



Executive Report

Peninsula Township, MI
Wastewater Cost of Service and Rate Design Report

September 8, 2021



September 8, 2021

Mr. Brad Bickle
Peninsula Township Treasurer
13235 Center Road
Traverse City, MI 49686

Dear Mr. Bickle,

We are pleased to present this executive summary report for a cost of service, financial projection and rate design study completed for Peninsula Township wastewater operation. This report was prepared to provide the utility with a comprehensive examination of its existing financials by an outside party.

The specific purposes of this long-term financial projection and rate study are:

- 1) Determine the wastewater utility's revenue requirements for 2022-2026,
- 2) Project rate adjustments needed to meet targeted revenue requirements,
- 3) Determine the cost to serve retail customers.

This report includes results of the cost of service, financial projection, and identifies future rate adjustments for the wastewater operation. Specific findings included in this report are:

- 1) Rate adjustments that are based on the utility's ability to work toward three factors listed below:
 - Debt Coverage Ratio
 - Minimum Cash Reserves
 - Optimal Operating Income
- 2) Rate adjustments are designed to work toward cost of service results.

This report is intended for information and use by management and the Board of Directors for purposes stated above and is not intended to be used by anyone except the specified parties.

Sincerely,

Dawn Lund

Utility Financial Solutions, LLC
Dawn Lund, Vice-President

UTILITY REVENUE REQUIREMENTS FOR 2022-2026

To determine revenue requirements, the revenues and expenses for Fiscal Year 2020 and YTD 2021 were analyzed, with adjustments made to reflect projected operating characteristics. **The projected financial statements are for cost of service purposes only.**

Table 1 is the projected financial summary for the water operation from 2022-2026 without any rate adjustments. The projected operating loss is (\$14,414) in 2022 and the losses increase to (\$28,727) in 2026. The revenues include approximately \$12,000 yearly in projected connection fees. The cash balance is projected at \$169,122 by fiscal year end 2022 and decreases to \$64,848 by 2026. Cash is at critical levels. The debt coverage ratio does not meet the targeted minimum for financial planning purposes. Debt drops off after 2025 which helps stabilize the cash balance. The current bonds are general obligation bonds with no specific covenant however, it is good financial practice to strive to meet a revenue bond minimum of at least 1.25.

Table 1 – Financial Projection Summary (Without Rate Adjustments)

| Fiscal Year | Projected Revenues | Projected Expenses | Adjusted Operating Income | Projected Cash Balances | Capital Improvements | Bond Issues | Debt Coverage Ratio |
|---------------------|--------------------|--------------------|---------------------------|-------------------------|----------------------|-------------|---------------------|
| 2022 | \$ 175,313 | \$ 189,727 | \$ (14,414) | \$ 169,122 | \$ 25,000 | - | 0.67 |
| 2023 | 175,348 | 193,028 | (17,681) | 101,790 | 25,000 | - | 0.64 |
| 2024 | 175,383 | 196,666 | (21,282) | 55,438 | 25,000 | - | 0.77 |
| 2025 | 175,420 | 200,384 | (24,964) | 22,915 | 25,000 | - | 0.90 |
| 2026 | 175,458 | 204,185 | (28,727) | 64,848 | 25,000 | - | n/a |
| Target In 2022 | | | \$ 113,791 | | | | |
| Target in 2026 | | | \$ 122,921 | | | | |
| Minimum Target 2022 | | | | \$ 163,797 | | | 1.45 |
| Minimum Target 2026 | | | | \$ 153,982 | | | 1.45 |

1. The five-year capital improvement plan was provided by the Township.
2. As the actual revenues, expenses and capital materialize, the Township will want to monitor the cash balance.
3. Financial projections should be updated during the budgeting process each year as expenses and capital expenditures change from projections.

PROJECTED CASH FLOW

Table 2 is the projected cash flow for 2022-2026, including projections of capital improvements as provided by the Township. Changes in the capital improvement plan can greatly affect the cash balance and minimum cash reserve target. The cash balance for 2022 is projected at \$169,122 and projected to decline. The utility should hold a minimum of approximately \$160,000 in the Wastewater Department, making current cash balances at a critical level.

Table 2 – Projected Cash Flows (Without Rate Adjustments)

| | Projected 2022 | Projected 2023 | Projected 2024 | Projected 2025 | Projected 2026 |
|------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Projected Cash Flows | | | | | |
| Add Net Income | \$ (21,763) | \$ (22,188) | \$ (23,236) | \$ (24,215) | \$ (25,516) |
| Add Back Depreciation Expense | 89,677 | 90,177 | 90,935 | 91,692 | 92,450 |
| Subtract Debt Principal | 106,741 | 110,321 | 89,050 | 75,000 | - |
| Add Bond Sale Proceeds | - | - | - | - | - |
| Cash Available from Operations | \$ (38,827) | \$ (42,332) | \$ (21,352) | \$ (7,523) | \$ 66,934 |
| Estimated Annual Capital Additions | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| Net Cash From Operations | \$ (63,827) | \$ (67,332) | \$ (46,352) | \$ (32,523) | \$ 41,934 |
| Beginning Cash Balance | 232,949 | 169,122 | 101,790 | 55,438 | 22,915 |
| Ending Cash Balance | \$ 169,122 | \$ 101,790 | \$ 55,438 | \$ 22,915 | \$ 64,848 |
| Total Cash Available | \$ 169,122 | \$ 101,790 | \$ 55,438 | \$ 22,915 | \$ 64,848 |
| Targeted Minimum | \$ 163,797 | \$ 183,934 | \$ 172,050 | \$ 152,858 | \$ 153,982 |

Projected Cash Balances are critical.

DEVELOPMENT OF FINANCIAL TARGETS

When evaluating rates to charge customers, three factors must be considered:

1. Debt Coverage Ratio
2. Minimum Cash Reserves
3. Optimal Net Income

Each of these factors is discussed below:

Debt Coverage Ratio - The minimum targeted debt coverage ratio for prudent financial planning purposes is 1.45. The current bonds on the system are general obligation bonds with no specific ratio. Typical revenue bonds require a 1.25 debt coverage ratio; maintaining a 1.45 ratio is good financial planning practice and helps to achieve the following:

- Helps to ensure adequate funds are available to meet debt service payments in years when sales are low due to cold or wet summers or loss of a major customer(s).
- Obtain higher bond rating, if revenue bonds are sold in the future, to lower interest cost

Table 3 - Current Debt Coverage Ratio (Without Rate Adjustments)

| | Projected 2022 | Projected 2023 | Projected 2024 | Projected 2025 | Projected 2026 |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| Debt Coverage Ratio | | | | | |
| Add Net Income | \$ (21,763) | \$ (22,188) | \$ (23,236) | \$ (24,215) | \$ (25,516) |
| Add Depreciation Expense | 89,677 | 90,177 | 90,935 | 91,692 | 92,450 |
| Add Interest Expense | 11,610 | 8,449 | 5,559 | 2,625 | - |
| Cash Available for Debt Service | \$ 79,524 | \$ 76,438 | \$ 73,257 | \$ 70,102 | \$ 66,934 |
| Debt Principal and Interest | \$ 118,351 | \$ 118,770 | \$ 94,608 | \$ 77,625 | \$ - |
| Projected Debt Coverage Ratio (Covenants) | 0.67 | 0.64 | 0.77 | 0.90 | n/a |
| Minimum Debt Coverage Ratio | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |

Debt Coverage Ratios are below targeted minimums. The current issuance is paid off after 2025.

Minimum Cash Reserve - Table 4 is the minimum level of cash reserves required to help ensure timely replacement of assets and to provide financial stability of the wastewater utility. The methodology used to establish this minimum is based on certain assumptions related to a percentage of operating expense, historical investment, capital improvements, and debt service. Minimum cash reserve attempts to quantify the minimum amount of cash the utility should keep in reserve and is considered at critical levels if cash approaches this minimum.

Actual cash reserves may vary substantially above the minimum and is dependent on the life cycle of assets that are currently in service. If a minimum cash reserve policy is established, and the utility's cash balance falls below the established amount, it should require the Board to take action to rebuild cash. The typical action includes a rate increase or the consideration of a bond issuance for extra-ordinary capital spending. Based on these assumptions, the utility should maintain a minimum of approximately \$160,000 in cash reserves.

Table 4 – Minimum Cash Reserves

| | Percent Allocated | Projected 2022 | Projected 2023 | Projected 2024 | Projected 2025 | Projected 2026 |
|---|----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Operation & Maintenance Less Depreciation Expense | 12.3% | \$ 12,306 | \$ 12,651 | \$ 13,005 | \$ 13,369 | \$ 13,743 |
| Historical Rate Base | 1% | 37,413 | 75,326 | 75,826 | 114,489 | 115,239 |
| Current Portion of Debt Service Reserve | 75% | 89,078 | 70,957 | 58,219 | - | - |
| Five Year Capital Improvements - Net of bond proceeds | 20% | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| Minimum Cash Reserve Levels | | \$ 163,797 | \$ 183,934 | \$ 172,050 | \$ 152,858 | \$ 153,982 |
| Projected Cash Reserves | | \$ 168,122 | \$ 101,780 | \$ 66,438 | \$ 22,915 | \$ 64,848 |

Projected cash balances do not meet minimum targets through the projection.

1. Operation and maintenance expenses exclude depreciation expense.
2. Rate base is historical investment in plant and equipment.
3. Five-year capital includes budgeted capital improvements for the next five years and excludes capital improvements funded through debt issuances.

Optimal operating income targets - The optimal target for setting rates is the establishment of a target operating income to help ensure the following:

- 1) Funding of Interest Expense on the outstanding principal on debt. Interest expense is below the operating income line and needs to be recouped through the operating income balance.
- 2) Funding of the inflationary increase on the assets invested in the system. The inflation on the replacement of assets invested in the utility should be recouped through the Operating Income
- 3) Adequate rate of return on investment to help ensure current customers are paying their fair share of the use of the infrastructure and not deferring the charge to future generations.

As improvements are made to the system, the optimal operating income target will increase unless annual depreciation expense is greater than yearly capital improvements. The target established for the projection period is approximately \$120,000. Operating Income falls below the targeted minimum throughout the projection and operating at losses.

Table 5 - Optimal Operating Income Targets Compared to Projected

| | Percent Allocated | Projected 2022 | Projected 2023 | Projected 2024 | Projected 2025 | Projected 2026 |
|--|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Interest Expense on Debt | 4.2% | 11,610 | 8,449 | 5,559 | - | - |
| Inflationary Increase on Assets | 6.4% | 102,181 | 109,583 | 116,097 | 122,121 | 122,921 |
| Target Operating Income | | \$ 113,791 | \$ 118,032 | \$ 121,656 | \$ 122,121 | \$ 122,921 |
| Projected Adjusted Operating Income | | \$ (14,414) | \$ (17,681) | \$ (21,282) | \$ (24,964) | \$ (28,727) |
| Target Rate of Return in % | | 6.1% | 6.5% | 7.0% | 7.3% | 7.6% |

Rate of Return does not meet minimum targets throughout the projection period.

REVENUE FORECAST

Sales were projected and adjusted for known or anticipated changes in customer usage and a growth for the projection period. Table 6 and 7 below projects the billed units and number of REUs.

TABLE 6 – PROJECTED BILLED UNITS

| | |
|--------------|---------------|
| Units | 37,251 |
|--------------|---------------|

TABLE 7 – PROJECTED NUMBER OF REUS

| | |
|------------|------------|
| REU | 577 |
|------------|------------|

SUMMARY OF FINANCIAL POSITION – PROPOSED RATE TRACK

Increasing rates requires balancing the financial health of the utility with the financial impact on customers and cost of service results. Table 8 below is the financial projection summary with the proposed rate track. The current rate has not been raised since 1992. The system is projected to be cash critical.

Suggested rate increases are projected at \$2.25 monthly per end user for the remainder of 2021, upon town board approval, 2022 and 2023 with 2.9% annual increases thereafter to help stabilize cash.

Table 8 – Financial Projection Summary (With Proposed Rate Adjustments)

| Fiscal Year | Projected Revenues | Projected Expenses | Adjusted Operating Income | Projected Cash Balances | Capital Improvements | Bond Issues | Debt Coverage Ratio |
|---------------------|--------------------|--------------------|---------------------------|-------------------------|----------------------|-------------|---------------------|
| 2022 | \$ 189,707 | \$ 189,727 | \$ (20) | \$ 183,517 | \$ 25,000 | - | 0.79 |
| 2023 | 205,562 | 193,028 | 12,533 | 146,470 | 25,000 | - | 0.90 |
| 2024 | 210,690 | 196,666 | 14,024 | 135,649 | 25,000 | - | 1.15 |
| 2025 | 215,967 | 200,384 | 15,583 | 144,074 | 25,000 | - | 1.43 |
| 2026 | 221,397 | 204,185 | 17,213 | 232,553 | 25,000 | - | n/a |
| Target in 2022 | | | \$ 113,791 | | | | |
| Target in 2026 | | | \$ 122,921 | | | | |
| Minimum Target 2022 | | | | \$ 163,797 | | | 1.45 |
| Minimum Target 2026 | | | | \$ 153,982 | | | 1.45 |

COST OF SERVICE RESULTS

The purpose of a cost of service study is to allocate costs between commodity costs and customer costs (Monthly Customer Service Charge). The cost of service study was based on recognized procedures from the American Water Works Association which typically results in a fixed monthly charge progressive by meter size, and a rate for usage.

Commodity Costs are costs that tend to vary with the quantity of wastewater treated, as well as costs associated with the collection system.

Customer Costs are costs associated with serving customers regardless of their usage or demand characteristics. Customer costs include the operation and maintenance expenses related to meters and services, meter reading costs, billing and collection costs. The customer costs were allocated based on the relative size of water meters and services and the number of customers.

Table 9 compares the City of Sturgis's current quarterly customer charge and current commodity rate with results of the cost of service analysis.

Table 9 – Comparison of Current Customer Rates with Actual Cost of Service

| Meter Size | Current Monthly Charges | Cost of Service Monthly Charges |
|------------|-------------------------|---------------------------------|
| 5/8 & 3/4" | \$ 21.00 | \$ 17.66 |
| 1" | 21.00 | 29.43 |
| 1.5" | 21.00 | 58.86 |
| 2" | 21.00 | 94.18 |

| Meter size | Current Consumption Cost | Cost of Service Average Cost 1000 Gallons |
|------------|--------------------------|---|
| Per unit | \$ - | \$ 3.552 |

ASSUMPTIONS

This section outlines the procedures used to develop the cost of service and rate design for the Wastewater Utility and the related significant assumptions.

Forecasted Operating Expenses

Forecasted expenses were based on 2020 and 2021 actual and adjusted for inflation.

Depreciation Expense

Depreciation expense was projected based on historical capital additions and discussions with management on future capital additions.

Interest Income

Interest income was forecasted based on projected cash balances and an interest rate of 0.50%.

Capital Improvements

The capital improvement projections were provided by the Utility. Projections for 2022-2026 are listed below:

| Year | Projected Capital Improvement |
|------|-------------------------------------|
| 2022 | \$ 25,000 |
| 2023 | 25,000 |
| 2024 | 25,000 |
| 2025 | 25,000 |
| 2026 | 25,000 |

WASTEWATER OPERATION FINDINGS

1. For the Township to maintain long-term financial targets of the wastewater utility, rate increases should be considered. Cash is projected to be critical levels. Below is a summary of the financial projection with proposed rate increases of \$2.25 per end use customer for remainder of 2021, upon town board approval, 2022 and 2023 as well as 2.9% annually thereafter. This rate track will stabilize targeted operating income, minimum cash balances as well as debt coverage ratio. The rate track should be reviewed annually as changes in revenues, expenses and capital can affect the proposed rate adjustments.

| Fiscal Year | Projected Revenues | Projected Expenses | Adjusted Operating Income | Projected Cash Balances | Capital Improvements | Bond Issues | Debt Coverage Ratio |
|---------------------|--------------------|--------------------|---------------------------|-------------------------|----------------------|-------------|---------------------|
| 2022 | \$ 189,707 | \$ 189,727 | \$ (20) | \$ 183,517 | \$ 25,000 | - | 0.79 |
| 2023 | 205,562 | 193,028 | 12,533 | 146,470 | 25,000 | - | 0.90 |
| 2024 | 210,690 | 196,666 | 14,024 | 135,649 | 25,000 | - | 1.15 |
| 2025 | 215,967 | 200,384 | 15,583 | 144,074 | 25,000 | - | 1.43 |
| 2026 | 221,397 | 204,185 | 17,213 | 232,553 | 25,000 | - | n/a |
| Target In 2022 | | | \$ 113,791 | | | | |
| Target In 2026 | | | \$ 122,921 | | | | |
| Minimum Target 2022 | | | | \$ 163,797 | | | |
| Minimum Target 2026 | | | | \$ 153,982 | | | |

2. A cash reserve policy should be considered based on the following formula:

| | Percent Allocated | Projected 2022 | Projected 2023 | Projected 2024 | Projected 2025 | Projected 2026 |
|---|-------------------|----------------|----------------|----------------|----------------|----------------|
| Operation & Maintenance Less Depreciation Expense | 12.3% | \$ 12,306 | \$ 12,851 | \$ 13,005 | \$ 13,369 | \$ 13,743 |
| Historical Rate Base | 1% | 37,413 | 75,326 | 75,826 | 114,489 | 115,239 |
| Current Portion of Debt Service Reserve | 75% | 89,078 | 70,957 | 58,219 | - | - |
| Five Year Capital Improvements - Net of bond proceeds | 20% | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| Minimum Cash Reserve Levels | | \$ 163,797 | \$ 183,934 | \$ 172,050 | \$ 152,858 | \$ 153,982 |

Rate Design at Proposed Structure Conclusion

If the Board chooses to adopt the proposed rate structure, the charge per REU would move from \$21.00 to \$23.25 or \$2.25 per month. The table below lists the rates for 2022-2026 however, the projection should be updated every year with the budget process to ensure the rates are sufficient.

| | Current Charge Per REU | Proposed with Increase | Increase to AVG Customer |
|--------|------------------------|------------------------|--------------------------|
| Jan-22 | \$ 21.00 | \$ 23.25 | \$ 2.25 |
| Jan-23 | 23.25 | 25.50 | 2.25 |
| Jan-24 | 25.50 | 26.25 | 0.75 |
| Jan-25 | 26.25 | 27.00 | 0.75 |
| Jan-26 | 27.00 | 27.75 | 0.75 |

Executive Report

Peninsula P, MI

Water Cost of Service and Rate Design Report

September 8, 2021

September 8, 2021

**Mr. Brad Bickle
Peninsula Township Treasurer
13235 Center Road
Traverse City, MI 49686**

Dear Mr. Bickle,

We are pleased to present this executive summary report for a cost of service, financial projection and rate design study completed for Peninsula Township water operation. This report was prepared to provide the utility with a comprehensive examination of its existing financials by an outside party.

The specific purposes of this long-term financial projection and rate study are:

- 1) Determine the water utility's revenue requirements for 2022-2026,**
- 2) Project rate adjustments needed to work toward targeted revenue requirements,**
- 3) Determine the cost to serve retail customers.**

This report includes results of the cost of service, financial projection, and identifies future rate adjustments for the water operation. Specific findings included in this report are:

- 1) Rate adjustments that are based on the utility's ability to work toward three factors listed below:**
 - Debt Coverage Ratio**
 - Minimum Cash Reserves**
 - Optimal Operating Income**
- 2) Rate adjustments are designed to work toward cost of service results.**

This report is intended for information and use by management and the Board of Directors for purposes stated above and is not intended to be used by anyone except the specified parties.

Sincerely,

Dawn Lund

**Utility Financial Solutions, LLC
Dawn Lund, Vice-President**

UTILITY REVENUE REQUIREMENTS FOR 2022-2026

To determine revenue requirements, the revenues and expenses for Fiscal Year 2020 and YTD 2021 were analyzed, with adjustments made to reflect projected operating characteristics. *The projected financial statements are for cost of service purposes only.*

Table 1 is the projected financial summary for the water operation from 2022-2026 without any rate adjustments. The projected operating income is \$36,537 in 2022 and decreases to \$2,164 in 2026. The revenues include approximately \$30,000 yearly in projected connection fees. The cash balance is projected at \$56,813 by fiscal year end 2022 and decreases to (\$317,532) by 2026. Cash is at critical levels. The debt coverage ratio does not meet the targeted minimum for financial planning purposes. The current bonds are general obligation bonds with no specific covenant however, it is good financial practice to strive to meet a revenue bond minimum of at least 1.25.

Table 1 – Financial Projection Summary (Without Rate Adjustments and With Bond Issues)

| Fiscal Year | Projected Revenues | Projected Expenses | Adjusted Operating Income | Projected Cash Balances | Capital Improvements | Bond Issues | Debt Coverage Ratio |
|---------------------------------|--------------------|--------------------|---------------------------|-------------------------|----------------------|-------------|---------------------|
| 2022 | \$ 339,093 | \$ 302,556 | \$ 36,537 | \$ 56,813 | \$ 25,000 | - | 0.62 |
| 2023 | 339,739 | 309,662 | 30,077 | (54,959) | 25,000 | - | 0.60 |
| 2024 | 340,386 | 316,439 | 23,947 | (173,875) | 25,000 | - | 0.57 |
| 2025 | 340,589 | 323,384 | 17,205 | (237,839) | 25,000 | - | 0.75 |
| 2026 | 332,667 | 330,503 | 2,164 | (317,532) | 25,000 | - | 0.65 |
| Targeted MINIMUM in 2022 | | | \$ 123,876 | \$ 205,002 | | | 1.25/1.45 |
| Targeted MINIMUM in 2026 | | | \$ 139,930 | \$ 220,338 | | | 1.25/1.45 |

Projected operating income, cash balances and debt coverage ratio decrease and do not meet targeted minimums.

1. The five-year capital improvement plan was provided by the Township.
2. Financial projections should be updated during the budgeting process each year as revenues, expenses and capital expenditures change from projections.

PROJECTED CASH FLOW

Table 2 is the projected cash flow for 2022-2026, including projections of capital improvements as provided by the Township. Changes in the capital improvement plan can greatly affect the cash balance and minimum cash reserve target. The cash balance for 2022 is projected at \$56,813 and projected to go negative in 2023; decreasing further to (\$317,532) by 2026. The utility should hold a minimum of \$220,000 in the Water Department, making current cash balances at a critical level.

Table 2 - Projected Cash Flows (Without Rate Adjustments)

| Projected Cash Flows | Projected 2022 | Projected 2023 | Projected 2024 | Projected 2025 | Projected 2026 |
|------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Add Net Income | \$ 11,221 | \$ 8,722 | \$ 6,841 | \$ 4,835 | \$ (6,652) |
| Add Back Depreciation Expense | 93,436 | 94,686 | 95,444 | 96,201 | 96,959 |
| Subtract Debt Principal | 185,179 | 190,179 | 196,201 | 140,000 | 145,000 |
| Add Bond Sale Proceeds | - | - | - | - | - |
| Cash Available from Operations | \$ (80,523) | \$ (86,772) | \$ (93,916) | \$ (38,964) | \$ (54,693) |
| Estimated Annual Capital Additions | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| Net Cash From Operations | \$ (105,523) | \$ (111,772) | \$ (118,916) | \$ (63,964) | \$ (79,693) |
| Beginning Cash Balance | 162,336 | 56,813 | (54,959) | (173,875) | (237,839) |
| Ending Cash Balance | \$ 56,813 | \$ (54,959) | \$ (173,875) | \$ (237,839) | \$ (317,532) |
| Total Cash Available | 56,813 | (54,959) | (173,875) | (237,839) | (317,532) |
| Targeted Minimum | 205,002 | 206,716 | 216,138 | 218,274 | 220,338 |

Current cash balances are critical.

DEVELOPMENT OF KEY FINANCIAL TARGETS

When evaluating rates to charge customers, three factors must be considered:

1. Debt Coverage Ratio
2. Minimum Cash Reserves
3. Optimal Net Income

Each of these factors is discussed below:

Debt Coverage Ratio - The minimum targeted debt coverage ratio for prudent financial planning purposes is 1.45. The current bonds on the system are general obligation bonds with no specific ratio. Typical revenue bonds require a 1.25 debt coverage ratio; maintaining a 1.45 ratio is good financial planning practice and helps to achieve the following:

- Helps to ensure adequate funds are available to meet debt service payments in years when sales are low due to cold or wet summers or loss of a major customer(s).
- Obtain higher bond rating, if revenue bonds are sold in the future, to lower interest cost.

Table 3 – Projected Debt Coverage Ratios – (Without Rate Adjustments)

| | Projected 2022 | Projected 2023 | Projected 2024 | Projected 2025 | Projected 2026 |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| Debt Coverage Ratio | | | | | |
| Add Net Income | \$ 11,221 | \$ 8,722 | \$ 6,841 | \$ 4,835 | \$ (6,652) |
| Add Depreciation Expense | 93,436 | 94,686 | 95,444 | 96,201 | 96,959 |
| Add Interest Expense | 29,224 | 24,871 | 20,337 | 15,600 | 12,100 |
| Cash Available for Debt Service | \$ 133,881 | \$ 128,278 | \$ 122,622 | \$ 116,637 | \$ 102,408 |
| Debt Principal and Interest | \$ 214,404 | \$ 215,050 | \$ 216,538 | \$ 155,600 | \$ 157,100 |
| Projected Debt Coverage Ratio (Covenants) | 0.62 | 0.60 | 0.57 | 0.75 | 0.65 |
| Minimum Debt Coverage Ratio | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |

Debt Coverage Ratios are below targeted minimums. The current bonds do not have a specific coverage requirement, but prudent financial planning should work toward these minimums.

Minimum Cash Reserve - Table 4 is the minimum level of cash reserves required to help ensure timely replacement of assets and to provide financial stability of the water utility. The methodology used to establish this minimum is based on certain assumptions related to a percentage of operating expense, historical investment, capital improvements, and debt service. Minimum cash reserve attempts to quantify the minimum amount of cash the utility should keep in reserve, and is considered at critical levels if cash approaches this minimum.

Actual cash reserves may vary substantially above the minimum and is dependent on the life cycle of assets that are currently in service. If a minimum cash reserve policy is established, and the utility's cash balance falls below the established amount, it should require the Board to take action to rebuild cash. The typical action includes a rate increase or the consideration of a bond issuance for extra-ordinary capital spending. Based on these assumptions, the utility should maintain a minimum of approximately \$220,000 in cash reserves.

Table 4 – Minimum Cash Reserves

| | Percent Allocated | Projected 2022 | Projected 2023 | Projected 2024 | Projected 2025 | Projected 2026 |
|---|----------------------|-------------------|--------------------|---------------------|---------------------|---------------------|
| Operation & Maintenance Less Depreciation Expense | 12.3% | \$ 25,722 | \$ 26,442 | \$ 27,182 | \$ 27,943 | \$ 28,726 |
| Historical Rate Base | 1% | 46,755 | 47,005 | 47,255 | 47,505 | 47,755 |
| Current Portion of Debt Service Reserve | 50% | 107,525 | 108,269 | 116,700 | 117,825 | 118,857 |
| Five Year Capital Improvements - Net of bond proceeds | 20% | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| Minimum Cash Reserves | | \$ 205,002 | \$ 206,716 | \$ 216,138 | \$ 218,274 | \$ 220,338 |
| Projected Cash Reserves | | \$ 56,813 | \$ (54,959) | \$ (173,875) | \$ (237,839) | \$ (317,532) |

Projected cash balances do not meet minimum targets through the projection.

Notes:

1. Operation and maintenance expenses exclude depreciation expenses.
2. Rate base is historical investment in plant and equipment.
3. Five-year capital includes budgeted capital improvements for the next five years and excludes capital improvements funded through debt issuances.

Operating income targets - The optimal target for setting rates is the establishment of a target operating income to help ensure the following:

- 1) Funding of Interest Expense on the outstanding principal on debt. Interest expense is below the operating income line and needs to be recouped through the operating income balance.
- 2) Funding of the inflationary increase on the assets invested in the system. The inflation on the replacement of assets invested in the utility should be recouped through the Operating Income
- 3) Adequate rate of return on investment to help ensure current customers are paying their fair share of the use of the infrastructure and not deferring the charge to future generations.

As improvements are made to the system, the optimal operating income target will increase unless annual depreciation expense is greater than yearly capital improvements. The target established for the projection period is approximately \$135,000. Operating Income falls below the targeted minimum throughout the projection period.

Table 5 - Optimal Operating Income Targets Compared to Projected

| | Percent Allocated | Projected 2022 | Projected 2023 | Projected 2024 | Projected 2025 | Projected 2026 |
|--|----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Interest Expense on Debt | 2.7% | 29,224 | 24,871 | 20,337 | 15,600 | 12,100 |
| Inflationary Increase on Assets | 5.0% | 94,652 | 103,420 | 112,972 | 120,066 | 127,830 |
| Target Operating Income | | \$ 123,876 | \$ 128,290 | \$ 133,309 | \$ 135,666 | \$ 139,930 |
| Projected Adjusted Operating Income | | \$ 90,042 | \$ 146,717 | \$ 152,590 | \$ 158,199 | \$ 155,867 |
| Target Rate of Return in % | | 4.0% | 4.3% | 4.6% | 4.8% | 5.0% |

Operating Income does not meet targeted minimum throughout the projection period.

REVENUE FORECAST

Sales were projected and adjusted for known or anticipated changes in customer usage and a growth for the projection period. Table 6 and 7 below projects the billed units and number of REUs.

TABLE 6 – PROJECTED BILLED UNITS

| Meter Size | Water Sales - 1st 600 CCF (minimum) | Water Sales CCF (over minimum) | Units Sold |
|-------------------|--|---|-------------------|
| 5/8" & 3/4" | 12,949 | 10,908 | 23,857 |
| 1 | 13,518 | 32,245 | 45,763 |
| 1 1/2 | 434 | 4,172 | 4,606 |
| 2 | 248 | 558 | 805 |
| Total | 27,149 | 47,883 | 75,032 |

TABLE 7 – PROJECTED NUMBER OF REUS

| <u>Meter Size</u> | Projected REUS |
|--------------------------|---------------------------|
| 5/8" & 3/4" | 294 |
| 1 | 291 |
| 1 1/2 | 6 |
| 2 | 9 |
| Total REUS | 600 |

SUMMARY OF FINANCIAL POSITION – PROPOSED RATE TRACK

Increasing rates requires balancing the financial health of the utility with the financial impact on customers and cost of service results. Table 8 below is the financial projection summary with the proposed rate track. The current rate has not been raised since 1992. The system is now cash critical.

To help put the current rate in perspective, according to USEPA the current standard for water affordability is 2% of median household income. This equates to about \$98 per month for rate-payers across the country. The average rate-payer (6 CCU per month) in Peninsula Township pays \$26.00 per month; or about 1/3 of the standard for water affordability.

Suggested rate increases are projected at \$4.75 per end use customer for the remainder of 2021, upon town board approval, 2022 and 2023 with 2.9% annually thereafter to help stabilize cash.

Table 8 – Financial Projection Summary (With Proposed Rate Adjustments)

| Fiscal Year | Projected Revenues | Projected Expenses | Adjusted Operating Income | Projected Cash Balances | Capital Improvements | Bond Issues | Debt Coverage Ratio |
|---------------------------------|--------------------|--------------------|---------------------------|-------------------------|----------------------|-------------|---------------------|
| 2022 | \$ 392,598 | \$ 302,556 | \$ 90,042 | \$ 110,318 | \$ 25,000 | - | 0.87 |
| 2023 | 456,379 | 309,662 | 146,717 | 115,454 | 25,000 | - | 1.14 |
| 2024 | 469,029 | 316,439 | 152,590 | 125,758 | 25,000 | - | 1.16 |
| 2025 | 481,583 | 323,384 | 158,199 | 203,417 | 25,000 | - | 1.66 |
| 2026 | 486,370 | 330,503 | 155,867 | 278,444 | 25,000 | - | 1.64 |
| Targeted MINIMUM in 2022 | | | \$ 123,876 | \$ 205,002 | | | 1.25/1.45 |
| Targeted MINIMUM in 2026 | | | \$ 139,930 | \$ 220,338 | | | 1.25/1.45 |

With the proposed rate track, the projected operating income for 2022 is \$90,042 and increases toward the targeted minimum throughout the projection period. Cash balances work toward minimum levels, and the debt coverage ratio is being met after the principal on the current debt decreases in 2025. The rate track should be updated on a yearly basis with the budget process, and cash balances should be watched closely.

COST OF SERVICE RESULTS

The purpose of a cost of service study is to allocate costs between commodity costs and customer costs (Monthly Customer Service Charge). The cost of service study was based on recognized procedures from the American Water Works Association which typically results in a fixed monthly charge progressive by meter size, and a rate for usage. The Township currently charges by REU and it would require additional analysis in order to make a more informed decision to move to this rate structure.

Commodity Costs are costs that tend to vary with the quantity of water used, as well as costs associated with purchasing, pumping, and distributing water to customers. Commodity costs include water purchase/treatment costs plus pumping stations and transmission lines.

Customer Costs are costs associated with serving customers regardless of their usage or demand characteristics. Customer costs are typically progressive by meter size and include the operation and maintenance expenses related to meters, services, meter reading costs, billing, and collection costs.

Table 9 are the results of the cost of service study compared to the current rates. The rates listed are for Board consideration and need to be worked toward over-time. Each customer on the system would need to be analyzed to determine the impacts as there can be large differentials moving to a new rate structure.

If the Board chooses not to change the rate structure, the recommended rate increase on page 10 still applies on the current REU and commodity components to produce the overall revenue increase (example in the appendix).

Table 9 – Comparison of Current REU Charge with Cost of Service

| Meter Size | Current Monthly Charges per REU | Cost of Service Monthly Customer Charges |
|-------------|---------------------------------|--|
| 5/8" & 3/4" | \$ 26.00 | \$ 15.53 |
| 1 | 26.00 | 25.19 |
| 1 1/2 | 26.00 | 50.02 |
| 2 | 26.00 | 79.01 |

| Meter size | Current Charge per CCF | Cost of Service Average Cost per CCF |
|---------------|------------------------|--------------------------------------|
| All Commodity | \$ 2.30 | \$ 2.83 |

SIGNIFICANT ASSUMPTIONS

This section outlines the procedures used to develop the cost of service study and rate design for the Water Utility the related significant assumptions.

Forecasted Operating Expenses

Forecasted expenses were based on 2020 and 2021 actual, as well as the current Budget and adjusted for inflation.

Depreciation Expense

Depreciation expense was projected based on historical capital additions and discussions with management on future capital additions.

Interest Income

Interest income was forecasted based on projected cash balances and an interest rate of 0.50%.

Capital Improvements

The capital improvement projections were provided by the Township. Projections for 2022-2026 are listed below:

| Year | Projected Capital Improvement |
|------|-------------------------------|
| 2022 | \$ 25,000 |
| 2023 | 25,000 |
| 2024 | 25,000 |
| 2025 | 25,000 |
| 2026 | 25,000 |

WATER OPERATION FINDINGS

1. For the Township to maintain long-term financial targets of the water utility, rate increases should be considered. Cash is at critical levels. Below is a summary of the financial projection with proposed rate increases of \$4.75 per end use customer in for the remainder of 2021, upon town board approval, 2022 and 2023 as well as 2.9% thereafter. This rate track will improve targeted operating income, minimum cash balances as well as debt coverage ratio. The rate track should be reviewed annually as changes in revenues, expenses and capital can affect the proposed rate adjustments.

| Fiscal Year | Projected Revenues | Projected Expenses | Adjusted Operating Income | Projected Cash Balances | Capital Improvements | Bond Issues | Debt Coverage Ratio |
|--------------------------|--------------------|--------------------|---------------------------|-------------------------|----------------------|-------------|---------------------|
| 2022 | \$ 392,598 | \$ 302,556 | \$ 90,042 | \$ 110,318 | \$ 25,000 | - | 0.87 |
| 2023 | 456,379 | 309,662 | 146,717 | 115,454 | 25,000 | - | 1.14 |
| 2024 | 469,029 | 316,439 | 152,590 | 125,758 | 25,000 | - | 1.16 |
| 2025 | 481,583 | 323,384 | 158,199 | 203,417 | 25,000 | - | 1.66 |
| 2026 | 486,370 | 330,503 | 155,867 | 278,444 | 25,000 | - | 1.64 |
| Targeted MINIMUM in 2022 | | | \$ 123,876 | \$ 205,002 | | | 1.25/1.45 |
| Targeted MINIMUM in 2026 | | | \$ 139,930 | \$ 220,338 | | | 1.25/1.45 |

2. A cash reserve policy should be considered based on the following formula:

| | Percent Allocated | Projected 2022 | Projected 2023 | Projected 2024 | Projected 2025 | Projected 2026 |
|---|-------------------|----------------|----------------|----------------|----------------|----------------|
| Operation & Maintenance Less Depreciation Expense | 12.3% | \$ 25,722 | \$ 26,442 | \$ 27,182 | \$ 27,943 | \$ 28,726 |
| Historical Rate Base | 1% | 48,755 | 47,005 | 47,265 | 47,505 | 47,755 |
| Current Portion of Debt Service Reserve | 50% | 107,525 | 108,269 | 116,700 | 117,825 | 118,857 |
| Five Year Capital Improvements - Net of bond proceeds | 20% | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| Minimum Cash Reserves | | \$ 205,002 | \$ 206,716 | \$ 216,138 | \$ 218,274 | \$ 220,338 |

RATE DESIGN AND IMPACTS

Rate Design at Proposed Structure Conclusion

If the Board chooses to adopt the suggested rate structure, the charge per REU would move from \$26.00 to \$30.75 with the commodity rate moving from \$2.30 to \$2.71 in the first year. For the average customer using 6 CCU, this equates to \$4.75 per month. The table below lists the rates for 2022-2026 however, the projection should be updated every year with the budget process to ensure the rates are sufficient.

| | Current Charge Per REU | Proposed with Increase | CCU after 6 | Proposed with Increase | Increase to AVG Customer 6 CCU |
|--------|---------------------------------------|---------------------------------------|------------------------|---------------------------------------|---|
| Jan-22 | \$ 26.00 | \$ 30.75 | \$ 2.30 | \$ 2.71 | \$ 4.75 |
| Jan-23 | 30.75 | 36.25 | 2.71 | 3.20 | 5.50 |
| Jan-24 | 36.25 | 37.50 | 3.20 | 3.30 | 1.25 |
| Jan-25 | 37.50 | 38.75 | 3.30 | 3.39 | 1.25 |
| Jan-26 | 38.75 | 40.00 | 3.39 | 3.49 | 1.25 |