

Northern Cheyenne Utility Commission Rate Study Report

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Contents

Executive Summary	3
Introduction	4
The Cost of Day-to-Day Operations	6
Capital Improvements	6
Consideration: Full Cost Recovery	6
Projecting Revenues and Expenses into the Future	7
Sufficiency of Current Rates	8
Rate Alternatives to Achieve Full Cost Recovery: Raise Non-Residential Rates Only	10
Rate Alternatives to Achieve Full Cost Recovery: Raise Residential and Elder Rates Only	10
Rate Alternatives to Achieve Full Cost Recovery: Raise Rates for All Customers	11
Rate Alternatives to Achieve Full Cost Recovery: Raise Rates for Residential Full and Non-Residential Customers and Maintain Current Elder Rates	12
Consideration: Affordability	13
Household Income	15
Homeowners and Renters	17
Key Demographic Data	18
Hours of Minimum Wage Work	20
Burden on the Working Poor (20 th Percentile Household Income)	20
Next Steps	22
Appendix 1: Projected Revenues and Expenses Over 5 Years	26
Appendix 2: Financial Targets Over 5 Years	27
Appendix 3: Residential Full, Elder Rate and Non-Residential Rate Increase Combinations for Full Cost Pricing	
Appendix 4: Monthly Rates for Non-Residential Customers Under Each Rate Change Scenario	31
Contact	43

Executive Summary

This report contains the summary rates analysis for the Northern Cheyenne Utility Commission (NCUC) conducted in 2020. The current water and wastewater rates are insufficient to capture the full cost of providing those services, even with grants covering many capital expenditures. In addition, NCUC must also increase its reserve funds to meet a goal of keeping \$100,000 in the bank. This reserve fund goal is approximately the minimum reasonable amount to have in reserves for a utility of NCUC's size. Over the next five years, the total annual revenue shortfall will range from approximately \$60,000 to \$112,000.

To recover this revenue shortfall, NCUC must raise rates. NCUC currently divides residential customers into two groups: residential customers who pay the full rate, and elder customers, whose rates are set by Resolution No. DOI-144 (2011) as half of the regular established residential full rates. This may allow for elder rates to be retained at half of the 2012 rates, or to be increased to half of new rates. In addition, each individual non-residential customer is assigned a different monthly rate based on the number of fixtures. Please note that because each non-residential customer pays a unique rate for water and wastewater service, the change in their rates is expressed throughout the report as a percentage increase.

This report examines four rate change scenarios: raising rates on non-residential customers only, raising rates on residential and elder customers only, raising rates on all customers, and raising rates on residential full and non-residential customers but maintaining the current elder rates. The table below shows what the monthly rates would be under these four rate scenarios:¹

			Percent Increase in
	Residential Full		Non-Residential
Rate Change Scenarios	Rate	Elder Rate	Rates
1. Raise Non-Residential Rates Only	\$51.00	\$25.50	51%
2. Raise Residential Full & Elder Rates Only	\$68.09	\$34.04	0%
3. Raise All Rates by the Same Percentage	\$61.34	\$30.67	20.28%
4. Raise Residential Full & Non-Residential			
Rates Only by Same Percentage	\$62.28	\$25.50	22.115%

NCUC can also consider building up to the revenue target over the next 5 years. That would allow small incremental rate increases that would be easier for customers to budget.

The utility serves a relatively low-income population, so affordability of service should be a concern. Household incomes are lower than countrywide averages, especially for customers in rental properties. Unemployment and participation in social safety net programs is higher than countrywide averages. Customers at the 20th percentile of household income in particular may have difficulty affording water and wastewater service.

¹ Appendix 4 shows what each individual non-residential customer would pay under each of the three rate scenarios.

Here are the recommended next steps:

- Determine an appropriate increase to the residential and non-residential rates
- Create a robust outreach plan to educate customers on the new rates
- Consider implementing a customer assistance program
- Discover ways to lower operating and capital costs
- Work to ensure a consistent and professional utility workforce
- Utilizing meter data in the future
- Establish and enforce a delinquency policy for non-payment
- Budget separately for water and wastewater

Introduction

Northern Cheyenne Utility Commission (NCUC) operates four community water systems in EPA Region 8. NCUC also provides wastewater service to these communities. Across the four service areas, there are a total of 881 accounts²:

- 526 pay the full residential rate
- 167 pay the elder residential rate
- 92 are non-residential properties
- 96 accounts are for properties that are vacant and not currently receiving bills

Currently, customers pay a flat monthly charge for the services they receive, and that fee does not change month to month based on the amount of the service used. Residential full customers pay the following rates:

• Water: \$31.00 per month

• Wastewater: \$20.00 per month

Elders currently pay a rate that is one-half of the current residential rate. By statute, the elder rate cannot exceed 50 percent of the residential full rate:

• Water: \$15.50 per month

• Wastewater: \$10.00 per month

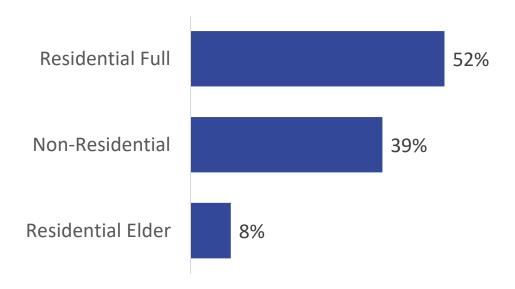
The utility has determined unique, individual fees for each of the non-residential customers based on the number of fixtures. Like residential customers, non-residential customers are not metered and pay a flat rate for unlimited service. These rates have three elements: a water rate, a wastewater rate, and a monthly standard charge for maintenance and fuel supply (which range from \$10 to \$90 a month). Some non-residential customers receive only water service, and others receive only wastewater service. But all pay the standard charge. Total non-residential rates range from \$60 to \$80 per month on the low end to nearly \$2,000 a month on the high end for the Indian Health Service clinic in Lame Deer.

² Source: communication with Ethelyn Shoulder Blade on 6/29/2020. Ethelyn warns that these numbers change month-to-month

Based on the current rate structure, and assuming a 90 percent collection rate, customers paying the full residential rate generate about \$290,000 a year in revenue. Non-residential customers generate about \$219,000 a year. The chart below shows the percentage of revenue each group brings in per year.

Percent of Total Revenue Generated Each Year by Group

Assumes a 90 percent collection rate



All of the revenue from the water and wastewater utilities accrues to the utility general fund.

By resolution of the tribal council, NCUC is not allowed to "sell" water. The fees they charge are for the service provided and for the cost of infrastructure. Rates had not been raised in 11 years due to a moratorium on increases. That moratorium was recently lifted, the Tribal Council recognized NCUC's authority to set rates, and non-residential rates were increased. The non-residential water and wastewater rates each increased by 20 percent, and the non-residential standard rate was raised \$10 per month. Residential rates remain unchanged.

This report will examine how rates could change so that NCUC becomes self-sufficient and is able to cover the full cost of providing water and wastewater service. One important note, all of the data on water and wastewater revenues and expenses, customer payment rates, and demographics are from past years and are not reflective of the changes that have occurred due to the ongoing COVID-19 pandemic. Should current conditions continue, analyses and conclusions within this report may be significantly impacted. Based on the age of the data and the complexity of the changes occurring in most communities, while NCUC should set higher rates in the short-term to get on a more sustainable financial path, it is recommended that the rate analysis be revisited in one year to assess conditions and to compare data, with particular attention paid to the bill collection rate and the expenses of providing water and wastewater service. In addition, the ongoing pandemic is expected to alter customer usage behavior, so it is also recommended that the utility gather data from its existing meters and pursue grants to install meters for all customers without one so that these usage changes can be measured.

The Cost of Day-to-Day Operations

The daily operating costs for water and wastewater utilities (operations and maintenance costs) include salaries, treatment supplies, maintenance costs, utilities, insurance, billing, and other expenses. Based on the NCUC FY19 budget, these expenses total \$595,864.33. O&M costs generally increase by a small amount per year due to inflation, and any change in infrastructure, treatment process, or regulation can cause O&M costs to increase.

Capital Improvements

NCUC has been successful in obtaining grants to cover the cost of many capital improvements. This has saved the utility and its customers a significant amount of money over time, and the utility should do everything it can to continue to receive these grants. For example, the utility has two lagoon projects underway—one at Lame Deer, and the other at Ashland. These two projects are funded by Indian Health Service and administered by NCUC along with an administrative fee. The Lame Deer project alone is for \$1.5 million. If instead the utility had to borrow money for that project through the United States Department of Agriculture (USDA) Rural Development's Water and Waste Disposal Loan Program, the interest rate would be at least 1.125% over 40 years. The monthly payment for that loan would be approximately \$3,882, which if spread evenly across all 785 active customers comes out to \$4.95 per customer per month. That one project alone would increase residential wastewater bills by 25 percent, and that extra charge will be with customers for the next four decades. Additional projects would add more monthly cost to customers.

This would be a good point in time for NCUC to take stock of the utilities' critical assets, replacement costs and estimate the useful life of assets. A more thorough assessment of the condition and expected useful life of assets across the two utility services is needed to understand better what other capital improvements will be necessary in the next 5 to 10 years.

Consideration: Full Cost Recovery

The gold standard for drinking water and wastewater utilities is to be operated as an independent enterprise. That is, they would each be self-sustaining, business-like units that cover their own costs through the rates and fees that they charge to their customers. Achieving true self-sufficiency is not easy for small water systems across the country, especially if they serve a lower income population. Often, these small water systems focus only on operations and emergency repairs and do not invest in capital improvements such as repairing treatment facilities, pipes, storage tanks, or rolling stock.

NCUC would likely have deferred many of its capital improvements, including the upcoming lagoon renovations in Lame Deer and Ashland, if not for the availability of federal grants. It is recommended the utility continue to pursue as many grant opportunities as are available for capital improvements, and this initial assessment assumes that grants will continue to cover a substantial portion of the cost of capital improvements into the future. Please note, if these grants are discontinued in the future, or if NCUC is not successful in obtaining grants, rates across both utility services will likely need to increase

substantially in order to pay for needed capital improvements. Currently, NCUC reports that it is running short-staffed. It is also possible that future additional hiring will increase costs. These potential increased costs should be taken into account when setting rates.

For the purposes of this initial analysis, full cost recovery will look at covering the cost of operations and maintenance, along with some money for reserves. NCUC has a goal to maintain a total of \$100,000 in its various reserve accounts, and it is generally a best practice for utility services to maintain some money in the bank for emergencies, revenue shortfalls, and future capital improvements.

Projecting Revenues and Expenses into the Future

Both revenues and expenses change over time. This analysis will project revenues and expenses over the next five years. The base year for the projections is the NCUC FY2019 budget, which was based off of a three-year average in operational costs. NCUC has not kept detailed budgets in the past.

The two biggest factors impacting revenue are:

- The number of customers served, and
- The number of customers that pay their bills on time and in full.

The formula for calculating annual revenue from customers is:

Number of Customers \times Rate \times Billing Periods \times Collection Rate

It is necessary to estimate both the number of customers NCUC will have over the next five years and what the collection rate will be. This analysis assumes that the number of residential, non-residential, and elder customers will remain the same over the next five years. While there are small variations from month-to-month, NCUC reports that, in general, the customer base is relatively stable. The report also assumes a 90 percent collection rate across all five years.

In general, the costs of goods and services that water and wastewater utilities purchase go up every year. This concept is known as inflation. Likewise, for most water and wastewater utilities, salaries also increase every year. That does not necessarily mean that all costs rise every year. For example, there may be a year with weather-related emergencies that cause the utility to spend extra money on repairs and overtime. The next year, if there isn't another emergency, those line items may decrease. Also, each individual cost does not necessarily rise by the same percentage.

The formula for calculating changes in operating expenses is:

Expense Base Number \times (1 + Rate of Change)

For this analysis, the FY2019 budget serves as the expense base number, and because there isn't good historical budget data, the analysis assumes an across-the-board 2 percent annual increase in expenses. The 2 percent increase is roughly the rate of inflation and is in line with what similar water and wastewater utilities report.

Sufficiency of Current Rates

With the expectations of changes to revenues and to expenses, the next step is a financial forecast. A financial forecast looks at the expected revenues and expenses over the next five years, including operations, capital outlays, and contributions to reserve funds. The financial forecast will determine whether the *current* rates will be sufficient to cover the full and true costs of the water and wastewater utilities.

In the base year, the FY2019 budget, revenues were already not sufficient to cover costs. Over the next five years, the analysis is expecting revenues to remain the same but costs to increase by 2 percent per year, so the current rates will certainly not be sufficient to cover costs over the next five years. The table below shows the expected revenue shortfall by year.

Revenues

	FY+1	FY+2	FY+3	FY+4	FY+5
Residential	\$289,720.80	\$289,720.80	\$289,720.80	\$289,720.80	\$289,720.80
Elder	\$45,991.80	\$45,991.80	\$45,991.80	\$45,991.80	\$45,991.80
Commercial	\$218,918.98	\$218,918.98	\$218,918.98	\$218,918.98	\$218,918.98
			-	-	

Total	\$554,631.58	\$554,631.58	\$554,631.58	\$554,631.58	\$554,631.58

Expenses

Total	\$607,781.62	\$619,937.25	\$632,335.99	\$644,982.71	\$657,882.37
Revenues - Expenses	(\$53,150.04)	(\$65,305.67)	(\$77,704.41)	(\$90,351.13)	(\$103,250.79)

The revenue shortfall grows from around \$53,000 in the first projected year to more than \$103,000 in the fifth projected year. This is just to cover the day-to-day operations of the utilities. In addition, NCUC has a goal of maintaining \$100,000 across its various reserve funds. It is a best practice to set a reserve target and build it into the rate structure. Healthy reserves are an important part of financially sustainable water and wastewater utilities.

Currently, the reserve fund balance is \$40,663. That means NCUC will need to generate an additional \$59,337 in the first year to hit the reserve goal. The table below shows the additional revenue that would need to be generated from customers to cover all projected costs and reserve fund goals:

FY+1	FY+2	FY+3	FY+4	FY+5
\$607,782	\$619,937	\$632,336	\$644,983	\$657,882
\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
\$40,663	\$100,000	\$100,000	\$100,000	\$100,000
\$59,337	\$0	\$0	\$0	\$0
667,119	619,937	632,336	644,983	657,882
554,632	554,632	554,632	554,632	554,632
	\$607,782 \$100,000 \$40,663 \$59,337 667,119	\$607,782 \$619,937 \$100,000 \$100,000 \$40,663 \$100,000 \$59,337 \$0 667,119 619,937	\$607,782 \$619,937 \$632,336 \$100,000 \$100,000 \$100,000 \$40,663 \$100,000 \$100,000 \$59,337 \$0 \$0 667,119 619,937 632,336	\$607,782 \$619,937 \$632,336 \$644,983 \$100,000 \$100,000 \$100,000 \$100,000 \$40,663 \$100,000 \$100,000 \$100,000 \$59,337 \$0 \$0 \$0 667,119 619,937 632,336 644,983

Additional Revenue Needed from Water Rates	\$112,487	\$65,306	\$77,704	\$90,351	\$103,251

Another alternative is to build up to the \$100,000 reserve target over multiple years to smooth out rate increases. For example, NCUC could build up to \$100,000 over 5 years. The table below shows the additional revenue that would need to be generated from customers to cover all projected costs and reserve fund goals:

	FY+1	FY+2	FY+3	FY+4	FY+5
Total Expenses	\$607,782	\$619,937	\$632,336	\$644,983	\$657,882
Reserve Target	\$50,000	\$62,500	\$75,000	\$87,500	\$100,000
Current Reserve Funds	\$40,663	\$50,000	\$62,500	\$75,000	\$87,500
Additional Reserve Funds Needed	\$9,337	\$12,500	\$12,500	\$12,500	\$12,500
Revenue Needed from Water/Wastewater	617,119	632,437	644,836	657,483	670,382
Projected Water/Wastewater Under Current Rates	554,632	554,632	554,632	554,632	554,632
Additional Revenue Needed from Water Rates	\$62,487	\$77,806	\$90,204	\$102,851	\$115,751

The full tables showing projected revenues and expenses are included in Appendix 1 of this report. The full tables showing the financial targets are included in Appendix 2 of this report.

These calculations show how much revenue NCUC needs to generate to cover the full cost of operations and full contributions to reserves. But there are multiple ways to set rates to generate that amount. This report will examine four rate scenarios:

- Raise non-residential rates only
- Raise residential and elder rates only
- Raise rates on all customers
- Raise residential (not elders) and non-residential rates only

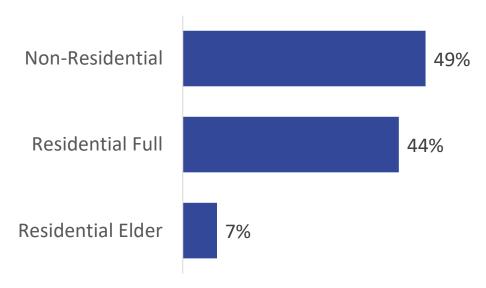
The report will also show what the rate per month would be if NCUC were to hit its \$100,000 reserve goal in the first year and what the rate per month would be if NCUC were to build up to \$100,000 in reserves over five years.

Rate Alternatives to Achieve Full Cost Recovery: Raise Non-Residential Rates Only

One method to generating additional revenue is to raise rates for the non-residential customers only. This would involve raising the water rate, the wastewater rate, and the standard rate. If all three were raised equally, all non-residential rates would need to increase 51.4 percent to cover the revenue shortfall and fully fund reserves in the first year. The rates could either stay at that level going forward to generate additional reserve funds or drop down after the first year.

Under this scenario, revenue from non-residential customers would account for nearly half of all revenue, as seen in the chart below.

Percent of Total Revenue Generated Each Year by Group if Only Non-Residential Rates are Raised Assumes a 90 percent collection rate



If the reserve balance is built up to \$100,000 over five years, the non-residential rates would increase at the following levels each year:

- Year 1: 28.5%
- Year 2: 5.4%
- Year 3: 4.2%
- Year 4: 4.1%
- Year 5: 4.0%

Rate Alternatives to Achieve Full Cost Recovery: Raise Residential and Elder Rates Only

Another method to generating additional revenue is to raise rates for residential full and elder customers only. This would involve raising the water rate and the wastewater rate. If both were raised

by equal percentages to cover the revenue shortfall and fully fund reserves in the first year, the new rates would be

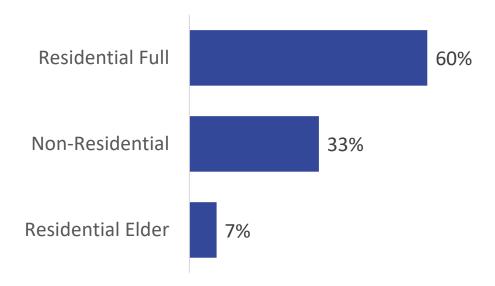
Residential Full: \$68.09 per month

• Elder: \$34.04 per month

The rates could either stay at that level going forward to generate additional reserve funds or be lowered after the first year.

Under this scenario, revenue from residential full customers would account for more than 60 percent of all revenue, as seen in the chart below.

Percent of Total Revenue Generated Each Year by Group if Only Residential and Elder Rates are Raised Assumes a 90 percent collection rate



If the reserve balance is built up to \$100,000 over five years, the residential and elder rates would increase to the following levels each year:

	Year 1	Year 2	Year 3	Year 4	Year 5
New Residential Full Rate	\$60.49	\$62.82	\$64.70	\$66.62	\$68.58
New Elder Rate	\$30.25	\$31.41	\$32.35	\$33.31	\$34.29

Rate Alternatives to Achieve Full Cost Recovery: Raise Rates for All Customers

The third method to generate additional revenue is to raise rates for all customers. For example, if residential full and elder rates went up 10 percent, then non-residential rates would increase 36 percent to cover all costs and reserve goals. Likewise, if non-residential rates went up 10 percent, then

residential full and elder rates would increase 27 percent to cover all costs and reserve goals. The first table in Appendix 3 shows the various combinations of rate increases.

An increase of approximately 20.28 percent to all customer groups would generate enough money to cover the revenue shortfall and fully fund reserves in the first year. Under that scenario, the current water rate, wastewater rate, and standard fee for non-residential customers would each increase by 20.28 percent. The new combined water and wastewater rate for residential full customers and elder customers would be

• Residential Full: \$61.34 per month

• Elder: \$30.67 per month

Because all rates are being raised by an equal percentage, the share that each group pays of all revenue would be the same as it is currently: 52 percent by residential full customers, 39 percent by non-residential customers, and 8 percent by elders.

If the reserve balance is built up to \$100,000 over five years, the residential full, elder, and non-residential rates would change in the following ways each year:

	FY+1	FY+2	FY+3	FY+4	FY+5
Residential Full Rate	\$56.75	\$58.15	\$59.29	\$60.46	\$61.64
Elder Rate	\$28.37	\$29.08	\$29.65	\$30.23	\$30.82
Non-Residential Annual Increase	11.3%	2.5%	2.0%	2.0%	2.0%

Rate Alternatives to Achieve Full Cost Recovery: Raise Rates for Residential Full and Non-Residential Customers and Maintain Current Elder Rates

The fourth method to generate additional revenue is to raise rates for residential full and non-residential customers and maintain the current rates for elder customers. For example, if residential full rates went up 10 percent, then non-residential rates would increase 38 percent to cover all costs and reserve goals. Likewise, if non-residential rates went up 10 percent, then residential full rates would increase 31 percent to cover all costs and reserve goals. The second table in Appendix 3 shows the various combinations of rate increases.

An increase of approximately 22.115 percent to both residential full and non-residential customers would generate enough money to cover the revenue shortfall and fully fund reserves in the first year. Under that scenario, the current water rate, wastewater rate, and standard fee for non-residential customers would each increase by 22.115 percent. The new combined water and wastewater rate for residential full customers and elder customers would be

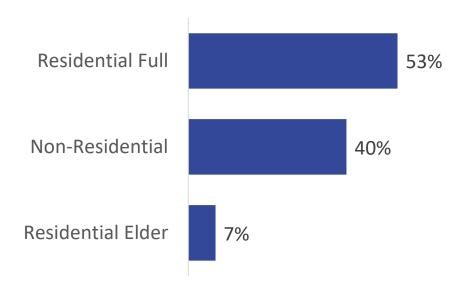
• Residential Full: \$62.28 per month

• Elder: \$25.50 per month (unchanged)

Under this scenario, revenue from residential full customers would account for 53 percent of all revenue, and revenue from non-residential customers would account for 40 percent of all revenue, as seen in the chart below. These numbers are very similar to the current percentage allocation.

Percent of Total Revenue Generated Each Year by Group if Only Residential and Non-Residential Rates are Raised by an Equal Percentage and Elder Rates Stay the Same

Assumes a 90 percent collection rate



If the reserve balance is built up to \$100,000 over five years, the residential full, elder, and non-residential rates would change in the following ways each year:

	FY+1	FY+2	FY+3	FY+4	FY+5
Residential Full Rate	\$57.27	\$58.80	\$60.04	\$61.31	\$62.61
Elder Rate	\$25.50	\$25.50	\$25.50	\$25.50	\$25.50
Non-Residential Annual Increase	12.3%	2.7%	2.1%	2.1%	2.1%

Consideration: Affordability

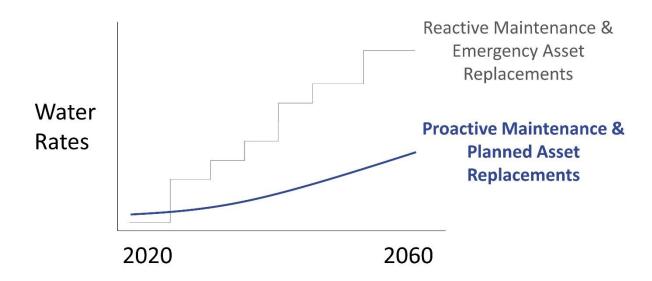
Water and wastewater are essential services for maintaining public health in a community. But those services rely on the fees and rates paid by customers to cover many of their costs. As a result, when setting rates, the ability of customers to pay should be considered.

This analysis on the affordability of water and wastewater service looks at key demographics within the utility service territory. There is no generally accepted definition of drinking water and wastewater affordability, nor is there one single, generally accepted metric to represent the affordability of drinking water and wastewater at the household level. Over the past several decades, water and wastewater rates have been artificially low. After the passage of the Clean Water Act in 1972 and the Safe Drinking

Water Act in 1974, the federal government provided generous construction grants to communities to help build water and wastewater infrastructure that was compliant with the new regulations. Today, tribal nations are still eligible for some federal grants through Indian Health Service and USDA, but the grants are limited. The customers of tribal water and wastewater utilities may end up being responsible for paying the full cost of infrastructure replacement into the future. As a result, it is not unusual to see water and wastewater rates rising faster than most other utility bills, faster than inflation, and faster than salaries. This trend has increased attention around the issue of affordability.

For many utilities, the old approach to affordability involved keeping rates as low as possible. Utilities would focus on covering only their day-to-day operational costs, or charging only what the lowest income customers could afford, or at least charging less than neighboring utilities. Routine, preventative maintenance was often not prioritized. This approach proved to be short-sighted. Utilities found themselves constantly reacting to infrastructure failure with reactive maintenance and emergency asset replacement, which are far more expensive in the long term than preventative maintenance and planned infrastructure replacement. Rates would need to be increased sharply at irregular intervals to cover revenue shortfalls created by the emergencies, and utilities failed to build up cash reserves. Charging artificially low rates may put the entire water and wastewater systems—and public health—at risk in the future.

Today, the focus of the water and wastewater sector is shifting to planned infrastructure replacement through asset management and charging what is necessary to sustain the utility now and for decades to come, with revenue to cover operations, to pay debt service and capital replacement costs, and to build up reserves for capital needs, unexpected revenue shortfalls, and emergencies. Rates that are designed with this 40-year view in mind may be higher today, but the proactive approach is the cheapest way to sustain operations over the long term.



The best practices in the water and wastewater sectors around affordability today involve charging what is necessary to run the utility properly for decades to come, identifying customers that may have affordability issues, and designing assistance programs to allow those customers to pay the charges

necessary to sustain the utility. Ultimately, it is up to each individual utility and community to decide what its customers are able to afford. But there are metrics built around demographic data that can help utilities make an informed decision about affordability and what assistance programs, if any, are appropriate. The metrics presented in this report represent the latest research into drinking water affordability. This report analyzes Northern Cheyenne Utility Commission's water and wastewater service under both its current rate structure and under two proposed rate structures: increasing the rates for all customers by an equal percentage, and increasing only residential full and elder rates.

There are three important notes. First, this report uses census data from the Northern Cheyenne Indian Reservation and Off-Reservation Trust Land census tract. No census data perfectly captures all the utility's customers, but this tract was most representative of the utility's customer base. Second, there is a larger margin of error in census data from both smaller communities and from Indian Country than there is in larger or non-tribal communities. Again, while there may be some inaccuracies as a result, the census data are the best data available on the utility's customer base. Third, all the data for this section are drawn from the 2018 American Community Survey. As mentioned earlier in the report, information on household income, unemployment, and other statistics are not reflective of the changes that have occurred due to the ongoing COVID-19 pandemic. Should current conditions continue, analyses and conclusions within this report may be significantly impacted. As recommended earlier, NCUC should revisit this rates analysis in one year to determine if there are any significant changes to the bill collection rate and to expenses.

Household Income

The U.S. Census collects information on "Income in the Past 12 Months" through the American Community Survey. This income is the sum of the amounts reported separately for wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income (SSI); public assistance or welfare payments (including food stamps and cash public assistance); retirement, survivor, or disability pensions; and all other income. "Household Income" includes the income of all individuals 15 years old and over in the household, whether they are related or not³.

The Median Household Income for the Northern Cheyenne Tribe census area is \$46,300.⁴ For comparison, the statewide Median Household Income for Montana is \$55,328, and the Median Household Income for the United States as a whole is \$61,937. The median household income, though, is just that—if you were to line up all the household incomes in the Northern Cheyenne Tribe census area from lowest to highest, it would be the one in the middle. The median household income does not tell us anything about the *distribution* of income within a community. Are household incomes clustered around the median? Or does the community have a large number of low-income households and a large number of high-income households?

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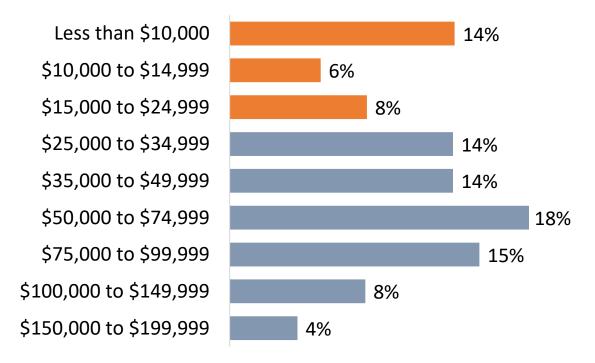
³ https://www.census.gov/programs-surveys/acs/technical-documentation/code-lists.html

⁴ Census table DP03

For the Northern Cheyenne Tribe census area, household incomes are relatively evenly distributed. About 28 percent of households have annual incomes under \$25,000 (the orange bars on the graph below). About 27 percent of households have annual incomes above \$75,000. And everyone else is in the middle⁵.

Household Income Distribution in Northern Cheyenne Indian Reservation and Off-Reservation Trust Land Census Tract

Based on American Community Survey 2018 5-Year Estimates



Under the current rate structure, households in the lowest income bracket (under \$10,000) pay at least 6.1 percent of their annual income for water and wastewater service at the residential full rate. Households in the \$15,000 to \$24,999 bracket pay at least 4.1 percent of their annual income for water and wastewater service at the residential full rate.

Under the proposed rate structure where rates increase by an equal percentage for residential, elder, and non-residential customers, households in the lowest income bracket (under \$10,000) would pay at least 7.4 percent of their annual income for water and wastewater service at the residential full rate. Likewise, households in the \$15,000 to \$24,999 bracket would pay at least 2.9 percent of their annual income for water and wastewater service at the residential full rate.

Under the proposed rate structure where rates increase by an equal percentage for residential full and non-residential customers but elder rates stay the same, households in the lowest income bracket (under \$10,000) would pay at least 7.5 percent of their annual income for water and wastewater service

⁵ Census table DP03

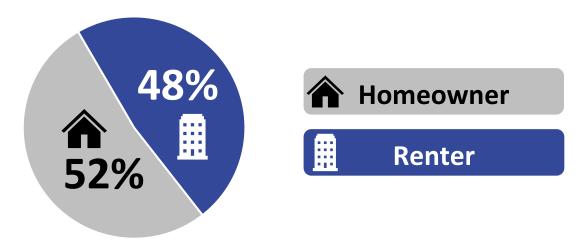
at the residential full rate. Likewise, households in the \$15,000 to \$24,999 bracket would pay at least 3.0 percent of their annual income for water and wastewater service at the residential full rate.

And under the proposed rate structure where rates increase only for residential and elder customers, households in the lowest income bracket (under \$10,000) would pay at least 8.2 percent of their annual income for water and wastewater service at the residential full rate. Likewise, households in the \$15,000 to \$24,999 bracket would pay at least 3.3 percent of their annual income for water and wastewater service at the residential full rate.

Homeowners and Renters

In the Northern Cheyenne Tribe census area, 52 percent of occupied housing units are owner-occupied, and the other 48 percent are renter-occupied.

Occupied Housing Units, Homeowner vs. Renter



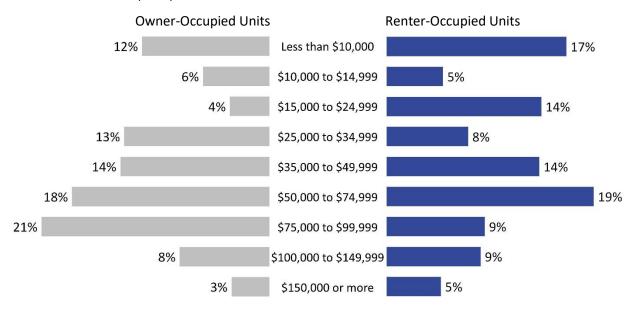
The household incomes for owner-occupied units (gray bars) are greater than the household incomes for renter-occupied units (blue bars)—see the graph below⁶. Just 22 percent of owner-occupied units have an annual household income under \$25,000, compared to 36 percent of renter-occupied units.

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⁶ Census table B25118

Household Income Distribution in Northern Cheyenne Indian Reservation and Off-Reservation Trust Land Census Tract, Owner vs. Renter

Based on American Community Survey 2018 5-Year Estimates



Key Demographic Data

People in certain demographic groups may be generally less able to pay their water and wastewater bills—for example, people who are out of work, or who are on a fixed income, or who work only part-time. Additionally, some demographics are more broadly associated with people living in poverty. What are these numbers for the Northern Cheyenne Tribe census area?

Employment

The previous section looked at household income. But what about the number of people in the Northern Cheyenne Tribe who are working in general? The Census divides the workforce, which is defined as anyone aged 16 and higher, into a few categories:

- Employed: people who have civilian jobs, either full-time or part-time.
- Unemployed: people who do not have civilian jobs but are actively seeking employment.
- Armed Forces: people serving our country as active duty military.
- Not in the labor force: people who do not have civilian jobs and are not actively seeking employment. This can include retirees, people still in school, people who are not able to work due to health issues or disabilities, and people who have voluntarily removed themselves from the workforce, perhaps to care for a relative.

For the Northern Cheyenne Tribe census area, the unemployment rate in the 2018 American Community Survey was 13.0 percent, which is about four times the statistic for the United States as a whole (3.1%). As a reminder, these numbers reflect pre-COVID data. Additionally, 41.6 percent of the

Northern Cheyenne Tribe census area residents age 16 and higher are not in the labor force, and this is slight above the United States statistic (37%)⁷.

Of the people who are employed in the civilian workforce, 10.1 percent are part-time employees, while the rest work full-time. This number is below the United States statistic of 17.0 percent. In the United States, adults who work part-time are three times more likely to live in poverty than adults who work full-time.

Social Security

In the Northern Cheyenne Tribe census area, 22.4 percent of households receive social security; this is below the United States statistic of 31.6 percent⁸. People who receive social security are often referred to as being on a "fixed income." While this is not literally true—social security recipients get a cost of living adjustment based on changes in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) (it was 1.6 percent in 2020⁹)—the fact is that social security income likely rises at a slower rate than the salaries of people who are employed. When water and wastewater rates rise faster than the cost of living adjustment, it becomes more difficult for people on social security to afford water service year after year.

Participation in Social Safety Net Programs

Another indication that people may have affordability issues is whether they qualify for and participate in federal social safety net programs. These programs have income requirements and are an indication that households have difficulty paying for other essential goods and services including food and housing. Some programs include:

- Supplemental Nutrition Assistance Program (SNAP)¹⁰: commonly known as food stamps, SNAP provides nutrition benefits to supplement the food budget of needy families.
- Supplemental Security Income (SSI)¹¹: pays benefits to disabled adults and children who have limited income and resources and pays benefits to people aged 65 and older without disabilities who meet certain financial limits.
- Cash public assistance¹²: a catch-all term for multiple social welfare programs including the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), Temporary Assistance for Needy Families (TANF), and General Assistance (GA).

For the Northern Cheyenne Tribe census area, participation in SNAP (27.5% of households), Supplemental Security Income (8.6% of households), and cash public assistance (12.0% of households) are all higher than the statistics for the United States as a whole (11.3% SNAP, 5.4% SSI, 2.3% CPA)¹³.

⁷ Census table DP03

⁸ Census table DP03

⁹ https://www.ssa.gov/OACT/COLA/latestCOLA.html

¹⁰ https://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program

¹¹ https://www.ssa.gov/benefits/ssi/

¹² https://www.census.gov/topics/income-poverty/public-assistance/about.html

¹³ Census table DP03

Education

There is a strong correlation between education and income. In the United States, 29 percent of adults without a high school diploma live in poverty. That compares to just 7 percent of college graduates, with everyone else in between. For the Northern Cheyenne Tribe census area, 14.6 percent of heads of households do not have a high school diploma, which is higher than the United States statistic of 9.9 percent¹⁴.

13.0%

41.6% 22.4%

27.5%

Unemployed

Not in Labor Force

On Social Security

Receiving SNAP

Hours of Minimum Wage Work

This metric, developed by Manny Teodoro, a professor at University of Wisconsin and a thought leader on water affordability, measures the number of hours of minimum wage labor required per month to pay for water and wastewater service. This is a measure of the labor burden on the lowest earners in a community. The minimum wage for the Northern Cheyenne Tribe is \$8.65 per hour¹⁵. This metric looks at gross wage, so no income taxes or payroll taxes have been removed. The hours of minimum wage labor required to pay for water and wastewater service under the current residential full rate is 5.9 hours per month. Under the proposed rate structure where rates increase by an equal percentage for residential, elder, and non-residential customers, the required hours increase to 7.1 hours per month. Under the proposed rate structure where rates increase only for residential and non-residential customers, the required hours increase to 7.2 hours per month. And under the proposed rate structure where rates increase only for residential and elder customers, the required hours increase to 7.9 hours per month.

Burden on the Working Poor (20th Percentile Household Income)

The ideal way to measure if customers can afford water and wastewater service would be to gather data on the actual income of each household in the community and their actual expenditures on housing and food. Then, we could look at the percent of income remaining to pay for water and wastewater service after these other essentials have been covered. Unfortunately, this type of analysis is not possible. We don't know the income of each individual household, nor do we know their actual expenditures on necessities. Since the focus on affordability concerns is often low-income households, Dr. Teodoro and others have developed metrics that try to approximate the ideal method of calculation but focus on households making the 20th percentile of income in a community (in other words, 80 percent of households make more money each year). This level is considered a good approximation of the "working poor."

¹⁴ Census table S2502

¹⁵ https://www.dol.gov/agencies/whd/minimum-wage/state

For the Northern Cheyenne census area, the 20th percentile household income is \$15,766 per year¹⁶. The average cost of housing, food, and other essential services for all households (these numbers are not available just for the 20th percentile household) are:

Description	Annual Amount	Source
Median Annual Housing Costs (mortgage,	\$9,372	Census table S2506
home insurance, other utilities)		
Annual Median Gross Rent	\$6,756	Census table B25064
Annual Food Costs	\$5,069	BLS Consumer Expenditure Survey ¹⁷
Annual Water/Wastewater Bill—Current	\$612	
Annual Water/Wastewater Bill—Increase	\$736.08	
Residential Full, Elder, and Non-Residential		
Annual Water/Wastewater Bill—Increase	\$817.08	
Residential Full and Elder only		

We know that about half of the housing units in the Northern Cheyenne Tribe census area are rental properties. And we know that the occupants of the rental units in general have lower annual incomes than do homeowners. So, it is more likely that someone at the 20th percentile income in the Northern Cheyenne Tribe census area is renting, and some of those rental units may be subsidized by Tribal housing. We also know that more than 20 percent of households in the Northern Cheyenne Tribe census area receive SNAP, so they may not be paying for all of their food costs directly. In addition, if the occupants of the 20th percentile income household are elders, they receive a reduced water and wastewater bill. Again, because we do not know the characteristics of individual customers, we cannot be sure what subsidies they may be receiving. Therefore, the calculations below assume that the household is paying 100 percent of its housing and food costs without subsidies. In other words, the calculations here represent the worst-case scenario for affordability.

Under the current rate structure, a renter at the 20th percentile of income who pays the full water and wastewater rate pays 6.8 percent of remaining income on water and wastewater after paying rent and 15.5 percent of its remaining income on water and wastewater after paying for rent and food. If the 20th percentile income is a homeowner, that household would spend 10.7 percent of its remaining income on water and wastewater after paying for housing and other utilities. That same household pays 90.7 percent of its remaining income on water and wastewater after paying for housing, other utilities, and food. Because elder water and wastewater rates are 1/2 of full water and wastewater rates, the percentages for elders are also 1/2 of those for other households (3.4% and 7.8% for renters, 5.3% and 45.3% for homeowners).

Under the proposed rate structure where rates increase by an equal percentage for residential, elder, and non-residential customers, a renter at the 20th percentile of income who pays the full water and wastewater rate pays 8.2 percent of remaining income on water and wastewater after paying rent and

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¹⁶ Census table B19080

¹⁷ The annual food cost data available from the Bureau of Labor Statistics' Customer Expenditure Survey are from the cross-tabulated table Region of residence by income before taxes. The numbers are taken from the West Region for the income band that includes the 20th percentile for the Northern Cheyenne census area. https://www.bls.gov/cex/tables.htm#crosstab

18.7 percent of its remaining income on water and wastewater after paying for rent and food. If the 20th percentile income is a homeowner, that household would spend 12.8 percent of its remaining income on water and wastewater after paying for housing and other utilities. That same household would not have enough money to cover its water and wastewater fees after paying for housing, other utilities, and food. Because elder water and wastewater rates are 1/2 of full water and wastewater rates, the percentages for elders are also 1/2 of those for other households (4.1% and 9.3% for renters, 6.4% and 54.5% for homeowners).

Under the proposed rate structure where rates increase by an equal percentage for residential full and non-residential customers but elder rates stay the same, a renter at the 20th percentile of income who pays the full water and wastewater rate pays 8.3 percent of remaining income on water and wastewater after paying rent and 19.0 percent of its remaining income on water and wastewater after paying for rent and food. If the 20th percentile income is a homeowner, that household would spend 13.0 percent of its remaining income on water and wastewater after paying for housing and other utilities. That same household would not have enough money to cover its water and wastewater fees after paying for housing, other utilities, and food.

Under the proposed rate structure where rates increase only for residential and elder customers, a renter who pays the full water and wastewater rate at the 20th percentile of income pays 9.1 percent of remaining income on water and wastewater after paying rent and 20.7 percent of its remaining income on water and wastewater after paying for rent and food. If the 20th percentile income is a homeowner, that household would spend 14.2 percent of its remaining income on water and wastewater after paying for housing and other utilities. That same household would not have enough money to cover its water and wastewater bill after paying for housing, other utilities, and food. Because elder water and wastewater rates are 1/2 of full water and wastewater rates, the percentages for elders are also 1/2 of those for other households (4.5% and 10.4% for renters, 7.1% and 60.5% for homeowners).

Next Steps

This report represents an initial analysis of how NCUC can set its water and wastewater rates. Here are a series of recommended next steps:

- Determine an appropriate increase to the residential and non-residential rates. There are multiple alternative pricing levels that will generate a sufficient level of revenue for the two utility services, balanced between increases to the residential and non-residential customers. NCUC will also need to determine the most appropriate time to institute the rate increase. Currently, in October 2020, many residents and small businesses are struggling due to the economic conditions surrounding the COVID-19 pandemic. Also, because many of the non-residential customers receive federal funds to cover their utility expenses, their budgets may be set for the coming year, so the timing of any rate change should ideally coincide with their grant and budget cycle.
- Create a robust outreach plan to educate customers on the new rates. Prior to implementing the
 rate changes, the utility should plan a comprehensive education and outreach campaign to explain
 what customers will be paying and why. This will be especially important for residential customers

who have not seen a rate increase for more than a decade. NCUC should consider public meetings as well as sending information to homes. NCUC can also include information about the rate changes in mailings to customers such as the monthly bill and be prepared to answer questions by phone.

- Consider implementing a customer assistance program. NCUC served a customer base that was economically challenged before the COVID-19 outbreak, and the pandemic is bound to make the economic situation more difficult, at least in the short term. Right now, NCUC offers one customer assistance program to a vulnerable group of customers—elders—by discounting their rates. The utility could consider programs for other vulnerable customers as well, such as discounts or assistance to low income customers or temporary assistance to customers who have been impacted negatively by the pandemic. NCUC can also consider any of the cost control programs listed below as a way to keep future rate increases smaller for customers.
- Discover ways to lower operating and capital costs. The bills that customers pay each month should be based on rates that reflect the true cost of running the water and wastewater utilities today and in the future. There are a number of actions that NCUC can take or continue to take that will ensure that water and wastewater are provided as cost-effectively as possible while maintaining regulatory compliance and level of service. These actions include:
 - Preventative maintenance and replacing assets on a fixed schedule, which will reduce the number of emergencies due to infrastructure failure
 - Planning for the replacement of infrastructure through an asset management and capital improvement program
 - Conduct a leak investigation and identify water leaks and taking appropriate steps to limit nonrevenue water
 - Efficiencies in operational costs through technology and energy management

Each of these practices has the effect of lowering the cost of operations, maintenance, and capital replacement immediately or over time, including by limiting the number of emergency repairs and emergency infrastructure replacements. This is a benefit to the utility. And if those cost reductions are reflected in future rate adjustments, all customers benefit, including those with affordability challenges. It also allows the utility to show its customers that it is being responsible with its revenue.

Ensure that the utility has is **properly staffed and maintains a consistent utility workforce**. Utilities are most efficiently run by professional, certified employees. Because each individual water and wastewater system is unique, employees become more efficient at operating the system the longer they have been employed. As a result, it is recommended that NCUC ensure that the salaries and benefits provided to employees are appropriate for water and wastewater professionals and that NCUC focus on employee retention as a long-term cost control strategy. Utilities often find that the cost of replacing employees who leave, or the cost of using contract labor for operations, is higher than the cost of providing higher salaries and better benefits to retain good employees. In addition, it is recommended that NCUC ensure it is staffed with an appropriate number of employees to carry out its mission. NCUC reports that they are currently understaffed and have difficulty paying competitive wages, and that they would ideally add one or more FTEs to the current team of

employees and raise wages to increase employee retention. Future rate studies should build in these potential positions into calculating revenue requirements.

In addition, NCUC should prepare for the possibility that employees will be unable to work, in particular due to the ongoing COVID-19 pandemic. A utility best practice is to have a Continuity of Operations plan, which is a written plan for how to maintain operations during emergencies such as the pandemic. This is especially important for utilities with limited staff. This plan should

- Catalog essential operations
- List critical positions and minimum staffing to maintain essential operations
- Specify staff with cross-training and other back-up resources
- Define employee health and safety procedures
- Discuss how to prevent or handle any chain of supply disruption
- Establish a communications plan for staff, leadership, and the community
- Consider collecting data from existing meters and installing meters for any customer without one in the future. Metering for water generates benefits for both the utility and for the customer. The utility can track water consumption better, and customers can understand their consumption better. Leaks on the customer side of the meter can be identified and eliminated quickly. The utility can also compare the volume of water recorded by the meters to the volume of water generated at the treatment plant to identify non-revenue water due to leaks on transmission lines or theft. These benefits would save the utility money even without changing the rate structure. Some parts of the four systems are currently metered, but most of the meters are not read regularly, and some may be inoperable. It is recommended that the NCUC conduct a meter survey to identify the number, type and size for the meters required. There is tremendous savings buying in bulk. Because the utility is often understaffed and because of the geographic distribution of the four systems, NCUC should consider installing radio-read AMI meters. These meters can also give the utility real-time updates on water usage and alert the utility about possible leaks.

Currently, by statute, NCUC is not allowed to sell water. If that were ever to change in the future, the utility could use the meter data to develop and charge volumetric rates. The current flat rate structure for unlimited water use has some advantages. It is easy to administer and simple for customers to understand. It doesn't require a complicated billing system. But under flat rates, customers are all paying the wrong amount for their water and wastewater service. Some pay too much, and others pay too little. There is no incentive for conservation or to even fix leaking toilets or fixtures. And customers with affordability challenges have no way to control their bills. No matter how much or how little water they use, their bill never changes.

• Establish and enforce a **delinquency policy** for non-payment. NCUC reports that some residential customers have delinquencies stretching back more than a year, and even some federal accounts have been delinquent for months at a time. The utility can consider establishing a delinquency policy where a late fee is levied if payment is not received within a certain time frame of billing (for example, 2-3 weeks), and water is shut off if payment is not received within a certain time frame after that (for example, an additional 1-2 weeks). The customer would then have to pay a reconnection fee to reestablish service. If the utility begins shutoffs, it is recommended that the

policy be enforced uniformly for all customers. For example, one tribal utility with a shutoff policy presents a list of shutoffs to the Tribal Council each month. The Tribal Council must accept all of the shutoffs or reject them all—there is no ability to shut some off but not others. And if the Tribal Council accepts all of the shutoffs, they sign each shutoff notice that is shown to the customer. One alternative to shutoffs is the use of flow restrictors when customers don't pay their bills. These devices allow a trickle of water to come out of the tap but not more. That would be enough for a customer to get a glass of water to drink, to fill a pot (slowly) for cooking, to wash hands, and to fill a bucket (again, slowly) for bathing. Water is not completely shut off, but it is greatly reduced. Another option for customers that may be habitually delinquent on bills is to require prepayment. Water and wastewater are often charged after the month of use, but the utility could switch to requiring delinquent customers to pay ahead of time for access to the system. Enforcing a delinquency policy always must be balanced with affordability concerns. The goal of a delinquency policy is to ensure that customers with the ability to pay their bills do in fact pay. The goal is not to punish customers with legitimate affordability concerns. It is recommended that any delinquency policy be paired with a customer assistance program.

Budget separately for water and wastewater. Ideally, each utility service should be self-sufficient
on its own, and the rates charged for each service should reflect the cost of that serve only. This is a
best practice for water and wastewater finance and management. In addition, funders such as
USDA require that water and wastewater budgets be separated as condition for accessing their
grant and loan funding. Having separate budgets would allow future rate studies to adjust water
and wastewater rates separately.

¹⁸ <u>https://www.ibenvironmental.com/blog/2020/04/13/waterflowrestrictionsblog</u> discusses flow restrictors in detail

¹⁹ This episode of the Water Values podcast discusses pre-paid water: https://www.bluefieldresearch.com/podcast/pre-paid-water/

Appendix 1: Projected Revenues and Expenses Over 5 Years

Revenues								
		Expected						
	Collection	Annual	Change in					
	Rate	Revenue	# Users	FY+1	FY+2	FY+3	FY+4	FY+5
Residential	90%			\$289,721	\$289,721			\$289,721
Elder	90%	45,992	0%	\$45,992				
Commercial	90%	-						
		<u> </u>						
Total		554,632		\$554,632	\$554,632	\$554,632	\$554,632	\$554,632
Expenses		FY2019 Projected	Change in Expenses	EV±1	FY+2	FY+3	FY+4	FY+5
SALARIES		\$296,120		\$302,043		_		\$326,941
TEMPORARY SA	ΔI ΔRIFS	\$9,246		\$9,431	\$9,620			\$10,208
EMPLOYEE TAX		\$33,047		\$33,707	\$34,382			\$36,486
EMPLOYEE BON		\$5,193		\$5,297	\$5,402	\$5,511		\$5,733
POSATAGE	103	\$1,965		\$2,004	\$2,044			\$2,170
TRAVEL		\$20,450		\$20,859	\$21,276			\$22,578
TRAINING		\$4,389		\$4,477	\$4,566			\$4,846
DONATIONS		\$3,500		\$3,570	\$3,641	\$3,714		\$3,864
LICENSES & FEE	:S	\$112		\$114	\$116			\$123
PUBLICATIONS		\$150		\$153	\$156	\$159	\$162	\$166
OFFICE SUPPLIE	S	\$6,381		\$6,509	\$6,639			\$7,045
FIELD SUPPLIES		\$51,344	2%	\$52,371	\$53,419	\$54,487	\$55,577	\$56,688
UTILITIES		\$76,187	2%	\$77,710	\$79,265	\$80,850	\$82,467	\$84,116
TELEPHONE		\$8,416	2%	\$8,584	\$8,756	\$8,931	\$9,110	\$9,292
LAB COSTS		\$9,450	2%	\$9,639	\$9,832	\$10,028	\$10,229	\$10,433
PROFESSIONAL	SERVICES	\$58,477	2%	\$59,647	\$60,839	\$62,056	\$63,297	\$64,563
MEETING COST	S	\$2,199	2%	\$2,243	\$2,288	\$2,334	\$2,380	\$2,428
BUILDING								
MAINTENANCE	/REPAIR	\$1,029	2%	\$1,050	\$1,071	\$1,092	\$1,114	\$1,136
VEHICLE								
MAINTENANCE	/REPAIR	\$800	2%	\$816	\$832	\$849	\$866	\$883
EQUIP								
MAINTENCE/RE	PAIR	\$2,200	2%	\$2,244	\$2,289	\$2,335	\$2,381	\$2,429
EQUIP RENTAL		\$5,000	2%	\$5,100	\$5,202	\$5,306	\$5,412	\$5,520
INTEREST EXPE	NSES	\$50		\$51	\$52			\$55
BANK SERVICE	CHARGE	\$160	2%	\$163	\$166	\$170	\$173	\$177

Total	\$595,864		\$607,782	\$619,937	\$632,336	\$644,983	\$657,882
Revenues - Expenses	(\$41,233)	(\$53,150)	(\$65,306)	(\$77,704)	(\$90,351)	(\$103,251)

Appendix 2: Financial Targets Over 5 Years

Reserve Target Met in Year 1:

	Base Year				
	+1	+2	+3	+4	+5
Total Projected Operating Expenses	\$607,782	\$619,937	\$632,336	\$644,983	\$657,882
Principal and Interest Payments on					
Long Term Debt	0	0	0	0	0
Capital Outlay	0	0	0	0	0
Total Expenses	\$607,782	\$619,937	\$632,336	\$644,983	\$657,882
	•		•	•	
Reserve Target	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Current Reserve Funds	\$40,663	\$100,000	\$100,000	\$100,000	\$100,000
Additional Reserve Funds Needed	\$59,337	\$0	\$0	\$0	\$0
Financial Target	\$667,119	\$619,937	\$632,336	\$644,983	\$657,882
Total Revenue Other Than					
Water/Wastewater Rates	\$0	\$0	\$0	\$0	\$0
	· 		·		·
Revenue Needed from					
Water/Wastewater	667,119	619,937	632,336	644,983	657 <i>,</i> 882
Projected Water/Wastewater Under					
Current Rates	554,632	554,632	554,632	554,632	554,632
Additional Revenue Needed from					

Reserve Target Met Gradually Over 5 Years:

	Base Year				
	+1	+2	+3	+4	+5
Total Projected Operating Expenses	\$607,782	\$619,937	\$632,336	\$644,983	\$657,882
Principal and Interest Payments on					
Long Term Debt	0	0	0	0	0
Capital Outlay	0	0	0	0	0
Total Expenses	\$607,782	\$619,937	\$632,336	\$644,983	\$657,882
Reserve Target	\$50,000	\$62,500	\$75,000	\$87,500	\$100,000
Current Reserve Funds	\$40,663	\$50,000	\$62,500	\$75,000	\$87,500
Additional Reserve Funds Needed	\$9,337	\$12,500	\$12,500	\$12,500	\$12,500
Financial Target	\$617,119	\$632,437	\$644,836	\$657,483	\$670,382
Total Revenue Other Than					
Water/Wastewater Rates	\$0	\$0	\$0	\$0	\$0
Revenue Needed from					
Water/Wastewater	617,119	632,437	644,836	657,483	670,382
Projected Water/Wastewater Under					
Current Rates	554,632	554,632	554,632	554,632	554,632
Additional Revenue Needed from					
Water Rates	\$62,487	\$77,806	\$90,204	\$102,851	\$115,751

Appendix 3: Residential Full, Elder Rate and Non-Residential Rate Increase Combinations for Full Cost Pricing

Scenario 3: All Three Rates are Raised

Rates Increase by	Would Increase by
If Residential Full and Elder	Then Non-Residential Rates

Rates Increase by		Would Increase by
	0%	51%
	1%	50%
	2%	48%
	3%	47%
	4%	45%
	5%	44%
	6%	42%
	7%	41%
	8%	39%
	9%	38%
	10%	36%
	11%	35%
	12%	33%
	13%	31%
	14%	30%
	15%	
	16%	27%
	17%	25%
	18%	24%
	19%	22%
	20%	
	20.28%	20.28%
	21%	19%
	22%	18%
	23%	16%
	24%	15%
	25%	13%
	26%	12%
	27%	10%
	28%	8%
	29%	7%
	30%	5%
	31%	4%
	32%	2%
	33%	1%
	34%	0%

← All rates raised by the same percentage

Scenario 4: The Residential Full and Non-Residential Rates are Raised, but the Elder Rate Stays the Same

If Residential Full Rates		Then Non-Residential Rates
Increase by		Would Increase by
	0%	51
	40/	

Increase by		Would Increase by
	0%	51%
	1%	50%
	2%	49%
	3%	47%
	4%	46%
	5%	45%
	6%	43%
	7%	42%
	8%	41%
	9%	39%
	10%	38%
	11%	37%
	12%	36%
	13%	34%
	14%	33%
	15%	32%
	16%	30%
	17%	29%
	18%	28%
	19%	26%
	20%	25%
	21%	24%
	22%	22%
	22.115%	22.115%
	23%	21%
	24%	20%
	25%	18%
	26%	17%
	27%	16%
	28%	14%
	29%	13%
	30%	12%
	31%	10%
	32%	9%
	33%	8%
	34%	7%
	35%	5%
	36%	4%
	37%	3%
	38%	1%
	39%	0%

 \leftarrow Rates raised by the same percentage

Appendix 4: Monthly Rates for Non-Residential Customers Under Each Rate Change Scenario

Scenario 1: Raise Non-Residential Rates Only

Non-Residential	Location	Water	Sewer	Standard	Monthly
Indian Health Service - Clinic	Lame Deer	\$1,819.68	\$963.78	\$135.90	\$2,919.37
NCTH SB Complex	Lame Deer	\$1,544.73	\$996.60	\$15.10	\$2,556.43
NC Tribal SchoolGym	Busby	\$697.69	\$495.13	\$135.90	\$1,328.72
Lame Deer Pub Sch - Main	Lame Deer	\$485.16	\$509.63	\$135.90	\$1,130.69
Lame Deer Pub Sch - Gym	Lame Deer	\$447.20	\$258.34	\$135.90	\$841.44
BIA Youth Detention Center	Busby	\$0.00	\$687.53	\$135.90	\$823.43
BIA - Law Enforcement	Lame Deer	\$306.12	\$209.01	\$135.90	\$651.03
NCT Tribal Office	Lame Deer	\$274.99	\$189.28	\$135.90	\$600.17
NCT Charging Horse Casino	Lame Deer	\$259.33	\$204.07	\$135.90	\$599.30
CDKC - Main A	Lame Deer	\$285.43	\$154.74	\$135.90	\$576.07
NCTH Elderly Program	Lame Deer	\$297.24	\$139.94	\$135.90	\$573.08
Boys & Girls Club of NC Nation	Lame Deer	\$259.33	\$150.14	\$135.90	\$545.38
NCT Headstart - Adm.	Lame Deer	\$228.02	\$130.08	\$135.90	\$494.01
CDKC - Main B	Lame Deer	\$222.80	\$135.01	\$135.90	\$493.72
NCT BOH - Main	Lame Deer	\$196.71	\$125.14	\$135.90	\$457.75
BIA - Adm.	Lame Deer	\$191.49	\$127.06	\$135.90	\$454.45
NCT Rosebud Lodge	Busby	\$181.06	\$95.55	\$135.90	\$412.50
CDKC - Daycare	Lame Deer	\$170.62	\$80.74	\$135.90	\$387.26
Blessed Sacrament Catholic Church	Lame Deer	\$212.37	\$125.14	\$45.30	\$382.80
NCT Cheyenne Depot	Lame Deer	\$154.96	\$70.89	\$135.90	\$361.75
NCT Lil Eagle Headstart	Busby	\$134.09	\$75.81	\$135.90	\$345.80
NCT Headstart - Rainbow	Lame Deer	\$134.09	\$75.81	\$135.90	\$345.80
NCT BOH - Fitness Center	Lame Deer	\$113.21	\$95.55	\$135.90	\$344.66
NCT Cheyenne Ave. Laundromat	Lame Deer	\$113.25	\$109.63	\$105.70	\$328.58
NC Tribal SchoolAdm.	Busby	\$118.43	\$70.89	\$135.90	\$325.22
NCT Headstart - Lil Cheyenne	Lame Deer	\$123.65	\$61.01	\$135.90	\$320.56
Lame Deer Trading Post	Lame Deer	\$134.09	\$31.42	\$135.90	\$301.41
NCT Prosecution	Lame Deer	\$102.78	\$61.01	\$135.90	\$299.69
NC Tribal SchoolSchool	Busby	\$113.21	\$46.21	\$135.90	\$295.32
People's Partnership	Lame Deer	\$122.31	\$36.69	\$135.90	\$294.90
NCT BOH- Ambulance Serv. Office	Lame Deer	\$118.23	\$28.54	\$135.90	\$282.67
NCT Tribal Historic Pres	Lame Deer	\$97.85	\$48.92	\$135.90	\$282.67
NCT BOH - Prevention Center	Lame Deer	\$97.56	\$46.21	\$135.90	\$279.66
NCT BOH - Wellness Center	Lame Deer	\$92.34	\$51.15	\$135.90	\$279.39
Robinson, Tom	Lame Deer	\$112.80	\$24.46	\$135.90	\$273.16

Non-Residential	Location	Water	Sewer	Standard	Monthly
NCT Land Authority	Lame Deer	\$48.92	\$81.54	\$135.90	\$266.36
Lame Deer Pub Sch - Altern Ed	Lame Deer	\$81.90	\$51.15	\$105.70	\$238.76
NCT E.P.D.	Lame Deer	\$40.15	\$56.08	\$135.90	\$232.14
US Postal Service Lame Deer	Lame Deer	\$71.47	\$51.15	\$105.70	\$228.32
NCT Headstart - ABC	Lame Deer	\$81.90	\$36.35	\$105.70	\$223.95
NCT Headstart - Can Do	Lame Deer	\$81.90	\$36.35	\$105.70	\$223.95
BIA - Forestry 2	Lame Deer	\$66.25	\$51.15	\$105.70	\$223.10
NCT Food Distribution	Lame Deer	\$66.25	\$41.80	\$105.70	\$213.75
NCT LIHEAP/HIP	Lame Deer	\$71.47	\$31.42	\$105.70	\$208.59
NCT Dept. of Transportation	Lame Deer	\$66.25	\$31.42	\$105.70	\$203.37
NCT MSU Extension Service	Lame Deer	\$61.03	\$36.35	\$105.70	\$203.08
CDKC - Library	Lame Deer	\$55.81	\$41.28	\$105.70	\$202.79
NCT Lube Center	Lame Deer	\$68.40	\$58.44	\$75.50	\$202.34
BIA - Forestry 1	Lame Deer	\$61.03	\$31.42	\$105.70	\$198.15
CDKC - Cultural Bldg	Lame Deer	\$50.59	\$36.35	\$105.70	\$192.64
Mike's Tool Box	Lame Deer	\$80.63	\$26.27	\$75.50	\$182.41
Morning Star Baptist Church	Lame Deer	\$81.90	\$51.15	\$45.30	\$178.36
NCTH Hse N Offie	Lame Deer	\$69.31	\$0.00	\$105.70	\$175.01
NCT Dev. Corp	Lame Deer	\$48.92	\$44.85	\$75.50	\$169.27
Lame Deer Pentecostal Church	Lame Deer	\$76.68	\$41.28	\$45.30	\$163.26
NCT Forestry Development	Lame Deer	\$55.81	\$26.47	\$75.50	\$157.78
NCT Motor Pool	Lame Deer	\$55.81	\$26.47	\$75.50	\$157.78
NCTH Main Office	Lame Deer	\$81.90	\$0.00	\$75.50	\$157.40
NCTH Maint. Dept.	Lame Deer	\$81.90	\$0.00	\$75.50	\$157.40
NCTH Maint. Shop	Lame Deer	\$81.90	\$0.00	\$75.50	\$157.40
CDKC - Café	Lame Deer	\$45.37	\$36.35	\$75.50	\$157.22
Lame Deer Menn. Church	Lame Deer	\$50.59	\$56.63	\$45.30	\$152.52
NCT Tribal Education	Lame Deer	\$45.37	\$26.47	\$75.50	\$147.35
CDKC - VoTech	Lame Deer	\$71.47	\$0.00	\$75.50	\$146.97
NCT Tribal Court	Lame Deer	\$45.37	\$21.54	\$75.50	\$142.42
Ind. Bir. Baptist Church *I	Birney	\$92.34	\$0.00	\$45.30	\$137.64
NC Tribal SchoolTransportation	Busby	\$40.15	\$21.54	\$75.50	\$137.20
First Interstate Bank	Lame Deer	\$40.15	\$21.54	\$75.50	\$137.20
Lame Deer Pub Sch - Bus Shop	Lame Deer	\$32.62	\$28.54	\$75.50	\$136.66
NCT BOH - D.E.S.	Lame Deer	\$44.85	\$16.31	\$75.50	\$136.66
NIWRC	Lame Deer	\$40.15	\$16.62	\$75.50	\$132.27
NCT Birney Comm Hall *I	Birney	\$54.18	\$0.00	\$75.50	\$129.68
Pentecostal Church of Busby	Busby	\$55.81	\$26.47	\$45.30	\$127.58
NCTH OPA	Lame Deer	\$40.15	\$11.69	\$75.50	\$127.34
NC Ministerial Assoc.	Lame Deer	\$50.59	\$31.42	\$45.30	\$127.31

Non-Residential	Location	Water	Sewer	Standard	Monthly
BIA - Fire Management	Lame Deer	\$24.50	\$26.47	\$75.50	\$126.47
Circle of Life Lutheran Church	Muddy Cluster	\$76.97	\$0.00	\$45.30	\$122.27
Lame Deer Pub Sch - Maint. Shop	Lame Deer	\$29.72	\$16.62	\$75.50	\$121.83
NC Tribal SchoolMaint. Shop	Busby	\$24.50	\$21.54	\$75.50	\$121.54
BIA - Fac. Management	Lame Deer	\$24.50	\$21.54	\$75.50	\$121.54
Busby Assembly Church of God	Busby	\$50.59	\$21.54	\$45.30	\$117.44
Christ the King Church of Busby	Busby	\$50.59	\$21.54	\$45.30	\$117.44
Range Telephone Coop	Lame Deer	\$29.72	\$11.69	\$75.50	\$116.90
White River Chey Menn Church	Busby	\$71.47	\$0.00	\$45.30	\$116.77
NCT Fire Dept.	Lame Deer	\$24.50	\$16.62	\$75.50	\$116.61
BIA - Roads Dept.	Lame Deer	\$19.28	\$21.54	\$75.50	\$116.32
Lame Deer Pub Sch - Daycare *1	Lame Deer	\$24.46	\$12.23	\$75.50	\$112.19
CDKC - Prev. Vo-Rehab.*I	Lame Deer	\$24.50	\$11.69	\$75.50	\$111.69
Flower Grinder	Lame Deer	\$24.50	\$11.69	\$75.50	\$111.69
NC Tribal SchoolBldg. 1713	Busby	\$14.06	\$21.54	\$75.50	\$111.11
NC Tribal SchoolBldg. 1714	Busby	\$14.06	\$21.54	\$75.50	\$111.11
US Postal Service Busby	Busby	\$34.94	\$0.00	\$75.50	\$110.44
NCTH Ross Grant	Lame Deer	\$34.94	\$0.00	\$75.50	\$110.44
NCT Ashland Comm Hall *I	Ashland	\$19.28	\$11.33	\$75.50	\$106.10
NCT BOH - Ambulance Serv. Garage	Lame Deer	\$20.39	\$8.15	\$75.50	\$104.04
NCT Solid Waste	Lame Deer	\$16.31	\$0.00	\$75.50	\$91.81
NCT (New Apostolic Ch) *I	Birney	\$0.00	\$0.00	\$15.10	\$15.10
NCT (Catholic Church)*I	Birney	\$0.00	\$0.00	\$15.10	\$15.10

Scenario 2: Raise Residential Full & Elder Rates Only

Non-Residential	Location	Water	Sewer	Standard	Monthly
Indian Health Service - Clinic	Lame Deer	\$1,205.09	\$638.27	\$90.00	\$1,933.36
NCTH SB Complex	Lame Deer	\$1,023.00	\$660.00	\$10.00	\$1,693.00
NC Tribal SchoolGym	Busby	\$462.05	\$327.90	\$90.00	\$879.95
Lame Deer Pub Sch - Main	Lame Deer	\$321.30	\$337.50	\$90.00	\$748.80
Lame Deer Pub Sch - Gym	Lame Deer	\$296.16	\$171.08	\$90.00	\$557.24
BIA Youth Detention Center	Busby	\$0.00	\$455.32	\$90.00	\$545.32
BIA - Law Enforcement	Lame Deer	\$202.73	\$138.42	\$90.00	\$431.15
NCT Tribal Office	Lame Deer	\$182.11	\$125.35	\$90.00	\$397.46
NCT Charging Horse Casino	Lame Deer	\$171.74	\$135.14	\$90.00	\$396.89
CDKC - Main A	Lame Deer	\$189.02	\$102.48	\$90.00	\$381.50
NCTH Elderly Program	Lame Deer	\$196.85	\$92.68	\$90.00	\$379.52
Boys & Girls Club of NC Nation	Lame Deer	\$171.74	\$99.43	\$90.00	\$361.18
NCT Headstart - Adm.	Lame Deer	\$151.01	\$86.15	\$90.00	\$327.16
CDKC - Main B	Lame Deer	\$147.55	\$89.41	\$90.00	\$326.96
NCT BOH - Main	Lame Deer	\$130.27	\$82.87	\$90.00	\$303.14
BIA - Adm.	Lame Deer	\$126.82	\$84.14	\$90.00	\$300.96
NCT Rosebud Lodge	Busby	\$119.90	\$63.28	\$90.00	\$273.18
CDKC - Daycare	Lame Deer	\$112.99	\$53.47	\$90.00	\$256.46
Blessed Sacrament Catholic Church	Lame Deer	\$140.64	\$82.87	\$30.00	\$253.51
NCT Cheyenne Depot	Lame Deer	\$102.62	\$46.94	\$90.00	\$239.57
NCT Lil Eagle Headstart	Busby	\$88.80	\$50.21	\$90.00	\$229.01
NCT Headstart - Rainbow	Lame Deer	\$88.80	\$50.21	\$90.00	\$229.01
NCT BOH - Fitness Center	Lame Deer	\$74.98	\$63.28	\$90.00	\$228.25
NCT Cheyenne Ave. Laundromat	Lame Deer	\$75.00	\$72.60	\$70.00	\$217.60
NC Tribal SchoolAdm.	Busby	\$78.43	\$46.94	\$90.00	\$215.38
NCT Headstart - Lil Cheyenne	Lame Deer	\$81.89	\$40.40	\$90.00	\$212.29
Lame Deer Trading Post	Lame Deer	\$88.80	\$20.81	\$90.00	\$199.61
NCT Prosecution	Lame Deer	\$68.06	\$40.40	\$90.00	\$198.47
NC Tribal SchoolSchool	Busby	\$74.98	\$30.60	\$90.00	\$195.58
People's Partnership	Lame Deer	\$81.00	\$24.30	\$90.00	\$195.30
NCT BOH- Ambulance Serv. Office	Lame Deer	\$78.30	\$18.90	\$90.00	\$187.20
NCT Tribal Historic Pres	Lame Deer	\$64.80	\$32.40	\$90.00	\$187.20
NCT BOH - Prevention Center	Lame Deer	\$64.61	\$30.60	\$90.00	\$185.21
NCT BOH - Wellness Center	Lame Deer	\$61.15	\$33.88	\$90.00	\$185.03
Robinson, Tom	Lame Deer	\$74.70	\$16.20	\$90.00	\$180.90
NCT Land Authority	Lame Deer	\$32.40	\$54.00	\$90.00	\$176.40
Lame Deer Pub Sch - Altern Ed	Lame Deer	\$54.24	\$33.88	\$70.00	\$158.12
NCT E.P.D.	Lame Deer	\$26.59	\$37.14	\$90.00	\$153.73

Non-Residential	Location	Water	Sewer	Standard	Monthly
US Postal Service Lame Deer	Lame Deer	\$47.33	\$33.88	\$70.00	\$151.20
NCT Headstart - ABC	Lame Deer	\$54.24	\$24.07	\$70.00	\$148.31
NCT Headstart - Can Do	Lame Deer	\$54.24	\$24.07	\$70.00	\$148.31
BIA - Forestry 2	Lame Deer	\$43.87	\$33.88	\$70.00	\$147.75
NCT Food Distribution	Lame Deer	\$43.87	\$27.68	\$70.00	\$141.56
NCT LIHEAP/HIP	Lame Deer	\$47.33	\$20.81	\$70.00	\$138.14
NCT Dept. of Transportation	Lame Deer	\$43.87	\$20.81	\$70.00	\$134.68
NCT MSU Extension Service	Lame Deer	\$40.42	\$24.07	\$70.00	\$134.49
CDKC - Library	Lame Deer	\$36.96	\$27.34	\$70.00	\$134.30
NCT Lube Center	Lame Deer	\$45.30	\$38.70	\$50.00	\$134.00
BIA - Forestry 1	Lame Deer	\$40.42	\$20.81	\$70.00	\$131.22
CDKC - Cultural Bldg	Lame Deer	\$33.50	\$24.07	\$70.00	\$127.58
Mike's Tool Box	Lame Deer	\$53.40	\$17.40	\$50.00	\$120.80
Morning Star Baptist Church	Lame Deer	\$54.24	\$33.88	\$30.00	\$118.12
NCTH Hse N Offie	Lame Deer	\$45.90	\$0.00	\$70.00	\$115.90
NCT Dev. Corp	Lame Deer	\$32.40	\$29.70	\$50.00	\$112.10
Lame Deer Pentecostal Church	Lame Deer	\$50.78	\$27.34	\$30.00	\$108.12
NCT Forestry Development	Lame Deer	\$36.96	\$17.53	\$50.00	\$104.49
NCT Motor Pool	Lame Deer	\$36.96	\$17.53	\$50.00	\$104.49
NCTH Main Office	Lame Deer	\$54.24	\$0.00	\$50.00	\$104.24
NCTH Maint. Dept.	Lame Deer	\$54.24	\$0.00	\$50.00	\$104.24
NCTH Maint. Shop	Lame Deer	\$54.24	\$0.00	\$50.00	\$104.24
CDKC - Café	Lame Deer	\$30.05	\$24.07	\$50.00	\$104.12
Lame Deer Menn. Church	Lame Deer	\$33.50	\$37.50	\$30.00	\$101.00
NCT Tribal Education	Lame Deer	\$30.05	\$17.53	\$50.00	\$97.58
CDKC - VoTech	Lame Deer	\$47.33	\$0.00	\$50.00	\$97.33
NCT Tribal Court	Lame Deer	\$30.05	\$14.27	\$50.00	\$94.32
Ind. Bir. Baptist Church *I	Birney	\$61.15	\$0.00	\$30.00	\$91.15
NC Tribal SchoolTransportation	Busby	\$26.59	\$14.27	\$50.00	\$90.86
First Interstate Bank	Lame Deer	\$26.59	\$14.27	\$50.00	\$90.86
Lame Deer Pub Sch - Bus Shop	Lame Deer	\$21.60	\$18.90	\$50.00	\$90.50
NCT BOH - D.E.S.	Lame Deer	\$29.70	\$10.80	\$50.00	\$90.50
NIWRC	Lame Deer	\$26.59	\$11.00	\$50.00	\$87.60
NCT Birney Comm Hall *I	Birney	\$35.88	\$0.00	\$50.00	\$85.88
Pentecostal Church of Busby	Busby	\$36.96	\$17.53	\$30.00	\$84.49
NCTH OPA	Lame Deer	\$26.59	\$7.74	\$50.00	\$84.33
NC Ministerial Assoc.	Lame Deer	\$33.50	\$20.81	\$30.00	\$84.31
BIA - Fire Management	Lame Deer	\$16.22	\$17.53	\$50.00	\$83.76
Circle of Life Lutheran Church	Muddy Cluster	\$50.98	\$0.00	\$30.00	\$80.98
Lame Deer Pub Sch - Maint. Shop	Lame Deer	\$19.68	\$11.00	\$50.00	\$80.68

Non-Residential	Location	Water	Sewer	Standard	Monthly
NC Tribal SchoolMaint. Shop	Busby	\$16.22	\$14.27	\$50.00	\$80.49
BIA - Fac. Management	Lame Deer	\$16.22	\$14.27	\$50.00	\$80.49
Busby Assembly Church of God	Busby	\$33.50	\$14.27	\$30.00	\$77.77
Christ the King Church of Busby	Busby	\$33.50	\$14.27	\$30.00	\$77.77
Range Telephone Coop	Lame Deer	\$19.68	\$7.74	\$50.00	\$77.42
White River Chey Menn Church	Busby	\$47.33	\$0.00	\$30.00	\$77.33
NCT Fire Dept.	Lame Deer	\$16.22	\$11.00	\$50.00	\$77.23
BIA - Roads Dept.	Lame Deer	\$12.77	\$14.27	\$50.00	\$77.04
Lame Deer Pub Sch - Daycare *1	Lame Deer	\$16.20	\$8.10	\$50.00	\$74.30
CDKC - Prev. Vo-Rehab.*I	Lame Deer	\$16.22	\$7.74	\$50.00	\$73.96
Flower Grinder	Lame Deer	\$16.22	\$7.74	\$50.00	\$73.96
NC Tribal SchoolBldg. 1713	Busby	\$9.31	\$14.27	\$50.00	\$73.58
NC Tribal SchoolBldg. 1714	Busby	\$9.31	\$14.27	\$50.00	\$73.58
US Postal Service Busby	Busby	\$23.14	\$0.00	\$50.00	\$73.14
NCTH Ross Grant	Lame Deer	\$23.14	\$0.00	\$50.00	\$73.14
NCT Ashland Comm Hall *I	Ashland	\$12.77	\$7.50	\$50.00	\$70.27
NCT BOH - Ambulance Serv. Garage	Lame Deer	\$13.50	\$5.40	\$50.00	\$68.90
NCT Solid Waste	Lame Deer	\$10.80	\$0.00	\$50.00	\$60.80
NCT (New Apostolic Ch) *I	Birney	\$0.00	\$0.00	\$10.00	\$10.00
NCT (Catholic Church)*I	Birney	\$0.00	\$0.00	\$10.00	\$10.00

Scenario 3: Raise All Rates by the Same Percentage

Non-Residential	Location	Water	Sewer	Standard	Monthly
Indian Health Service - Clinic	Lame Deer	\$1,449.48	\$767.71	\$108.25	\$2,325.44
NCTH SB Complex	Lame Deer	\$1,230.46	\$793.85	\$12.03	\$2,036.34
NC Tribal SchoolGym	Busby	\$555.75	\$394.40	\$108.25	\$1,058.40
Lame Deer Pub Sch - Main	Lame Deer	\$386.46	\$405.95	\$108.25	\$900.66
Lame Deer Pub Sch - Gym	Lame Deer	\$356.22	\$205.78	\$108.25	\$670.25
BIA Youth Detention Center	Busby	\$0.00	\$547.65	\$108.25	\$655.91
BIA - Law Enforcement	Lame Deer	\$243.84	\$166.49	\$108.25	\$518.58
NCT Tribal Office	Lame Deer	\$219.04	\$150.77	\$108.25	\$478.07
NCT Charging Horse Casino	Lame Deer	\$206.57	\$162.55	\$108.25	\$477.38
CDKC - Main A	Lame Deer	\$227.36	\$123.26	\$108.25	\$458.87
NCTH Elderly Program	Lame Deer	\$236.77	\$111.47	\$108.25	\$456.49
Boys & Girls Club of NC Nation	Lame Deer	\$206.57	\$119.60	\$108.25	\$434.42
NCT Headstart - Adm.	Lame Deer	\$181.63	\$103.62	\$108.25	\$393.50
CDKC - Main B	Lame Deer	\$177.48	\$107.54	\$108.25	\$393.27
NCT BOH - Main	Lame Deer	\$156.69	\$99.68	\$108.25	\$364.62
BIA - Adm.	Lame Deer	\$152.53	\$101.21	\$108.25	\$361.99
NCT Rosebud Lodge	Busby	\$144.22	\$76.11	\$108.25	\$328.58
CDKC - Daycare	Lame Deer	\$135.91	\$64.32	\$108.25	\$308.47
Blessed Sacrament Catholic Church	Lame Deer	\$169.16	\$99.68	\$36.08	\$304.92
NCT Cheyenne Depot	Lame Deer	\$123.44	\$56.46	\$108.25	\$288.15
NCT Lil Eagle Headstart	Busby	\$106.81	\$60.39	\$108.25	\$275.45
NCT Headstart - Rainbow	Lame Deer	\$106.81	\$60.39	\$108.25	\$275.45
NCT BOH - Fitness Center	Lame Deer	\$90.18	\$76.11	\$108.25	\$274.54
NCT Cheyenne Ave. Laundromat	Lame Deer	\$90.21	\$87.32	\$84.20	\$261.73
NC Tribal SchoolAdm.	Busby	\$94.34	\$56.46	\$108.25	\$259.05
NCT Headstart - Lil Cheyenne	Lame Deer	\$98.49	\$48.60	\$108.25	\$255.34
Lame Deer Trading Post	Lame Deer	\$106.81	\$25.03	\$108.25	\$240.09
NCT Prosecution	Lame Deer	\$81.87	\$48.60	\$108.25	\$238.72
NC Tribal SchoolSchool	Busby	\$90.18	\$36.81	\$108.25	\$235.24
People's Partnership	Lame Deer	\$97.43	\$29.23	\$108.25	\$234.91
NCT BOH- Ambulance Serv. Office	Lame Deer	\$94.18	\$22.73	\$108.25	\$225.16
NCT Tribal Historic Pres	Lame Deer	\$77.94	\$38.97	\$108.25	\$225.16
NCT BOH - Prevention Center	Lame Deer	\$77.71	\$36.81	\$108.25	\$222.77
NCT BOH - Wellness Center	Lame Deer	\$73.55	\$40.75	\$108.25	\$222.55
Robinson, Tom	Lame Deer	\$89.85	\$19.49	\$108.25	\$217.59
NCT Land Authority	Lame Deer	\$38.97	\$64.95	\$108.25	\$212.17
Lame Deer Pub Sch - Altern Ed	Lame Deer	\$65.24	\$40.75	\$84.20	\$190.18
NCT E.P.D.	Lame Deer	\$31.98	\$44.67	\$108.25	\$184.91

Non-Residential	Location	Water	Sewer	Standard	Monthly
US Postal Service Lame Deer	Lame Deer	\$56.93	\$40.75	\$84.20	\$181.87
NCT Headstart - ABC	Lame Deer	\$65.24	\$28.95	\$84.20	\$178.39
NCT Headstart - Can Do	Lame Deer	\$65.24	\$28.95	\$84.20	\$178.39
BIA - Forestry 2	Lame Deer	\$52.77	\$40.75	\$84.20	\$177.71
NCT Food Distribution	Lame Deer	\$52.77	\$33.30	\$84.20	\$170.26
NCT LIHEAP/HIP	Lame Deer	\$56.93	\$25.03	\$84.20	\$166.15
NCT Dept. of Transportation	Lame Deer	\$52.77	\$25.03	\$84.20	\$161.99
NCT MSU Extension Service	Lame Deer	\$48.61	\$28.95	\$84.20	\$161.76
CDKC - Library	Lame Deer	\$44.46	\$32.88	\$84.20	\$161.53
NCT Lube Center	Lame Deer	\$54.49	\$46.55	\$60.14	\$161.18
BIA - Forestry 1	Lame Deer	\$48.61	\$25.03	\$84.20	\$157.84
CDKC - Cultural Bldg	Lame Deer	\$40.30	\$28.95	\$84.20	\$153.45
Mike's Tool Box	Lame Deer	\$64.23	\$20.93	\$60.14	\$145.30
Morning Star Baptist Church	Lame Deer	\$65.24	\$40.75	\$36.08	\$142.07
NCTH Hse N Offie	Lame Deer	\$55.21	\$0.00	\$84.20	\$139.40
NCT Dev. Corp	Lame Deer	\$38.97	\$35.72	\$60.14	\$134.83
Lame Deer Pentecostal Church	Lame Deer	\$61.08	\$32.88	\$36.08	\$130.05
NCT Forestry Development	Lame Deer	\$44.46	\$21.09	\$60.14	\$125.68
NCT Motor Pool	Lame Deer	\$44.46	\$21.09	\$60.14	\$125.68
NCTH Main Office	Lame Deer	\$65.24	\$0.00	\$60.14	\$125.38
NCTH Maint. Dept.	Lame Deer	\$65.24	\$0.00	\$60.14	\$125.38
NCTH Maint. Shop	Lame Deer	\$65.24	\$0.00	\$60.14	\$125.38
CDKC - Café	Lame Deer	\$36.14	\$28.95	\$60.14	\$125.24
Lame Deer Menn. Church	Lame Deer	\$40.30	\$45.11	\$36.08	\$121.49
NCT Tribal Education	Lame Deer	\$36.14	\$21.09	\$60.14	\$117.37
CDKC - VoTech	Lame Deer	\$56.93	\$0.00	\$60.14	\$117.07
NCT Tribal Court	Lame Deer	\$36.14	\$17.16	\$60.14	\$113.44
Ind. Bir. Baptist Church *I	Birney	\$73.55	\$0.00	\$36.08	\$109.64
NC Tribal SchoolTransportation	Busby	\$31.98	\$17.16	\$60.14	\$109.29
First Interstate Bank	Lame Deer	\$31.98	\$17.16	\$60.14	\$109.29
Lame Deer Pub Sch - Bus Shop	Lame Deer	\$25.98	\$22.73	\$60.14	\$108.85
NCT BOH - D.E.S.	Lame Deer	\$35.72	\$12.99	\$60.14	\$108.85
NIWRC	Lame Deer	\$31.98	\$13.24	\$60.14	\$105.36
NCT Birney Comm Hall *I	Birney	\$43.16	\$0.00	\$60.14	\$103.30
Pentecostal Church of Busby	Busby	\$44.46	\$21.09	\$36.08	\$101.63
NCTH OPA	Lame Deer	\$31.98	\$9.31	\$60.14	\$101.43
NC Ministerial Assoc.	Lame Deer	\$40.30	\$25.03	\$36.08	\$101.41
BIA - Fire Management	Lame Deer	\$19.51	\$21.09	\$60.14	\$100.74
Circle of Life Lutheran Church	Muddy Cluster	\$61.31	\$0.00	\$36.08	\$97.40
Lame Deer Pub Sch - Maint. Shop	Lame Deer	\$23.67	\$13.24	\$60.14	\$97.05

Non-Residential	Location	Water	Sewer	Standard	Monthly
NC Tribal SchoolMaint. Shop	Busby	\$19.51	\$17.16	\$60.14	\$96.82
BIA - Fac. Management	Lame Deer	\$19.51	\$17.16	\$60.14	\$96.82
Busby Assembly Church of God	Busby	\$40.30	\$17.16	\$36.08	\$93.54
Christ the King Church of Busby	Busby	\$40.30	\$17.16	\$36.08	\$93.54
Range Telephone Coop	Lame Deer	\$23.67	\$9.31	\$60.14	\$93.12
White River Chey Menn Church	Busby	\$56.93	\$0.00	\$36.08	\$93.01
NCT Fire Dept.	Lame Deer	\$19.51	\$13.24	\$60.14	\$92.89
BIA - Roads Dept.	Lame Deer	\$15.36	\$17.16	\$60.14	\$92.66
Lame Deer Pub Sch - Daycare *1	Lame Deer	\$19.49	\$9.74	\$60.14	\$89.37
CDKC - Prev. Vo-Rehab.*I	Lame Deer	\$19.51	\$9.31	\$60.14	\$88.96
Flower Grinder	Lame Deer	\$19.51	\$9.31	\$60.14	\$88.96
NC Tribal SchoolBldg. 1713	Busby	\$11.20	\$17.16	\$60.14	\$88.50
NC Tribal SchoolBldg. 1714	Busby	\$11.20	\$17.16	\$60.14	\$88.50
US Postal Service Busby	Busby	\$27.83	\$0.00	\$60.14	\$87.97
NCTH Ross Grant	Lame Deer	\$27.83	\$0.00	\$60.14	\$87.97
NCT Ashland Comm Hall *I	Ashland	\$15.36	\$9.02	\$60.14	\$84.52
NCT BOH - Ambulance Serv. Garage	Lame Deer	\$16.24	\$6.50	\$60.14	\$82.87
NCT Solid Waste	Lame Deer	\$12.99	\$0.00	\$60.14	\$73.13
NCT (New Apostolic Ch) *I	Birney	\$0.00	\$0.00	\$12.03	\$12.03
NCT (Catholic Church)*I	Birney	\$0.00	\$0.00	\$12.03	\$12.03

Scenario 4: Raise Residential Full and Non-Residential Rates by the Same Percentage and Maintain Current Elder Rates

Non-Residential	Location	Water	Sewer	Standard	Monthly
Indian Health Service - Clinic	Lame Deer	\$1,471.59	\$779.42	\$109.90	\$2,360.92
NCTH SB Complex	Lame Deer	\$1,249.24	\$805.96	\$12.21	\$2,067.41
NC Tribal SchoolGym	Busby	\$564.23	\$400.42	\$109.90	\$1,074.55
Lame Deer Pub Sch - Main	Lame Deer	\$392.36	\$412.14	\$109.90	\$914.40
Lame Deer Pub Sch - Gym	Lame Deer	\$361.66	\$208.92	\$109.90	\$680.48
BIA Youth Detension Center	Busby	\$0.00	\$556.01	\$109.90	\$665.91
BIA - Law Enforcement	Lame Deer	\$247.56	\$169.03	\$109.90	\$526.50
NCT Tribal Office	Lame Deer	\$222.39	\$153.07	\$109.90	\$485.36
NCT Charging Horse Casino	Lame Deer	\$209.73	\$165.03	\$109.90	\$484.66
CDKC - Main A	Lame Deer	\$230.83	\$125.14	\$109.90	\$465.87
NCTH Elderly Program	Lame Deer	\$240.38	\$113.17	\$109.90	\$463.46
Boys & Girls Club of NC Nation	Lame Deer	\$209.73	\$121.42	\$109.90	\$441.05
NCT Headstart - Adm.	Lame Deer	\$184.40	\$105.20	\$109.90	\$399.51
CDKC - Main B	Lame Deer	\$180.18	\$109.19	\$109.90	\$399.27
NCT BOH - Main	Lame Deer	\$159.08	\$101.20	\$109.90	\$370.18
BIA - Adm.	Lame Deer	\$154.86	\$102.75	\$109.90	\$367.52
NCT Rosebud Lodge	Busby	\$146.42	\$77.27	\$109.90	\$333.59
CDKC - Daycare	Lame Deer	\$137.98	\$65.30	\$109.90	\$313.18
Blessed Sacrament Catholic Church	Lame Deer	\$171.74	\$101.20	\$36.63	\$309.58
NCT Cheyenne Depot	Lame Deer	\$125.32	\$57.33	\$109.90	\$292.55
NCT Lil Eagle Headstart	Busby	\$108.44	\$61.31	\$109.90	\$279.65
NCT Headstart - Rainbow	Lame Deer	\$108.44	\$61.31	\$109.90	\$279.65
NCT BOH - Fitness Center	Lame Deer	\$91.56	\$77.27	\$109.90	\$278.73
NCT Cheyenne Ave. Laundromat	Lame Deer	\$91.59	\$88.66	\$85.48	\$265.72
NC Tribal SchoolAdm.	Busby	\$95.78	\$57.33	\$109.90	\$263.01
NCT Headstart - Lil Cheyenne	Lame Deer	\$100.00	\$49.34	\$109.90	\$259.24
Lame Deer Trading Post	Lame Deer	\$108.44	\$25.41	\$109.90	\$243.75
NCT Prosecution	Lame Deer	\$83.12	\$49.34	\$109.90	\$242.36
NC Tribal SchoolSchool	Busby	\$91.56	\$37.37	\$109.90	\$238.83
People's Partnership	Lame Deer	\$98.91	\$29.67	\$109.90	\$238.49
NCT BOH- Ambulance Serv. Office	Lame Deer	\$95.62	\$23.08	\$109.90	\$228.60
NCT Tribal Historic Pres	Lame Deer	\$79.13	\$39.57	\$109.90	\$228.60
NCT BOH - Prevention Center	Lame Deer	\$78.90	\$37.37	\$109.90	\$226.17
NCT BOH - Wellness Center	Lame Deer	\$74.68	\$41.37	\$109.90	\$225.95
Robinson, Tom	Lame Deer	\$91.22	\$19.78	\$109.90	\$220.91
NCT Land Authority	Lame Deer	\$39.57	\$65.94	\$109.90	\$215.41
Lame Deer Pub Sch - Altern Ed	Lame Deer	\$66.24	\$41.37	\$85.48	\$193.08

Non-Residential	Location	Water	Sewer	Standard	Monthly
NCT E.P.D.	Lame Deer	\$32.47	\$45.35	\$109.90	\$187.73
US Postal Service Lame Deer	Lame Deer	\$57.79	\$41.37	\$85.48	\$184.64
NCT Headstart - ABC	Lame Deer	\$66.24	\$29.40	\$85.48	\$181.11
NCT Headstart - Can Do	Lame Deer	\$66.24	\$29.40	\$85.48	\$181.11
BIA - Forestry 2	Lame Deer	\$53.57	\$41.37	\$85.48	\$180.42
NCT Food Distribution	Lame Deer	\$53.57	\$33.81	\$85.48	\$172.86
NCT LIHEAP/HIP	Lame Deer	\$57.79	\$25.41	\$85.48	\$168.68
NCT Dept. of Transporation	Lame Deer	\$53.57	\$25.41	\$85.48	\$164.46
NCT MSU Extension Service	Lame Deer	\$49.35	\$29.40	\$85.48	\$164.23
CDKC - Library	Lame Deer	\$45.13	\$33.38	\$85.48	\$164.00
NCT Lube Center	Lame Deer	\$55.32	\$47.26	\$61.06	\$163.63
BIA - Forestry 1	Lame Deer	\$49.35	\$25.41	\$85.48	\$160.24
CDKC - Cultural Bldge	Lame Deer	\$40.91	\$29.40	\$85.48	\$155.79
Mike's Tool Box	Lame Deer	\$65.21	\$21.25	\$61.06	\$147.51
Morning Star Baptist Church	Lame Deer	\$66.24	\$41.37	\$36.63	\$144.24
NCTH Hse N Offie	Lame Deer	\$56.05	\$0.00	\$85.48	\$141.53
NCT Dev. Corp	Lame Deer	\$39.57	\$36.27	\$61.06	\$136.89
Lame Deer Pentecostal Church	Lame Deer	\$62.01	\$33.38	\$36.63	\$132.03
NCT Forestry Development	Lame Deer	\$45.13	\$21.41	\$61.06	\$127.60
NCT Motor Pool	Lame Deer	\$45.13	\$21.41	\$61.06	\$127.60
NCTH Main Office	Lame Deer	\$66.24	\$0.00	\$61.06	\$127.29
NCTH Maint. Dept.	Lame Deer	\$66.24	\$0.00	\$61.06	\$127.29
NCTH Maint. Shop	Lame Deer	\$66.24	\$0.00	\$61.06	\$127.29
CDKC - Café	Lame Deer	\$36.69	\$29.40	\$61.06	\$127.15
Lame Deer Menn. Church	Lame Deer	\$40.91	\$45.79	\$36.63	\$123.34
NCT Tribal Education	Lame Deer	\$36.69	\$21.41	\$61.06	\$119.16
CDKC - VoTech	Lame Deer	\$57.79	\$0.00	\$61.06	\$118.85
NCT Tribal Court	Lame Deer	\$36.69	\$17.42	\$61.06	\$115.17
Ind. Bir. Baptist Church *I	Birney	\$74.68	\$0.00	\$36.63	\$111.31
NC Tribal SchoolTransportation	Busby	\$32.47	\$17.42	\$61.06	\$110.95
First Interstate Bank	Lame Deer	\$32.47	\$17.42	\$61.06	\$110.95
Lame Deer Pub Sch - Bus Shop	Lame Deer	\$26.38	\$23.08	\$61.06	\$110.51
NCT BOH - D.E.S.	Lame Deer	\$36.27	\$13.19	\$61.06	\$110.51
NIWRC	Lame Deer	\$32.47	\$13.44	\$61.06	\$106.97
NCT Birney Comm Hall *I	Birney	\$43.81	\$0.00	\$61.06	\$104.87
Pentecostal Church of Busby	Busby	\$45.13	\$21.41	\$36.63	\$103.18
NCTH OPA	Lame Deer	\$32.47	\$9.45	\$61.06	\$102.98
NC Ministerial Assoc.	Lame Deer	\$40.91	\$25.41	\$36.63	\$102.96
BIA - Fire Management	Lame Deer	\$19.81	\$21.41	\$61.06	\$102.28
Circle of Life Lutheran Church	Muddy Cluster	\$62.25	\$0.00	\$36.63	\$98.88

Non-Residential	Location	Water	Sewer	Standard	Monthly
Lame Deer Pub Sch - Maint. Shop	Lame Deer	\$24.03	\$13.44	\$61.06	\$98.53
NC Tribal SchoolMaint. Shop	Busby	\$19.81	\$17.42	\$61.06	\$98.29
BIA - Fac. Management	Lame Deer	\$19.81	\$17.42	\$61.06	\$98.29
Busby Assembly Church of God	Busby	\$40.91	\$17.42	\$36.63	\$94.97
Christ the King Church of Busby	Busby	\$40.91	\$17.42	\$36.63	\$94.97
Range Telephone Coop	Lame Deer	\$24.03	\$9.45	\$61.06	\$94.54
White River Chey Menn Church	Busby	\$57.79	\$0.00	\$36.63	\$94.43
NCT Fire Dept.	Lame Deer	\$19.81	\$13.44	\$61.06	\$94.31
BIA - Roads Dept.	Lame Deer	\$15.59	\$17.42	\$61.06	\$94.07
Lame Deer Pub Sch - Daycare *1	Lame Deer	\$19.78	\$9.89	\$61.06	\$90.73
CDKC - Prev. Vo-Rehab.*I	Lame Deer	\$19.81	\$9.45	\$61.06	\$90.32
Flower Grinder	Lame Deer	\$19.81	\$9.45	\$61.06	\$90.32
NC Tribal SchoolBldg. 1713	Busby	\$11.37	\$17.42	\$61.06	\$89.85
NC Tribal SchoolBldg. 1714	Busby	\$11.37	\$17.42	\$61.06	\$89.85
US Postal Service Busby	Busby	\$28.25	\$0.00	\$61.06	\$89.31
NCTH Ross Grant	Lame Deer	\$28.25	\$0.00	\$61.06	\$89.31
NCT Ashland Comm Hall *I	Ashland	\$15.59	\$9.16	\$61.06	\$85.81
NCT BOH - Ambulance Serv. Garage	Lame Deer	\$16.49	\$6.59	\$61.06	\$84.14
NCT Solid Waste	Lame Deer	\$13.19	\$0.00	\$61.06	\$74.25
NCT (New Apostolic Ch) *I	Birney	\$0.00	\$0.00	\$12.21	\$12.21
NCT (Catholic Church)*I	Birney	\$0.00	\$0.00	\$12.21	\$12.21

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