

CHAPTER 3

SOCIAL AND ECONOMIC CONDITIONS

I. Introduction

Chapter 3 of this report describes baseline social and economic conditions on the Northern Cheyenne Reservation. The two overarching factors that shape the Reservation's present condition are: (1) the Northern Cheyenne Tribe's unique history, rich culture and traditions; and (2) the persistent overriding economic poverty of most of its members.

By bringing forward Northern Cheyenne culture and the present poverty-stricken condition of the Northern Cheyenne Reservation in the same breath, this report does not suggest that they are related. In fact, the opposite may be true. As shown in the previous Chapter, it is precisely those past policies aimed at fully appropriating Cheyenne resources into the expanding Euroamerican economy and simultaneously destroying Cheyenne culture, while really achieving neither, that laid the foundations for the current conditions of poverty on the Reservation.

This report makes clear that the Northern Cheyenne Tribe represents a distinct cultural, social, political, and economic entity within the Northern Plains region. Nevertheless, data relating specifically to the Northern Cheyenne Reservation or Tribe is often not broken out from county-wide or region-wide analyses. Indeed, Indian reservations were not broken out in decennial census counts until 1990. Important State and county health statistics do not readily distinguish the Northern Cheyenne Reservation from Big Horn and Rosebud County data generally. The Census of Agriculture still does not break out Indian reservation data. This lack of data that adequately distinguishes the Reservation and its people from the population at large remains a difficult problem for researchers in many areas, as they prepare studies such as this one. Too often, impact analyses, relying on such data, also fail to adequately address affected reservations as distinct and unique entities. The Northern Cheyenne Tribe constitutes a distinct, sovereign governmental entity, with its own defined territory, substantial resources, and constitutional responsibilities for its citizens and its resources. This reality also is implicitly denied when data adequately characterizing this distinct entity is not provided in the same ways as it is routinely provided for counties, states, and municipalities.

A review of Northern Cheyenne Reservation history leaves little reasonable doubt that contemporary Reservation poverty and dysfunction has its roots in past Federal policies that, aiming to hasten the forced assimilation of Northern Cheyenne into the mainstream of American life, concentrated on the literal destruction of Northern Cheyenne culture and livelihood. The dynamic relations between the Reservation community and its immediate region, and between the Reservation and the dominant society at large, were set in place in these past eras of Federal Indian policy. But once

such relations are established, they prove much more resistant to change than the original policies themselves. These relations which embody and perpetuate severe inequity, and to some extent the attitudes and assumptions that they originally expressed, had become ingrained in the very social fabric and institutional structure of the region.

Because Northern Cheyenne Reservation poverty is not so much a condition as a process or structural relationship between the Reservation and surrounding region, it tends to shape new development initiatives rather than being changed by them. This means that new development initiatives within the region, in the absence of conscious intervention, become part of this existing dynamic relationship and may tend to worsen rather than alleviate the poverty-stricken position of the Reservation. As showed in Part III.C of this Chapter, this is precisely what occurred during recent past energy development booms in the region.

Reservation poverty also persists as a result of the psycho-social damage that was inflicted upon the Northern Cheyenne people by the past Federal policies of forced cultural assimilation, and by unprincipled individuals to whom these policies had made the Cheyenne people subject, and before whom they were essentially defenseless, especially as children. A current rash of convictions of priests for sexual abuse of children entrusted to their care is, at this writing, a current news item. But the problem is hardly a new one, and it was apparently especially severe for the Northern Cheyenne as a subject population. Add to this the sometimes well-meaning but terribly misguided prosecution of Indian people merely for pursuing the daily ways and practices of their traditions. And all this occurred after decades of warfare under the harshest of conditions, and in then-current conditions of hardship and semi-starvation.

What is well understood now is that such experiences leave deep psychic scars on human beings – wounds that are passed down within families for generations, and even within whole societies. The effects may express themselves as severe anger or grief, as heightened vulnerability to alcohol and drug abuse, as reckless disregard or even suicide. Continuing poverty only makes such effects worse. When all this occurs within a relatively small, traditional, and enduring community, where people and families know each other intimately, the emotional effects of, for instance, seemingly unnecessary deaths or suicides are amplified even more.

The problems of inter-generational and social dysfunction are not determining factors, but they are limiting ones. They sap people's energy and will, and divert attention. There is little doubt that this affects the community's ability to more effectively challenge the long-endured conditions that keep the Reservation as a whole in relative poverty. They also, similarly, help define one dimension of the Reservation community's special vulnerability to impacts from off-Reservation energy developments. Such developments, for one thing, have been known to attract influxes of itinerant workers who themselves bring similar if as a whole less severe problems with them. They also often bring as well prejudicial or intolerant attitudes, along with increased supplies of recreational drugs.

The next part of this Chapter introduces the reader to some general population characteristics of the Northern Cheyenne Reservation. The following part of the Chapter discusses the economic characteristics of the Reservation and attempts to identify some of the forces and dynamics that maintain the Reservation in its status of extreme poverty, vis-à-vis the rest of the region. The next part of the Chapter describes the importance of the Reservation's subsistence economy which allows many Tribal members to survive and maintain their cultural traditions despite harsh conditions of poverty.

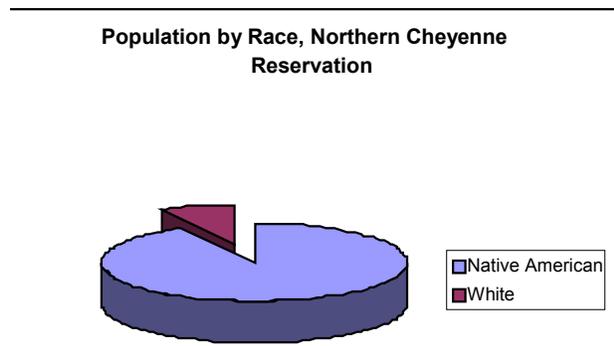
Because the poverty-stricken condition of the Reservation community is so severe, it tends to dominate and override many other dimensions of peoples' lives. Because this is so, the rest of this Chapter describes the *human consequences* of the difficult poverty-stricken economic conditions: e.g. social dysfunction, violence, poor health and chemical dependency.

II. Demographics.

A. Reservation Population.

According to the 2000 Census, the population of the Northern Cheyenne Reservation is 4,470 persons, of whom 4,029 are Native American (Figure 3-1). It is

important here to note that the total Reservation population of 4,470 given in the 2000 Census almost certainly underestimates the actual Reservation population. It is well known that the official census figures regularly undercount the actual population in low-income areas affected by poverty and social instability. People in such areas tend to be less fixed and less easy for census takers to locate and interview. Some people refuse to cooperate with the census or to make



Derived, Census 2000, SF 1, N. Cheyenne Reservation.

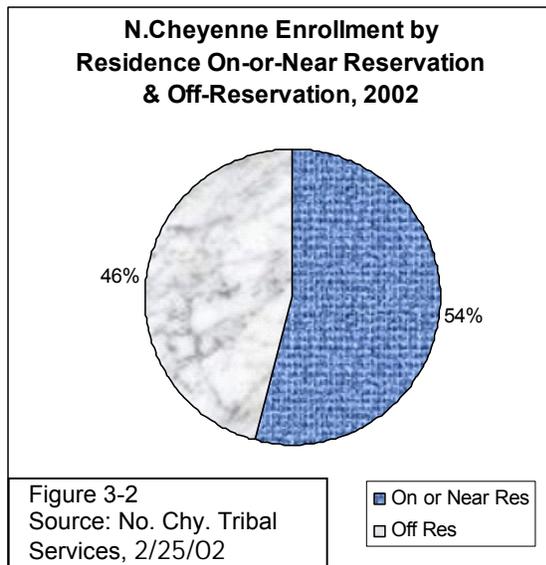
Figure 3-1

themselves known. Indian reservations are known to be one kind of area that the census especially undercounts. Another population that is regularly not fully counted is that of children. Both of these sources of undercounting converge on the Northern Cheyenne Reservation with its relatively large youth population.

The 1990 decennial census provides undercount rates based on actual studies. It also provides both "official" figures reflecting the actual counts, and "adjusted" figures based on the undercount projections. The relevant adjustment rates for the Northern Cheyenne Reservation in the 1990 census are: for the total reservation population, 11.78%; and for the Indian population, 12.48%. Based on these rates, the total

population was raised from 3,923 in the official count to 4,447 in the adjusted count; and the Indian population was raised from 3,542 in the official count to 4,047 in the adjusted count. Using these conversion factors, the total Reservation population in 2000 was likely about 5,000.¹

Tribal enrollment data indicates that the current number of enrolled tribal members is 8008 persons, of whom 4343 live on or near the Reservation. (Spang, 2-25-2002).



Thus, almost half of the enrolled population lives off the Reservation. See Figure 3-2. However, the Reservation boundary is open and the on-Reservation and off-Reservation populations of Tribal members are somewhat fluid. The Reservation and its community remain the homeland and anchor for most Tribal members. As a community, and as individuals and families, Northern Cheyenne are generally less mobile than non-Indians; they less readily pick up their roots and put them down somewhere else. Family members may leave for a while, but they also return. Despite extremely limited housing and other necessities, changing conditions can bring more Tribal members back to the Reservation.

The relatively high population density of the Reservation reflects this pull of land and community. That even more of the Tribal membership does not live on the Reservation reflects the lack of employment and other economic opportunities, as well as an extremely limited housing stock and other public services and facilities. See Chapter 5. It is likely that the on-Reservation population of enrolled Tribal members would increase if economic conditions improve, or even if there is a perception that conditions are improving.

B. Social Geography.

Every community or political jurisdiction has a location "on the ground," in some particular area of the landscape. It is not an accident that we call towns or Indian reservations or other culturally or socially meaningful entities "places." But such places are not defined only geographically; they also occupy positions within systems of social identities and economic exchange. In other words, the "location" of a place defines an

¹ Adjusting the official census count to better represent actual populations has become a politically and legally contentious issue. The 2000 decennial census does not provide adjusted counts for this reason. This report generally uses official count figures for technical and other reasons, so the conclusions it draws should be recognized as being conservative. For instance, the contrast between the population density of the reservation as compared to the population density of the neighboring non-Indian areas is actually probably somewhat greater than is represented in Figure 3-7.

area of natural geography, but it also constitutes a site within a landscape that is differentiated economically and socially, and perhaps culturally. A town, county, state, or Indian reservation occupies a position not just on territorial maps, but also on a "map" defined by dynamic relations of economic exchange and social, political, and ethnic identities.

Geographically, the Northern Cheyenne Reservation's most immediate social environment consists of Bighorn and Rosebud Counties, which it spans, the Crow Reservation which borders it on the west, and Powder River County immediately to the east. Below, the Reservation's demographic characteristics are examined in relation to neighboring non-Indian populations in the southeastern Montana area. These populations live in the same region, are similarly rural, share a common history to some degree, and are subject generally to many of the same larger economic and social forces as the Northern Cheyenne. Local non-Indian populations also make up the immediate social and economic environment with which the Reservation community is in dynamic interaction. These social and economic dynamics between the Reservation and the surrounding region help perpetuate the present social and economic baseline conditions on the Reservation.

Indian Reservation populations in this area still are often ignored or averaged into the general population in many planning studies and data bases. County health profiles, for instance, do not show the presence of Indian populations within the counties, and only indicate that there are different ethnic groups or populations with regard to one variable, that of median age at death, where the population is broken down into "White" and "Other." If one knows the area, of course, one knows that "Other" overwhelmingly means Native American, specifically Crow and Northern Cheyenne.

According to the 2000 Census (Summary File 1, 100% data), in Bighorn county the "Other" category (made up of Crow and Northern Cheyenne) is actually the majority population of the county. Figure 3-3. Rosebud County's population is fully one-third Northern Cheyenne. Figure 3-4. By contrast, Powder River County, which unlike Bighorn and Rosebud Counties does not contain a portion of an Indian Reservation, has only a small Indian population. Figure 3-5. Nevertheless, Native Americans, overwhelmingly Crow and Northern Cheyenne, make up nearly half (44%) of the population of all three counties as a whole. Figure 3-6.

Figure 3-3

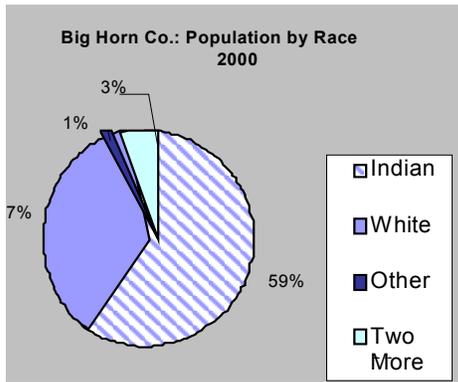


Figure 3-4

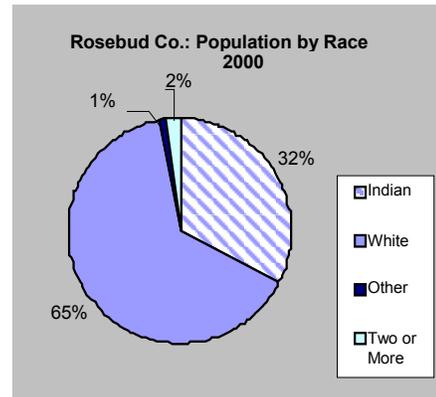


Figure 3-5

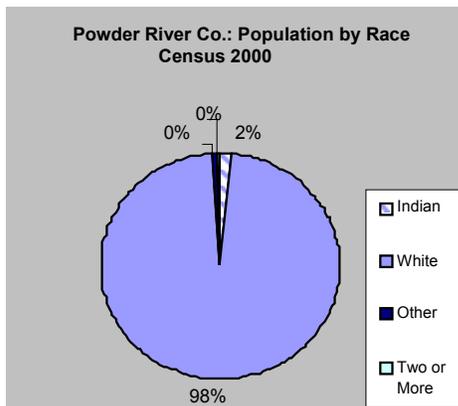
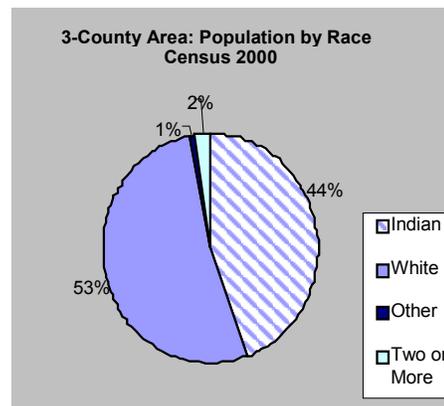


Figure 3-6



Members of the Northern Cheyenne Tribe by themselves make up 12 percent of Bighorn County, a third of Rosebud County, and nearly 20 percent of the three-county area. In short, the Northern Cheyenne Tribe, just in terms of numbers, is a significant presence. It should be noted that these are the most conservative figures. If one adjusts for the census undercount and also include people in the 2000 census who identified themselves as being "two or more" races (most of whom in this area will be part Indian) then the figures would be even higher. By comparison, in the 2000 census, 56,068 Indians made up only 6 percent of Montana's overall population.

C. Population Density.

Until the mid- to late-1960s, the area of southeastern Montana that surrounds the Northern Cheyenne Reservation remained highly rural and relatively isolated. Often described as the last and least settled region of the United States, it supported an agricultural economy based primarily on large ranches owned and operated by families with deep roots in the land, many of whom were (and are) descendants of the original settlers. With its agricultural economy, the area remained by and large an economic

"backwater," and the relatively stable Euroamerican communities were content to let many of the changes that occurred elsewhere pass them by. Socially, and in some respects economically, the Northern Cheyenne Reservation constituted an even more isolated pocket within this highly rural Northern Plains region.

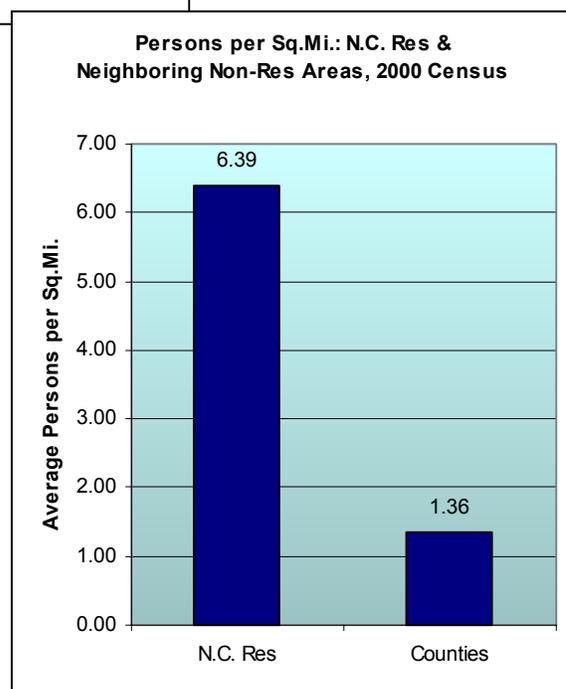
All of this changed in the 1960s, with the advent of coal development. But except for specific "boom" conditions, localized in time and space, energy development did not drastically change the region's overall basic population. With an economy still based in resource extraction, the area remains sparsely populated. Industrial energy production, however, has changed the character of the region in other ways, and continues to affect established local communities, including the Northern Cheyenne Tribe, economically, socially, and culturally.

The population density of the region reflects its economy. Euroamericans are relatively mobile. If a local economy will not support them with jobs or livelihoods, they go somewhere else. This is often true of the children of established families in rural areas, as well as whole families who may be subject to currents of economic change. In southeastern Montana, as Figure 3-7 below illustrates, using data from the 2000 Census, the rural ranching and mining economy of the region supports only a little over one person per square mile (PPM). This figure represents the non-Reservation areas of Rosebud, Big Horn, and Powder River Counties, including the towns of Colstrip and Forsyth in Rosebud County, and Hardin in Big Horn County. The average of 1.4 PPM includes these local population centers. But it does not include either the Crow or Northern Cheyenne Reservation portions of Rosebud and Big Horn Counties.

As compared to the non-reservation areas with only 1.4 persons per square mile, however, the Northern Cheyenne Reservation has a population density of 6.4 persons per square mile. As a community, the Northern Cheyenne Tribe has its homeland in the Northern Cheyenne Reservation. The Reservation community as a whole is not mobile within the larger U.S. social economy; and in general Northern Cheyenne families and individuals are far less mobile than their local Euroamerican counterparts, even though the latter also may be representatives of established communities with deep local ties.

The powerful rootedness of the Tribe in its homeland, the value of its traditions and culture to its members, and the pull of the tribal community on its members, mean

Figure 3-7



that people remain on the Reservation in numbers greater the local and regional economy supports. Because they are so much less mobile, many Northern Cheyenne tribal members endure poverty and joblessness to remain on their homeland and within their community. That the local agricultural economy cannot support the population of the Tribe within the land base it has been allotted is one dimension of the severe poverty found today on the Reservation.

Without going more deeply into its historical, political, and economic causes and implications, it is clear that the simple demographic variable of population density marks off the Northern Cheyenne Reservation from, and within, its larger region. This distinction in turn relates to the Northern Cheyenne Tribe's unique history, culture, economic condition, and continuing identity within the region. Tables 3-1 and 3-2 provide further breakdown of the data from which Figure 3-7 is derived.

Table 3-1 Land Areas and Population by Census Tract – Northern Cheyenne Reservation

County	Tract	Sq. Miles	White	N. Amer.	Total Pop	PPM
Rosebud	9404	380.764	239	2,632	2,928	7.69
Bighorn	9403	318.308	111	1,397	1,542	4.84
Totals		699.072	350	4,029	4,470	6.39

Table 3-2 Land Areas and Population by Census Tract – Off-Reservation Areas

County	Tract	Sq. Miles	White	N. Amer.	Total Pop	PPM
Rosebud	100	2,691	2,616	46	2,728	1.01
Rosebud	200	1,938	1,213	98	1,374	0.71
Rosebud (Colstrip)	300	12.7	1,975	265	2,353	185.93
Big Horn	100	857	2,947	1,142	4,358	5.09
Big Horn	400	610	138	6	145	0.24
Powder River	100	3,296	1,810	33	1,858	0.56
Totals		9,405	10,669	1,590	12,816	1.36

Montana Department of Commerce, Census and Information Center, Interactive Maps On Line. <http://ceic.commerce.state.mt.us/Maps&GIS/Maps/index.htm> Note: The figures for "Total Population" include additional categories of persons not shown in this Table.

The presence of the Reservation as a unique, irreplaceable, and non-fungible land base for the Northern Cheyenne Tribe is one reality that distinguishes the Cheyenne from local Euroamericans. One measurable consequence of this difference is that the population density of the Reservation land area already is roughly six times that of the surrounding areas. Northern Cheyenne respond more to place and community

and (for several reasons) less to economic imperatives than do many non-Indians. On the one hand, there may be many reasons for people to leave the Reservation, since life on the Reservation can be hard and available resources are entirely inadequate even for the roughly half of the tribal membership that lives there. But on the other hand, Cheyenne often feel a strong pull to return and live with their own community on their own land. The relatively high population density of the Reservation reflects this pull of land and community. That even more of the Tribal membership does not live here reflects the economic limitations we have been noting, as well as an extremely limited housing stock. See Chapter 5, Part I.

Thus, many people who are off of the Reservation at a given time regularly return, while some of those who are on the Reservation now will leave for a while. All this means also that the numbers of people on the Reservation can shift relatively rapidly. This is not entirely unlike boomtown conditions anywhere; but the realities of place and community on the Reservation are different from those of other places caught in energy development booms.

In the recent past, for example, the possibility of jobs in nearby energy developments at Colstrip brought people back to the Reservation. Many jobs were created, but very few went to Cheyenne. When far fewer jobs than anticipated materialized for returning Cheyenne, the *unemployment rate* on the Reservation actually *increased*, and already stressed social service and economic resources became even more strained (Feeney, 1986; BLM, 1989).

Social service planners on the Reservation identify another factor unrelated to regional energy development that could bring or force significant numbers of Northern Cheyenne living off the Reservation back home in the near future. Recent "welfare reform" laws impact off-Reservation Cheyenne differently and more adversely than Tribal members living on their Reservation. Also, Tribal members off the Reservation typically lack the social support networks of family and friends they have on the Reservation. As off-Reservation Cheyenne are forced off of welfare in the cities, they may come back to the Reservation, putting even more strain on scarce resources. The two independent factors of (1) the possibility of more local jobs with currently proposed coal bed methane and coal development, and (2) of welfare reform, threaten to converge and amplify each other's effects.

D. Age Structure.

The age structure of the Northern Cheyenne Tribe also is quite different from that of the surrounding Euroamerican population. The age distribution of the Northern Cheyenne Tribe is much more heavily weighted toward the young – that is, the Tribe has relatively more young people and fewer elders. This distinctive age structure also reflects its unique and difficult history. Figures 3-8 and 3-9, together with Table 3-3 illustrate the distinctive age structure of the Northern Cheyenne Reservation population as compared with the age structure of neighboring Euroamerican populations.

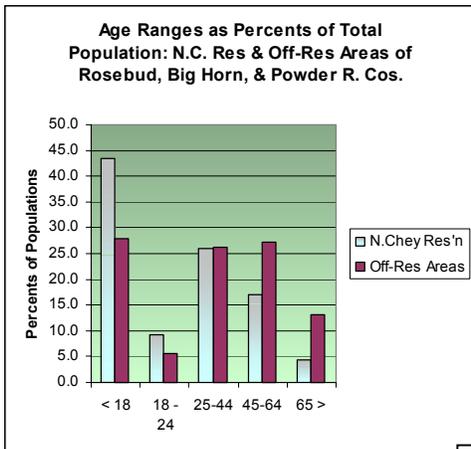


Figure 3-8

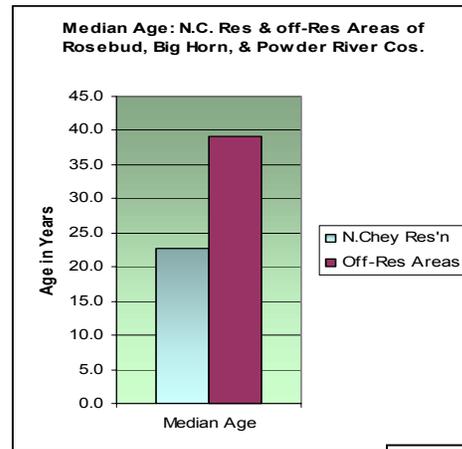


Figure 3-9

Table 3-3 -- Distributions: Northern Cheyenne Reservation and Non-Reservation Portions of Rosebud, Big Horn, and Powder River Counties.

County	Census Area	Total Pop.	Percent of Total Population					Median Age
			< 18	18 - 24	25-44	45-64	65 >	
NC RB	Tract 9404	2,928	43	10.2	25.4	16.6	4.7	22.7
NC BH	Tract 9403	1,542	43.9	8.4	26.5	17.3	4	22.7
Totals --		4,470	43.5	9.3	26.0	17.0	4.4	22.7
RB	Tract 100	2,728	24.1	5.6	23.9	28.7	17.7	42.9
RB	Tract 200	1,374	30.4	5.7	24.5	29.3	10	37.5
RB	Tract 300	2,353	34.3	6.1	28.7	27.8	3.1	35.4
BH	Tract 100	4,358	30.2	7.1	26.5	22.9	13.2	35.6
BH	Tract 400	145	22.1	4.8	30.3	26.9	15.9	41.5
PR	Tract 100	1,858	26.6	4.8	23.3	26.8	18.5	42.1
Totals --			28.0	5.7	26.2	27.1	13.1	39.2

Source: U.S. Census Bureau, Census 2000 Summary File 1, Matrices PCT12 and P13.

The age profile summarized in Figures 3-8 and 3-9 and Table 3-3 directly reflects the Northern Cheyenne Tribe's history over the last century. From a purely demographic perspective, prolonged warfare and the difficult events prior to the establishment of the Reservation took their toll on the Northern Cheyenne Tribe's numbers.

Extremely difficult early years on the Reservation followed the decades of Plains warfare. Increasingly surrounded by hostile Euroamerican settlers, and governed by arbitrary and often corrupt Bureau of Indian Affairs (BIA) agents, the Northern Cheyenne Tribe dwindled even farther. Starvation and disease were the most significant factors in causing the continuing decline in population during the early Reservation years. Weist provides one summary of the adverse conditions under which the Northern Cheyenne subsisted during this era:

Although the Cheyennes had been basically healthy when they settled on the reservation and experienced an initial increase in population, by 1916 the number of deaths exceeded births, a situation that was to continue into the Thirties. New diseases—tuberculosis and trachoma—ravaged the people, infecting an estimated forty to sixty percent of the population (Weist, 1977: 191).

The proceedings from a 1929 investigation conducted by a special subcommittee of the U.S. Senate Committee on Indian Affairs provide a detailed review of the intolerable conditions on the Northern Cheyenne Reservation. The survey of conditions on the Northern Cheyenne Reservation was part of a larger Senate investigation in which Senator Burton K. Wheeler of Montana played a prominent role. The Report concluded that the primary cause of high rates of illness and early death was chronic prolonged semi-starvation.

The work of this Subcommittee prominently helped bring about passage of the Indian Reorganization Act (IRA) in 1934. One respondent during the Northern Cheyenne Hearings estimated the Tribe's reservation population at that time to be between 1,400 to 1,500 persons (U.S. Senate Committee on Indian Affairs, 1932: 12780), providing one helpful population baseline. Verne Dusenberry (1956:74-75) says that the pre-contact population of the Tribe was never more than 4,000. If we take this figure of 4,000 to approximate the Tribe's population before the years of warfare and confinement on the Reservation, then by the 1930s the Northern Cheyenne Tribe had experienced a population decline of some 65-70%.

After passage of the IRA, conditions on the Reservation began to slowly improve. The Tribe's population stabilized and then began to rapidly recover. In 1956, Dusenberry estimated the Tribe's population on the Reservation at about 2,000. From this mid-century figure the Reservation's population has increased rapidly. These historical circumstances largely account for the distinctive age profile of the Reservation population today with its relatively large proportion of young people and fewer elders, as compared with neighboring Euroamerican populations. Although relatively better, conditions on the Reservation remained desperate by the standards of developed nations in the 20th century. Ironically, hardly had the Tribe begun to recover from the devastations of war and starvation on the Reservation than it confronted the threat from coal and other energy development beginning in the late mid-century period, and continuing to the present.

The large number of young people relative to elders, however, is more than just a statistical historical fact, it also has consequences for the Northern Cheyenne Tribe

today. With relatively fewer elders to pass on their traditional knowledge, the transmission of the Cheyenne culture becomes more problematic. Although this problem results from what happened to the Tribe in the past, it is a problem that only the Tribe itself can address in the present. In short, while current conditions have historical causes, they also have present and future consequences for the community.

For example, during the 1980s coal development dollars funded new parks, swimming pools and other recreational facilities and opportunities in Colstrip, off the Reservation. See Chapter 5, Part IX. These new facilities naturally drew many of the Tribe's young people away from the Reservation community, helping orient them instead to the youth cultures of the dominant society. As one Tribal member put it: "We didn't have facilities like that. We were blindsided by those developments. Northern Cheyenne young people were just sucked right out of here." (Mexicancheyenne, 1-25-2002).

The pull of young people to improved facilities off the Reservation reduces even further their opportunities to spend time with Tribal elders and to learn Tribal traditions, values, and history, that the Tribe's demographic profile already makes problematic. The critical task of passing on the tribe's traditions becomes even more difficult.

In sum, the age data presented here, when put in comparative and historical context, reveals a demographic profile that distinguishes the Tribe from neighboring communities. It also represents one of the unique vulnerabilities of the Northern Cheyenne Tribe in the face of impacts from proposed large-scale energy developments in the region.

III. Regional Economics.

A. Relative Poverty.

It is no secret that the Northern Cheyenne Reservation is among the poorest regions in the United States. The accompanying table and chart, using economic data from the 1990 census, compare per capita incomes by race in Rosebud County, Montana.

Table 3-4 shows a huge disparity in incomes in Rosebud County, between the Indian and the non-Indian populations. On a per capita basis, whites in Rosebud County enjoy nearly three times as much income as their Indian neighbors. White households enjoy more than twice the income of Indian households. The reason that the disparity in household is not quite as great as the per capita disparity is probably the result of larger households on the Indian side, as people join together to pool their meager incomes. Virtually all of the Indians in Rosebud County are Northern Cheyenne, and the vast majority of Northern Cheyenne live in the Reservation portion of the County.

Table 3-4 – Income Disparities -- Rosebud Co.

Per Capita Income by Race 1990 Census	
Indian	\$4,367
White	\$12,676
Median Household Incomes 1990 Census	
Indian	\$14,350
White	\$32,700

Given the figures in Table 3-4, it is hardly surprising that the poverty rate on the Northern Cheyenne Reservation is some four times greater than the poverty rate of neighboring non-Indian portions of Rosebud and Powder River Counties. See Table 3-5.

Table 3-5 - Poverty Rates, 1990 Census

Northern Cheyenne Reservation	47%
Non-Reservation Portions of Rosebud & Powder River Counties	12%

Indian people, just like everyone else, depend on jobs and business opportunities for livable incomes. In this sense, lower average incomes on the Reservation reflect lack of access to employment and other economic opportunity. An indication of the scope of the problem can be gleaned from Table 3-6. The next section of this chapter examines this differential access to employment opportunities in greater detail.

Table 3-6 Northern Cheyenne Reservation Employment Data – 1999

Total Potential Labor Force	2437
Total Not Employed	1719
UNEMPLOYMENT RATE	71%
EMPLOYMENT RATE	29%

Source: BIA Labor Force Report, 1999.

B. The Relationship Between Education, Income and Employment.

Educational attainment receives significant economic rewards across the nation. The income received by individuals is significantly affected by their educational accomplishments. Higher levels of education clearly boost the productivity of individuals on the job and with that high level of education comes higher rewards for their labor efforts. In 1998, for instance, Americans who did not finish high school earned 27 percent or \$7,600 per year less than those who did earn a high school diploma. Those who received some college education earned 52 percent or \$15,000 per year more than those who only finished high school.²

The same pattern is found in Montana. Across Montana counties, those counties with a higher percentage of the working-age population with post-secondary education tend to have higher median household incomes and those with a higher percentage of the working-age population that did not finish high school tend to have lower median household incomes.³

Education is valued on the Northern Cheyenne Reservation. Parents and families make extra efforts, often with minimal resources, to send their children to the best available schools. Given the distances involved in this rural area, such commitment may demand considerable investments in time and transportation costs for after-school events, even where bussing is available for regular school hours. For decades the Northern Cheyenne people had wanted a Reservation high school in Lame Deer. Finally, through intense effort and lobbying they acquired a new high school district was formed and a new school was constructed in Lame Deer in 1997. See Chapter 5, Part V. In the face of difficulties associated with poverty, and sometimes overt resistance, the Cheyenne community's commitment to the education of their young people remains strong.

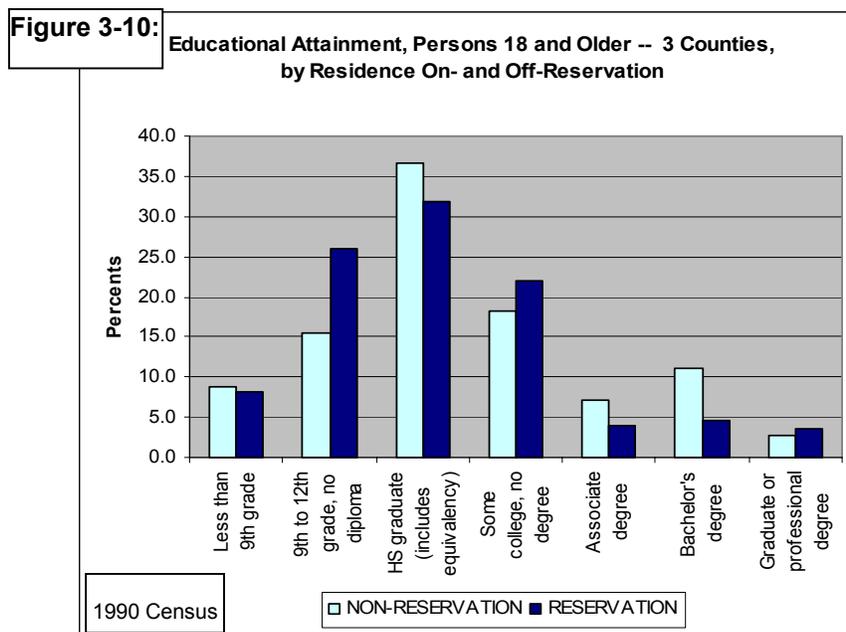
Education levels on the Northern Cheyenne Reservation are relatively high. For instance, the 1990 Census indicated that 38.4 percent of Reservation residents over 25 had some college education. In Rosebud County as a whole about the same

² U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60, "Money Income of Households, Families, and Persons in the United States," "Income, Poverty, and Valuation of Noncash Benefits," various years, "Money Income in the United States: 1995," P60-193, "Money Income in the United States: 1997) P60-200, and "Money Income in the United States: 1998" P60-206. The table from which the data was taken was prepared in October 1999. <http://nces.ed.gov/pubs2000/digest99/tables/XLS/Tab386.xls>

³ These statements are based on 1990 Census data since the 2000 detailed Census data is not yet available at the county level. In a regression of median household income on the percentage of those over 25 who have post-secondary education, the percentage of the population living in urban areas, and the percentage of the population over 64, the coefficient on education is positive and significant at the 4 percent level. Similar regression analysis using the percentage of those over 25 who did not finish high school shows a significant negative coefficient. Because those two education variables are correlated the relative importance of each cannot be determined from the Montana county level data.

percentage (41.1 percent) had some college education. On the Reservation, 10.3 percent of residents over 25 had a bachelor's degree or higher while that percentage was 13.4 percent for Rosebud County. On the other hand, in 1990 there was a higher percentage of Reservation residents who had not obtained a high school diploma: 35.2 percent versus 21.7 percent for Rosebud County as a whole.

Figure 3-10 breaks out the Reservation from the non-Reservation areas and shows the educational attainment of the Northern Cheyenne Reservation population (persons 18 years and older), compared to the non-Reservation portions of the three neighboring counties. The percentage of the population with a high school diploma and with some college is roughly similar on and off the Reservation. Perhaps the most notable differences are the larger proportion of persons on the Reservation without high school or equivalent diplomas, and the larger percentage off the Reservation with college degrees. However, given the significantly more difficult conditions of life on the Reservation, it is perhaps surprising that these differences are not greater.



If the average income associated with various levels of educational attainment across the United States in 1991 are assigned to the Reservation and Rosebud County populations, expected income levels for those over 25 would be quite similar: \$25,600 on the Reservation and \$26,700 in the county. Only a 4 percent difference would be

expected based on the educational differences.⁴ But average incomes on the Reservation are much lower than this. Average family incomes were 45 percent lower on the Reservation in 1990 and per capita incomes were 52 percent lower than in Rosebud County as a whole. See Table 3-7.

Table 3-7
Educational Attainment and Income - 1990

	Northern Cheyenne Reservation	Rosebud County	US Average Income by Education
No High School Diploma	35%	22%	\$17,867
High School Diploma	27%	37%	\$23,429
Some College	38%	41%	\$34,469
Expected Average Income	\$25,678	\$26,732	
Ration: No. Chy/ Rosebud	96.1%		
Actual Average Family Income	\$18,296	\$33,543	
Ratio: No. Chy/ Rosebud	54.5%		

Source: 1990 Census of Population; see footnotes in text.

Clearly the educational attainments of the Northern Cheyenne, especially the higher education accomplishments, are not being rewarded the way similar educational levels are rewarded off the Reservation and around the nation. The very limited employment opportunities available to Reservation residents which result in very low rates of employment largely explain this massive gap.

The above data is confirmed by 1990 census data comparing the employment rates of high school graduates aged 16 to 19 (not enrolled in school) living on and off the Reservation in Rosebud, Bighorn and Powder River Counties. The data shows that only 18.6 percent of the cohort living on the Reservation was employed, compared to 77.8 percent of the same age and educational cohort living off the Reservation. Fully *100 percent* of the off-Reservation whites from this age and educational cohort were employed. Of the on-Reservation cohort, 37.2 percent were *unemployed* and 44.2 percent were not in the labor force. The on-Reservation cohort was composed entirely of Native Americans. See Tables 3-8 and 3-9.

⁴ 1991 income levels were used because the 1990 data did not distinguish between different levels of college education. The income levels by education level were weighted by the percentage of each population that had that level of educational attainment to calculate the expected average income.

Table 3-8
School Enrollment, Educational Attainment and Employment Status
Persons 16 to 19 years

High School Graduate	On-Reservation	Off-Reservation
Employed	18.6%	77.8%
Unemployed	37.2%	22.2%
Not in Labor Force	44.2%	0.0%
TOTAL	100.0%	100.0%

Data Set: 1990 Summary Tape File 3 (STF 3) - Sample data.

Table 3-9
Race by School Enrollment, Educational Attainment and Employment Status
Persons 16 to 19 years

High School Graduate	On-Reservation Native American		Off-Reservation White	
	Number	Percent	Number	Percent
Employed	8	18.6	40	100.0
Unemployed	16	37.2	0	0.0
Not in Labor Force	19	44.2	0	0.0
TOTAL	43	100.0	40	100.0

Data Set: 1990 Summary Tape File 3 (STF 3) - Sample data

Although the numbers of youth represented in Table 3-9 are not large, the differences shown are great enough, nevertheless, to be significant. Furthermore, the data is generally consistent with other data presented earlier in this Chapter which shows that unemployment and poverty are rampant on the Reservation and that the age structure of the Reservation is highly skewed toward the younger age brackets in comparison to much larger non-Reservation populations in the three neighboring counties.

The lack of economic returns to the educational attainments of the Northern Cheyenne is reflected in the data on food security collected in a 2001 Chief Dull Knife College study sponsored by the United States Department of Agriculture.⁵ Those who had received post-secondary education were almost as likely to face food insecurity as those with a high school diploma or less, 62 percent versus 75 percent. Those with some college education were as likely as those who did not finish high school to be food

⁵ Summary Report, 2001 USDA Small Grant Project, "The Relationship of Food Assistance Program Participation to Nutritional and Health Status, Diabetes Risk and Food Security Among the Northern Cheyenne."

insecure (but not hungry); those with a college degree were as likely to be food insecure and hungry as those who did not go beyond high school.⁶ The economic returns for Northern Cheyenne going to college often were not sufficient even to assure that food was on the table.

It is not only college education that fails to earn the same economic rewards on the Reservation that are associated with improved skill levels elsewhere in Rosebud County, in Montana, and in the nation. Blue-collar workers on the Reservation who are certified in construction trade skills and/or have put in thousands of hours developing those construction trade skills also find it difficult to provide themselves with a livelihood using those skills. In 2000-2001 the Northern Cheyenne Tribal Employment Rights Office (TERO) had 682 Tribal members who were registered as seeking employment. This number of Tribal members seeking employment through TERO was almost as large as the total number of employed Tribal members in 1999 (719). See Table 3-6 above. Of these TERO clients, 393 (58 percent) were construction trade certified and 199 (29 percent) were experienced skilled construction trades workers who had more than 5,000 hours of experience in their trade.⁷ Despite this training, certification, and extensive skilled work experience, these Tribal members were not able to obtain jobs in their fields. Again, the training and experience that regularly receives significant economic rewards off the Reservation are not being similarly rewarded on the Reservation.

In sum, educational attainment, income and employment are closely associated in the United States and Montana. However, this association breaks down dramatically on the Reservation. Wages, of course, are the primary source of income for the Northern Cheyenne just as they are for others in the United States, so the lack of association between educational attainment and income and employment has seriously adverse consequences for the Northern Cheyenne people.

C. The Economic Impacts of 1970-1990 Energy Development on the Northern Cheyenne Reservation Region.

This part of Chapter 3 examines the economic impacts of the expansion of energy development in the three-county area surrounding the Northern Cheyenne Reservation in the 1970s and 1980s. Energy extraction and processing provide some of the highest paid jobs available in Montana and produce very valuable commodities. For that reason, energy development is usually assumed to provide very positive support for local economic development efforts, especially in rural areas where well-paid jobs are relatively scarce. During the first decade of the 21st century energy developments in the

⁶ Ibid. Table 8.

⁷ Northern Cheyenne TERO data summary prepared for the Otter Creek EIS, January 1, 2000-December 31st, 2001.

same region, including new coal mining and coal bed methane development, are being proposed and many of the same economic development claims are being made. This report reviews the actual impacts of the previous energy development in order to obtain useful information to assist in evaluating the likely adverse economic impacts on the Reservation from those new energy development proposals, in the absence of effective mitigation.

1. The Scale of the Energy Development 1972-1990.

Between 1972 and the early 1980s coal, oil, and electric production in the three county areas around the Northern Cheyenne Reservation boomed. The real value of coal production expanded 12 fold; the real value of oil production grew 4 fold, and an export-oriented electrical energy generating complex was built at Colstrip. Mineral extraction jobs expanded 6 fold and the payroll associated with them grew 10 fold.⁸ Construction to build the coal mines, the electricity generating facilities, and related homes and businesses caused construction jobs to expand 7 fold and their payroll 12 fold.⁹ In Rosebud County, where the Colstrip generators were located, public utility and transportation jobs also increased substantially. Overall, the energy-related jobs expanded 7.5 fold and their payroll grew 9 fold. As a result the share of total jobs located in these energy-related sectors grew from 8 percent in 1972 to 38 percent at their peak in 1982. Real labor earnings in these energy-related sectors grew from 14 percent of real earnings to 64 percent. At the end of the study period, 1990, the energy-related jobs still represented 22 percent of total employment and 40 percent of total earnings. The difference between these two percentages is due to the high pay associated with those jobs. See Table 3-10.

⁸ All of the dollar values are expressed in year 2000 constant dollars so that they can be compared to contemporary purchasing power. The Personal Consumption Expenditure Price index was used to remove the effects of inflation. The data on coal and oil production come from the Montana Department of Revenue's Biennial Reports. The data on electricity production comes from the U.S. Department of Energy's Energy Information Administration

⁹ Employment and "payroll" data come from the U.S. Department of Commerce's Regional Economic Information System (REIS) that provides employment and labor earnings by county. For years when data was not reported to protect against disclosing individual firm data, it was approximated by extrapolating from the data that was reported.

Table 3-10
Direct Economic Impact of Mineral Extraction
in the Northern Cheyenne Reservation Area
(Rosebud, Big Horn and Powder River Counties)
1972 - 1990

Economic Impact	1972	Peak Year	1990
Real Value of Coal Production Coal	\$56,000,000	1984 \$688,000,000	\$489,000,000
Value of Oil Production Oil	\$84,000,000	1981 \$318,000,000	\$31,000,000
Real Value of Electricity Generated Electricity		1985 \$405,000,000	\$405,000,000
Mineral Extraction Jobs Real Payroll	278 \$10,000,000	1981 1,615 \$104,000,000	1,133 \$66,000,000
Public Utility, Transportation & Communications (Rosebud Co. Only) Jobs Payroll	30 \$3,800,000	1988 931 \$45,300,000	898 \$47,100,000
Total Direct Economic Impacts Jobs Payroll	695 \$29,900,000	1982 5,214 \$277,400,000	2,526 \$128,200,000

Sources: Montana Department of Revenue Biennial Reports, U.S. Department Commerce's Regional Economic Information System; U.S. Department of Energy, Energy Information Administration.

Clearly energy development between 1972 and 1990 led to a major expansion in economic activity and created a tremendous amount of wealth. In addition to mineral value extracted and the electricity produced, the four electrical generating plants at Colstrip were constructed, and, of course, are still operating. In year 2000 dollars, those generating facilities were assessed as worth \$2.2 billion when they were completed in the mid-1980s.¹⁰

The gross dollar value of the energy production was huge. Expressed in constant year 2000 dollars, coal, oil, and electricity production between 1972 and 1990 had a cumulative value of over \$16 billion. The annual production value was about \$900 million. Associated with the coal production was a severance tax that totaled \$1.8 billion during this time period, generating about \$95 million per year for State government. See Table 3-11.

¹⁰ Montana Department of Revenue Biennial Reports.

Table 3-11
Energy Wealth Created in the Northern Cheyenne Reservation Area
1972 - 1990

Type of Mineral Wealth	Rosebud Co. (\$ millions)	Big Horn Co. (\$ millions)	Powder River Co. (\$ millions)	Three County Area (\$ millions)
Coal: Cumulative Real Value	\$3,108	\$6,049		\$9,158
Coal: Average Annual Real Value	\$164	\$318		\$482
Electricity: Cumulative Real Value	\$3,925			\$3,925
Electricity: Average Annual Real Value	\$245			\$245
Oil: Cumulative Real Value	\$800		\$2,303	\$3,103
Oil: Average Annual Real Value	\$42		\$121	\$163
Total Cumulative Value: Coal, Elec., Oil	\$7,833	\$6,049	\$2,303	\$16,186
Average Annual Value: Coal, Elec., Oil	\$451	\$318	\$121	\$890
Coal: Cumulative Severance Tax	\$602	\$1,204		\$1,807
Coal: Average Annual Severance Tax	\$32	\$63		\$95

Note: Values are expressed in constant year 2000 dollars.

Sources: Montana Department Revenue Biennial Reports, U.S. Department of Energy, Energy Information Administrator.

2. Mineral Wealth Remaining in the Local Area.

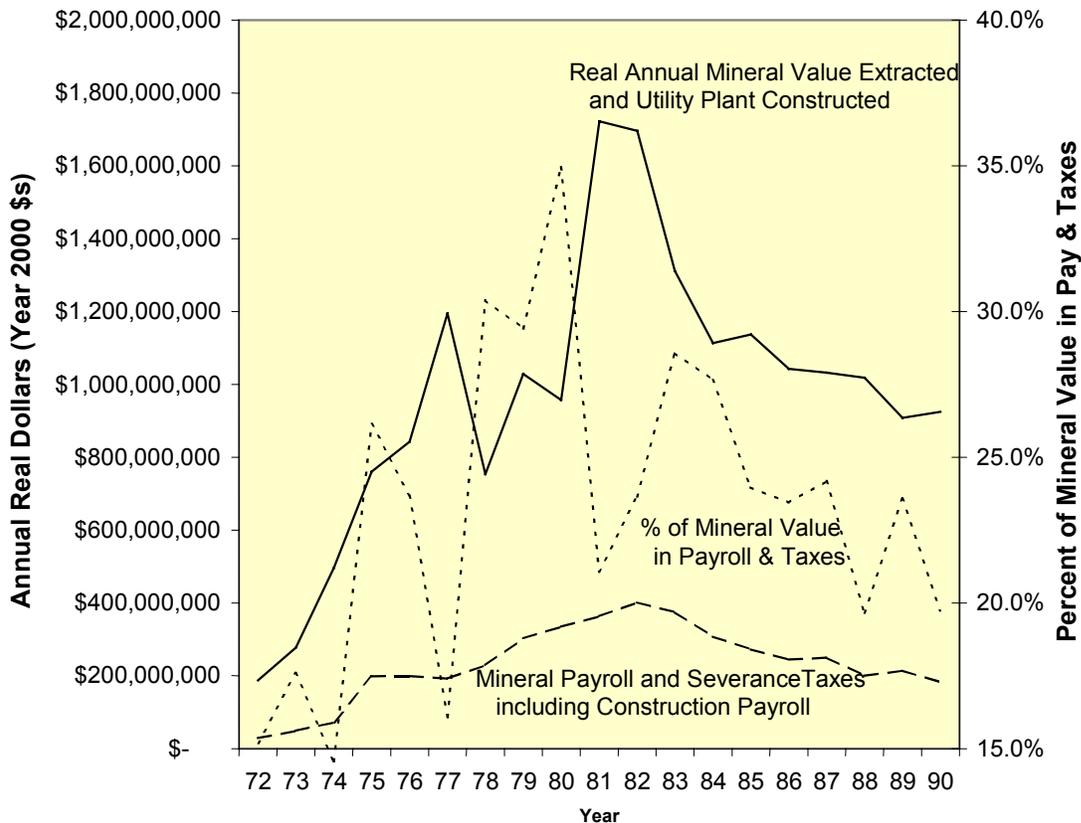
The primary “local” economic impact that mineral development has is the creation of jobs and the payment of wages. In addition, the State of Montana levies taxes on mineral extraction and local governments also levy property taxes or other mineral taxes.

When studying local economic impacts, it is important to focus on these actual local impacts rather than on the dollar value of the minerals extracted or electricity produced since much of the mineral value does not remain in the local area. In general only a relatively small fraction (20 to 25 percent) of the value of the minerals produced becomes income to local residents.

“Local” is used here loosely because workers in energy industries often commute long distances to their jobs and may not live in the rural counties where the mineral development is taking place. For instance, many of the workers associated with coal development in Big Horn County actually live in the Billings area (Yellowstone County). Many of the construction workers who built the strip mines and the electric generators and the workers who drilled the oil wells were not permanent residents of the region. For that reason, much of the payroll associated with these activities did not circulate within the local economy. Since it is difficult to estimate these payroll dollars that were generated by local economic activity but then flowed quickly out of the area, we will label them all “local” impacts.

A crude indication of the share of the total wealth created during the 1972-1990 energy development in the region surrounding the Northern Cheyenne Reservation that stayed in the “local” economy can be obtained by comparing the total real value of the mineral-related wealth created to the real pay received by workers and the coal severance tax received by the state government. Figure 3-11 compares these two.¹¹

Figure 3-11: Real Value of Mineral-Related Production and Local Income Received: Northern Cheyenne Reservation Region



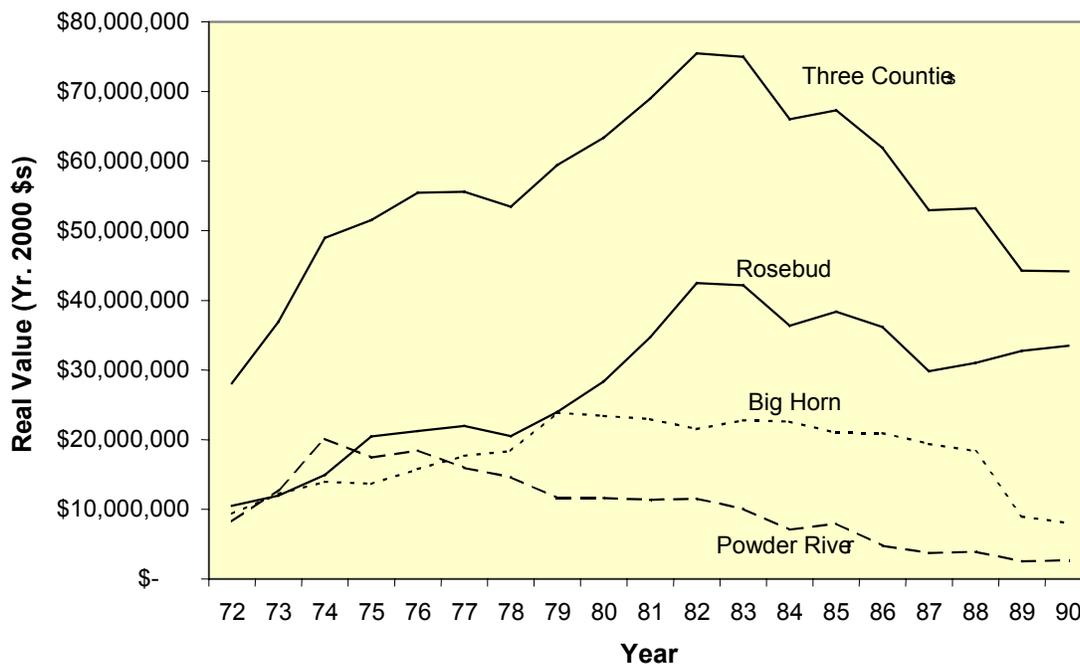
Only in the years of heavy construction on the Colstrip generating units in the early 1980s did the share of the wealth being created that was paid out in local wages approach one-third. In most years it was in the 20 to 25 percent range.

In addition to the coal severance taxes reported on in Figure 3-11, mineral producers also pay property taxes on the equipment they use and, until the late 1980s, on the economic value being generated by the mineral site. Because it is difficult to establish the value of a mineral deposit in place, local governments were allowed to

¹¹ Sources: MT Dept. Revenue Biennial Reports (value of construction, mineral production value, and mineral taxes), U.S. Dept. Comm. Regional Economic Information System (pay); U.S. Dept. Energy, Energy Information Administration (electricity production).

apply their property tax level to the net proceeds of mineral developments. Although this was not really a property tax, it was treated as such.¹² As mineral development expanded during the 1970s and 1980s in the region surrounding the Northern Cheyenne Reservation, total property tax collections also expanded in real terms. In Rosebud County, where the Colstrip power plants were built as well as the coal mines and oil wells developed, property tax collections in the mid-1980s rose to four times their level in 1972 and then declined to three times that earlier level. In Big Horn County property tax collections rose to 2.5 times the 1972 level before falling back to 1972 levels. In Powder River County where oil development was already under way in 1972, property taxes more than doubled but then fell off to less than half of what they had been in 1972.¹³ See Figure 3-12.

Figure 3-12: Real Property Taxes Levied for All Purposes in Three County Northern Cheyenne Reservation Region



¹² In the late 1980s this “property tax” was replaced with a “local government severance tax” to allow local government to continue to receive tax revenues from producing mineral sites, but the tax is no longer labeled a “property tax.”

¹³ These property tax collections include taxes collected within the county for all purposes including those levied for the state government, those levied for school districts, etc. They are not just the taxes levied by the county governments themselves. Source: Montana Department of Revenue Annual Reports, deflated using the personal consumption expenditure price deflator.

Some of the property taxes collected within each county flow to State government to fund school districts across the state. Not all of the property tax dollars are spent within the county where they are collected. If, instead of focusing on property tax revenues, we look at general revenues collected by local governments from their own tax and revenue sources, we may have a better indication of the way in which energy development supported local government activities and expenditures. Table 3-12 provides this information on a per person basis with the effects of inflation removed. Expressing the local government revenue data on a per person basis allows revenues to be assessed on the basis of the number of people served. Expressed this way, the government revenues per capita indicate how the capacity of local government to support the total population with services has changed over time.

Table 3-12
Real General Revenues per Capita from Own Tax and Revenue Sources
All Local Governments in County

Year	Big Horn	Powder River	Rosebud
1966 - 67	\$782	\$1,059	\$1,221
1976 - 77	\$2,347	\$4,282	\$4,245
1986 - 87	\$2,206	\$2,897	\$8,948
1991 - 92	\$1,565	\$9,387	\$6,876

Note: Northern Cheyenne Tribal Government Not Included.

Source: Census of Governments; Year 2000 Constants.

As can be seen, energy development allowed local governments to significantly increase their general revenues per capita. All of the increase was not sustainable, but at the end of the study period real per capita local government revenues were double what they had been before energy development in Big Horn County. In Rosebud County where the Colstrip power plants provided a relatively permanent addition to the local property tax base, the real revenues per capita were more than five times what they had been in the late 1960s before energy development. Powder River County showed the greatest increase in per capita local government revenues per capita. This was due to a large increase in non-tax revenues to the local government.

3. The Impact of This Energy Development on the Northern Cheyenne Reservation.

Despite the creation of billions of dollars of wealth and thousands of high-paid jobs, the energy boom of the 1970s and 1980s in the region surrounding the Northern Cheyenne Reservation did not support improved prosperity on the Reservation. Between 1970 and 1990 real median family income on the Reservation declined from \$17,800 to \$15,950 in 1980 and declined further, to \$14,800 in 1990, an overall decline

of almost a sixth.¹⁴ Off the Reservation in Rosebud County median family income increased from \$20,700 to \$39,300, almost doubling. In 1970 the Northern Cheyenne Reservation had a median family income that was 86 percent of that of off-Reservation Rosebud County.¹⁵ By 1990 the Reservation median family income fell to only 38 percent of that found off the Reservation in Rosebud County.

Although real per capita income on the Northern Cheyenne Reservation improved somewhat over the 20-year period, 1970 to 1990, it declined relative to Rosebud County as a whole, from 52 to 48 percent of the county-wide level. While real per capita income on the Reservation increased by 27 percent, that of people living off the reservation in Rosebud County increased by 40 percent.

During this boom in energy-related employment opportunities, the percentage of working age residents of the Reservation who were not employed increased and the official unemployment rate almost tripled from 5.9 to 16.9 percent.¹⁶ Relative to Rosebud County as a whole, these employment statistics also deteriorated.

Despite the \$2.3 billion of additional energy industry real payroll generated between 1972 and 1990 in the surrounding three counties (an average of \$120 million per year) the poverty rate on the Northern Cheyenne Reservation increased from 41 to 48 percent. For Rosebud County residents living off the Reservation the poverty rate declined from 20 to 10 percent. The percent of Reservation residents living below the poverty level rose from twice that of the Rosebud County residents living off the Reservation to almost five times (4.7x) that of non-Reservation residents.

The generation of billions of dollars of energy wealth did not translate into the accumulation of wealth on the part of Reservation residents. Home ownership rates on the Northern Cheyenne Reservation fell between 1970 and 1990 from 78 percent to 59 percent. Relative to Rosebud County as a whole, the Reservation went from being 37 percent above the county home ownership rate to being 15 percent below it.

¹⁴ 1970, 1980, and 1990 Census of the Population. The 2000 Census data on socioeconomic characteristics is not yet available.

¹⁵ The estimate for non-Reservation Rosebud County was based on the assumption that the economic characteristics of the Rosebud County part of the Northern Cheyenne Reservation were similar to those of the Reservation as a whole. 70 to 75 percent of the Reservation population, families, etc. are located in the Rosebud County part of the Reservation. In addition, because the 1970 Census did not report separately on the Rosebud and Big Horn County portions of the Reservation, the 1980 division of the Reservation population between the two counties was used.

¹⁶ The official unemployment rates are substantially lower than those reported in the BIA Labor Force Reports for the same years. This is likely attributable to the fact that the methodology for calculating the official unemployment rate, unlike used by the BIA in its Labor Force Reports, does not count discouraged job-seekers as part of the work force.

Tables 3-13 and 3-14 below summarize the changes that took place on the Northern Cheyenne Reservation and in Rosebud County as a whole. It documents the startling fact that despite major energy developments in the surrounding region, economic conditions deteriorated on the Reservation in both absolute and relative terms. Whatever happened to the mineral wealth created, it did not flow to residents of the Northern Cheyenne Reservation.

Table 3-13
Changes in Economic Conditions on the Northern Cheyenne Reservation
During the Energy Boom 1970 - 1990

Economic Indicator	1970 Census	1980 Census	1990 Census
<u>Employment Status</u>			
%Working Age Not Employed	54.6%	53.7%	56.2%
Official Unemployment Rate	5.9%	8.6%	16.9%
<u>Real Income (\$1990)</u>			
Median Family Income	\$17,833	\$15,946	\$14,815
Per Capita Income	\$3,899	\$4,290	\$4,970
<u>Poverty Rate</u>			
% of all Persons below Poverty	40.7%	41.8%	48.2%
% of all Families below Poverty	39.8%	41.7%	43.8%
<u>Home Ownership Rate</u>	77.7%	63.8%	58.7%

Source: Census of Population 1970, 1980, 1990.

Table 3-14
Northern Cheyenne Reservation as % of Rosebud County
Changes in Economic Conditions During the Energy Boom 1970 - 1990

Economic Indicator	1970	1980	1990
<u>Employment Status</u>			
%Working Age Not Employed	127%	143%	147%
Official Unemployment Rate	216%	243%	206%
<u>Real Income (\$1990)</u>			
Median Family Income	90%	47%	45%
Per Capita Income	52%	41%	48%
<u>Poverty Rate</u>			
% of all Persons below Poverty	158%	232%	236%
% of all Families below Poverty	220%	318%	302%
<u>Home Ownership Rate</u>	137%	94%	85%

Source: Census of Population 1970, 1980, 1990.

The limited employment and income opportunities on the Northern Cheyenne Reservation during these decades of energy development were not due to faster population growth on the Northern Cheyenne Reservation compared with the rest of Rosebud County. During the 1970 –1990 period the population of the Rosebud County

portion of the Reservation grew by 61 percent while that of the rest of Rosebud County grew by 79 percent. During the first decade of this period, the Rosebud County part of the Reservation grew by 30 percent while the rest of Rosebud county grew by 82 percent. During the second decade, the Rosebud part of the Reservation continue to grow at a slightly low rate (24 percent for the decade) while the rest of the County saw population decline slightly (2 percent) as the Colstrip construction ended and that workforce dispersed.

Although the Reservation population was growing more slowly than the off-Reservation area, employment opportunities were growing even more slowly, leaving a larger and larger portion of the Reservation population out of the workforce and depressing median income. While employment in Rosebud County expanded 85 percent between 1970 and 1980, employment on the Reservation grew only 28 percent. For the two-decade period, Rosebud County employment expanded 94 percent while Reservation employment expanded 73 percent.

During the decade of the 1980s, the “boom” portion of the energy expansion ended. The huge construction force working on the Colstrip power plants was no longer needed and growth in employment in mining, electric generation, and transportation ended. During that decade, census data indicates that employment in Rosebud County increased by only 217. Other federal data indicates that wage and salary employment in 1987 was almost the same as it was in 1980. During this period, however, the number of “working age” (16 and older) residents of the Northern Cheyenne Reservation increased by 692. Although employment on the Reservation increased by 262, the number of those 16 and older who were not working rose by 434. This suggests that one source of the depressed income and employment on the Reservation is that the Reservation workforce expanded significantly just as employment in some energy sectors fell dramatically and in other sectors stopped growing. But, as will be seen below, another part of the problem also appears to have been lack of access of Reservation residents to the higher paid energy-related jobs.

4. Changes in the Structure of Employment on the Northern Cheyenne Reservation

The expansion in energy development in the region surrounding the Northern Cheyenne Reservation created many very high paying jobs. Mining jobs paid \$50,000 to \$65,000. Jobs associated with electric generation and transportation paid \$40,000 to \$50,000. Construction jobs at their peak during the construction of the Colstrip generating facilities paid over \$50,000.¹⁷ Table 3-15 below shows real average annual pay in different industries in Rosebud County during the 1970-1990 period.

¹⁷ U.S. Dept. Comm. Regional Economic Information System. Calculated by dividing labor earnings by number of jobs to estimate annual pay per job.

Table 3-15
Real Pay per Job in Rosebud County, Montana

Industry	1973	1980	1990
All Jobs	\$27,513	\$27,803	\$28,768
Mining Jobs	\$52,385	\$64,426	\$58,718
Public Utility and Transportation	\$40,119	\$44,209	\$52,496
Construction	\$31,096	\$41,934	\$34,287
Manufacturing	\$17,449	\$34,713	\$16,969

Source: U.S. Dept. Comm. BEA, REIS, 1999 dollars.

In 1980 on the Northern Cheyenne Reservation, the population 16 years and older (the “working age” population) was the equivalent of 25 percent of this age cohort in Rosebud County.¹⁸ 1980 Census data indicates that Reservation residents held none of the mining jobs, 8.7 percent of the public utility and transportation jobs, and 8.3 percent of the construction jobs. The Census data indicates that while 261 new mining jobs were created between 1970 and 1980, *none* of them went to Northern Cheyenne Reservation residents. Of the 420 public utility and transportation jobs created between 1970 and 1980, only 14 or about 3 percent went to Reservation residents. Of the 496 new construction jobs created, only 32 or 6.5 percent went to Reservation residents.¹⁹

During the 1980s, Northern Cheyenne residents were somewhat more successful at finding jobs in energy-related industries, gaining 12 mining jobs, 70 jobs in public utility and transportation, and 52 jobs in construction, according to 1990 Census data. But even with these gains, in 1990, when the Reservation had the equivalent of a third of the “working age” population of Rosebud County, Reservation residents held only 3 percent of mining jobs and 8.5 percent of the public utility jobs, the two industries with the highest pay. In 1990 Reservation residents did hold 21 percent of the Rosebud County transportation jobs and 32 percent of the construction jobs. The relatively high paid construction jobs, however, had already disappeared. While average real pay in construction in 1983 was \$52,000, in the late 1990s average annual construction pay in Rosebud County was only about \$20,000. The same may be true of the transportation jobs: The new transportation jobs may represent trucking jobs (paying \$30,000 statewide) rather than railroad jobs (paying \$61,000 statewide).

¹⁸ Part of the Northern Cheyenne Reservation is in Big Horn County. 25 to 30 percent of the Reservation population lives in Big Horn County. If the workers and the working age population are divided proportionately between Rosebud and Big Horn County, the analysis comparing the Reservation to Rosebud County will be approximately accurate.

¹⁹ The Census employment numbers are below those indicated in the Regional Economic Information System maintained by the US Department of Commerce. As long as the undercount is consistent across industries the general conclusions discussed here will be accurate.

In explaining the deterioration in Reservation economic opportunities, however, it is also important to underline the overall failure to create employment opportunities for the Reservation's working age population. As pointed out above, the percentage of the working age population on the Reservation that was not employed rose slightly (from 55 to 56 percent) during 1970-1990 energy boom rather than declining (from 40 to 30 percent) as it did for the rest of Rosebud County working age population. As the Reservation working age population expanded between 1970 and 1990, 58 percent did not find jobs. For the rest of Rosebud County, only 16 percent of the expanded working age population failed to be employed.²⁰ Lack of employment opportunities across the board reduced the labor earnings available to support the Reservation's residents. While only a quarter of the Reservation population held jobs, 40 percent of the overall Rosebud County population was employed. This lack of employment and wage income depressed incomes in absolute as well as relative terms. While about the same percentage of households had wage and salary income in 1989 on both the Reservation and across Rosebud County as a whole (85 percent), the mean wage and salary income for Reservation households was only \$17,500 while it was \$29,500 for the county as a whole, 69 percent higher. Fewer people within the Reservation households were working and the pay received by those who were working was lower than experienced by those living off the Reservation.

D. Economic Decline on the Reservation Amidst an Energy Boom Off the Reservation.

As discussed previously, energy development in the region surrounding the Northern Cheyenne Reservation during the 1970s and 1980s created tremendous mineral wealth, led to the construction of major industrial facilities, and provided over a thousand very high paid jobs in mining, construction, public utilities, and transportation. Despite these dramatically positive economic impacts in the surrounding region, the economic characteristics on the Northern Cheyenne Reservation actually deteriorated during this very boom period with real median incomes falling and unemployment and poverty rates rising. Relative to the economic gains in the rest of Rosebud County, the deterioration of economic conditions on the Reservation was even more dramatic. The economic gap grew even larger.

²⁰ These differences were partly due to the Northern Cheyenne Reservation having a larger percentage of its population in the "young worker" age category: 16-24. In 1980 about 18.6 percent of the Reservation population was in this age group versus about 16.3 percent of Rosebud County as a whole. Between 1980 and 1990, the percentage of the population in this age category declined in both the Reservation and the county, but much more dramatically in Rosebud County as a whole: 18.6 to 16.1 percent on the Reservation versus 16.3 to 11.8 percent in the county as a whole. While the number of 16-24 year olds increased by 72 on the Reservation, they declined by 387 in the county as a whole. Since this age group is more likely to be in school and not employed, this would contribute to the observed growth in the number of working age not employed. But the number of those 16 and older who were not working grew by 434 on the reservation between 1980 and 1990; the additional 72 in the 16-24 age category represent only about a sixth of these.

These contrasting economic trajectories on and off the Northern Cheyenne Reservation during the energy boom of the 1970s and 1980s calls out for explanation. If the forces that kept the Northern Cheyenne from benefiting from the earlier energy development are not understood, there is little likelihood that new energy development will benefit them either and could, again, leave them worse off.

There are four primary explanations for the deterioration of economic conditions on the Reservation during the past energy boom.

1. The lack of access by Northern Cheyenne to the higher-paid energy jobs;
2. The limited local commercial infrastructure on the Reservation;
3. The lack of access to mineral revenue to support public services and infrastructure on the Reservation; and
4. The impact of the Northern Cheyenne commitment to place.

1. Lack of Access by Northern Cheyenne to High-Paid Energy-Related Jobs.

As discussed above, although the Northern Cheyenne Reservation provided between a quarter and a third of the working-age population in Rosebud County, it gained only a very small fraction of the better-paid energy-related jobs: mining, public utility, railroad, and construction jobs. Instead of gaining access to 25 to 33 percent of these jobs, it received 3 to 8 percent of those jobs.²¹

This by itself meant that the vast majority of the direct impact of the energy boom, the payroll associated with energy-related jobs, bypassed the Northern Cheyenne Reservation. There were very few direct positive impacts on Reservation earnings.

2. Limited Local Commercial Infrastructure on the Reservation.

The local economic impacts of changes in the economy are usually analyzed using the concept of the “economic base.” Certain types of export-oriented economic activities, like coal mining, put people to work and in the process inject income into the local economy where that income circulates among local businesses putting additional people to work as the money is spent and re-spent. The total impact is larger than the initial payroll’s direct impact to the extent that the local economy is able to capture and hold those dollars in local businesses before they “leak out” to pay for purchases from

²¹ As discussed earlier, even the jobs that residents of the Reservation obtained may have been at the lower end of the pay scale. Data on the income associated with the jobs taken by Reservation residents are not available.

outside of the local economy. A “multiplier” is used to summarize the amplified impact that the income injected in from the outside has on the local economy.

This economic base view of the local economy has two parts: The export-oriented activity that injects income into the local economy from the outside and the capacity of the local economy to capture and hold those dollars. The more complete the local economy is in terms of providing goods and services to its residents, the larger is the multiplier impact and the greater is the impact associated with each dollar injected into the local economy.

A small local economy that provides very few goods and services to its residents, leaving them to purchase those goods and services from outside sources, will see whatever dollars are injected into the local economy leak out almost immediately, providing almost no local economic impact beyond the pay earned in the export-oriented business.

This is one of the problems faced by the Northern Cheyenne Reservation. The 1980 Census did a special expanded survey of residents of the nation’s Indian reservations that not only asked in what industry residents worked but also whether that work took place on the reservation. That data for the Northern Cheyenne Reservation indicated that 9.8 percent of the population worked in the locally-oriented business sectors, trade, service, and finance, on the Reservation. Federal data for the same year indicated that jobs in these same sectors in Rosebud County as a whole represented 20.4 percent of the population, over twice as great a percentage.²² That by itself would suggest that the off-Reservation part of Rosebud County would receive much more of the indirect and induced benefits associated with the energy industry payrolls than would the Reservation.

As energy development took place in the region surrounding the Northern Cheyenne Reservation, the Reservation did not have a local economy that was able to derive the local economic benefits associated with the new dollars that were being generated. As the Colstrip and other urban economies in the region expanded because of those new energy dollars, they provided a more attractive and competitive set of goods and services than found on the Reservation. In that sense, the expanded set of businesses off of the Reservation tended to draw even more dollars away from businesses located on the Reservation. Rather than gain from the increased levels of income and expenditure, the Reservation declined in terms of its commercial rank within the regional economy.

²² The federal data is from the US Department of Commerce, Regional Economic Information System (REIS). It is possible that the Census data and RIES data are not completely consistent with one another. If, instead, the Reservation Census data is compared to the Census data for Rosebud County as a whole, the locally oriented sectors represented 16 percent of the population, still 63 percent above the Reservation figure. If the Reservation is compared to the non-Reservation part of Rosebud County, the off-reservation area had 17.4 percent of its population employed in the local sectors compared to the 9.8 percent on the Reservation.

In 1996-1997 both businesses and households on the Northern Cheyenne were surveyed to determine what local businesses existed that could help capture and hold Reservation income and to determine where Reservation residents actually spent their income.²³ Those survey results are reported more fully in Appendix A. These surveys confirmed there was only a very limited local economy on the Reservation and the bulk of the purchases made by Reservation residents took place off of the Reservation.

The range of Reservation businesses in 1997 was very limited. Included were the following retail businesses:

- 1 restaurant
- 2 grocery stores
- 3 convenience stores
- 1 coffee shop
- 2 hair salons
- 1 video store
- 2 arts and crafts businesses
- 1 laundromat.

In addition, there were the following construction-type businesses:

- 2 construction companies
- 1 backhoe company
- 1 pump / well business
- 1 painting business.

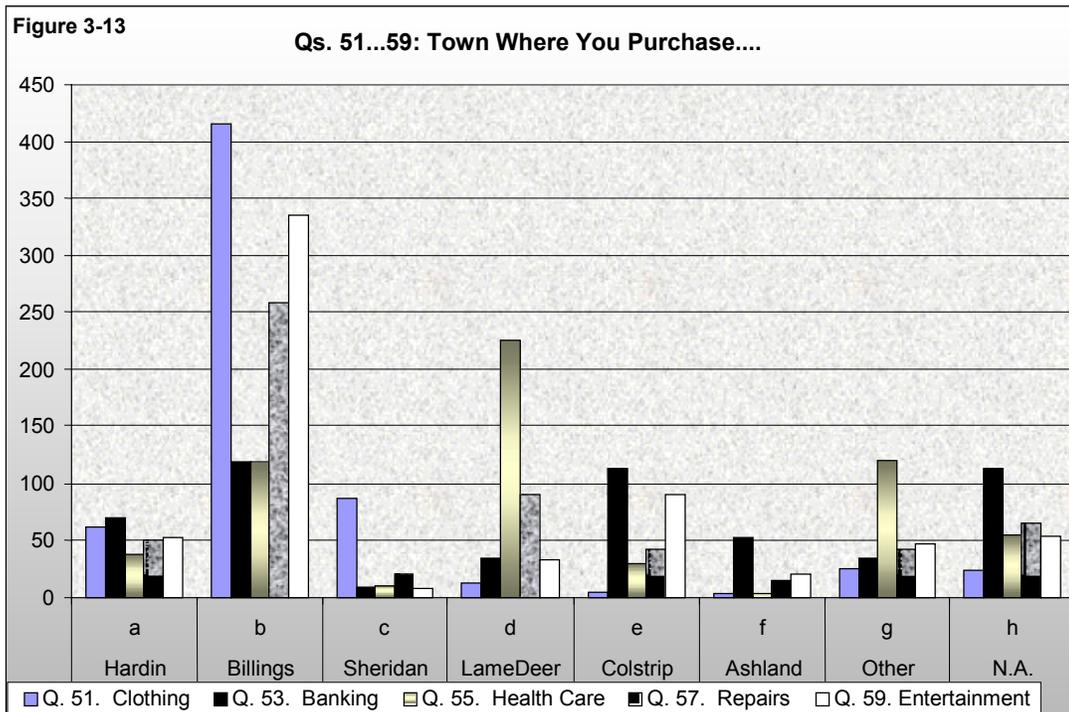
There was also a home health care business and a child services business. Finally, there were, of course, ranching operations and a trail riding operation.

Not surprising given the limited range of goods and services available on the Reservation, most residents did their purchasing off the Reservation, primarily in the largest trade center in the region and state, Billings. The ongoing growth of the Billings' trade and service infrastructure, the new "big box" "warehouse" retail trade stores, the new entertainment opportunities (multiplex theaters, restaurants, etc.), specialized "niche" stores, multi-brand automobile dealerships, etc. provides increasingly stiff competition to smaller towns including those on the Reservation. Table 3-16 and Figure 3-13 show that Reservation residents predominantly shop at off-Reservation establishments.

²³ Community and Economic Development Survey and Reservation Business Survey conducted for Native Action, Lame Deer, Montana.

**Table 3-16
Location of Reservation Resident Expenditures
1996 - 1997**

Item	Off-Reservation Locations	On-Reservation Locations
Q. 43. Groceries	478	195
Q. 45. Furniture	443	29
Q. 47. Vehicles	443	18
Q. 49. Appliances	445	37
Q. 51. Clothing	507	17
Q. 53. Banking	335	88
Q. 55. Health Care	305	228
Q. 57. Repairs	394	106
Q. 59. Entertainment	526	54



The combination of the lack of access to the high-paid energy-related jobs, lack of local economic development on the Northern Cheyenne, and the rapid expansion of the retail trade and service sectors in the major trade center, Billings, had a cumulative negative impact on the Northern Cheyenne's ability to derive benefits from the surrounding energy development: The direct impact in terms of access to high paid jobs was very small. Then there was little or no indirect or induced impact because there are no substantial trade centers on the Reservation. Finally, the businesses on the

Reservation found themselves at an increasing competitive disadvantage compared to the growing trade center within the region.

3. Lack of Access to Energy Revenues to Support Public Services and Infrastructure.

Rosebud County, the City of Colstrip, the State of Montana, and the Federal government all were able to gain access to a significant amount of energy-related revenues through mineral taxation and the sharing of royalty revenues. These governments could use those mineral revenues to expand the services provided to citizens and businesses, improve schools and other public facilities, and finance various economic development and citizen support programs.

The Northern Cheyenne Tribal Government did not have access to a share of those mineral revenues. While other governments were improving their cities and towns and trying to stimulate balanced economic development, the Northern Cheyenne could not do the same. This too put the Reservation at a competitive economic disadvantage. Steps that the Tribal Government might have taken to increase the likelihood that some of the benefits associated with regional energy development would flow to and stay on the Reservation could not be funded. In that sense, the Reservation could not act to take advantage of the new economic opportunities that surrounding energy development provided.

4. Impact of the Northern Cheyenne Commitment to Place.

To the Northern Cheyenne the Reservation is not just a convenient location temporarily chosen because of the economic opportunities in the area, but the Tribe's permanent homeland. Tribal members over many generations have contributed substantial resources to the protection and integrity of this homeland.

This commitment to place can be contrasted with the large, mobile, workforce that helped construct the coal mines, the Colstrip power plants, and the oil fields. Those workers came for the well-paid jobs that were available and, when those jobs ended, they traveled on to other places in the pursuit of new economic opportunities. Many of those still holding jobs in the region surrounding the Northern Cheyenne Reservation also migrated in to take the jobs that were proliferating while the energy boom was still underway. Even now, as some of those jobs are lost, the workers move on to other areas looking for new jobs.

This is partly what has allowed Rosebud County to maintain relatively high average incomes and low unemployment rates even though thousands of jobs have been lost during the 1980s and 1990s as various phases of the energy boom subsided. Out-migration is the "safety valve" that prevents wages and incomes from being depressed and unemployment rates from skyrocketing.

For the Northern Cheyenne this is not an acceptable solution to low pay and employment opportunities even though limited economic opportunity does ultimately force a certain amount of out-migration from the Reservation. The Northern Cheyenne are committed to making the Reservation a viable homeland for their people, economically as well as culturally, socially, and environmentally.

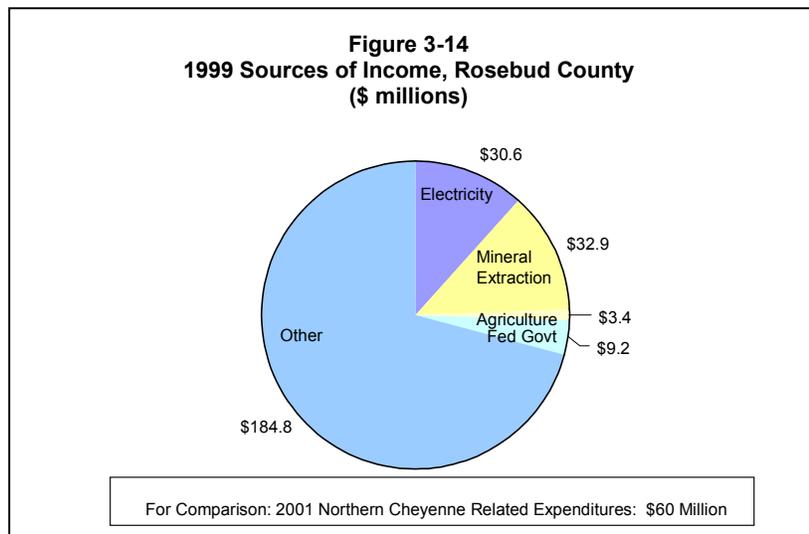
That complicates the economic challenges the Tribe faces. The quiet out-migration of families and individuals that has allowed many regions to adjust to economic change is not an acceptable option to the Tribe. This makes the first three problems outlined above all the more damaging and their solution all the more important.

E. Contribution of Northern Cheyenne-Related Expenditures.

As discussed more fully in Chapters 4 and 5, the presence of the Northern Cheyenne Tribe and Reservation in the region, has led to a substantial flow of federal and other dollars into the region associated with a broad range of Tribal and other government agency programs as well as programs sponsored by the St. Labre Mission. Because these dollars flow in from outside the region, largely as a result of federal and grants and private charitable contributions, Northern Cheyenne-related income flows are part of the regional economic base. They represent income that is injected into the local economy that then circulates within the local economy putting additional people to work and generating additional income.

The vast majority of most Northern Cheyenne-related program expenditures take the form of wage and salary payments to people who live within the region. The exceptions to this are those Tribal programs, such as housing, that involve construction of new facilities. Construction projects, besides involving the hiring of buildings trades workers, design staff, and supervisory and administrative personnel, also involve the purchase of building materials many of which are likely to be imported from outside the region (e.g. household heating and plumbing equipment). Some of the St. Labre Mission direct-mail activities may also involve expenditures on professional assistance and services outside of the region. Dollars expended outside the region do not have a stimulating impact on the local economy.

As indicated in the tables and discussions in Chapter 4 and 5, Federal, State and Tribal government expenditures on the Reservation may total as much as \$45 million in fiscal year 2002. In addition, the St. Labre Mission expends another \$25 million, much of which is at least ostensibly intended to benefit the Northern Cheyenne. (Yarlett, 1-10-2002). About \$60 million of the estimated total of \$70 million appears to have been paid out for wages and salaries and locally purchased goods and services. This represents a huge income flow for the rural area surrounding the Northern Cheyenne Reservation. In 1999, the latest year for which detailed income information is available, total wage and salary income in Rosebud County was about \$128 million. In the three county area, it was \$244 million. Clearly the Tribal-related expenditures represented a considerable share of those totals. See Figure 3-14.

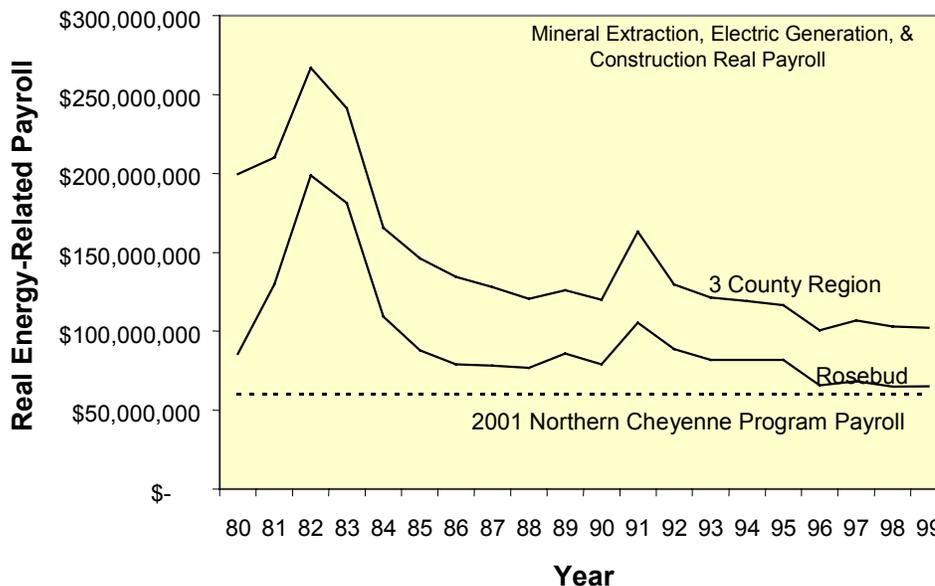


During 1999, the electricity producing and mineral extraction industries paid salaries totaling \$63.5 million in wages and salaries in Rosebud County and \$96.2 million in the three county region. In terms of total earnings, the expenditures associated with Tribally-related programs rivaled the energy industry in terms of relative size.

Ironically, even though the broad array of programs run by and for the Northern Cheyenne Tribe and its members are intended to allow them to meet their basic needs, assist in the creation of a viable Reservation economy, and support the Tribe as a sovereign people, much of the economic benefit of these programs flows off of the Reservation to the economies of the region surrounding the Reservation. Because of the limited set of businesses and economic activities found on the Reservation, the funds supporting these Tribally-related program quickly “leak” off of the Reservation to businesses in the adjacent urban areas. The “ripple” or “multiplier” impacts flow largely to non-Reservation businesses and workers.

Nevertheless, given the ongoing decline in payroll associated with energy development in the Northern Cheyenne region, the income associated with Tribally-related programs has become more and more important to the regional economy. See Figure 3-15.

Figure 3-15
The Decline in Energy Related Real Payrolls in the Three-County Northern Cheyenne Region



IV. Socio-Economic Importance of the Cheyenne Subsistence Activities.

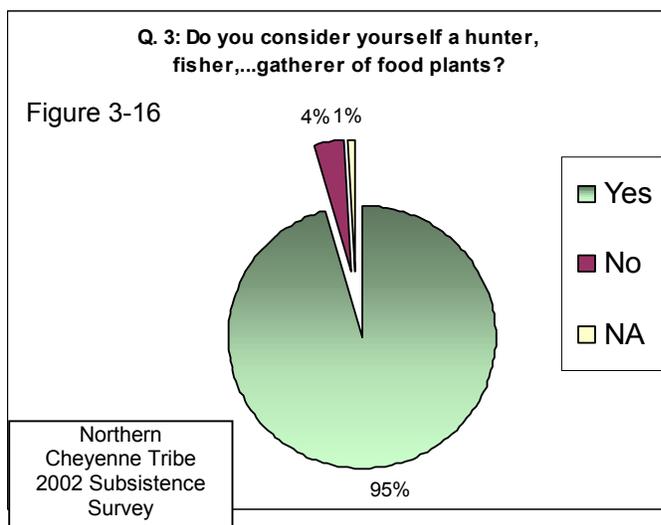
Unemployment rates, mean annual income and so on are routine measures used to describe participation in the national market based economy. However, they give only a partial picture of Reservation economies. For example, a study of the White Earth Chippewa clearly demonstrates that a "high unemployment rate" does not mean people do not work.

While unemployment on the White Earth Reservation was listed by the Department of Labor at approximately 75 percent, most people were "employed" in a land based economy. Over 75 percent harvest one or more deer annually, 65 percent harvest ducks, geese, or small game, 35 percent harvest twenty-five or more fish annually, 45 percent harvest wild rice (for own use, and for sale of excess), and berries or medicines. 62 percent had gardens, 58 percent had been sugarbushing (maple syrup making), and over 45 percent produced handcrafts for their own use and for sale. Overall in many Native communities the traditional land-based economy, and in fact this way of life, remains a centerpiece of the community. (Whaley and Bressete, 1994: xviii).

The high unemployment rate of the Northern Cheyenne should likewise not be confused with not working. Feeney (1986) noted the continuing economic and social significance of hunting, gathering and fishing to the Northern Cheyenne. This has not changed. In early 2002, the Northern Cheyenne conducted a survey on the traditional economy and subsistence patterns on the Reservation. The survey involved interviews

with 112 people, 38 female and 64 male, ranging in age from 16 to 91. Interviewees were drawn from all districts of the Reservation (Lame Deer District 46; Muddy District 11; Busby 16; Birney 19; and Ashland 20).

Over 95 percent of those interviewed consider themselves to be a hunter, fisher, berry picker and/or gatherer of food plants. In terms of hunting 84 percent hunted on the Reservation while only 30% hunted off Reservation. Survey respondents hunted deer, elk, bear, bobcat and coyotes as well as smaller game, including rabbits, ground



hogs, wood chucks, porcupine and prairie dogs. In addition they hunted a variety of birds including sage hen, grouse, quail, pheasants, turkeys, hawks and prairie chickens. Deer were the most commonly sought big game and pheasants the most commonly sought bird.

Sixty percent of the people interviewed fished last year in the Tongue River or in the Reservation lakes and ponds. They caught bass, trout, catfish, suckers, pike and bottom feeders.

People hunted, fished and gathered these traditional foods not only for themselves but also to share with others. Over 85 percent shared with other members of their household, 58 percent with relatives in other households and 62 percent with tribal elders or others who need meat.

Traditional respect for the game was still evident in people's hunting, gathering and fishing behavior. Over 63 percent reported eating a piece of raw liver, heart or kidney after their first kill. About 86 percent reported sharing their first kill and over 76 percent reported praying or offering ceremony before and/or after hunting, fishing or gathering. Eighty-nine (89) percent said dry meat, berries and other wild plant foods were part of their diet and 76 percent reported that they used part of animals or birds for ceremonial or social purposes. Eighty-eight (88) percent reported gathering wood for personal use.

Eighty-nine (89) percent of the people interviewed gathered berries, mushrooms, turnips, carrots, onion, asparagus or tea for food in 2001. Furthermore, over 84 percent gathered sage, cedar, roots, willows, sweet grass, thrush, chokecherry branches, ash trees, cottonwood or other plants for medicines or ceremonies. Over 90 percent of the people interviewed ranked wild game and plants as very important to their social way of life, their economic way of life and their spiritual way of life in the Cheyenne community.

Ninety-seven percent of the Cheyenne interviewees said that springs have spiritual value. Over 90 percent said that water is very important to the Reservation's social, economic and spiritual way of life. Finally about 74 percent reported collecting clay/pigments (red pigments), which are necessary for tribal ceremonies.

Clearly traditional economic activities continue to be important to the Northern Cheyenne today. Ongoing participation in the traditional seasonal round is an important part of Tribal cultural identity. Continuing to hunt, fish and gather contributes to people's diets and allows them to meet traditional social and ceremonial obligations within their community. It also reflects a deep and abiding respect for the natural beauty and resources of the region and the Northern Cheyenne homeland.

The cultural significance of gathering, hunting and fishing extends beyond the amount of food, craft materials and medicines procured. While hunting, fishing, and gathering, the Cheyenne are passing on their traditions. Parents or elders introduce their young people to the intimate environment of the Reservation, the Tongue River Valley, and the Custer National Forest as they experience these areas when they go hunting and gathering together. They recount their oral histories associated with particular areas or features, waterways, and plants and animals. By doing so, they pass on their way of life to their children and honor their elders and ancestors. They reaffirm their long-term commitment to the area in all its physical and spiritual aspects.

V. Health and Well Being on the Northern Cheyenne Reservation.

Health conditions on the Northern Cheyenne Reservation today are not as critical as they were two or three generations ago. People no longer die as a result of chronic semi-starvation and associated diseases at a rate faster than they are being born, as was true when the U.S. Senate Committee on Indian Affairs surveyed conditions on the Northern Cheyenne Reservation two or three generations ago in 1929, and for some time thereafter.

Figure 3-17
Death Rates by Various Causes
Enrolled Members of the Federally Recognized Indian Tribes
Compared to U.S. All Races
1995

■	Alcoholism - 627% greater
■	Tuberculosis - 533% greater
■	Diabetes - 349% greater
■	Accidents - 204% greater
■	Suicide - 72% greater
■	Pneumonia and Influenza - 71% greater
■	Homicide - 63% greater

Source: Indian Health Service, *Trends in Indian Health 1998-99*, p.6.

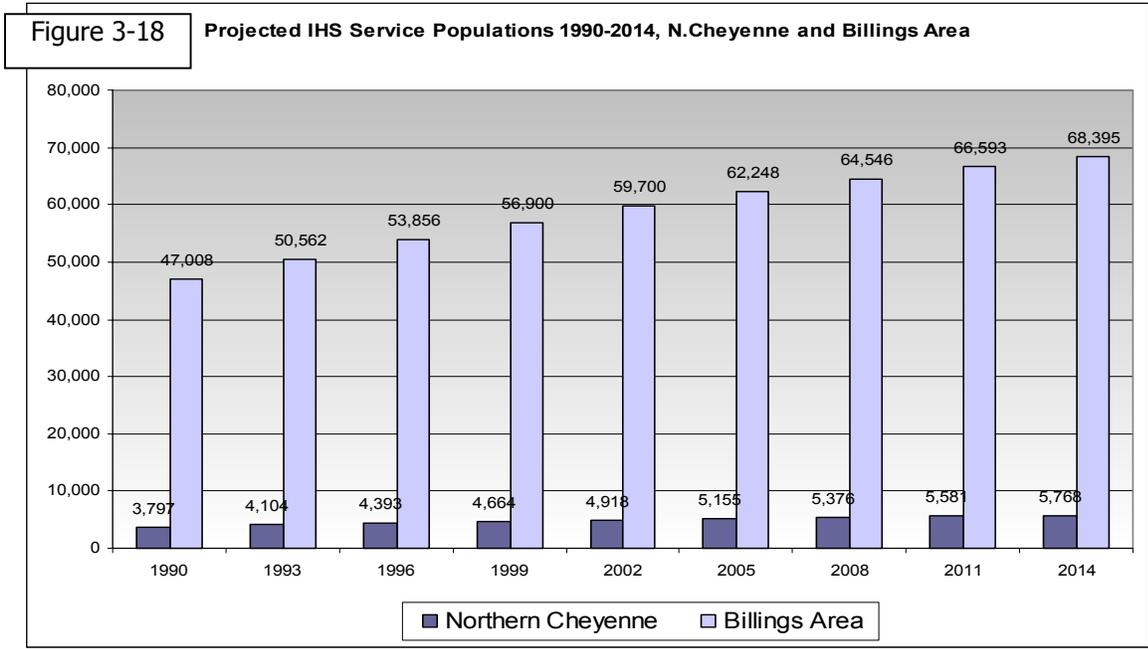
But by any measure the health needs on the Northern Cheyenne Reservation still remain critical today. In all dimensions of health and well-being, adverse conditions among Northern Cheyennes still far exceed adverse conditions among whites in the U.S., in Montana, or in those of the counties neighboring the Reservation. Figure 3-17 above compares U.S. Indian death rates by various causes to comparable death rates for the U.S. population as a whole. Because of the problems of data availability discussed in this Report, we have not been able to obtain comparable figures specific to the Northern Cheyenne Reservation, but the aggregate data at least indicates the seriousness of the problems faced by reservation communities in the nation as a whole.

Health and well-being typically are measured along various dimensions, from death and birth rates, to the incidence of different diseases, to the prevalence of risk factors such as alcohol, obesity, smoking, and so on. Different such measures will be reviewed below.

Besides presenting important information about health conditions on the Reservation and pointing to key vulnerabilities in its population, the data reviewed below also continue to demonstrate the more general central themes of this Section. First, they reveal further dimensions of the Northern Cheyenne Tribe's unique presence within the region. They help define the Tribe as a distinct population, and reveal new facets of its identity as a particular social and governmental entity in relation to local neighboring counties, the state of Montana, and the nation. Second, like the other profiles of social and economic life on the Reservation presented in this Report, indices of health and well-being also need to be seen in context. The Reservation must be recognized as a distinct social and jurisdictional entity, but also as existing *within* its region and state and nation, and in dynamic relation with them. Finally, the following review also reveals the limitations of readily available current and comparable data for the Northern Cheyenne Reservation, with respect to various critical aspects of the health and well-being of the Reservation community. In all of these ways, the Northern Cheyenne Tribe and Reservation represent an especially vulnerable social, political, and cultural entity with respect to possible impacts from sudden expansions of large-scale energy development in the region.

A. Tribal Populations.

The Indian Health Service, Billings Area Office, has calculated population projections area-wide, and for its eight Service Units (Reservations) in Montana and Wyoming, 1990-2015. The accompanying Figure 3-15 summarizes these projections for the Billings Area and Northern Cheyenne IHS service populations, in three year intervals.



Projections prepared by IHS, based on modified 1990 census data and vital event data for 1989-1998. Obtained from IHS, Billings Area Office, March 2002.

These population projection figures show steady if not dramatic increases in the respective populations over the period. Besides providing a helpful visual overview of the projected population growth and the relative size of the Northern Cheyenne Tribe within the IHS area, Figure 3-18 provides an opportunity to note again difficulties and vulnerabilities that the Tribe itself experiences as it confronts impending energy development in neighboring areas.

The IHS uses the projections in the above chart, with other data it generates, in its own planning and budgeting process – including monies budgeted for tribal contracted health programs (see Chapter 5 Part VI). There is a substantial lag time of four to six years or more between the time that something might happen to affect the IHS figures for a given variable and the time that those figures enter the planning data base in usable forms. Local developments that could affect a given Reservation within a short time-span, for instance, are population growth through in-migration, an epidemic of drug use, or other impacts from "boomtown" effects associated with regional energy development could take many years to influence HIS projections and health budgeting.

Many of the figures used below obtained from IHS and presented below refer back to the decade of the 1990s, and sometimes even earlier. The most recent *Billings Area Profile* published by the IHS, Billings Area Office is for Fiscal Year 1996 and uses data primarily from 1994 and 1995. The current very useful *Trends in Indian Health* (useful because it presents tables with data comparing U.S. Indians with U.S. Whites and U.S. All Races, often with considerable time-depth) is for 1998-1999, but many of the tables of figures used extend only to 1995 or 1996.

Thus, it is difficult for the Tribe cannot prioritize its own issues because it depends on IHS funding and planning, which in its turn is based on data that is no longer current by the time it becomes available. Although the data is generated in the local service units, it must be aggregated and processed through the centralized data system before it finds its way back to the Service Unit, if it does. Strangely enough, therefore, the more local the administrative unit, the less data relevant to that unit's operations seems to be available and the more outdated it is. Similarly, all of IHS's priorities reflect data aggregated at the Area or National levels, which may be more or less relevant to the local Service Unit or Tribe as it responds to developments within its region and its own local or immediate circumstances.

For instance, like many other communities, but perhaps more seriously than most, Northern Cheyenne has experienced an epidemic of methamphetamine use in recent years. "Meth" is a very damaging and addicting drug, easy to obtain, and very difficult to treat. Everyone on the Reservation knows that this has become a huge and very serious problem. But there is little money available to deal with the Methamphetamine problem because, even though it has been present now for some years, the data documenting the problem has not yet worked its way through "the IHS system." Currently money is available for alcohol-related problems, which, however, have now been eclipsed by the threat posed by methamphetamine.

In a different vein, health workers in the trenches at Northern Cheyenne report that now more money is becoming available for diabetes, though it still remains insufficient to the need. But the planning and budgeting emphasis focuses on treatment rather than prevention. Most diabetes is avoidable. While diabetes requires expensive treatment after onset, it would be highly desirable to also put resources into a coherent program of education, nutritional sources, and health and recreational facilities that could keep many people from contracting this debilitating and life-diminishing disease. While many at Northern Cheyenne would like to implement such a program, it seems to be difficult or impossible to do so within the framework of current IHS priorities and plans.

In short, the Tribe's dependence on an external agency, whose "center of gravity" is far from the Reservation and its local problems, contributes to an important and greatly needed health delivery system at the local level – but one that at the same time is fragmented, uncoordinated, and unwieldy. This mirrors what we have found in other areas and programs of Tribal government and Reservation life. It is almost as if the Tribe finds itself suspended in a web of support from diverse and uncoordinated federal programs that is critically essential for its survival, but at the same time prevents it from responding to its own immediate local priorities, values, and needs in indigenous and creative ways.

What we find here is a system that maintains, but does little to create nor cure. It is staffed with many caring and capable people whose work is necessary but remains incomplete because of its context. The system is palliative, while insufficiently addressing root causes of the elevated levels of disease, addiction, early deaths, and

poverty that afflict the Northern Cheyenne community. And it means that the Tribe has, among other things, serious and unique vulnerabilities with respect to impacts from proposed energy developments in the region.

The long-term population trend shown and projected in Figure 3-18 above, in its simplest terms, reflects births minus deaths. If deaths exceed births then the population declines, as the Northern Cheyenne Tribe experienced in the late nineteenth and early decades of the twentieth centuries. If births exceed deaths, the population grows as has occurred more recently. But this simple formula leaves out many things, including, most importantly, locality and migration.

The Northern Cheyenne Tribe currently has a significant proportion, approaching half, of its membership living away from the Reservation (see above Part II). The figures shown here, however, generally are for the Reservation itself or for the Reservation and its immediate area (e.g., the IHS "Service Unit"). People live away from the Reservation primarily because the Reservation lacks housing to shelter them, jobs to support them and other critical resources. However, Northern Cheyenne move readily between the on- and off-Reservation populations. In particular, the local numbers can shift rapidly in response to such external factors as the effects of "welfare reform" on people living away in urban areas or new jobs locally created by regional developments. Often, the trends shown in statistical tables or charts, like Figure 3-18 above, seem smooth or constant while the underlying local reality is much more dynamic.

B. Births and Deaths.

1. Birth Rates.

Recent birth rate data for Northern Cheyenne on and near the Reservation, and for Montana, are shown in Figure 3-19 below. Notable is the relative decline in the Northern Cheyenne birth rate. The difference in birth rates shown here appears to be narrowing relatively rapidly, although it still remains large. In 1989-93 the Montana rate for all races was only 43.6 percent of the Northern Cheyenne birth rate, while in 1994-1998 it had increased to a little over half of the Northern Cheyenne rate at 52.8 percent. These figures roughly parallel national trends, as shown in the IHS publication, *Trends in Indian Health 1998-99*.²⁴

²⁴ US Indian Health Service 1998-1999. Trends in Indian Health, pp. 45-46, Chart 3.1, Table 3.1. Washington, D.C.: U.S. Department of Health and Human Services.

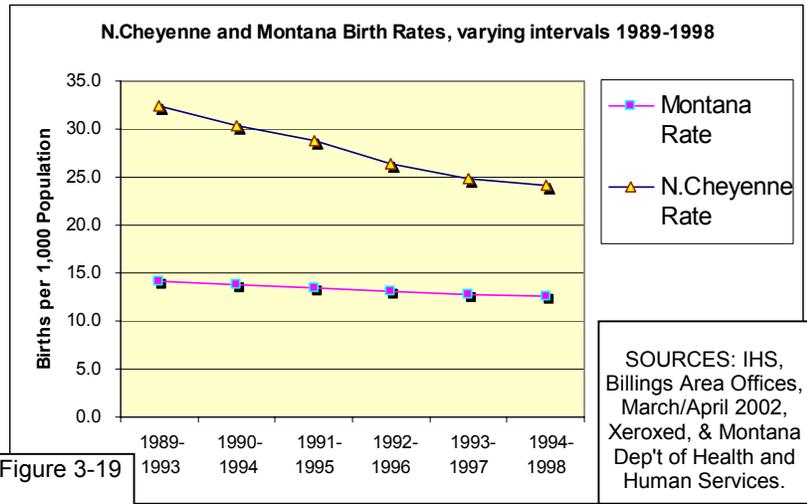
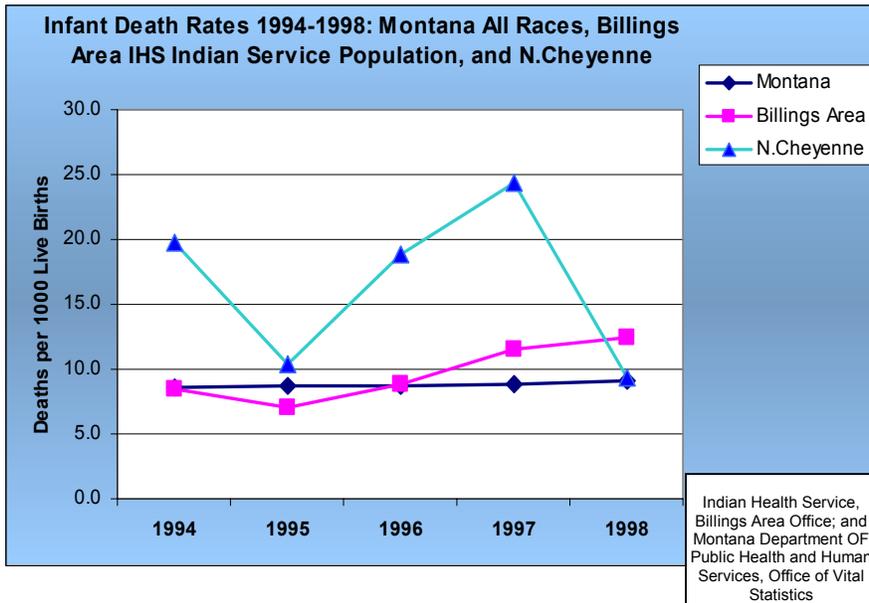


Figure 3-19

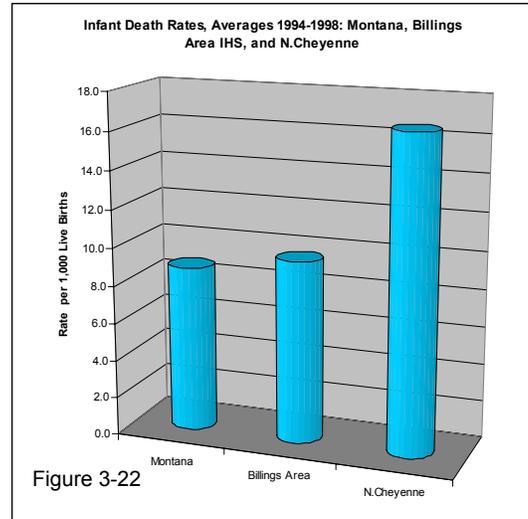
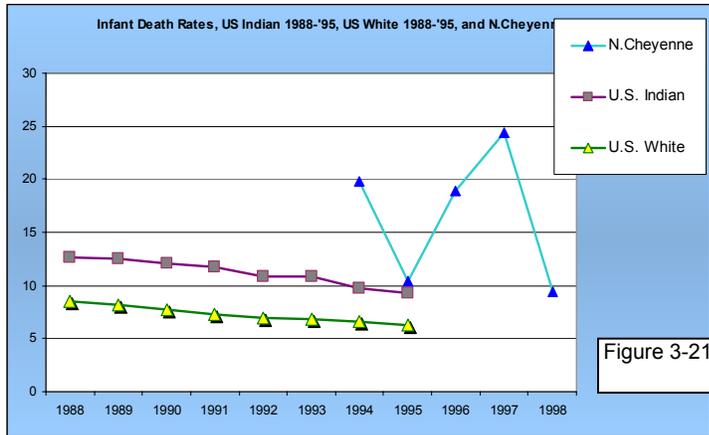
i. Infant Mortality.

Infant mortality is another important indicator of a community's health and well-being. Infants are a particularly vulnerable group within any population, and are the newest carriers of the group's potential and future. Infant mortality largely reflects of the stresses and resources of the parents, especially the mother. Lack of adequate nutrition, or family dysfunction, drug, and alcohol abuse especially affect infants and children. Figure 3-20 below shows recent available data on infant mortality.

Figure 3-20



For comparison, Figure 3-21 presents nation-wide data on infant death rates through 1995.²⁵ This chart also includes the Northern Cheyenne trend line from Figure 3-20 for reference. The reason that the Northern Cheyenne line is so jagged is that it reflects a small number of incidents over a relatively short time. One way to smooth out this effect somewhat is to average the respective rates over the entire five-year interval in Figure 3-20. These results are shown in Figure 3-22.



ii. Age at Death.

One of the most important indicators of a population's well-being is longevity – how long people in a particular group or area live. This figure reflects many factors indicating the health and well-being of members of the group, including the infant death rate, the incidence of various fatal diseases and accidents, suicide rate, nutrition, the various choices people make and have available that are summed up under the term "lifestyle," and simply the cumulative effects of aging under more or less stressful life experiences. Age at death may be represented in different ways, some of which we will look at below.

²⁵ This national data is from IHS's publication, *Trends in Indian Health, 1998-99*, at p. 57. See n.1 above.

However age at death for Native American and white populations in Montana is reckoned, Native American people die on average considerably younger than do whites. According to figures from the Montana Office of Vital Statistics, during the decade from 1991 – 2000 the median age at death for whites was 77, while for Indians death came some fifteen years sooner at only 62.²⁶ The median age at death is the age at which half of all deaths came earlier and half later. The contrast in this measure locally, in Rosebud County, is even greater at 78 for whites and only 54.5 for "Other" (which means primarily Northern Cheyenne in Rosebud County) (see Rosebud County Health Profile, December 1998, Montana Department of Health and Human Services). Figure 3-23 and Table 3-17 show the median age at death for Montanans during the decade of the 1990's, broken down by race and gender.

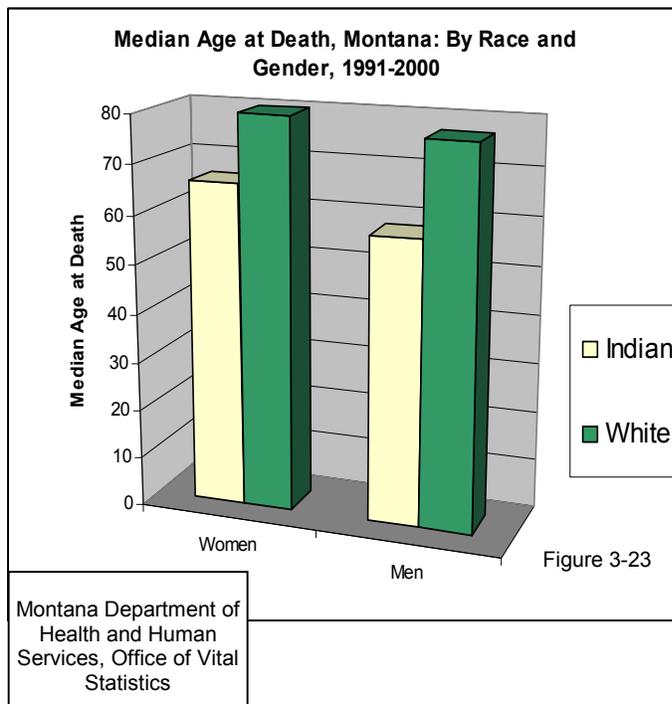


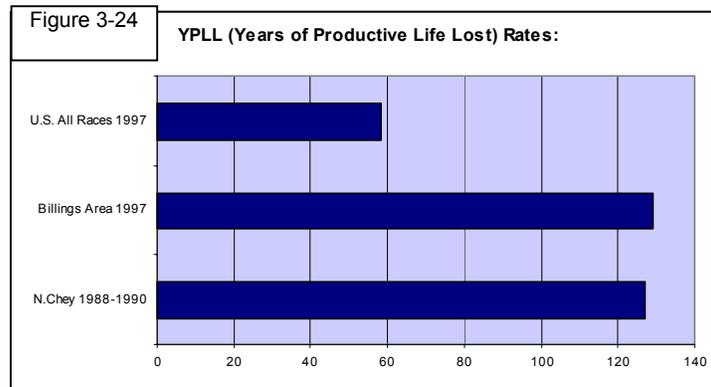
TABLE 3-17
Median Age at Death - Montana
1991-2000

	Women	Men
Indian	66	58
White	80	77

Breaking the figures into quartiles instead of halves gives even more striking differences. During this same decade, one fourth of Montana whites died at or below the age of 67, while one fourth of the Indian population died at or below the age of 41.5 years (State of Montana, Office of Vital Statistics).

²⁶ Department of Public Health And Human Services, Office of Vital Statistics. *Montana Vital Statistics, 2000*, p. 45, Figure 14.

Another way that health professionals and statisticians measure longevity is by calculating the "Years of Productive Life Lost" (YPLL). Based on IHS figures,²⁷ the YPLL rate for the United States in 1987 was 58.1. For the Northern Cheyenne and Crow IHS Service Units for Calendar Years 1988-1990 it was 126.9; and for the IHS Billings Service Area (Montana and Wyoming Indian Reservations) that year it was 128.9. The YPLL rate for combined Crow and Northern Cheyenne populations served by IHS is some 120% greater than the U.S. rate for all races.



As the above figures show, there are large and important differences between Native Americans and whites with respect to these two measures of mortality, the median age at death for a population, and "Years of Productive Life Lost" as a rate per 1000 persons. These statistical differences reflect the result of earlier policies of overt oppression and the on-going entrenched inequitable economic and social systems that maintain Reservation poverty today.

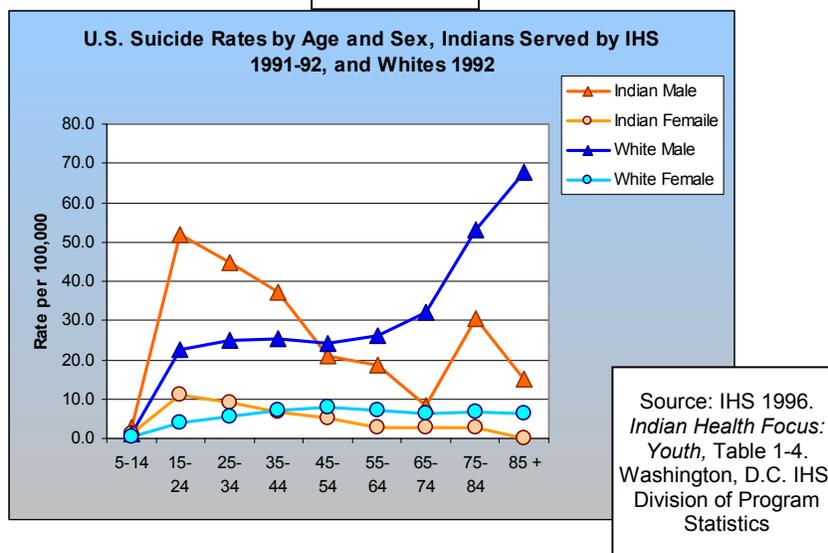
iii. Suicide.

Figure 3-25 shows national suicide rates by age and race for 1993. Rates for men are higher than rates for women. Most interesting is that nationwide young Indian men commit suicide at a rate two and a half times greater than young White men; but this relationship reverses with age. Whereas the White population has considerably

²⁷ The YPLL ("Years of Productive Life Lost," "Years of Potential Life Lost") measures the years of life lost if a person dies before a given age. This measure "...highlights premature, preventable, and unnecessary mortality" (*Montana Vital Statistics, 2000*, p. 73). The YPLL rate sums these years for a given population. The IHS measures the YPLL rate from age 65, as shown in Figure 3-24. (As with many labor force statistics, age 65 is rather arbitrarily chosen here as the end of productive life.) Thus, if one dies at age 60, one has lost 5 years of productive life, according to this measure. To get the YPLL rate per 1000 for a population, divide the total or aggregate YPLL for the population by that segment of the population under age 65, and multiply the result by 1000. This explanation and data is from material obtained from the Indian Health Service, Billings Area Office, during March 2002. The data presented here was calculated by IHS using Montana and Wyoming Vital Statistics Data Tapes obtained from the respective Montana and Wyoming State Offices. In contrast, the Montana Office of Vital Statistics calculates the YPLL for Montana residents at large based on age75. This choice may reflect the generally longer life spans of White Montanans. See *Montana Vital Statistics, 2000*, pp. 73ff.

lower rates among the young, the White male suicide rate increases rapidly after about age 50, as the corresponding Indian rate declines.

Figure 3-25



We do not at present have usable or comparable data on suicide for the Northern Cheyenne, or Northern Cheyenne and Crow, populations, except data from the IHS clinic in Lama Deer which shows that 73 patients were treated for attempted suicide from April 2000 through March 2001. (Bauer, 2002). The Montana Department of Public Instruction conducts a "Montana Youth Risk Behavior Survey" in Montana high schools every other year, beginning in 1997. The most recent results are from 1999, and 2,917 high school students from 44 schools participated in this latest survey. The survey includes data on suicide that reverses the gender differences shown above. In both 1997 and in 1999 female students were more likely than male students both to contemplate and to attempt suicide. Female students in Montana in 1999 were than twice as likely as male students to actually attempt suicide.²⁸ It is not clear if this is function of the time difference between the two surveys, or, more likely, a function regional differences or of some other factor.

C. Drugs and Alcohol.

1. Introduction.

Alcohol abuse has long been a serious problem among reservation Indian populations – as it has been among other chronically poor and discriminated

²⁸ Montana Office of Public Instruction (OPI). 1999. Montana Youth Risk Behavior Survey Report – 1999. Helena, Montana: Montana Office of Public Instruction. The available data is not broken out by Reservation or by race, and the results at this level are considered sensitive. We did not have time, in the short period available to prepare this Report, to obtain access to this data.

populations, including perhaps most famously the early immigrant Irish. Immigrant Irish, like Native Americans today, similarly faced discrimination and cultural conflict as well as poverty. Unlike most Irish communities, however, which much more than Indians resemble the Euroamerican "mainstream" in race, religion, heritage, and values, Indians have not "assimilated" and indeed often have not wished to do so. Thus, the issues of segregation, poverty, and cultural conflict persisted, and have become chronic – along with their attendant problems of pain and addiction. Currently, serious drug abuse on reservations is emerging as a problem of epidemic proportions, eclipsing even alcohol abuse as a major health issue.

Everyone on the Northern Cheyenne Reservation knows that drugs, especially methamphetamine ("meth," "crank"), have recently become a deadly threat to the community. Methamphetamine is an especially dangerous drug, because it is easy to manufacture locally, easy to obtain, requires difficult and lengthy detoxification and treatment, and has lasting if not permanent effects. The manufacture of methamphetamine also results in environmental problems due to improper disposal of its toxic by-products. Meth is a rising problem throughout Montana and the nation, but indications are that it may be an even larger problem on the Northern Cheyenne Reservation and on other Indian Reservations in the State.

Health professionals and researchers have established what the historical example noted above suggests – namely, that addiction is not linked to race but to poverty. A recent publication that focuses on addiction and prevention issues among Montana's reservation Indian populations puts it this way:

Alcohol and drug addiction are not about race, they are about pain ... Research has shown that when adjustments are made for income and education, there is no significant difference among the races relative to alcohol and drug addiction. A very recent study conducted in Montana ... finds that alcohol and drug addiction is far greater among Native Americans *living in poverty* than among those who have incomes above the federal poverty guidelines.²⁹

These are important conclusions, in light of on-going racism and stereotyping that unfortunately still persists in Reservation border towns and communities in southeastern Montana. On the other hand, it is important as well to distinguish drug and alcohol problems afflicting reservations from those experienced in other urban or rural poor communities. The article just cited points to one critical difference, by noting that "people are living in tremendous poverty in small communities on reservations, with few opportunities and little hope for change in the future. Problems with addiction in that context become highly visible."

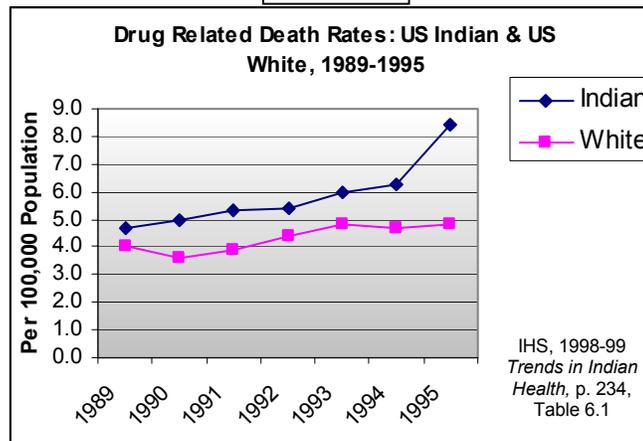
²⁹ Sharette, Maxine. 2001. "Links to Poverty." *The Prevention Connection Newsletter*, Vol. V, Issue 3 (Fall 2001): 1. Helena, Montana: The Montana Prevention Resource Center and the Montana Department of Health and Human Services.

Indeed, in relatively small, culturally distinct, and socially rather isolated communities such as the Northern Cheyenne Reservation community, what happens to one person not only affects many more people than usually would be the case in the typical nucleated Euroamerican neighborhood, but also a much larger proportion of the community as a whole. Thus, the death of a young person, an Elder, a parent, occasions a sense of loss and grief throughout the Reservation. Community impacts when an individual or a family falls prey to addiction are similarly amplified.

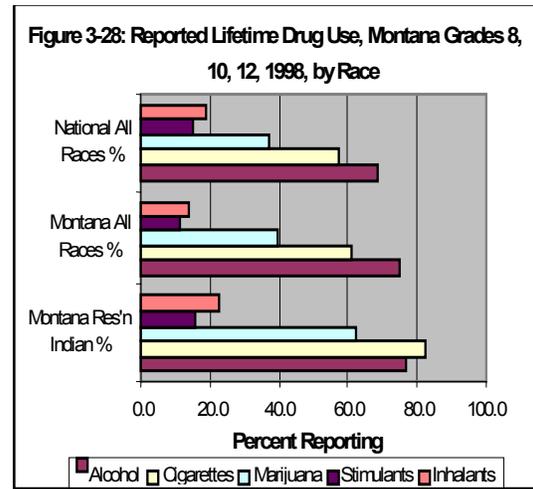
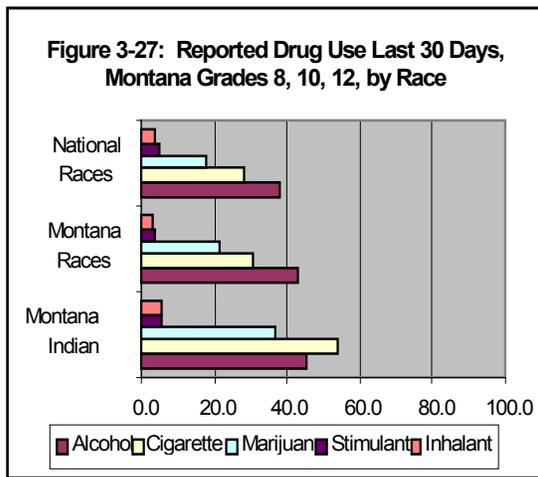
2. Some Indicators of the Drug Use Problem.

Figure 3-26 indicates an upward trend in drug-related deaths in the U.S. among both Indians and Whites from 1989-1995, with the Indian rate always remaining higher. It also, shows, however, a startling upswing in the rate of deaths directly attributable to drugs among Indians nationally, as compared to whites in 1995. Data is not available beyond 1995.

Figure 3-26



Drug-related deaths, of course, are only one indicator of drug abuse. Data more specific to Montana, and to the Northern Cheyenne Reservation, can be found from several recent school surveys. The Montana Youth Risk Assessment Survey for 1997 and 1999 (Montana OPI), referenced above at note 6. In addition, the Montana Department of Public Health and Human Services conducts its *Montana Prevention Needs Assessment Survey*, also every two years alternating with the OPI survey. Figures 3-27 and 3-28 below show data from this survey, made available by the Boys and Girls Club of the Northern Cheyenne Nation, which has been an active and constructive force on the Reservation to improve conditions for the Tribe's young people.



What these data show is that drug use in Montana's high schools is more prevalent than in the nation's schools generally, and more prevalent yet among Montana's Reservation Indian population. These figures confirm again the general problems noted above. In addition to these recent surveys, the Montana Department of Health and Human Services, with funds from the Center for Substance Abuse and Treatment, conducted a household survey specifically targeted to Montana Indian Reservations in 2001. The Bureau of Business and Economic Research, University of Montana, tabulated and analyzed the data. Although not included in this report, this information is available on a state-wide basis, and Reservation-specific data has been given to the respective Tribal authorities.

More specific data compiled by the IHS Clinic in Lame Deer indicates that between April 2000 through 2001, 60 patients were treated for drug abuse-related conditions, 17 were treated for drug overdose, and 19 children were treated for fetal alcohol syndrome. During the same period 390 patients were treated for depression, suggesting that many Tribal members are self-medicating to cope with their depression stemming from unemployment, lack of economic opportunities and other stressors related to underlying socio-economic conditions. (Bauer, 2002).

These various recent surveys and studies indicate that responsible agencies and health care professionals, including Tribal governments, are noting and responding to a growing problem of drug use among Montana's Reservation populations. This clearly is a serious problem. It needs further work as regards the Northern Cheyenne Reservation in particular, but clearly it very much needs to be part of the equation in assessing socio-economic impacts to a federally recognized Indian tribe or Reservation.