

TOWN OF NEDERLAND

Rate Study for Water & Wastewater Services

Final Report / December 11, 2014





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Ms. Eva Forberger
Treasurer, Town of Nederland
45 West First Street
P.O. Box 396
Nederland, CO 80466

Subject: Rate Study for Water & Wastewater Services

Dear Ms. Forberger:

Raftelis Financial Consultants, Inc. (RFC) is pleased to provide this Water and Wastewater Financial Plan Study Report (Report) for the Town of Nederland (Town) to address current financial challenges the Town is facing and to establish water and wastewater rates that are equitable and recover the revenue requirements for each respective utility.

The major objectives of the study include the following:

1. Develop comprehensive financial plans for the Town's water and wastewater utilities that will ensure adequate long-term funding for the utility operations under a variety of demand forecasting, water supply availability, capital expenditure, and operating expense sensitivities.
2. Analyze the performance of the Town's existing water and wastewater rate structures and develop recommended alternative rate structures designed to achieve the Town's sustainability, financial, and public policy objectives without any reduction in revenue stability.
3. Recommend plant investment fees to fund capital expenditures of the Town's water and wastewater utilities.

The Report summarizes the key findings and recommendations related to the development of the financial plans for Water and Wastewater utilities and the development of the updated rates.

It has been a pleasure working with you, and we thank you and the Town staff for the support provided during the course of this study.

Sincerely,
RAFTELIS FINANCIAL CONSULTANTS, INC.


John Wright
Project Manager



Robert Wadsworth
Consultant

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1. EXECUTIVE SUMMARY

BACKGROUND OF THE STUDY

The Town authorized Raftelis Financial Consultants, Inc. (RFC), to review its financial status and to recommend rate adjustments as necessary to support the Town’s continuing financial viability. This study includes:

1. Develop 10-year financial plan
2. Limited analysis of cost of service
3. Design of 2015 water and sewer rates
4. Design of 2015 water and sewer Plant Investment (PIF) Fees

The Town of Nederland serves approximately 875 water and 650 sewer users. The Town’s water and sewer operations are funding primarily from user rates and sales tax.

Assumptions

RFC incorporated the following key assumptions into the study. Changes in these assumptions could have a material effect on the study findings.

1. Water and Sewer use per account will remain constant
2. Forecast sales tax receipts developed by Town staff
3. Forecast CIP expenditures from recent master plans adjusted by Town staff
4. Costs will increase at the following annual inflation rates:
 - a. Personnel costs (including health insurance) at 4.5%
 - b. All other operation and maintenance (O&M) costs at 3%
 - c. Construction costs at 3%
5. 2015 costs are calculated applying the above inflation factors to the 2014 projected expenses as adjusted by Town staff
6. The Town will maintain an operating reserve equal to at least three months O&M expense
7. The Town will use PIF fee proceeds to fund infrastructure replacement and renewal projects
8. Table 1-1 summarizes annual growth assumptions used in the financial planning model:

Table 1-1: Forecast Annual Growth

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Growth Rate	0.50%	1.00%	1.00%	2.00%	1.00%	0.50%	0.50%	0.50%	0.50%	0.50%

2. WATER UTILITY

WATER FINANCIAL PLAN

RFC developed a ten-year financial plan for the study period 2015 – 2024. Revenue for the water utility is derived from water sales, sales tax, and other miscellaneous sources. Projected water sales revenue under existing rates is inadequate to meet revenue requirements and sustain minimum reserves throughout the study period. Revenue requirements of the water utility include O&M, debt service, and transfers to the capital improvement fund. The water utility currently makes debt service payments on a single water bond. Debt service payments average \$143,000 annually. This bond is fully paid in 2030.

RFC projects that rates may need to be adjusted at the beginning of each fiscal year to produce the water sales revenue shown in the tabulation below to maintain the financial viability of the water utility. RFC recommends annually updating the water utility’s ten-year financial plan to recognize changes in growth, water sales, operating expenses, capital improvement needs, and capital financing requirements.

Below in Table 2-1 are forecast rate revenue increases during the study period.

Table 2-1: Water Utility Forecast Rate Revenue Increases

Year	Revenue From Existing Rates	Revenue Increase	Revenue From Forecast Rate Adjustments	Total
2015	\$360,955	3.0%	\$10,829	\$371,784
2016	363,303	3.0%	22,125	385,428
2017	366,441	3.0%	33,979	400,420
2018	371,927	3.0%	46,680	418,607
2019	374,872	3.0%	59,707	434,579
2020	377,105	3.0%	73,178	450,283
2021	378,279	3.0%	86,956	465,235
2022	380,243	3.0%	101,437	481,680
2023	381,615	0.0%	101,803	483,418
2024	382,789	0.0%	102,117	484,906

WATER COST OF SERVICE

Equitable water rates fairly recover cost of service from each customer class. Determination of cost of service takes into account volume of water used, peak rates of demand, number of customers, fire protection requirements, and other relevant factors. Water customers in the Town have minimal outdoor irrigation demand and based on analysis of historical customer usage data, there is a minimal difference in max to average peak loads between the residential (1.08) and non-residential (1.24) classes. Additionally, the Town has a new treatment plant with limited operating history which hinders estimates of total system demands and limited asset accounting records reduce the potential to properly functionalize costs.

With no reasonable basis for allocating costs between residential and non-residential customers, RFC recommends that both classes should pay the same average rate per thousand gallons, with one exception. Non-residential customers impose marginally higher billing and collection costs as they are billed monthly compared to quarterly for residential customers.

WATER RATE DESIGN

Existing water rates have been in effect since January 1, 2014 and have the following structure:

- Monthly base charge per user
- Uniform volume charge per thousand gallons
- Residential and Non-Residential rates are the same

RFC explored the possibility of introducing a tiered volumetric rate structure for residential customers. This type of structure helps promote conservation, as rates in the higher usage blocks are more expensive. The Board considered this alternative but ultimately decided to maintain the current uniform volume rate structure.

RFC developed three 2015 water rate structure alternatives that use the existing structure and increase annual water service revenue by 3.0 percent. The proposed rates take into consideration additional billing costs related to non-residential customers who are billed monthly compared to quarterly for residential customers. The result is a slightly higher base charge for non-residential customers. The three alternatives differ in the percentage of revenue recovered through base and volumetric charges. Table 2-2 shows the three rate alternatives.

Table 2-2: Proposed Residential Volumetric Usage Blocks

Class	Charge	2014 Existing Rates	2015 Alt 1 Rates – Aggressive Conservation	2015 Alt 2 Rates – Midpoint Conservation	2015 Alt 3 Rates – Low Conservation
Residential	Base	\$16.50	\$5.78	\$10.78	\$15.78
	Volume	6.00	9.81	8.13	6.46
Commercial	Base	16.50	8.13	13.13	18.13
	Volume	6.00	9.81	8.13	6.46

ADOPTED WATER RATES

The Town Board adopted the Alternative 2 – Midpoint Conservation water rates from Table 2-2. This rate structure recovers more revenue from the volumetric charge compared to the current rate structure while increasing forecast revenue by 3.0 percent. Table 2-3 summarizes the existing 2014 and adopted 2015 water rates.

Table 2-3: 2014 Existing vs 2015 Adopted Water Rates

Customer Class	Charge	2014 Existing Rates	2015 Proposed Rates	% Change
Residential	Base	\$16.50	\$10.78	-35%
	Volume	\$6.00	\$8.13	36%
Commercial	Base	\$16.50	\$13.13	-20%
	Volume	\$6.00	\$8.13	36%

WATER PLANT INVESTMENT FEES

The City charges water Plant Investment (PIF) fees to all new connectors. This fee is intended to recover the new connector’s proportionate share of the Town’s water backbone facility and water resource costs. The current PIF fees have been in effect since October 26, 1999.

The PIF fee calculations performed in this study are based on the system buy-in method. This method is based on the concept that existing customers, through rates and other assessments, have developed a valuable water system. A new customer must “buy-in” to this system by making a contribution equal to the amount of equity a similar existing customer has in the system.

Using this method, RFC calculated a maximum water PIF fee of \$18,505 for a ¾” meter. To reduce the impact on new customers, the Town Board adopted a water PIF fee of \$14,804, or 80% of the maximum calculated PIF, to reduce the impact on new customers. Table 2-4 summarizes the existing and adopted water PIF fees by meter size.

Table 2-4: Water PIF Fees

Meter Size	Existing	Adopted	% Increase
¾"	\$5,214	\$14,804	184%
1"	8,650	24,560	184%
1.5"	17,380	49,347	184%
2"	27,808	78,956	184%
3"	49,533	140,640	184%
4"	86,900	246,737	184%

3. WASTEWATER UTILITY

WASTEWATER FINANCIAL PLAN

RFC developed a ten-year financial plan for the study period 2015 – 2024. Revenue for the wastewater utility is derived from service charges, sales tax, and other miscellaneous sources. Projected wastewater service revenue under existing rates is inadequate to meet revenue requirements and sustain minimum reserves throughout the study period. Revenue requirements of the wastewater utility include O&M, debt service, and transfers to the capital improvement fund. The wastewater utility currently makes debt service payments on two wastewater bonds. Debt service payments average \$220,000 annually. The bonds are fully paid in 2032.

RFC projects that rates may need to be adjusted at the beginning of each fiscal year to produce the wastewater service revenue shown in the tabulation below to maintain the financial viability of the utility. RFC recommends annually updating the wastewater utility’s ten-year financial plan to recognize changes in growth, operating expenses, capital improvement needs, and capital financing requirements.

Below in Table 3-1 are forecast rate revenue increases during the study period.

Table 3-1: Wastewater Utility Forecast Rate Revenue Increases

Year	Revenue From Existing Rates	Revenue Increase	Revenue From Proposed Rate Adjustments	Total
2015	\$415,851	6.0%	\$24,951	\$440,803
2016	419,485	6.0%	51,848	471,334
2017	424,344	6.0%	81,057	505,401
2018	432,838	4.0%	103,300	536,137
2019	437,091	3.0%	120,557	557,648
2020	440,643	2.0%	132,780	573,423
2021	442,460	1.0%	139,085	581,545
2022	444,882	1.0%	145,694	590,577
2023	447,319	1.0%	152,430	599,749
2024	449,136	1.0%	159,071	608,207

WASTEWATER COST OF SERVICE

In developing an equitable wastewater service rate structure, costs of service are allocated to various customer classes according to the service requirements of each class. Allocation of the costs of service should take into account the quantity of wastewater contributed, strength of wastewater, number of customers, City policies, and other relevant factors.

The Town of Nederland does not test customer discharges rendering it impossible to determine discharge strength differences, if any, between classes. Additionally, the Town has a new wastewater treatment plant with limited operating history which hinders estimates of total system demands and limited asset accounting records reduce the potential to properly functionalize costs. Thus, with no reasonable basis for allocating costs between residential and non-residential customers, RFC recommends that both classes pay the same average rate per thousand gallons, with one exception. Non-residential customers impose marginally higher billing and collection costs as they are billed monthly compared to quarterly for residential customers.

WASTEWATER RATE DESIGN

Existing water rates have been in effect since January 1, 2014 and have the following structure:

- Monthly base charge per user
- Uniform volume charge per thousand gallons
- Residential and Non-Residential rates are the same

RFC developed three 2015 wastewater rate structure alternatives that use the existing structure and increase annual wastewater service revenue by 6.0 percent. The proposed rates also take into consideration additional billing costs related to non-residential customers who are billed monthly compared to quarterly for residential customers. The result is a slightly higher base charge for non-residential customers. The three alternatives differ in the percentage of revenue recovered through base and volumetric charges. Table 3-2 shows the three rate alternatives.

Table 3-2: 2015 Proposed Wastewater Rate Alternatives

Class	Charge	2014 Existing Rates	2015 Alt 1 Rates - Low Base Charge	2015 Alt 2 Rates - Medium Base Charge	2015 Alt 3 Rates - High Base Charge
Residential	Base	\$32.50	\$28.98	\$33.98	\$38.98
	Volume	7.00	8.86	7.22	5.92
Commercial	Base	32.50	31.29	36.29	41.29
	Volume	7.00	8.86	7.22	5.58

ADOPTED WASTEWATER RATES

The Town Board adopted the wastewater rates associated with Alternative 2 from Table 3-2. This rate structure is comparable in structure to the existing rates while increasing forecast revenue by 6.0 percent. Table 3-3 summarizes the existing 2014 and adopted 2015 wastewater rates.

Table 3-3: 2014 Existing vs 2015 Adopted Wastewater Rates

Customer Class	Charge	Existing Rates	2015 Proposed Rates	% Change
Residential	Base	\$32.50	\$33.98	5%
	Volume	7.00	7.22	3%
Commercial	Base	32.50	36.29	12%
	Volume	7.00	7.22	3%

WASTEWATER PLANT INVESTMENT FEES

The City charges wastewater Plant Investment (PIF) fees to all new connectors. This fee is intended to recover the new connector's proportionate share of the Town's wastewater backbone facility costs. The current PIF fees have been in effect since October 26, 1999.

The PIF fee calculations performed in this study are based on the system buy-in method. This method is based on the concept that existing customers, through rates and other assessments, have developed a valuable wastewater system. A new customer must "buy-in" to this system by making a contribution equal to the amount of equity a similar existing customer has in the system. Note this is not the cost to provide new service to the new customer, and when new capacity is needed, all customers will bear the cost.

Using this method, RFC calculated a maximum wastewater PIF fee of \$8,481 for a ¾" meter which the Town Board adopted. Table 3-4 summarizes the existing and proposed wastewater PIF fees by meter size.

Table 3-4: Wastewater PIF Fees

Meter Size	Existing	Adopted	% Increase
¾"	\$5,214	\$8,481	63%
1"	8,650	14,070	63%
1.5"	17,380	28,270	63%
2"	27,808	45,232	63%
3"	49,533	80,570	63%
4"	86,900	141,351	63%