Ferruginous Hawks inhabits dry, open country. Often in eroded badlands type of topography. No Ferruginous Hawks were observed during the survey and no suitable habitat exists for this raptor of concern.

3.3.7.3 Compilation of Field Data and Methodology

Field survey was conducted on approximately 10-12 acres of disturbed rangelands east of Black Mesa Chapter House. The field survey was completed September 1, 2002 with one field surveyor conducting the initial ground work.

Methodology used during the field survey consists of walking out the entire survey boundary in small manageable blocks of 1 acre. The surveyor walked 15 feet apart, transecting the entire 10-12 acres block back and forth to ensure that 90-95% total ground cover was achieved. A 25-50 foot buffer zone was also surveyed beyond the required survey boundary.

Raptor surveys were conducted through visual surveys of all powerline poles, fencelines and any other protruding high areas with the aid of binoculars and field spotting scopes.

3.3.7.4 Summary of Survey Results

Survey results conclude that no plant or animal species of concern grow or reside within the proposed project area. Potential habitat for Macdougal False-carrot exists nearby but not within the tract boundary. The tract is suitable for development with powerlines paralleling the site.

Low gradient of the site is another positive feature for the site; however the site needs to be planned in a rectangular shape area with the northern border bounded by undulated topography of small hills and scattered large talus boulders.

The southern edge is bounded by an entrenched headward erosional drainage that is part of the upper Wind Rock Valley. Headward erosional drainages increase upstream and channel dimensions through a relatively short time. The headward drainage may need to be stabilized to prevent it from migrating northward towards the proposed site.

The area surveyed is pre-disturbed with a homesite, corral and water well. The grazing rights owners have given their permission to remove the homesite if the site is approved for the proposed housing project. Impacts to the site should be minimal to raptors and wildlife. Cattle, horses, sheep and goats are presently grazed nearby.

3.4 Accessibility

The proposed development site is located approximately 9 miles east of the Black Mesa Chapter and 5 miles east of the junction of Navajo Route 41 and 4, these roads lead to Blue Gap/Cottonwood/Ganado and Black Mesa/Rough Rock/Pinon and east to the development site. The site is accessible via Navajo Route 4 which is the main access for the east Black Mesa community. The site is thus relatively easily accessible.

3.5 Conclusion

The proposed development site selected by the Black Mesa CLUP Committee and Chapter Leadership is in a good location. It has positive attributes in addition to its location, such as, moderate to good soil conditions, good slope for drainage, no vegetation or animal species of concern, no culturally or traditionally sensitive areas of concern and community support. The site also has excellent aesthetics.

The primary obstacles to be surmounted is to tap into the established water system supplied by well water. The Navajo Tribal Utility Authority maintained single-phase electric powerline that borders the development area may be sufficient to provide adequate power to the site, thus obtaining electrical power should not be a major concern. These determinations will be made with specificity in the Phase IV Infrastructure Analysis.

The Consultant recognizes the potential that the selected development site represents, and with the committed determination of the Black Mesa CLUP Committee and the Chapter Leadership, the development site can provide long term and well-deserved success by the Black Mesa community.

3.6 Consultation Coordination (similar to all sites, thus documented once)

The Consultant credits Mr. Arnold Clifford of Beclahbito, Navajo Nation for the commendable fieldwork performed on the Vegetation, Wildlife, and Environmentally Sensitive Areas elements of this Phase III Land Suitability Analysis on the 8 and 10-acre sites that are identified for development purposes by the Black Mesa Chapter and Community.

Exhibit 3.7.1

Black Mesa Development Sites Map

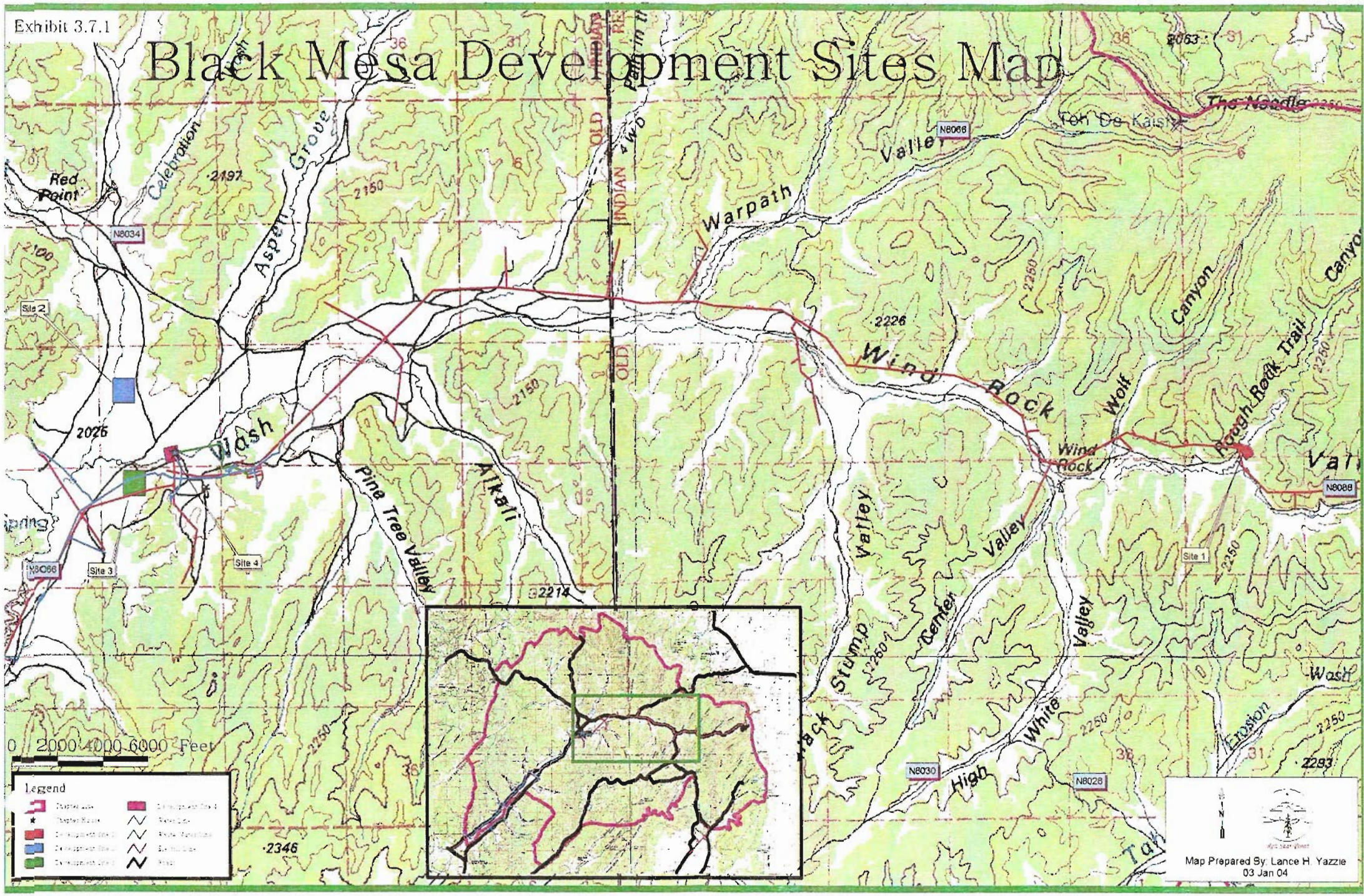


Exhibit 3.7.2

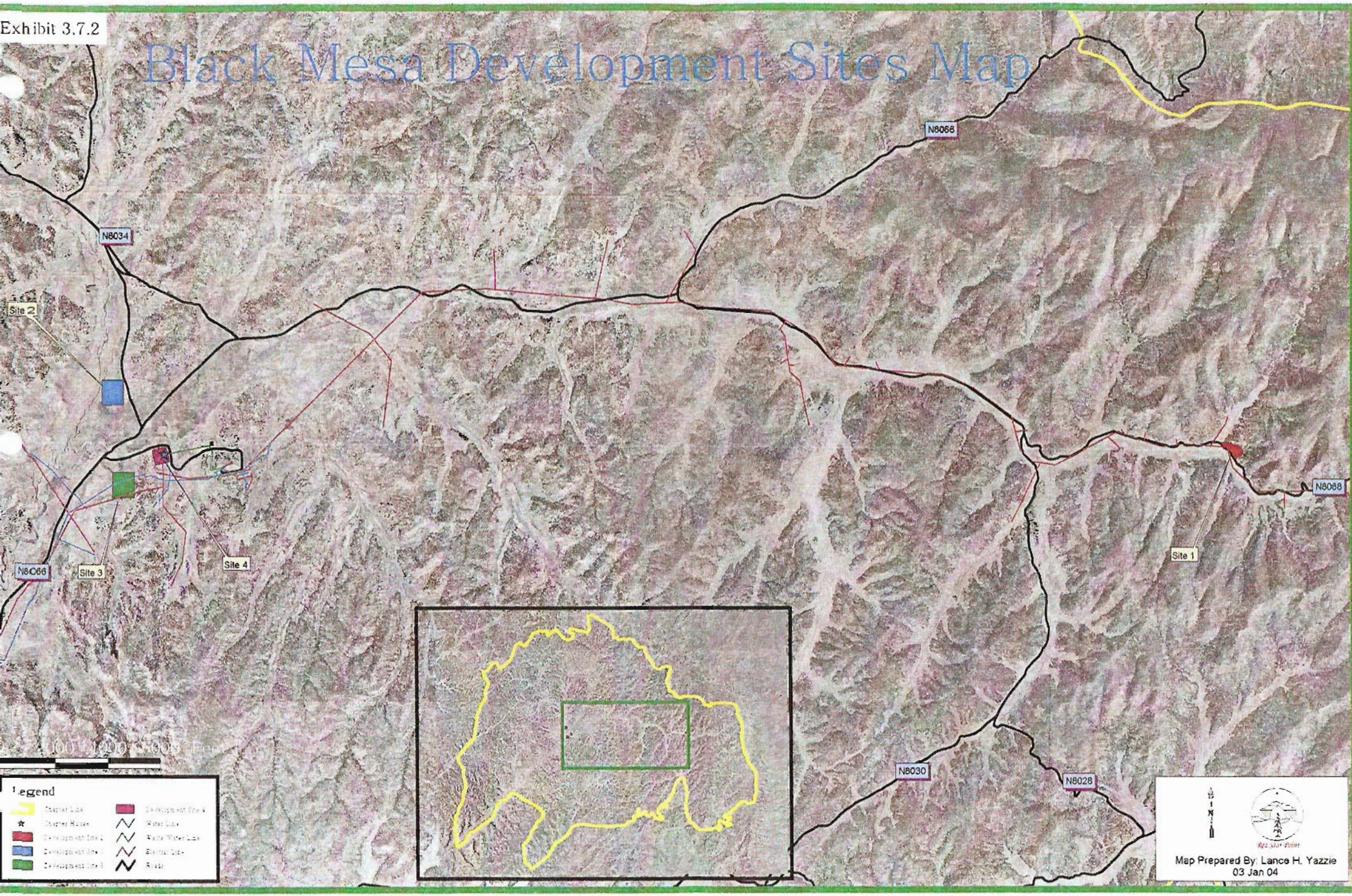
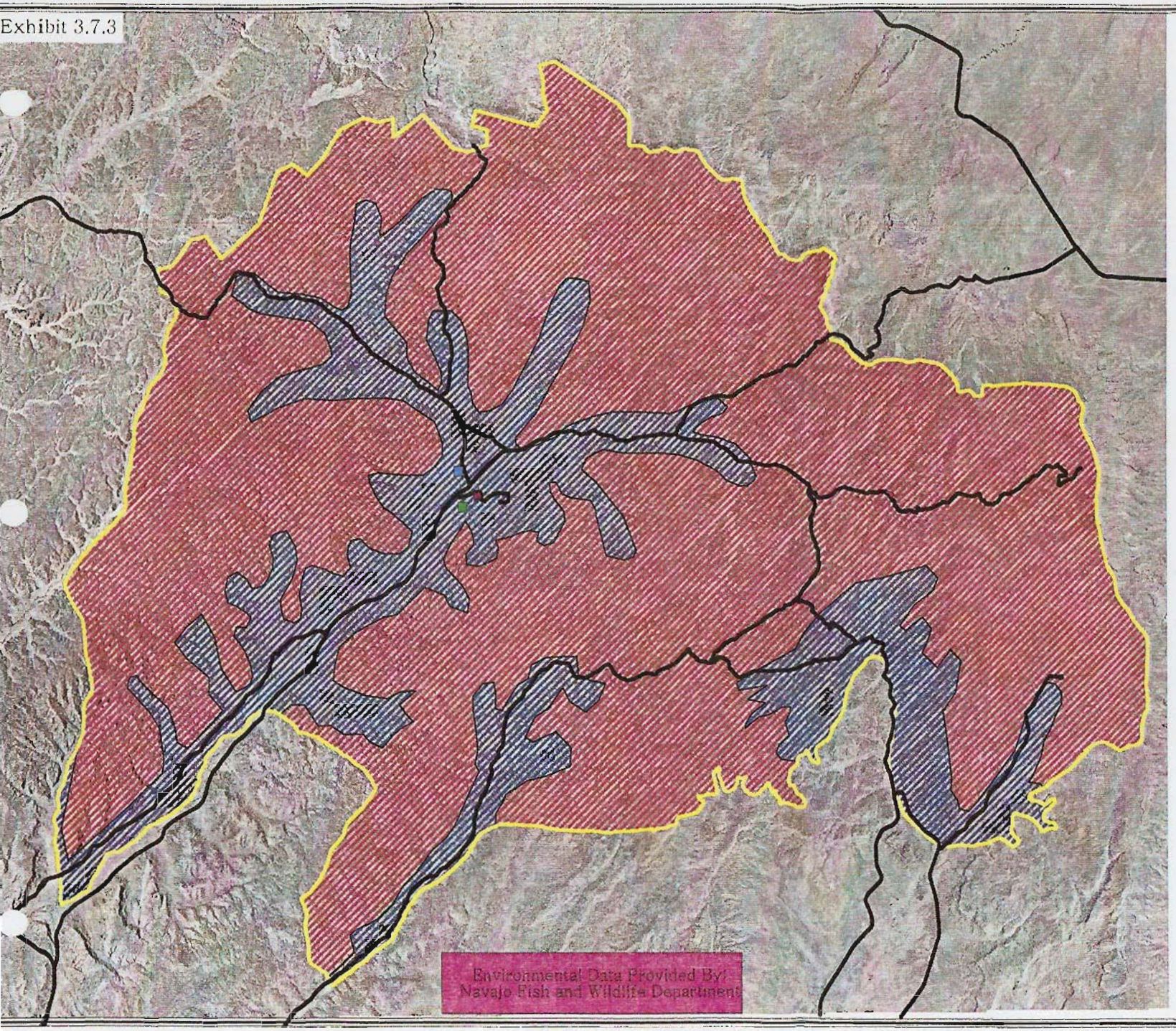

Black Mesa Development Sites Map
N8066
N8034
Site 2
N8066
Site 3
Site 4
N8088
Site 1
N8030
N8028
Legend
Map Prepared By: Lance H. Yazzie
03 Jan 04

Exhibit 3.7.3



Black Mesa Environmental Sensitive Zones Map

N

Rez Star Point

Map Prepared By: Lance H. Yazzie
03 Jan 05

0 2 4 Miles

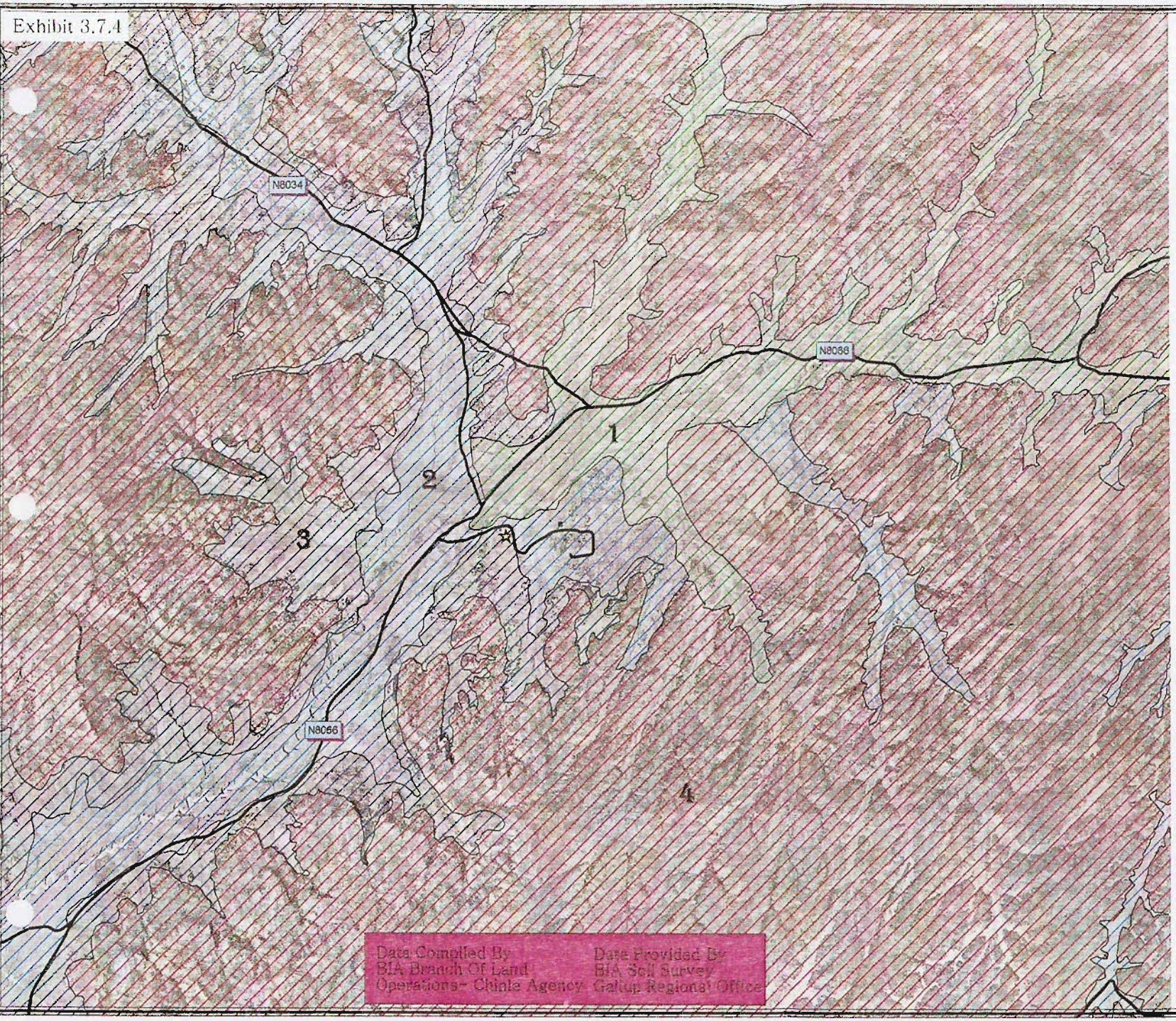
Legend

- Chapter Line
- Chapter House
- Open Development
- Restricted Development
- Development Site 1
- Development Site 2
- Development Site 3
- Development Site 4

LEGEND – Black Mesa Community Soils Map

	(Range Symbol)	(Soil Symbol)
1.	**LO4P80** LO – Loamy (Silt) Range Soil 4 – 15"-17" PPT, 6,500`-7,500` Elev P - Poor Range Condition 80 – Ac Req/1 SU Yr Long	**5X-4/AB-2** 5 – Med Soil Text/Slow Perm X – Flood Plain Alluvium 4 – 15"-17" PPT, 6,500`-7,500` Elev AB - 0% to 3% Slope 2 – Moderate Erosion
2.	**CY4P112** CY – Clayey Soil 4 – 15"-17" PPT, 6,500`-7,500` Elev P - Poor Range Condition 112 – Ac Req/1 SU Yr Long	**2X-4/AB-2** 2 – Fine Soil Text/Slow Perm X – Flood Plain Alluvium 4 – 15"-17" PPT, 6,500`-7,500` Elev AB - 0% to 3% Slope 2 – Moderate Erosion
3.	**LO4P80** LO – Loamy (Silt) Range Soil 4 – 15"-17" PPT, 6,500`-7,500` Elev P - Poor Range Condition 80 - Ac Req/1 SU Yr Long	**6T-4/BD-2** 6 – Med Soil/Mod Perm T – Footslope Alluvium 4 – 15"-17" PPT, 6,500`-7,500` Elev BD – 1%-8% Slope 2 – Moderate Erosion
4.	**TB4bP137** TB – Thin Breaks Range Soil 4 – 15"-17" PPT, 6,500`-7,500` Elev b – 40%-69% Pinon Juniper P - Poor Range Condition 137 - Ac Req/1 SU Yr Long	**49EM-4/FG-7** 49 – Thin Breaks EM – Interbedded Sandstone/Shale 4 – 15"-17" PPT, 6,500`-7,500` Elev FG – 12%-55% Slope 7 – Undifferentiated Erosion

Exhibit 3.7.4



Black Mesa Community Soils Data Map

Map Prepared By: Lance H. Yazzie
29 Feb 05

0 3000 6000 9000 Feet

LEGEND

- ☆ Chapter House
- 1-L04P80 5X-4/AB-2
- 2-CY4P112 2X-4/AB-2
- 3-L04P80 6T-4/BD-2
- 4-TB466P137 49EM-4/FG-7
- Roads

Data Compiled By
BIA Branch Of Land Operations- Chinle Agency

Data Provided By
BIA Soil Survey
Gallup Regional Office

Exhibit 3.7.7 **Bibliography** (similar to all sites thus documented once herewith)

Allred, K.W. 1980's. A Filed Guide to the Grasses of New Mexico. Department of Animal and Range Sciences. New Mexico State University.

Barneby, R. 1989. Fabales. In Intermountain Flora, Vol. 3, Part B. New York Botanical Garden, Bronx, New York.

Benson, L. 1982. The Cacti of the United States and Canada. Stanford University Press, Stanford, California.

Brown, D.E. 1982. Biotic Communities of the American Southwest - United States and Mexico. In Desert Plants. University of Arizona, Tucson, Arizona.

Cooley, M.E., J.W. Harshbarger, J.P. Akers and W.f. Hardt. 1969. Regional Hydrogeology of the Navajo and Hopi Indian Reservations, Arizona, New Mexico and Utah. Geological Survey Professional Paper 521-A. United States Government Printing Office, Washington D.C.

Cronquist, A., A.H. Holmgren, N.H. Holmgren and J.L. Reveal. 1986. Intermountain Flora. Vascular Plants of the Intermountain West, USA. Vol. 1 – Geological and Botanical History of the Region, Its Plant Geography and a Glossary. The Vascular Cryptogams and theGymnosperms. New York Botanical Garden, Bronx, New York.

Cronquist, A., N.H. Holmgren and P.K. Holmgren. 1997.Intermountain Flora. Vascular Plants of the Intermountain West, USA. Vol. 3, Part A - Subclass Rosidae (Except Fabales). New York Botanical Garden, Bronx, New York.

Cronquist A., A.H. Holmgren, N.H. Holmgren, J.L. Reveal and P.K. Holmgren. 1984. Intermountain Flora. Vascular Plants of the Intermountain West, USA. Vol. 4 – Subclass Asteridae (except Asteraceae). New York Botanical Garden, Bronx, New York.

Cronquist, A., A.H. Holmgren, N.H. Holmgren, J.L. Reveal and P.K. Holmgren. 1994. Intermountain Flora. Vascular Plants of the Intermountain West, USA. Vol. 5 - Asterales. New York Botanical Garden, Bronx, New York.

Cronquist, A., A.H. Holmgren, N.H. Holmgren, J.L. Reveal and P.K. Holmgren. 1994. Intermountain Flora. Vascular Plants of the Intermountain West, USA. Vol. 6 – The Monocotyledons. New York Botanical Garden. Columbia University Press.

Dane, D.H. and G.Q. Bachman. 1965. Geologic Map of New Mexico (Scale 1:500,000). United States Geological Survey.

Findley, U.S., A.H. Harris, D.E. Wilson and D. Jones. 1975. Mammals of New Mexico. University of New Mexico Press, Albuquerque, New Mexico.

Heil, K. 1995. Endangered, Threatened and Sensitive Plant Field Guide. Bureau of Land Management, Farmington District. Desert Dolphin, Inc., Durango, Colorado.

Heil, K. and S. White. 2000. Four Corners Invasive and Poisonous Plant Field Guide. Bureau of Land Management, Farmington District. Desert Dolphin, Inc., Durango, Colorado.

Isley, D. 1998. Native and Naturalized Leguminosae (Fabaceae) of the United States (Exclusive of Alaska and Hawaii). Brigham Young University. Provo, Utah.

Kearney, T.H., R.H. Peebles and collaborators. 1964. Arizona Flora. University of California Press. Berkeley and Los Angeles, California.

Martin, W.C. and C.R. Hutchins. 1980. A Flora of New Mexico. J. Cramer Press. Germany.

McDougall, W.B. 1973. Seed Plants of Northern Arizona. The Museum of Northern Arizona. Flagstaff, Arizona.

National Geographic Society. 1983, 1987. Field Guide to the Birds of North America – Second Edition. Washington D.C.

New Mexico Forestry and Resources Conservation Division. Inventory of Rare and Endangered Plants of New Mexico. Edited by R. Sivinski and K. Lightfoot. 1994. Santa Fe, New Mexico.

New Mexico Native Plant Protection Advisory Committee. 1984. A Handbook of Rare and Endemic Plants of New Mexico. University of New Mexico Press, Albuquerque, New Mexico.

United States Department of Commerce, Weather Bureau. 1965, 1976. Local Climatological Data. Annual Summary. United States Government Printing Office.

United States Department of the Interior. 1978. Disrict 12 Shiprock Agency Soil and Range Inventory Technical Report. Bureau of Indian Affairs, Branch of Land Operations.

Weber, W.A. 1987. Colorado Flora: Western Slope. Colorado Associated University Press. Boulder, Colorado.

Welsh, S.L., N.D. Atwood, L.C. Higgins, S, Goodrich. 1993. A Utah Flora. Printing Services, Brigham Young University, Provo Utah.

Whitson, T.D., L.C. Burrill, S.A. Dewey, D.W. Cudney, B.E. Nelson, R.D. Lee and R. Parker. 1992. Weeds of the West. Pioneer of Jackson Hole, Jackson Wyoming.

Personnel

Arnold Clifford (Botanist-Geologist)
Carrizo Mountain Consulting
Beclahbito, Navajo Nation

Exhibit 3.7.8 Flora of the Black Mesa Development Site 1

***APIACEAE (UMBELLIFERAE)* - Parsley Family**

Cymopterus sp.

***ASTERACEAE (COMPOSITAE)* - Sunflower Family**

Artemisia dracunculus L.	Terragon
Artemisia tridentata Nutt.	Big Sagebrush
Chaenactis douglasii (Hook.) H. & A.	Douglas Dustymaiden
Chrysothamnus greenei (Gray) Greene	Green Rabbitbrush
Chrysothamnus visicdiflorus (Hook.) Nutt.	Viscid Rabbitbrush
Gutierrezia sarothrae (Pursh) Britt. & Rusby	Broom Snakeweed
Heterotheca villosa (Pursh) Shinn.	Hairy Goldenaster
Hymenoxys richardsonii (Hook.) Cockerell	Colorado Rubberweed
Leucelene ericoides (Torr.) Greene	Rose-heath
Lygodesmia juncea (Pursh) D. Don	
Machaeranthera canescens (Pursh)	Gray Hoary Aster
Stephanomeria	
Tetradymia canescens DC.	Gray Horsebrush

***BORAGINACEAE* - Borage Family**

Cryptantha bakeri (Greene) Payson	Baker Cryptanth
Lappula occidentalis (Wats.) Greene	Western Stickseed

***BRASSICACEAE (CRUCIFERAE)* - Mustard Family**

Descurainia sophia (L.) Webb ex Prantl.	Flixweed
Sisymbrium altissimum L.	Tumbling Mustard

***CACTACEAE* - Cactus Family**

Coryphantha vivipara (Nutt.) Britt. & Rose	Ball Cactus
Opuntia polyacantha Haw.	Plains Prickly Pear

***CHENOPODIACEAE* - Goosefoot Family**

Atriplex canescens (Pursh) Nutt.	Four-winged Saltbush
Ceratoides lanata (Pursh) J. T. Howell	Winterfat
Chenopodium botrys L.	Jerusalem-oak
Chenopodium fremontii Wats.	Fremont Goosefoot

var. *incanum* Wats.	
Chenopodium leptophyllum (Moq.) Wats.	Narrowleaf Goosefoot
Kochia scoparia (L.) Schrader	Summer Cypress
Salsola iberica Sennen & Pau	Tumbleweed
Sarcobatus vermiculatus (Hook.) Torr. in Emory	Greasewood

***EUPHORBIACEAE* - Spurge Family**

Euphorbia brachycera Engelm. in Emory.	Shorthorn Spurge
Euphorbia glyptosperma Engelm. in Emory.	Ridgeseeded Spurge

***CUPRESSACEAE* - Cypress Family**

Juniperus osteosperma (Torr.) Little	Utah Juniper

***GERANIACEAE* - Geranium Family**

Erodium cicutarium (L.) L'Her.	Storksbill

***LOASACEAE* - Stickleaf Family**

Mentzelia sp.	Stickleaf

***MALVACEAE* - Mallow Family**

Sphaeralcea coccinea (Nutt.) Rydb.	Common Globemallow
Sphaeralcea parvifolia A. Nels.	Nelson Globemallow

***NYCTAGINACEAE* - Four O'Clock Family**

Mirabilis linearis (Pursh) Heimerl	Narrowleaf Umbrellawort
Mirabilis multiflora (Torr.) Grant in Torr.	Colorado Four O'Clock
Mirabilis oxybaphoides Gray	

***ONAGRACEAE* - Evening Primrose Family**

Oenothera caespitosa Nutt.	Morning-lily

***PINACEAE* - Pine Family**

Pinus edulis Engelm.	Pinyon Pine
Pinus ponderosa Lawson	Ponderosa Pine

***PLANTAGINACEAE* - Plantain Family**

Plantago patagonica Jacq.	Wooly Plantain

***POACEAE (GRAMINAE)* - Grass Family**

Bouteloua gracilis (H.B.K.) Lag. ex Steudel	Bluegrama
Bromus tectorum L.	Cheatgrass
Hilaria jamesii (Torr.) Benth.	Galleta
Munroa squarrosa (Nutt.) Torr.	False Buffalograss
Oryzopsis hymenoides (R. & S.) Ricker	Indian Ricegrass
Sitanion hystrix (Nutt.) J.M. Sm.	Squirreltail
Stipa sp.	Needle-Thread Grass

***POLEMONIACEAE* - Phlox Family**

Gilia aggregata (Pursh) Sprengel	Scarlet Gilia
Ipomopsis longiflora (Torr.) V. Grant	
Phlox hoodii Richards.	Carpet Phlox

***PORTULACEAE* - Purslane Family**

Portulaca oleracea L.	Purslane

***SCROPHULARIACEAE* - Figwort Family**

Penstemon

***SOLANACEAE* - Potato Family**

Lycium pallidum Miers	Pale Wolfberry

Exhibit 3.7.9 Fauna of the Black Mesa Development Site 1

Mammals

Bovis sp.	Cattle
Canis domesticus	Feral Dog
Canis latrans	Coyote
Felis domesticus	Feral Cat
Equus sp.	Horse
Mus musculus	House Mouse
Ovis sp.	Sheep
Peromyscus maniculatus	Deer Mouse
Sylvilagus auduboni	Desert Cottontail

Birds

Chondestes grammacus	Lark Sparrow
Corvus corax	Common Raven
Gymnorhinus cyanocephalus	Pinyon Jay
Sturnella neglecta	Western Meadowlark

SPECTRUM 3 – SITE ANALYSIS – SITE 2

3.8 Background

The Black Mesa Chapter selected a second site that was considered as a planning site for new development for the Black Mesa Chapter community. The site located ¾ mile northwest of the Black Mesa Chapter House was biologically assessed and is reported on herein, see location map at **Exhibit 3.7.1** and **3.7.2.**

Once the Black Mesa CLUP Committee advised the Consultant that the potential development site was identified, the CLUP Committee, the Consultant along with associate Arnold Clifford, GeoBotanist proceeded with the Land Suitability Analysis of the 25-acre site, consistent with the Phase III requirements of the NAHASDA Chapter Land Use Plan and Housing Planning Project.

Mr. Clifford did a pedestrian survey to identify all the vegetation and evidence of wildlife and recorded other significant observations of cultural and/or traditional significant value. Mr. Clifford also noted the evidence of surface water, soil and topographic conditions.

The significant presence of pottery shards was immediately ascertained and it was determined that the site was an obvious cultural significant area and that it would not be feasible for any development consideration. The decision was to forego this site and proceed with other alternative sites. The report provided herein is for documentation purposes.

3.9 Existing Environment

3.9.1 Climate

The Black Mesa - Yale Point region is situated at approximate 7350 feet elevation, with a semi-arid climate. Temperatures of 100 degrees (F) rarely occur during the summer. Sub-zero temperatures often occur during the coldest parts of winter. The monthly mean annual temperature in the region ranges from 44-46 degrees (F). Precipitation occurs primarily during two periods in the year from mid to late summer and mid winter through the late minter months. Summer precipitation occurring as rainfall, generally exceeds that of the winter months. The mean annual precipitation is estimated to be about 14-16 inches. Regional prevailing winds blow from the southwest.

3.9.2 Geology

Proposed project tract is located on Quaternary age alluvial deposited sediments derived from Cretaceous age bedrock that is exposed as caprock of scattered mesas that sit atop Black Mesa Range. The valleys and talus slope bedrock consists of middle Upper Cretaceous Wepo Formation, an alternating sequence of grayish-yellow sandstone, gray siltstone and coal lens. The tan-brown sandstone caprock above the Wepo is the Yale Point Sandstone. Both the Wepo Formation and Yale Point Sandstone are part of the Mesa Verde Group of the Black Mesa Basin.

3.10 Site Analysis Elements

3.10.1 Slopes and Topography

The project area is located on relatively undisturbed rangeland west-southwest of Black Mesa chapter house. The site is characterized by several small knolls located adjacent to a broad west sloping alluvial terrace valley that drains towards Orabi Wash 1200 feet to the west. The eastern edge of the surveyed project area is bordered by scattered mesas that sit atop Black Mesa range. The mesas are covered by Pinyon-Juniper and the adjacent valley covered by Greasewood community. An existing dirt road comes off the main dirt road from Pinon and heads east bisecting the surveyed area, the road leads eastward towards several homesite leases.

Two minor entrenched headward erosional channels drain from the knoll tops heading southwest and northwest towards Orabi Wash drainage. The headward erosional channel dimensions are 5 feet depth and up to 3 feet width at its widest section. Also, included within the survey block is an existing waterline and electrical located on the surveyed tract or within close proximity.

3.10.2 Soils

The proposed housing development site is located on soil complexes derived from alluvial and minor eolian deposited weathered Cretaceous age bedrock. On site observation of generalized soils type has indicated overall texture of clayey to siltyclay soils prevalent throughout the study area. Soils on knoll tops are derived from wind blown sand and are silty to siltysand.

3.10.3 Vegetation

Vegetation community cover types were determined by visual observation of the existing flora throughout the project area. Dominant and/or co-dominant plant species, other associated plant species and estimated total percent plant cover were all determined during the initial survey.

Grassland-Shrub plant community type was observed during the botanical survey. A complete list of vascular plant species observed within the project area can be found in **Exhibit 3.13.1**.

Grassland-Shrub: Community type determined by Co-dominant Galleta, Blue Grama grass with Viscid Rabbitbrush and sparsely scattered Four Winged Saltbush. Total vegetative cover is up to 20%. Alluvial deposited soils are silty to siltyclay. The majority of the surveyed tract falls within this community type on moderately sloping alluvial deposited swales.

3.10.4 Culturally Significant Areas

There have not been any Cultural Resources Surveys done in the immediate vicinity of the proposed development site. However with the significant presence of pottery shards that was immediately ascertained it was determined that the site was an obvious cultural significant area.

It is recommended that the Black Mesa Chapter arrange to have the site be archeologically surveyed to determine the extent of the cultural resources that are present in the area. Through the cursory review through the Biological Survey it felt that the cultural resource may be quite extensive.

3.10.5 Compilation of Field Data and Methodology

Field survey was conducted on approximately 25 acres of undisturbed rangelands west of Black Mesa Chapter house complex. The field survey was completed April 03, 2003 with one field surveyor conducting the initial ground work. Methodology used during the field survey consists of walking out the entire survey boundary in small manageable blocks of 1 acre each.

The surveyor walked 15 feet apart, transecting the entire 25 acres block back and forth to ensure that 90-95% total ground cover was achieved. A 25-50 foot buffer zone was also surveyed beyond the required survey boundary.

Raptor surveys were conducted by visual surveys of all powerline poles, fencelines and any protruding high areas with the aid of binoculars and field spotting scopes.

3.10.6 Summary of Survey Results

Survey results conclude that no plant or animal species of concern grow or reside within the proposed project area. However, the tract is not suitable for Housing development the area is bounded by undulated topography of small hills and knoll that have remains of archeological sites located along the knoll tops and ridge lines.

Two archeological sites were observed in the center of the proposed site, one ruin is evident by the foundation blocks that were exposed by erosional processes and the other sites located near the main dirt road from Pinon is still covered by a thin layer of eolian deposited soils. Both sites have an abundance of scattered ceramics and minor shards within the immediate vicinity of the ruins.

The region is currently used for grazing sheep, goats, cattle and horses on a daily basis.

3.11 Accessibility

The proposed development site is located approximately ¾ mile northwest of the Black Mesa Chapter on the road that goes towards the Black Mesa mining operation and the Forest Lake Chapter area. The site is accessible via Navajo Route 4 which is the main access for the east Black Mesa community. The site is thus relatively easily accessible.

3.12 Conclusion

This site proposed for development is not a good location due to the strong evidence of archeologically significant cultural resources. The Chapter leadership and the CLUP Committee determined that this site would not be pursued any further as a potential development site and will consider alternative sites.

Exhibit 3.13.1 Flora of the Proposed Development Site 2

***ASTERACEAE (COMPOSITAE)* - Sunflower Family**

Chrysothamnus greenei (Gray) Greene	Green Rabbitbrush
Chrysothamnus visicdiflorus (Hook.) Nutt.	Viscid Rabbitbrush
Cirsium sp.	
Gutierrezia sarothrae (Pursh) Britt. & Rusby	Broom Snakeweed
Heterotheca villosa (Pursh) Shinn.	Hairy Goldenaster
Hymenopappus filifolius Hook.	Hyalineherb
Leucelene ericoides (Torr.) Greene	Rose-heath
Senecio douglasii DC.	Douglas Groundsel
var. *longilobus* (Benth.) L. Benson	
Townsendia sp.	

***BORAGINACEAE* - Borage Family**

Cryptantha crassisepala (T. & G.) Greene	
Lappula occidentalis (Wats.) Greene	Western Stickseed

***BRASSICACEAE (CRUCIFERAE)* - Mustard Family**

Descurainia pinnata (Walter) Britt.	Tansy Mustard

***CACTACEAE* - Cactus Family**

Opuntia polyacantha Haw.	Plains Prickly Pear

***CHENOPODIACEAE* - Goosefoot Family**

Atriplex canescens (Pursh) Nutt.	Four-winged Saltbush
Kochia scoparia (L.) Schrader	Summer Cypress
Salsola iberica Sennen & Pau	Tumbleweed

***GERANIACEAE* - Geranium Family**

Erodium cicutarium (L.) L'Her.	Storksbill

***LINACEAE* - Flax Family**

Linum sp.

***PINACEAE* - Pine Family**

Pinus edulis Engelm.	Pinyon Pine

***PLANTAGINACEAE* - Plantain Family**

Plantago patagonica Jacq.	Wooly Plantain

***POACEAE (GRAMINAE)* - Grass Family**

Aristida purpurea Nutt.	Purple Threeawn
Bouteloua gracilis (H.B.K.) Lag. ex Steudel	Bluegrama
Bromus tectorum L.	Cheatgrass
Elymus smithii Rydb.	Western Wheatgrass
Hilaria jamesii (Torr.) Benth.	Galleta
Sitanion hystrix (Nutt.) J.M. Sm.	Squirreltail

***POLEMONIACEAE* - Phlox Family**

Leptodactylon pungens (Torr.) Nutt.

Exhibit 3.13.2 Fauna of the Black Mesa Development Site 2

Mammals

Bovis sp.	Cattle
Canis domesticus	Feral Dog
Canis latrans	Coyote
Equus sp.	Horse
Ovis sp.	Sheep
Peromyscus maniculatus	Deer Mouse
Sylvilagus auduboni	Desert Cottontail

Birds

Chondestes grammacus	Lark Sparrow
Corvus corax	Common Raven
Gymnorhinus cyanocephalus	Pinyon Jay

SPECTRUM 3 – SITE ANALYSIS – SITE 3

3.14 Background

The Black Mesa Chapter selected a third site that was considered as a potential site for new development for the Black Mesa Chapter community. The site located ½ mile southwest of the Black Mesa Chapter House was biologically assessed and is reported on herein, see location map at **Exhibit 3.7.1** and **3.7.2.**

Once the Black Mesa CLUP Committee advised the Consultant that the potential development site was identified, the CLUP Committee, the Consultant and associate Arnold Clifford, GeoBotanist proceeded with the Land Suitability Analysis of the 25-acre site, consistent with the Phase III requirements of the NAHASDA Chapter Land Use Plan and Housing Planning Project.

Mr. Clifford did a pedestrian survey to identify all the vegetation and evidence of wildlife and recorded other significant observations of cultural and/or traditional significant value. Mr. Clifford also noted the evidence of surface water, soil and topographic conditions.

The significant presence of pottery shards was immediately ascertained and it was determined that the site was an obvious cultural significant area and that it would not be feasible for any development consideration. The decision was to forego this site and proceed with other alternative sites. The report provided herein is for documentation purposes.

3.15 Existing Environment

3.15.1 Climate

The Black Mesa - Yale Point region is situated at approximately 7350 feet elevation, with a semi-arid climate. Temperatures of 100 degrees (F) rarely occur during the summer. Sub-zero temperatures often occur during the coldest parts of winter. The monthly mean annual temperature in the region ranges from 44-46 degrees (F). Precipitation occurs primarily during two periods in the year from mid to late summer and mid winter through the late minter months. Summer precipitation occurring as rainfall generally exceeds that of the winter months. The mean annual precipitation is estimated to be about 14-16 inches. Prevailing winds blow from the southwest.

3.15.2 Geology

The proposed project tract is located on Quaternary age alluvial deposited sediments derived from Cretaceous age bedrock that is exposed as caprock of scattered mesas that sit atop the Black Mesa Range.

The valleys and talus slope bedrock consists of middle Upper Cretaceous Wepo Formation, an alternating sequence of grayish-yellow sandstone, gray siltstone and coal lens. The tan-brown sandstone caprock above the Wepo, is the Yale Point Sandstone. Both the Wepo Formation and Yale Point Sandstone are part of the Mesa Verde Group of the Black Mesa Basin.

3.16 Site Analysis Elements

3.16.1 Ground and Surface Water

Surface Water: No surface flowing streams are located within the boundaries of the proposed project area. The northern boundary is bordered by an entrenched emphemeral stream channel that drains northeastward towards the Cottonwood Wash, a large headward erosional drainage. Also along the eastern edge is a large headward erosional channel that drains northeast from Navajo Route 4. These drainage channels control seasonal rainfall runoff within the study area.

Ground Water: The Yale Point region is part of the Black Mesa Hydrologic Basin. Groundwater in the Black Mesa region is a table aquifer and yields small water from the sandstone units of the Wepo and Toreva Formations. Wells are drilled to a depth of greater than 400 feet (Cooley and Others, 1969).

The Yale Point Sandstone yields water along the upper flanks of Black Mesa range where water is released as springs below the Yale Point Sandstone caprock. An existing water well is located in the western edge of the study tract. An existing working water well pump is located next to a water trough and water tank.

Domestic ground water wells are drilled where drilling depth and pumping levels are economically feasible, the wells provides water for domestic and livestock use.

3.16.2 Soils

The proposed housing development site is located on soil complexes derived from alluvial and minor eolian deposited weathered Cretaceous age bedrock. On site observation of generalized soils type has indicated overall texture of clayey to siltyclay soils prevalent throughout the study area. Soils on knoll tops are derived from wind blown sand and are silty to siltysand.

3.16.3 Topography

The project area is located on relatively undisturbed rangeland west-southwest of Black Mesa chapter house. The site is characterized by several small knolls located adjacent to a broad west sloping alluvial terrace valley that drains towards Orabi Wash 1200 feet to the west.

The eastern edge of the surveyed project area is bordered by scattered mesas that sit atop Black Mesa range. The mesas are covered by Pinyon-Juniper and the adjacent valley covered by Greasewood community. An existing dirt road comes off the main dirt road from Pinon and heads east bisecting the surveyed area, the road leads eastward towards several homesite leases.

Two minor entrenched headward erosional channels drain from the knoll tops heading southwest and northwest towards Orabi Wash drainage. The headward erosional channel dimensions are 5 feet depth and up to 3 feet width at its widest section. Also, included within the survey block is an existing waterline and electrical located on the surveyed tract or within close proximity.

3.16.4 Vegetation

Vegetation community cover types were determined by visual observation of the existing flora throughout the project area. Dominant and/or co-dominant plant species, other associated plant species and estimated total percent plant cover were all determined during the initial survey.

Grassland-Shrub plant community type was observed during the botanical survey. A complete list of vascular plant species observed within the project area can be found in **Exhibit 3.19.1.**

Grassland-Shrub: Community type determined by Co-dominant Galleta, Blue Grama grass with Viscid Rabbitbrush and sparsely scattered Four Winged Saltbush. Total vegetative cover is up to 20%. Alluvial deposited soils are silty to siltyclay. The majority of the surveyed tract falls within this community type on moderately sloping alluvial deposited swales.

3.16.5 Compilation of Field Data and Methodology

Field survey was conducted on approximately 25 acres of undisturbed rangelands west of Black Mesa Chapter house complex. The field survey was completed April 03, 2003 with one field surveyor conducting the initial ground work.

Methodology used during the field survey consists of walking out the entire survey boundary in small manageable blocks of 1 acre. The surveyor walked 15 feet apart, transecting the entire 25 acres block back and forth to ensure that 90-95% total ground cover was achieved. A 25-50 foot buffer zone was also surveyed beyond the required survey boundary.

Raptor surveys were conducted by visual surveys of all powerline poles, fencelines and any protruding high areas with the aid of binoculars and field spotting scopes.

3.16.6 Summary of Survey Results

The survey results conclude that no plant or animal species of concern grow or reside within the proposed project area. However, the tract is not suitable for Housing development the area is bounded by undulated topography of small hills and knoll that have remains of archeological sites located along the knoll tops and ridge lines.

Two archeological sites were observed in the center of the proposed site, one ruin is evident by the foundation blocks that were exposed by erosional processes and the other sites located near the main dirt road from Pinon is still covered by a thin layer of eolian deposited soils. Both sites have an abundance of scattered ceramics and minor shards within the immediate vicinity of the ruins.

The region is currently used for grazing sheep, goats, cattle and horses on a daily basis.

3.17 Accessibility

The proposed development site is located approximately ½ mile southwest of the Black Mesa Chapter. The site is accessible via Navajo Route 8065 which is the main access for the west Black Mesa community. The site is thus easily accessible.

3.18 Conclusion

The significant presence of pottery shards was immediately ascertained and it was determined that the site was an obvious cultural significant area and that it would not be feasible for any development consideration. The decision was to forego this site and proceed with other alternative sites.

Exhibit 3.19.1 Flora of the Proposed Development Site 3

***ASTERACEAE (COMPOSITAE)* - Sunflower Family**

Chrysothamnus greenei (Gray) Greene	Green Rabbitbrush
Chrysothamnus visicdiflorus (Hook.) Nutt.	Viscid Rabbitbrush
Cirsium sp.	
Gutierrezia sarothrae (Pursh) Britt. & Rusby	Broom Snakeweed
Heterotheca villosa (Pursh) Shinn.	Hairy Goldenaster
Hymenopappus filifolius Hook.	Hyalineherb
Leucelene ericoides (Torr.) Greene	Rose-heath
Senecio douglasii DC. var. *longilobus* (Benth.) L. Benson	Douglas Groundsel
Townsendia sp.	

***BORAGINACEAE* - Borage Family**

Cryptantha crassisepala (T. & G.) Greene	
Lappula occidentalis (Wats.) Greene	Western Stickseed

***BRASSICACEAE (CRUCIFERAE)* - Mustard Family**

Descurainia pinnata (Walter) Britt.	Tansy Mustard

***CACTACEAE* - Cactus Family**

Opuntia polyacantha Haw.	Plains Prickly Pear

***CHENOPODIACEAE* - Goosefoot Family**

Atriplex canescens (Pursh) Nutt.	Four-winged Saltbush
Kochia scoparia (L.) Schrader	Summer Cypress
Salsola iberica Sennen & Pau	Tumbleweed

***GERANIACEAE* - Geranium Family**

Erodium cicutarium (L.) L'Her.	Storksbill

***LINACEAE* - Flax Family**

Linum sp.

***PINACEAE* - Pine Family**

Pinus edulis Engelm.	Pinyon Pine

***PLANTAGINACEAE* - Plantain Family**

Plantago patagonica Jacq.	Wooly Plantain

***POACEAE (GRAMINAE)* - Grass Family**

Aristida purpurea Nutt.	Purple Threeawn
Bouteloua gracilis (H.B.K.) Lag. ex Steudel	Bluegrama
Bromus tectorum L.	Cheatgrass
Elymus smithii Rydb.	Western Wheatgrass
Hilaria jamesii (Torr.) Benth.	Galleta
Sitanion hystrix (Nutt.) J.M. Sm.	Squirreltail

***POLEMONIACEAE* - Phlox Family**

Leptodactylon pungens (Torr.) Nutt.

Exhibit 3.19.2 Fauna of the Proposed Development Site 3

Mammals

Bovis sp.	Cattle
Canis domesticus	Feral Dog
Canis latrans	Coyote
Equus sp.	Horse
Ovis sp.	Sheep
Peromyscus maniculatus	Deer Mouse
Sylvilagus auduboni	Desert Cottontail

Birds

Chondestes grammacus	Lark Sparrow
Corvus corax	Common Raven
Gymnorhinus cyanocephalus	Pinyon Jay

SPECTRUM 3 – SITE ANALYSIS – SITE 4

3.20 Background

The Black Mesa Chapter selected a fourth site that was considered as a potential site for new development for the Black Mesa Chapter community. The site located within the Black Mesa Chapter House tract was biologically assessed and is reported on herein, see location map at **Exhibit 3.7.1** and **3.7.2**.

Once the Black Mesa CLUP Committee advised the Consultant that the potential development site was identified; the Consultant and associate Arnold Clifford, GeoBotanist proceeded with the Land Suitability Analysis of the 10 acre site, consistent with the Phase III requirements of the NAHASDA Chapter Land Use Plan and Housing Planning Project.

Mr. Clifford did a pedestrian survey to identify all the vegetation and evidence of wildlife and recorded other significant observations of cultural and/or traditional significant value. Mr. Clifford also noted the evidence of surface water, soil and topographic conditions.

The significant presence of pottery shards was immediately ascertained and it was determined that the site was an obvious cultural significant area and that it would not be feasible for any development consideration. The decision was to forego this site and proceed with other alternative sites. The report provided herein is for documentation purposes.

3.21 Existing Environment

3.21.1 Climate

The Black Mesa region is situated at approximate 6650 feet elevation, with a semi-arid climatic condition. Temperatures of 100 degrees (F) rarely occur during the summer and sub-zero temperatures often occur during the coldest parts of winter. The monthly mean annual temperature in the region ranges from 44-46 degrees (F). Precipitation occurs primarily during two periods in the year from mid to late summer and mid winter through the late minter months. Summer precipitation occurring as rainfall, generally exceeds that of the winter months. The mean annual precipitation is estimated to be about 14-16 inches. Regional prevailing winds blow from the southwest.

3.21.2 Geology

The proposed project tract is located on Quaternary age alluvial deposited sediments derived from Cretaceous age bedrock that is exposed along slopes of scattered mesas that sit atop Black Mesa Range. The valleys and talus slope bedrock consists of middle Upper Cretaceous Wepo Formation, an alternating sequence of grayish-yellow sandstone, gray siltstone and coal lens. The tan-brown sandstone caprock above the Wepo, is the Yale Point Sandstone. Both the Wepo Formation and Yale Point Sandstone are part of the Mesa Verde Group of the Black Mesa Basin. Yale Point Sandstone type section is located at Yale Point several miles northeast.

3.22 Site Analysis Elements

3.22.1 Ground and Surface Water

Surface Water: No surface flowing streams are located within the boundaries of the proposed project area. Beyond the northern boundary is Orabi Wash a headward erosional entrenched ephemeral stream channel that drains westward. Within the tract are small headward erosional channels with round bank slopes, these channels drain north into Orabi Wash. These drainage channels control seasonal rainfall runoff within the study area.

Ground Water: The general region is considered part of the Black Mesa Hydrologic Basin. Groundwater in the Black Mesa region is a table aquifer, small water yields from the sandstone units of the Wepo and Toreva Formations. Wells drilled are drill to a depth of greater than 400 feet (Cooley and Others, 1969). The Yale Point Sandstone yields water along the upper flanks of Black Mesa range where water is released as springs below the Yale Point Sandstone caprock. An existing water well is located southeast of the study tract at a distance of 1000 to 1200 feet. An existing wind mill located next to a water trough and two large water tanks. The well provides water for domestic and livestock use.

3.22.2 Soils

The proposed development site is located on soil complexes derived from alluvial deposited weathered Cretaceous age bedrock. On site observation of generalized soils type has indicated overall texture of clayey to siltyclay soils prevalent throughout the study area.

3.22.3 Topography

The project area is located on a somewhat disturbed area within a fenced off region of Black Mesa Chapter house complex. The site is characterized by northeast sloping alluvial terrace just south of Orabi Wash drainage. The north and eastern edge of the survey boundary is bordered by a bladed dirt road. To the southwest is a small north trend ridge that approaches the western boundary.

Immediately beyond to the south are several homesites with livestock corrals and a small family burial plot. The southwest corner is about 60-70 feet higher than the north and eastern boundary with moderate slopes of 5-6% grade. Several small headward erosional channels began in the southwest corner and drains north to Orabi Wash. Black Mesa Chapter house complex and warehouse is located in the northeastern corner of the surveyed tract.

3.22.4 Vegetation and Wildlife

3.22.4.1 Vegetation

Vegetation community cover types were determined by visual observation of the existing flora throughout the project area. Dominant and/or co-dominant plant species, other associated plant species and estimated total percent plant cover were all determined during the initial survey.

There were Pinyon-Juniper Woodland and Grassland-Shrub vegetative plant community types observed during the botanical survey. A complete list of vascular plant species observed within the project area can be found in **Exhibit 3.25.2**.

Pinyon-Juniper Woodland: Plant community dominated by open canopy Pinyon Pine and Utah Juniper. Shrub associates include Greene Rabbitbrush, Four-winged Saltbush, Broom Snakeweed and Prickly Pear Cactus. Limited grass cover consists of Blue Grama, Western Wheatgrass and Galleta. Total vegetation cover ranges from 25 to 30%. Soils are generally silty to siltyclay. This plant community lies mainly beyond the boundary of the surveyed tract along the mesa tops.

Grassland-Shrub: Vegetative community type is characterized by Co-dominant Western Wheatgrass, Blue Grama grass with Greene Rabbitbrush and scattered Four Winged Saltbush. Total vegetative cover is up to 20%. Alluvial deposited soils are silty to siltyclay. The surveyed tract falls within this community type on gentle to moderately sloping alluvial deposited swales.

3.22.4.2 Wildlife

Wildlife field data was developed based on field observation of wildlife tracks, droppings, habitat inventory, animal occurrence and other life forms analysis. See **Exhibit 3.25.3** for list of species occurrence or signs of occurrence within the study area.

Rodents: Minor rodent activity was noted within the project area. Small burrows of Field mice and Kangaroo Rats are noted. No active or inactive prairie dog burrows were located within the study area.

Carnivores: No signs of carnivore species were observed during the survey. Carnivores that have been historically documented include: Black Bears, Gray Wolf, Mountain Lion and Bobcat. However, it is very unlikely any of these species reside in or near the study area at the present time. Habitat exists for Mountain lions, Bobcats and possibly Black Bears within the wooded slopes and rocky mesas scattered nearby.

Raptors: No Raptors of concern was found near the study area. Potential raptors in the nearby Black Mesa Mountains include: Golden Eagle, Peregrine Falcon and Ferruginous Hawk. Good potential raptor utility areas occur along the eastern Black Mesa escarpment several miles to the east, as well as the numerous scattered caprock mesas. No white wash or raptor nest sites were observed within the immediate vicinity of the proposed site.

The proposed community development project will have minimal impact on wildlife inhabiting the area. These impacts should be limited to small rodents and reptiles.

Domestic and/or feral animal activity within the study area includes tracks made by cattle, sheep, horse and feral dogs occur throughout the survey area. Livestock are grazed throughout the valley region.

3.22.5 Culturally Significant Areas

Through a Class I records check with the Navajo Historic Preservation Department it is determined that a Cultural Resources Survey done in the immediate vicinity of development site 4. This site which is limited in size is documented as Site AZ-J-41-05 in Project Report No. NNAD-93-375.

Through the Cultural Resources Survey there was a site identified towards the southwest corner of the 10 acres that is a potential cultural resources site. There is evidence that there has been human habitation of the site that is over 100 years old.

The Navajo Historic Preservation Department Archeologists recommend that there be no development in close proximity to the identified Site AZ-J-41-05 and there be a 50 foot buffer established to protect the integrity of the cultural site.

Resultantly, the Consultant, the Chapter leadership and the CLUP Committee are planning the development well away from the site. The planned development as articulated herein will occur toward the front portion of the 10-acres immediately around the Chapter House.

3.22.6 Traditionally Sensitive Areas

Through interviews with the Chapter leadership, the Consultant ascertained that there are no significant traditionally sensitive areas in the vicinity of the proposed development site, as no traditional ceremonies have been performed there in recent memory or other significant traditional activity. The Consultant concludes there are no traditional sensitive areas that will hinder the proposed development.

3.22.7 Environmentally Sensitive Areas – (Endangered, Threatened and Sensitive species)

Federally funded agencies are prohibited from authorizing or carrying out any development projects or activities that may jeopardize the existence of any federal listed species under the Endangered Species Act of 1973 (as amended). Therefore it is very important to inventory potential habitats for any plants and animals that are Endangered, Threatened and Sensitive before any construction activities are proposed.

3.22.7.1 Endangered, Threatened and Sensitive Flora

Federally funded agencies are prohibited from authorizing or carrying out any development projects or activities that may jeopardize the existence of any federal listed species under the Endangered Species Act of 1973 (as amended). Therefore it is very important to inventory potential habitats for any plants and animals that are Endangered, Threatened and Sensitive before any construction activities are proposed.

Federal, State and Navajo Tribal plant Species of Concern found growing near the proposed Black Mesa Housing and community development project area, Navajo County, Arizona include: ***Aletes macdougalii*** (Macdougal False-carrot) and ***Asclepias cutleri*** (Cutler Milkweed).

- ***Aletes macdougalii*** Coult. & Rose (Macdougal False-carrot)

  Federal Status: Species of Concern

  Navajo Heritage Status: Species of Concern

  Description: Acaulescent perennial from a thick caudex; many stems branched from the caudex, 6-25 cm tall; leaves pinnate to bipinnate, 2-6 opposite pairs of lateral, linear to oblong leaflets, entire; inflorescence in solitary umbels; flowers yelloy; fruit 3-8 mm long, oblong with small corky wing ribs; flowers in May to early June.

  Known Distribution: A Colorado Plateau Endemic, San Juan and McKinley Counties, New Mexico, northeastern Arizona, southwestern Colorado and southeastern Utah.

Habitat: Sandstone rimrock, slickrock, ledges, benches, talus slopes and rarely sandy alluvial bottoms. Mainly in the Mesa Verde Group, Entrada Sandstone and Wingate Sandstone Formations. Pinyon-Juniper Woodland community at 2000-2275 meters elevation.

Remarks: The plant is rare throughout its range. The nearest populations occur at Yale Point Area, several miles to the northeast. Growing on talus slopes and caprock at the locality. No potential habitat exists within the surveyed tract area.

- ***Asclepias cutleri*** Woodson (Cutler Milkweed)

Federal Status: Species of Concern

Navajo Heritage Status: Species of Concern

Description: Small slender perennial, single to few branching from the base; stems 6-13 cm long; Leaves linear to filiform, sessile, 3-8 mm long and 1-2 mm wide; Terminal flowers solitary, small; Corolla reflex-rotate, Pale green-rose to pink-purple; Fruit a follicle pendulous to spreading on a weakly ascending pedicel. Flowering period Late April to early June.

Known Distribution: Grand and San Juan Counties, Utah; Apache and Navajo Counties, Arizona.

Habitat: Sand sheets and dunes in mixed Sand desert shrub and Pinyon-Juniper communities. Elevation 4200-4700 feet.

Remarks: A Colorado Plateau endemic that is rarely noted by surveyors. An easily overlooked species due to its small and inconspicuous growth habit. There are no suitable habitat that exists within the vicinity of the proposed tract.

3.22.7.2 Endangered, Threatened and Sensitive Flora

Animals of concern found in or near the proposed project area Navajo County, Arizona include: ***Aquila chrysaetos***

(Golden Eagle), ***Falco peregrinus*** (Peregrine Falcon), ***Buteo regalis*** (Ferruginous Hawk), ***Asio flammous*** (Burrowing Owl) and ***Mustella nigripes*** (Black-footed Ferret). No active Prairie dog colonies were located therefore; it is not likely the Burrowing Owl and the Black-footed Ferret are present within the study area.

- ***Aquila chrysaetos*** (Golden Eagle)

  Federal Status: Federal Sensitive Species

  Remarks: Golden Eagles are occasionally reported hunting or hovering overhead within the general area. Good habitat for nesting exists along the top Black Mesa Mountain range where there are scattered tall Ponderosa pines and high sandstone caprock mesas scattered throughout the top of Black Mesa.

- ***Falco peregrinus*** (Peregrine Falcon)

  Federal Status: Federally protected

  Remarks: No potential nesting sites were seen in or near the proposed project area. Potential habitat exists within the general area along mesa tops that are scattered across the top of Black Mesa where high protruding sandstone caprock forms extensive cliffs. No Peregrine Falcons were observed within the surveyed area.

- ***Buteo regalis*** (Ferruginous Hawk)

  Federal Status: Federal Candidate Species

  Remarks: Ferruginous Hawks inhabits dry, open country. Often in eroded badlands type of topography. No Ferruginous Hawks were observed during the survey and no suitable habitat exists for this raptor of concern.

3.22.8 Compilation of Field Data and Methodology

Field survey was conducted on approximately 10 acres of somewhat disturbed rangelands within the Black Mesa Chapter house complex. The field survey was completed May 06, 2003 with one field surveyor conducting the initial ground work.

Methodology used during the field survey consists of walking out the entire survey boundary by walking 15 feet intervals, transecting the entire 10 acres block back and forth to ensure that 90-95% total ground cover was achieved. A 25-50 foot buffer zone was also surveyed beyond the required survey boundary.

Raptor surveys were conducted by visual surveys of all powerline poles, fencelines and any protruding high areas with the aid of binoculars and field spotting scopes.

3.22.9 Summary of Survey Results

The survey results conclude that no plant or animal species of concern grow or reside within the proposed project area. The proposed development tract is situated within the existing fenced Black Mesa Chapter House compound. The tract is somewhat disturbed and is suitable for development. Existing powerlines and waterlines are located nearby the tract. Access roads lead up to the Chapter house and the proposed site.

Moderate gradient of 12 - 15 degrees (5-6% slope) characterize the site, however the southwestern corner of the site needs to be leveled to even out with the northern and eastern areas of the site. The northern and eastern edge is bounded by an existing bladed dirt road that continues eastward to the Black Mesa Community School. The southern edge is bordered by several homesites scattered along the hillslope of a small north trending ridge.

Also near the mid point of the southern fenced boundary is a small family burial plot with several gravesites. Minor headward erosional drainages occur in the western half of the tract. The minor channels drain north towards Orabi Wash situated about 1000 feet to the north. Headward erosional features and small eroded areas in the eastern edge expose sandstone bedrock that underlie the alluvial valley fill.

The proposed elderly group home and Health Clinic outreach center may best be situated near the western edge of the survey tract. This will provide quick and easy access to these facilities from the bladed dirt road that bounds the northern edge. Privacy for elderly group home can be achieved by locating it in the southwestern corner of the tract and the Preschool and business site along the southeastern corner.

3.23 Accessibility

The proposed development site is located within the Black Mesa Chapter house complex. The site is accessible via Navajo Route 8066, which is the main access for the east Black Mesa community. The site is thus easily accessible.

3.24 Conclusion

The proposed development site selected by the Black Mesa CLUP Committee and Chapter Leadership is in a good location. It has positive attributes in addition to its location, such as, moderate to good soil conditions, good slope for drainage, no vegetation or animal species of concern and all utility infrastructure already serve the site. The site also has excellent aesthetics. There are no traditionally sensitive areas of concern issues and there is community support.

The one issue that the community needs to be cognizant of is the culturally significant site that is located to the southwest of the Chapter House; there will need to be a buffer of 50 feet at the minimum to protect the site.

The Consultant recognizes the potential that the selected development site represents, and with the committed determination of the Black Mesa CLUP Committee and the Chapter Leadership, the development site can provide long term and well-deserved success by the Black Mesa community.

Exhibit 3.25.2 Flora of the Proposed Development Site 4

***ASCLEPIADACEAE* - Milkweed Family**

Asclepias subverticillata (Gray) Vail	Whorled Milkweed

***ASTERACEAE (COMPOSITAE)* - Sunflower Family**

Carduus nutans L.	Nodding Thistle
Chrysothamnus greenei (Gray) Greene	Green Rabbitbrush
Chrysothamnus nauseosus (Pallas) Britt.	Rubber Rabbitbrush
Cirsium sp.	
Gutierrezia sarothrae (Pursh) Britt. & Rusby	Broom Snakeweed
Heterotheca villosa (Pursh) Shinn.	Hairy Goldenaster
Hymenopappus filifolius Hook.	Hyalineherb
Leucelene ericoides (Torr.) Greene	Rose-heath
Taraxacum officinale Weber ex Wiggers	Common Dandelion
Townsendia sp.	
Tragopogon dubius Scop.	Yellow Salsify

***BORAGINACEAE* - Borage Family**

Cryptantha crassisepala (T. & G.) Greene var. *elachantha* Johnston	Plains Cryptanth
Lappula occidentalis (Wats.) Greene	Western Stickseed

***BRASSICACEAE (CRUCIFERAE)* - Mustard Family**

Descurainia pinnata (Walter) Britt.	Pinnate Tansy-mustard
Malcomia africana R. Br. in Ait.	African Mustard
Sisymbrium altissimum L.	Tumbling Mustard

***CACTACEAE* - Cactus Family**

Opuntia polyacantha Haw.	Plains Prickly Pear

***CHENOPODIACEAE* - Goosefoot Family**

Atriplex canescens (Pursh) Nutt.	Four-winged Saltbush
Ceratoides lanata (Pursh) J. T. Howell	Winterfat
Chenopodium fremontii Wats. var. *incanum* Wats.	Fremont Goosefoot
Salsola iberica Sennen & Pau	Tumbleweed

E*CONVOLVULACEA* - Morning Glory Family

Convolvulus arvensis L.	Field Bindweed

***CUPRESSACEAE* - Cypress Family**

Juniperus osteosperma (Torr.) Little	Utah Juniper

***GERANIACEAE* - Geranium Family**

Erodium cicutarium (L.) L'Her.	Storksbill

***LILIACEAE* - Lily Family**

Allium sp.	Wild Onion

***LINACEAE* - Flax Family**

Linum puberulum (Engelm.) Heller

***MALVACEAE* - Mallow Family**

Sphaeralcea coccinea (Nutt.) Rydb.	Common Globemallow

***PINACEAE* - Pine Family**

Pinus edulis Engelm.	Pinyon Pine

***PLANTAGINACEAE* - Plantain Family**

Plantago patagonica Jacq.	Wooly Plantain

***POACEAE (GRAMINAE)* - Grass Family**

Aristida purpurea Nutt.	Purple Threeawn
Bouteloua gracilis (H.B.K.) Lag. ex Steudel	Bluegrama
Bromus tectorum L.	Cheatgrass
Elymus smithii (Rydb.) Gould	Western Wheatgrass
Festuca octoflora Walter	Sixweeks Fescue
Hilaria jamesii (Torr.) Benth.	Galleta
Oryzopsis hymenoides (R. & S.) Ricker	Indian Ricegrass

***POLEMONIACEAE* - Phlox Family**

Gilia inconspicua (J.E. Sm.) Sweet
Leptodactylon pungens (Torrr.) Nutt.

Exhibit 3.25.3 Fauna of the Proposed Development Site 4

Mammals

Bovis sp.	Cattle
Canis domesticus	Feral Dog
Canis latrans	Coyote
Felis domesticus	Feral Cat
Equus sp.	Horse
Mus musculus	House Mouse
Ovis sp.	Sheep
Peromyscus maniculatus	Deer Mouse
Sylvilagus auduboni	Desert Cottontail

Birds

Chondestes grammacus	Lark Sparrow
Corvus corax	Common Raven
Gymnorhinus cyanocephalus	Pinyon Jay

SPECTRUM 4 - INFRASTRUCTURE ANALYSIS

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SPECTRUM 4 - INFRASTRUCTURE ANALYSIS

4.1 Background

The Black Mesa (Kits' iili') Chapter selected two sites that are potential sites for new development for the Black Mesa community, including the development of housing, commercial and other facets of community development.

The first site is located 9 miles east of the Black Mesa Chapter House and 3 miles east of the junction of Navajo Routes N8028 and N8088, these roads lead to Blue Gap/Cottonwood/Ganado and Black Mesa/Rough Rock/Pinon and east to the development site. The 8-acre site is accessible via Navajo Route 8088 which is the main access for the east Black Mesa community.

The second site is located within the Black Mesa Chapter House 10-acre tract and thus is in immediate proximity of the existing community utility infrastructure. The site is very accessible by Navajo Route N8066 that is connected to N8065 going to Pinon. The Chapter House tract is approximately 18 miles northeast of Navajo Route 41, the closest paved road to the community.

The Consultant performed Land Suitability Analysis' of the sites and has deemed that they are well suited for development. The first site is fair to good for development considering the utility elements reviewed and analyzed. The second site is good to excellent for development considering the utility elements reviewed and analyzed in this Infrastructure Analysis, the Utility Infrastructure Map is shown at **Exhibit 4.4.1** and **4.4.2.**

4.2 Infrastructure Analysis Elements

4.2.1 Electric

Site 1 – This site is less that 200 feet from a single-phase electric power line and the calculation to bring electricity to the site is $5,000.00.

Site 2 – The electric line is immediately available to the site and the cost to tap into the line would be about $2,500.00.

This calculation is based on the formula that is used by the NTUA wherein the cost to extend a powerline is $2,500.00 per pole and the standard distance between power poles is 350 feet at the maximum.

The conclusion of the Consultant is that the electrical power source is accessible and the cost to obtain electrical power is reasonable.

4.2.2 Water

Site 1 - This site is adjacent to the local water system that is supplied by well water. The estimate to bring water to the site is about $17,500.00. This calculation is based on the assumption that the well supplies sufficient water, this determination will be made definitively through the engineering studies of the IHS Office of Environmental Health. A further determination to be made by the OEH will be whether the well would need to be upgraded.

This calculation is based on the formula that is generally used by the IHS Office of Environmental Health wherein the cost to extend a waterline from an existing well water system is $2,500.00 per home. The community is contemplating 7 housing units at this site.

Site 2 – The second site has immediate access to the community water supply and thus the cost to tap into the existing system would be approximately $4,500.00.

This calculation is based on the formula that is generally used by the IHS Office of Environmental Health wherein the cost to extend a 6" waterline is $8.50 per foot.

4.2.3 Gas

There is no commercial natural gas available in the vicinity of the site, thus the new homes will need to rely on propane for heating and cooking.

4.2.4 Waste Water

Site 1 – The first site will require the development of a one-cell sewage lagoon. The approximate cost on developing a one-cell lagoon would be $250,000.00.

Site 2 – The second site will be able to access the existing community sewage lagoon. However, if it is determined that an additional lagoon cell is necessary, the approximate cost on developing an additional cell would be $250,000.00.

4.2.5 Telecommunications

The Black Mesa community has only limited telephone service with a radio tower based system; the securing of landline telephone services will be dependent on the Navajo Communications Co extending its service to this area.

4.2.6 Solid Waste

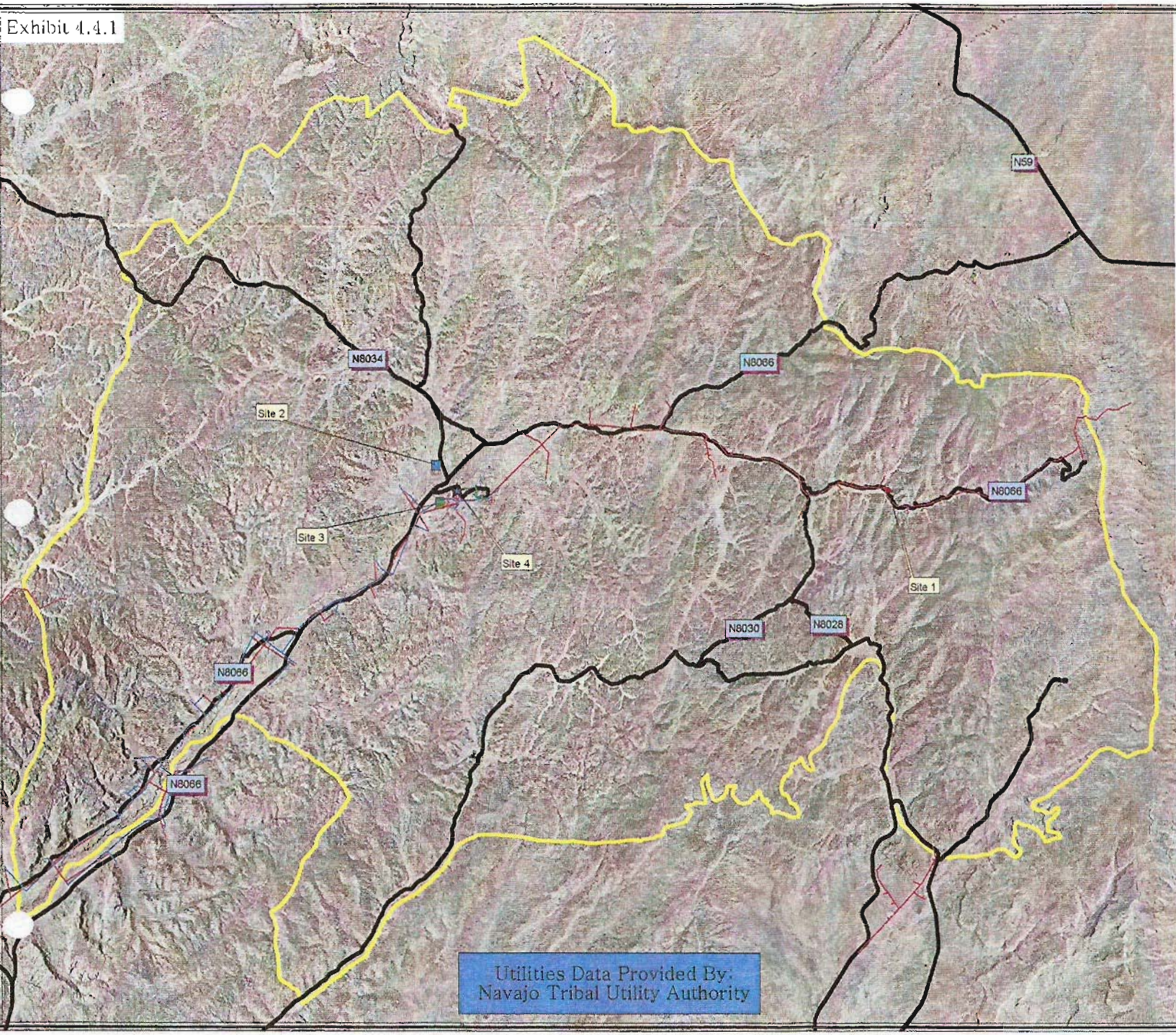
The community does not have an organized solid waste disposal system; it does have a 1-acre landfill for disposal of solid waste. The community members also transport their solid waste to trash bins located in Rough Rock, Chinle and/or Pinon. The community does need to plan on the development of a solid waste disposal system with the development that the community is anticipating.

4.3 Conclusion

The conclusion of the Consultant is that the development of infrastructure to serve the two sites is feasible. The costs estimates provided are estimates using base calculation formula used by the NTUA and OEH, these estimates are provided in this manner as the NTUA and OEH have not developed more detailed estimates. The community is advised that these cost estimates are only very general estimates to bring these various utilities to the sites. The community understands further that detailed costs will be developed with the pre-engineering studies that will be done by NTUA and OEH prior to development.

With the provision of the utility infrastructure systems, the proposed development sites can be made ready for development. The Chapter leadership and community planners/developers will need to continue a close collaboration with the Navajo Tribal Utility Authority, the IHS Office of Environmental Health, the Navajo Communications Co. and other pertinent agencies in order that the utility infrastructure are brought to the proposed development area so that the desired development is completed in a timely manner.

Exhibit 4.4.1



Black Mesa Chapter Infrastructure Map

N

Rez Star Point

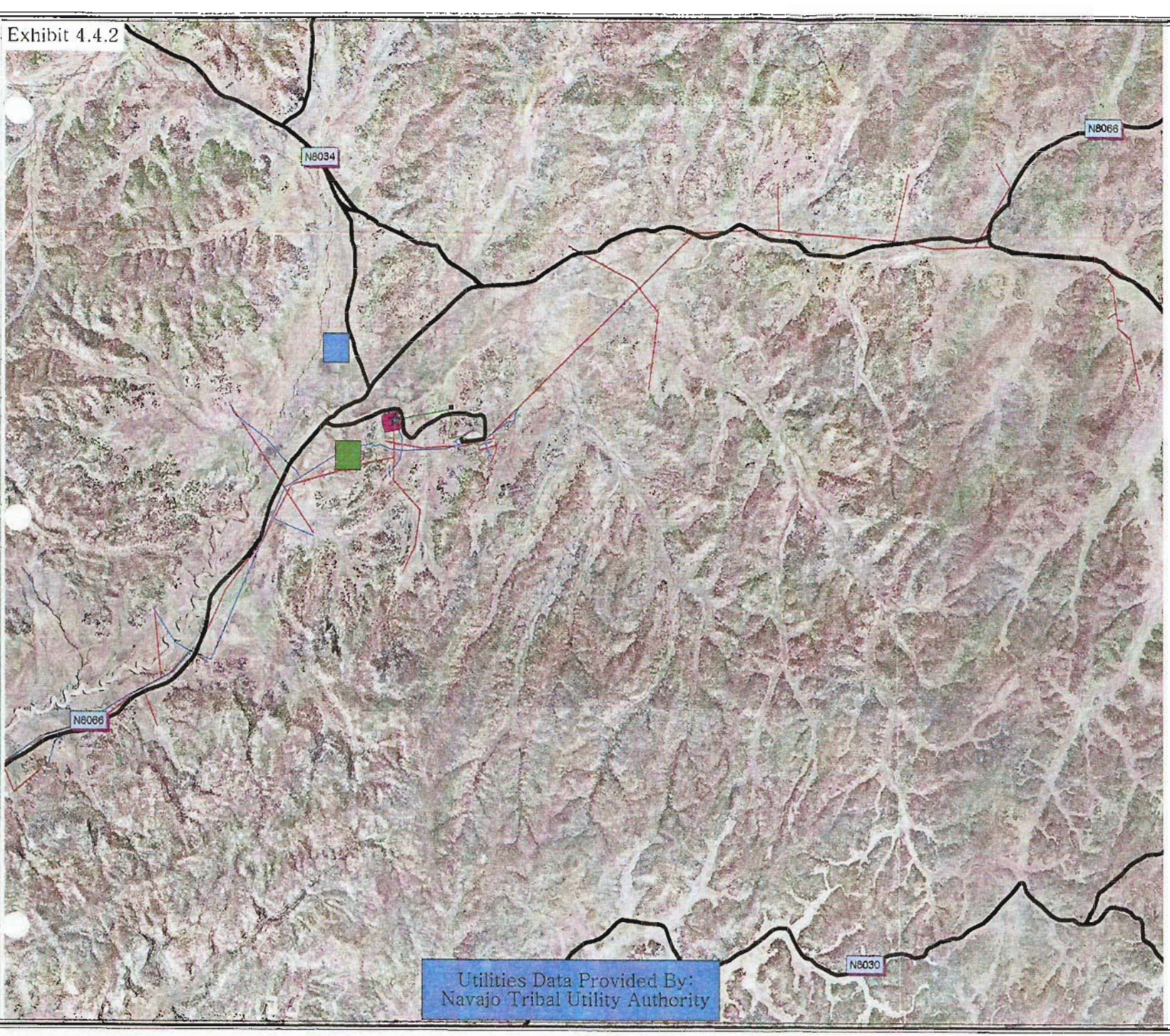
Map Prepared By: Lance H. Yazzie
03 Jan 05

0 2 4 Miles

Legend

- Chapter Line
- Chapter House
- Water Line
- Waste Water Line
- Electric Line
- Development Site 1
- Development Site 2
- Development Site 3
- Development Site 4
- Roads

Exhibit 4.4.2



Black Mesa Community Infrastructure Map

Map Prepared By: Lance H. Yazzie
03 Jan 05

0 3000 6000 9000 Feet

Legend

- Chapter House
- Water Line
- Waste Water Line
- Electric Line
- Development Site 2
- Development Site 3
- Development Site 1
- Roads

SPECTRUM 5 - LAND USE PLAN

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SPECTRUM 5 - LAND USE SITE PLAN NARRATIVE

5.1 Background

The Consultant performed Land Suitability Analyses for sites 1, 2, 3 and 4 and now herein presents the Land Use (Site Development) Plans for sites 1 and 4, **Exhibits 5.6.1 and 5.6.2.** Also provided are narratives of the 8-acre and 10-acre proposed development sites.

The Land Suitability and the Infrastructure Analyses conclusions support the viability of the potential development sites and thus substantiate the formulation of these Land Use Plans for development sites.

5.2 Site Access

The proposed development site 1 is located approximately 9 miles east of the Black Mesa Chapter House and 3 miles east of the junction of Navajo Routes N8028 and N8088, these roads lead to Blue Gap/Cottonwood and Black Mesa/Rough Rock/Pinon and east to the development site. The site is accessible via N8088 which is the main access for the east Black Mesa community. Thus the site has relatively easy accessibility.

Development site 2 is located within the Black Mesa Chapter House land tract. The site is located along N8066 and ½ mile west of the Black Mesa Community School and as such the site is located off of the primary immediate community roadway used by the Black Mesa residents. The site is highly and easily accessible.

5.3 Site Related Elements

5.3.1 Manmade improvement Structures

There are no existing structures or improvements of any kind on the first development site that are under continued use except for a livestock corral to the northeast corner of the site that is used periodically by the host land user family.

There is a primary access dirt road that borders the area to the south; the road is used only by local residents. There is an old water well with storage tank outside the west side of the site; the plan is to redevelop this water well to provide water to the proposed development. There is also a single-phase electric powerline that comes up to the site.

The second site within the Black Mesa Chapter House withdrawn area has some development limitations. One consideration is the site has 5% to 6% slopes to the south and west sides and there is a high ridge outside the west border. The only developments on the 10 acres presently are the Chapter House and the Chapter warehouse. There are homesites and other domestic development to the south. The road to the Chapter House is well-used, as is the dirt road that borders the site to the north and east. These roads lead to N8066 and to the Black Mesa Community School and the homesites.

5.3.2 Utilities

Site 1 has a primary community road going through it and has an adequate electrical utility system which ends at the western border of the site. The existing water well storage facilities will need to be redeveloped; there is reportedly sufficient groundwater for the redevelopment of the well and its appurtenances. There will need to be the development of a new waste water lagoon system for the site.

Site 2 has an electrical powerline, water and wastewater systems infrastructure located within the 10-acre Chapter House tract. These utility infrastructures are in close enough proximity that the further development of the site is reasonable. There will be a need to expand the waste water system for the site.

The conclusion of the Consultant is that the development of the sites is feasible with the water, electrical utility and telecommunications infrastructure in close proximity. The waste water system capacity will need to be developed for both sites.

5.3.3 Contamination

As there has been limited development within the two sites or their peripheral area, there is absolutely no potential of any type of contamination.

5.3.4 The Environmental Assessment

Through a Class I records check with the Navajo Historic Preservation Department it is determined that there have not been any Cultural Resources Surveys done in the immediate vicinity of the proposed development site 1.

Thus it is presumed that there are not any cultural resources sites documented within the proposed site. However, it is recommended that prior to the finalization of any proposed development plans for the area, the entire site be archeologically surveyed to conclusively determine if there are any cultural resources.

Although the Cultural Resources Survey has not been done in compliance with the Navajo Nation and the BIA requirements for the first site, an initial Biological Survey has been performed of the site, primarily to identify the vegetation and wildlife. The data collected through the Biological Survey can be referenced when the Cultural Resources Survey and other clearance surveys are being performed.

A primary objective of the Biological Survey is to determine if there are any vegetation or wildlife that are Species of Concern considering the dictates of the Federal Endangered Species Act (ESA). There are no findings at the first site that would qualify for consideration under the ESA.

The community is advised that as the community continues with the planning of the development sites, the Cultural Resources Survey and other relevant surveys need to be performed and completed. These would include securing the Finding of No Significant Impact (FONSI) statement, the Cultural Resources Survey, as well as completing the land withdrawal process for the 8 acres through the Navajo Nation and BIA processes.

The conclusion of the Consultant is that there are not any known cultural resources concerns found in the vicinity of the 8 acres.

Through a Class I records check with the Navajo Historic Preservation Department it is determined that there was a Cultural Resources Survey done in the immediate vicinity of the proposed development site 2. This site which is limited in size is documented as Site AZ-J-41-05 in Project Report No. NNAD-93-375.

Through the Cultural Resources Survey there was a site identified towards the southwest corner of the 10 acres that is a potential cultural resources site. There is evidence that there has been human habitation of the site that is over 100 years old.

5.4.4 Elderly Care Group Home

One of the great needs that the community wants to address is the unfortunate institutionalization of elderly to off reservation elderly nursing homes, the CLUP Committee and the Chapter Leadership want to develop an Elderly Care Group Home for which there is 2 acres reserved.

5.4.5 Clinic

The community has to travel a distance to get medical attention and with the growing population of Black Mesa, the community would like to have a day health clinic established in the immediate community to attend to this important need. To facilitate this plan the community planners have reserved 1 acre.

5.4.6 Education Tract

The community leadership plans for the establishment of new educational facilities and programs and is thus setting aside 1 acre for this critical community service. The Chapter leadership wishes to provide for the educational needs of the children close to home. The educational program will initially include Headstart/Day Care programs.

5.4.7 Streets

In addition to the various components of the Land Use Plan discussed, there are also basic elements of the streets, sidewalks, landscaping and access to the different parts of the development area accounted for.

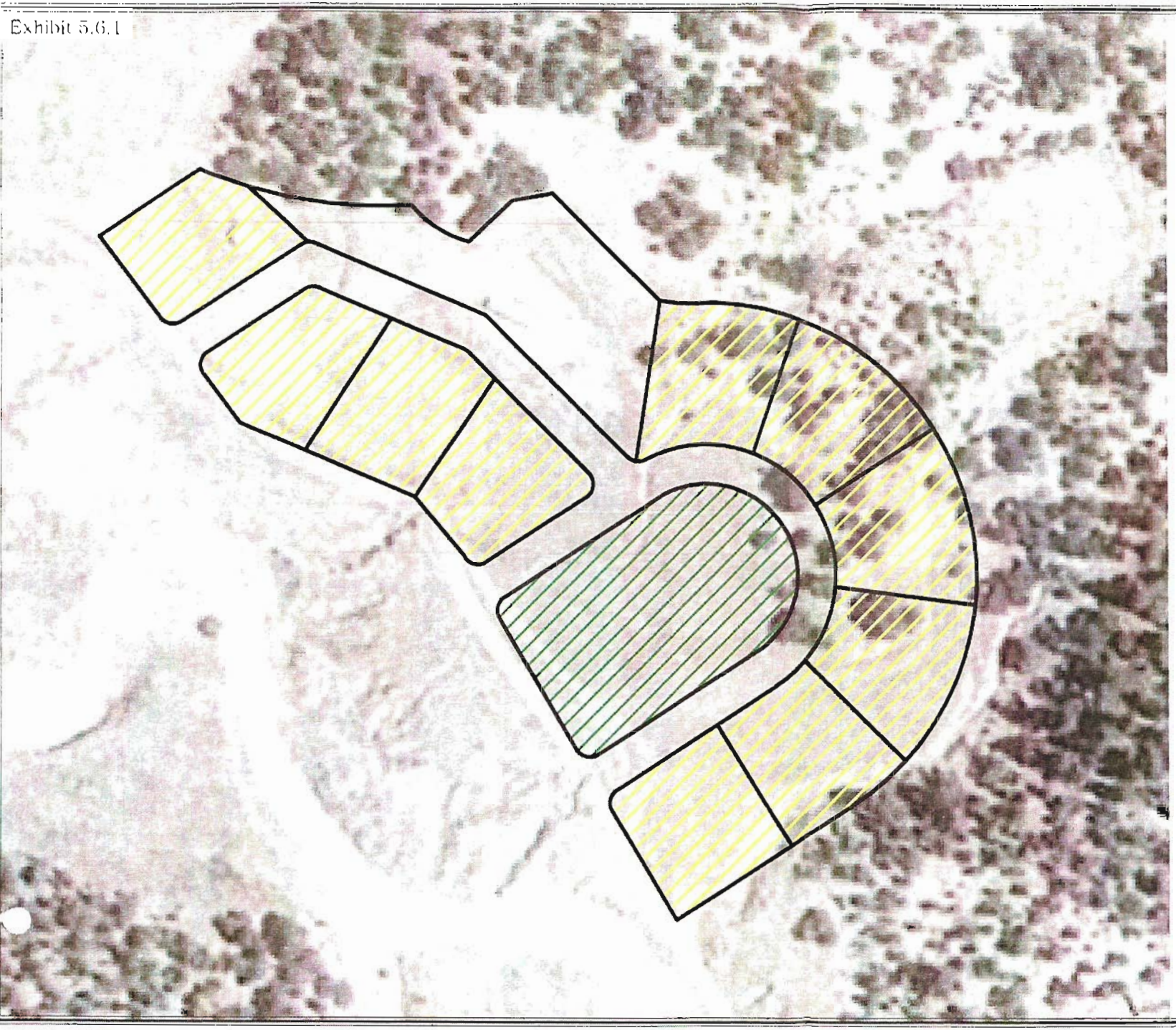
5.4.8 Commercial

The community wishes to host the development of convenience store/gas station business enterprises, as well as other business development possibilities. However the sites that are identified are not conducive to economic development and the community is advised that another site needs to be selected for the development of commercial development.

5.5 Conclusion

The 8-acre and 10-acre sites proposed for a housing subdivision and the different components of community development are good sites. With the advent of bringing all necessary utility infrastructure systems to the sites and with the aggressive advocacy for development by the community leadership, coupled with support from the Navajo Nation, the Indian Health Services and the Bureau of Indian Affairs, the Black Mesa community can have and experience the positive attributes of development into the future that it deserves.

Exhibit 5.6.1



Black Mesa Development Site 1 Map

Map Prepared By: Lance H. Vazzie
04 Jan 05

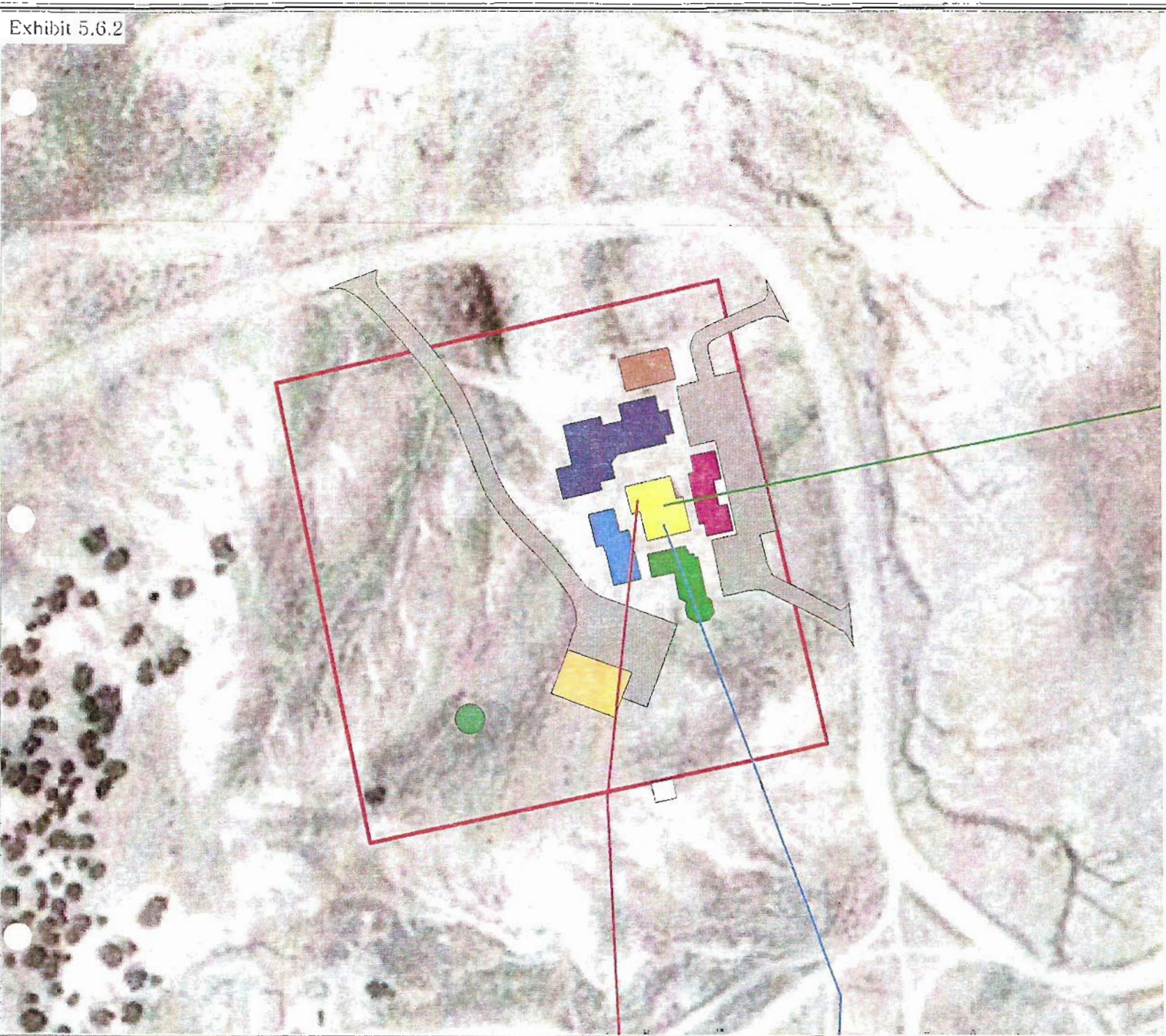
0 100 200 Feet

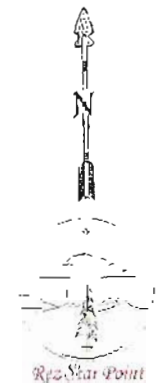
Legend

- Development Site 1 Layout
- Housing Lots
- Park

Exhibit 5.6.2

Black Mesa Development Site 4 Plat





Map Prepared By: Lance H. Yazzie
04 Jan 05

0 100 200 300 Feet

Legend

- Development area 4
- Chapter House
- Existing Warehouse
- Clinic
- Daycare/Headstart
- Warehouse
- Senior Citizens Center
- Office Complex
- Proposed Streets & Parking Lots
- Archeological Site
- Family Cemetery
- Water Line
- Waste Water Line
- Electric Line

SPECTRUM 6 – IMPLEMENTATION RECOMMENDATIONS

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SPECTRUM 6 – IMPLEMENTATION RECOMMENDATIONS

6.1 Black Mesa Chapter Land Use Policies

PREFACE:

These policies describe the internal policies that provide general direction for the Chapter government, as the community proceeds with its plans in the development of the community utilizing this Land Use Plan.

These policies are intended to provide guidance in the most general terms, specific issues not addressed by these policies shall be governed by pertinent Navajo Nation laws and regulations. Further those localized issues not provided for herein and not specifically provided for in Navajo law or regulations, shall be subject to the recommendations of the Black Mesa Chapter leadership for deliberation and decision of the Chapter leadership and community membership.

6.1.1 Chapter Boundary Policy

It is recognized that there are no "official" Chapter boundaries that are formally accepted by the Black Mesa Chapter, the Navajo Nation and the Bureau of Indian Affairs. It is understood that the Black Mesa Chapter has approximately 157,320 acres within its jurisdiction of Trust Lands according to the Navajo Land Development Office.

The Black Mesa Chapter located in the northwestern section of the Chinle Agency shares its borders with the Rough Rock, Chinle, Tachee Blue Gap, Pinon, Forest Lake and Chilchinbeto Chapters. The 157,320 acres claimed by the Black Mesa Chapter is all Navajo Trust Land.

In instances where there are Black Mesa Chapter members who have physical residences in other Chapter areas, will be addressed through dialogue with other Chapters to determine Chapter membership/ client service areas.

The policy of the Black Mesa Chapter will be to protect the integrity of the boundary recognized by the Black Mesa Chapter and to diligently engage in discussions and negotiation with other jurisdictions to conclusively resolve any potential boundary discrepancies.

6.1.2 Cultural and Traditional Resources Preservation Policy

A prerequisite in the process of community and economic development is the assessing of the cultural and traditional resources located on and adjacent to the proposed development sites.

The Chapter leadership will assure that the knowledge of community members of such resources are considered in the predevelopment assessment processes. Cultural resources include areas where there were previous human habitation and funery sites. Traditional resources areas are those areas currently used for traditional ceremonial activities.

In addition to this responsibility, the Chapter will assure that all relevant laws and regulations are complied with, including but not limited to the Navajo Nation Cultural Resources Preservation Act, the National Historic Preservation Act, Archeological Protection Act and the National American Graves Protection and Repatriation Act.

6.1.3 Environmentally Sensitive Areas Policy

Another prerequisite in the process of community and economic development is the assessing of the environmental conditions and resources located on and adjacent to proposed development sites. The Chapter leadership will assure that in the assessment of proposed development areas, all relevant laws and regulations are complied with, including but not limited to the Navajo Nation Environmental Protection Act, the Federal Environmental Protection Act, Endangered Species Act and the Clean Water Act.

6.1.4 Grazing and Agricultural Land Management Policy

The prudent practices of land use for grazing and agricultural activities are time-honored activities the Black Mesa community members are accustomed to. The regard for the land and the proper care thereof, have been central to traditional livelihood throughout the history of the people and is a sacred trust and birthright.

The Chapter leadership shall assure the continuance of the proper caring of the land and natural resources by advancing and advocating appropriate land management practices. The policy of the Black Mesa Chapter shall be to continue traditionally learned land management practices, in addition to referring to and utilizing the dictates of the Navajo Nation Grazing Regulations and other pertinent laws and regulations.

6.1.5 Land Use Approval Policy

The Land Use Plan as approved by the Chapter membership shall dictate the manner and process of the various land use proposals. The Land Use Plan is subject to periodic review and amendment by the Chapter membership.

All requests for Chapter land development shall be first presented to the Black Mesa Chapter Land Use Planning Committee for initial review. The CLUP Committee shall submit their recommendations to the Chapter Planning Committee prior to presentation to the Chapter membership.

The Chapter leadership shall insure that all appropriate information is secured before the land use proposal is forwarded to the Chapter membership. This information shall include verification of land availability, regulatory clearances, development plans and conformance with the Land Use Plan. Appropriate Tribal and other laws and regulations shall be complied with.

6.1.6 Chapter Land Master Leasing Policy

To expedite the planning and development of land, the policy of the Black Mesa Chapter shall be to make concerted effort to withdraw large contiguous tracts of land for comprehensive planning for housing, commercial, industrial and other appropriate development. These large withdrawn tracts of Chapter lands shall be surveyed and field cleared in a comprehensive manner to secure all required regulatory clearances.

6.1.7 Chapter Housing Development Policy

With the housing needs of the community delineated, the Chapter leadership in conjunction with various housing providers shall determine a strategy to address the housing need.

The basic considerations in the formulation of the housing development strategy shall include the land areas identified for housing development, required infrastructure systems, funding sources, types of housing development and building materials, housing designs, and long-term maintenance and operation of the projects.

6.1.8 Identification of New Areas for Development Policy

The Black Mesa Chapter leadership and the Chapter Land Use Planning Committee shall continually assess the need to identify new development areas to meet the anticipated growth of population and community. Areas that are considered for new development shall be assessed for land suitability, including all appropriate surveys and regulatory clearances. Areas that are determined to be available and suitable for future development shall be dedicated as such, with inclusion to the Land Use Plan.

6.1.9 Infrastructure Needs Policy

The consideration for and identification of new development areas requires that the infrastructure necessary to serve the new areas be analyzed and planned. In addition to the future planning for infrastructure, the Chapter leadership must be cognizant of the condition of existing infrastructure systems with the purpose of assuring the viability of the systems. This function is necessary to determine the portions or components of the systems that need replacement or upgrade to insure that the infrastructure needs of the community membership are satisfied.

6.1.10 Commercial and Industrial Development Policy

The policy of the Black Mesa Chapter and community will be to encourage local community members and other interested parties to develop commercial/business development. The community would also encourage the establishment of light industrial development to provide employment opportunities. The development of such commercial and industrial interests shall be provided for within the established Land Use Plan. The community leadership shall do all things necessary to assist the prospective entrepreneurs to establish their business concerns in the community.

6.2 Additional Implementation Recommendations

6.2.1 Learning and Working with Existing Laws and Regulations

The Black Mesa Chapter leadership and CLUP Committee shall gain familiarity with the intent and enabling authorities of pertinent existing Navajo Nation laws and Bureau of Indian Affairs regulations as they relate to the Black Mesa development process.

Albeit the Local Governance Act of 1998 grants certain authorities to the Chapter government for the planning and regulation of local affairs and issues, there will remain continued oversight of community local governance activities by the central Navajo government and the BIA.

It is therefore incumbent upon the community leadership to understand these pertinent laws and regulations to be able to exercise the greatest measure of local governance autonomy that is feasible. By understanding and working within the parameters of the oversight laws and regulations, the community will be enabled to better achieve its goals and objectives.

6.2.2 Establishment of Chapter Land Development Code

As the Chapter leadership and community membership understand their position in relation to existing laws and regulations and further understanding the mechanisms in developing and maintaining the Comprehensive Land Use Plan, there will be the need to develop appropriate Land Development Codes to provide additional guidance in the orderly development of the Black Mesa Chapter area.

6.2.3 Enforcement of Land Use Development Code

Even the most well-developed and well-intentioned Development Code is not practical, if they lack enforcement procedures. The Black Mesa Chapter and community will establish appropriate enforcement processes to assure the viable and successful exercise of the Black Mesa Land Use Development Code.

6.2.4 Zoning

To ensure that the various components of community and economic development occur in a prescribed and orderly fashion, specific sites for these components will be described beforehand using appropriate zoning mechanisms and delineating them in the Land Use Plan.

The Chapter Leadership and CLUP Committee will require that all development occur in conformity with the zoning policies, except where the community membership makes formal exceptions to the zoning policies. Such exceptions shall be accomplished through Chapter resolution and with appropriate adjustments to the Black Mesa Land Use Plan.

6.2.5 Regulatory Clearances

With the provision of land for the proposed development pursuant to the Land Use Plan and attendant zoning requirements, the Chapter leadership shall assure that there is compliance with all pertinent legal and regulatory clearance requirements.

These include, but are not limited to legal survey, cultural resources (archeological) survey, environmental assessments with the Finding Of No Significant Impact (FONSI) statement.

6.2.6 Building Code

The Chapter leadership should consider the development of a set of Building Codes to provide guidance on the manner of acceptable construction of public facilities and housing. A set of Building Codes would ensure quality construction and would thus assure the protection of the safety and health of the citizens in this respect.

6.2.7 Community Education

It is incumbent on the Chapter leadership and the CLUP Committee to insure that the community membership understands the purpose and intent of the Black Mesa Chapter Land Use Plan and all its particulars.

The Chapter leadership and the CLUP Committee shall continue an orientation process on the Land Use Plan to establish ownership and acceptance of the Plan as a guiding tool for the orderly future growth and development of the community.

6.2.8 Review and Update of the Land Use Plan

The Chapter leadership and the CLUP Committee shall continually assess the Land Use Plan and present recommendations to the Chapter membership on any elements of adjustment and updating that are appropriate and necessary.

This Land Use Plan will provide reasonable planning guidance over the next five years or through the year 2008. At the end of the five-year period, the Plan should undergo critical review and updating.

6.3 Special Site Development Requirements

6.3.1 Utility Infrastructure Development

The 8 acre and 10 acre tracts can be served with all manner of utility infrastructure including adequate electrical power, water, sewer, gas and telecommunications. The Chapter Officials will need to continue a close collaborative relationship with the Office of Environmental Health, the Navajo Tribal Utility Authority, the Navajo Communications Co. and other appropriate vendors in order that the utility infrastructure are brought to the fruition in a timely manner.

6.4 Legal Considerations

6.4.1 Development Site Land Withdrawal

The land withdrawal for the 8 acre and 10 acre planned development sites will need to be processed through the Navajo Nation and the BIA by the Chapter.

6.4.2 Clearances and Surveys

The Consultant concludes that the area is free of any cultural resource concerns that could be complicating factors. However, the Environmental Assessment and the Archeological Survey/Cultural Resources Clearance and the Finding Of No Significant Impact (FONSI) statement requirements will still need to be completed prior to any development.

6.5 Conclusion

The 8 acre and 10 acre sites proposed for housing and the different components of community and economic development is a good site. The much-needed development planned herein requires the advent of bringing adequate utility infrastructure to the site. With the support of the Navajo Nation, as well as the Indian Health Service and Bureau of Indian Affairs, the Black Mesa community can enjoy the positive attributes of development on this site.

SPECTRUM 7: SUMMARY

The Native American Housing and Self Determination Act has provided the Black Mesa Chapter and community the unique opportunity to self-reflect in a process of assessing its special inherent qualities. This self-assessment by the community has brought the community and the Chapter leadership to the realization that it has the ability to plan the development of the community and to forge a beginning to a successful future.

The learning that has been collectively realized and the technical assistance imparted by the Consultant and other partners in the planning process have developed an interest in community planning. The Chapter leadership, the CLUP Committee and the community recognize that in spite of the lack of development, that there is potential for the eventual development of the community and Chapter area.

It is understood that the Black Mesa Land Use Plan document is to be regarded as a tool in the planning and development process of the community. It is understood that the Plan is intended to provide general guidance in the planning process. It is accepted that the Plan is a living document, such that it should not be stagnant, but ever changing and growing as the community continues to refine the document by working with it. It is further accepted that the Plan is intended to provide general community planning and development guidance for five years, at which time there needs to be a critical review and updating of the Plan.

The Black Mesa Chapter leadership and community membership appreciate that the developed Land Use Plan represents a crucial element in the satisfaction of the requirements to attain certification under the Local Governance Act. The Black Mesa Chapter leadership and community membership believe that their aspirations and hopes for development and progress has been enhanced through the community capacity building and community empowerment that is made evident through participation in the NAHASDA Chapter Land Use Planning project.

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