



## **RESOLUTION 26-684**

### **A RESOLUTION OF THE TOWN OF MOUNT CARMEL, TENNESSEE ADOPTING THE MTAS WASTEWATER UTILITY RATE STUDY AND ESTABLISHING SEWER RATES FOR FISCAL YEARS 2027 THROUGH 2030**

**WHEREAS**, the Town of Mount Carmel owns and operates a municipal wastewater collection and treatment system for the benefit of its citizens and customers; and

**WHEREAS**, Tennessee law requires municipal utility systems to be operated in a financially self-sustaining manner and maintain adequate revenues to support operations, maintenance, debt obligations, and capital improvements; and

**WHEREAS**, the Tennessee Comptroller of the Treasury, Board of Utility Regulation, ordered the Town to engage a qualified expert to perform a rate study and develop recommendations to address the financial condition of the wastewater utility; and

**WHEREAS**, The Town retained the Municipal Technical Advisory Service (MTAS) to perform a comprehensive financial sufficiency review of the wastewater system; and

**WHEREAS**, MTAS completed its Town of Mount Carmel Sewer System Financial Sufficiency Review dated April 29, 2026, which evaluated the financial condition of the wastewater utility and developed alternative rate structures to restore and maintain financial sustainability; and

**WHEREAS**, the Board of Mayor and Aldermen has reviewed the MTAS rate study and finds that adoption of the recommended rate plan (Option 4) is necessary to maintain compliance with state requirements, ensure the long-term financial stability of the wastewater utility, and provide adequate funding for future system improvements and capital needs.

**NOW, THEREFORE, BE IT RESOLVED**, by the Board of Mayor and Aldermen meeting at Mount Carmel, Tennessee, on this 25th day of June, 2026, that

SECTION 1. The Town hereby accepts and adopts the findings, conclusions, and recommendations contained in the Municipal Technical Advisory Service (MTAS) Town of Mount Carmel Sewer System Financial Sufficiency Review dated April 29, 2026, which is incorporated herein by reference.

SECTION 2. The Board hereby approves and adopts MTAS Option 4 – Hybrid as the official wastewater rate implementation plan of the Town.

SECTION 3. The Board hereby adopts the wastewater rate schedule recommended by MTAS under Option 4 – Hybrid (Minimum Bill Increase and Additional Usage Rate Increase). The wastewater rates shall be adjusted effective July 1 of each fiscal year as follows:

| <b>Fiscal Year</b> | <b>Effective Date</b> | <b>Minimum Monthly Charge<br/>(First 2,000 gallons)</b> | <b>Additional Usage Charge<br/>(Per 1,000 gallons)</b> |
|--------------------|-----------------------|---------------------------------------------------------|--------------------------------------------------------|
| FY 2027            | July 1, 2026          | \$52.79                                                 | \$8.52                                                 |
| FY 2028            | July 1, 2027          | \$61.04                                                 | \$9.85                                                 |
| FY 2029            | July 1, 2028          | \$64.09                                                 | \$10.34                                                |
| FY 2030            | July 1, 2029          | \$67.27                                                 | \$10.86                                                |

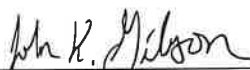
The Board finds that the above rate adjustments are necessary to maintain the financial sufficiency of the wastewater utility, achieve and maintain a positive statutory change in net position, provide adequate reserves for future capital improvements, and comply with the directives of the Tennessee Comptroller of the Treasury and the recommendations contained in the MTAS Financial Sufficiency Review

SECTION 4. The rates shall remain in effect until modified by subsequent action of the Board of Mayor and Aldermen.

SECTION 5. The Town Recorder is directed to provide a copy of this Resolution and any supporting documentation to the Tennessee Comptroller of the Treasury, Board of Utility Regulation, as evidence of the Town's implementation of the recommendations contained in the MTAS rate study

This Resolution shall take effect immediately, the public welfare requiring it.

ADOPTED this 25th day of June, 2026.

  
\_\_\_\_\_  
**John K. Gibson, Mayor**

Attest:

  
\_\_\_\_\_  
**Tyler S. Williams, CMFO**  
**Town Recorder**





Municipal Technical Advisory Service  
INSTITUTE *for* PUBLIC SERVICE

# Town of Mount Carmel

## *Sewer System*

## *Financial Sufficiency Review*

Brad Peters, Public Works Consultant

April 29, 2026



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## **Introductory Section**

### **Town of Mount Carmel Wastewater System**

The Town of Mount Carmel operates a municipal wastewater system that provides collection and treatment services to customers within the Town. The wastewater system is reported as an enterprise fund and is intended to be financially self-supporting through user charges.

### **Rate Study Purpose**

In 2024, the Town of Mount Carmel sewer utility was referred to the Tennessee Board of Utility Regulation due to a decrease in net position and a negative statutory change in net position. The purpose of this report is to evaluate the financial condition of the wastewater system and evaluate rate alternatives to ensure the system maintains a positive statutory change in net position through FY 2030.

### **Disclaimer**

MTAS utilized the Town's financial information, the FY 2026 budget assumptions, and the attached multi-year financial models to develop the projections included in this report. Any other data utilized in the preparation of this report was provided by the Town and has not been verified nor audited. If there are discrepancies in the data provided this report may not be valid.

### **Order from the Tennessee Comptroller of the Treasury**

The Comptroller's staff recommendation included the following key directives for the sewer utility:

- The utility shall engage a qualified expert and perform a rate study that includes reviews of capitalization and debt policies, a five-year capital asset budget, and relevant utility fees.
- By Aug. 31, 2025, the utility shall provide Board staff a copy of the contract between the utility and the qualified expert.
- By Feb. 15, 2026, the utility shall provide Board staff the completed rate study and either proof of implementation of the resulting recommendations or a proposed plan of implementation. Due to a request from MTAS for additional time to complete the report, an extension until Aug. 15, 2026 was given to meet this requirement.
- Board staff may grant one additional six-month extension upon a showing of good cause.

### **State Requirement for the Financial Operation of Public Utilities**

Tennessee law requires municipal utility systems to be financially self-supporting. A system may be considered financially distressed if it meets one or more conditions, including a negative statutory change in net position for two consecutive years.

Statutory change in net position is defined as the GAAP change in net position adjusted to remove capital contributions and other non-operating/non-available items so regulators can evaluate whether utility operations are financially self-sustaining.

## **System Background**

### **Operations**

The Town owns a sanitary sewer system that provides wastewater collection service to more than 2,000 customers. The system is overseen by a five-member utilities board appointed by the mayor with the advice and consent of the BMA. In 2025, the Town outsourced sewer operations to Inframark, LLC, and eliminated all municipal sewer personnel and related expenses. The Town also pays the First Utility District \$1 per customer each month for billing services.

### **Current Rate Structure**

In March of 2025, the Town approved a 35% rate increase effective April 1, 2025. In March of 2026, the Town approved an additional 4.6% increase, consistent with CPI-U inflationary indicators, and adopted the following rates, effective April 1, 2026:

- Minimum monthly sewer charge (including first 2,000 gallons): \$45.90
- Each additional 1,000 gallons: \$7.41

## **Evaluation of Financial Condition**

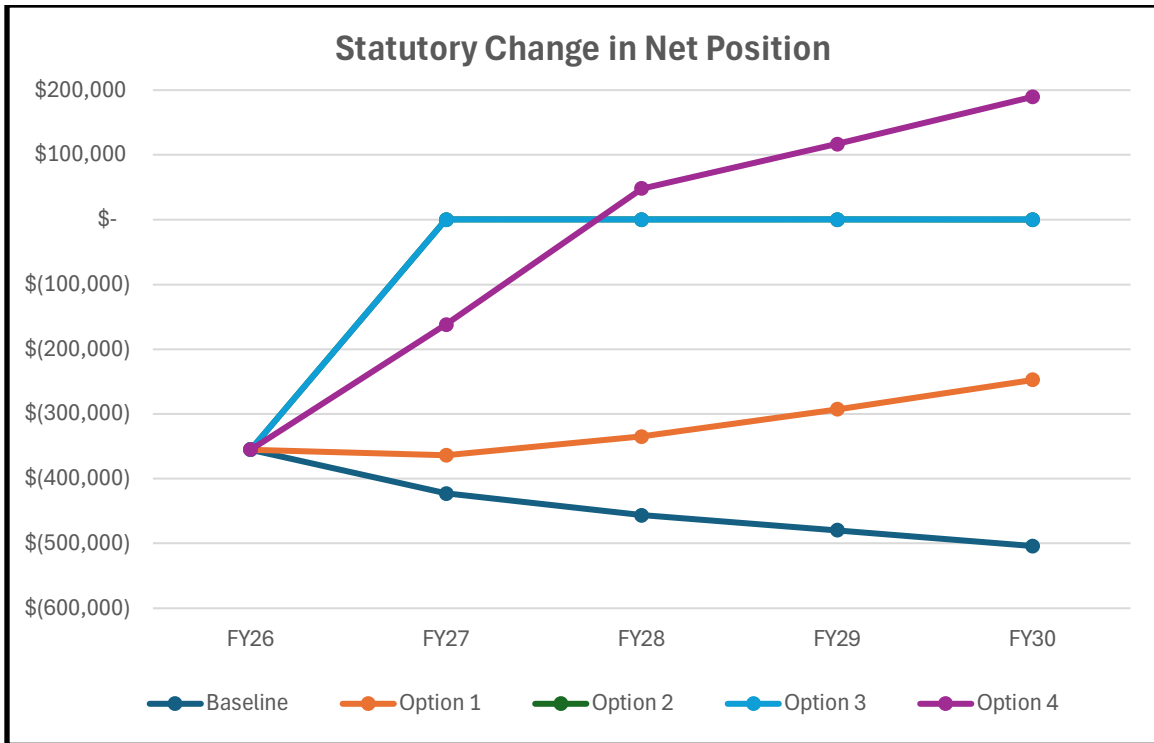
MTAS prepared five financial analysis models for developing future projections for the wastewater system for FY 2026 through FY 2030. A baseline condition is included for comparison purposes. Options 1 through 4 represent rate adjustments intended to restore and maintain a positive statutory change in net position.

### **Summary of Key Financial Measures by Option**

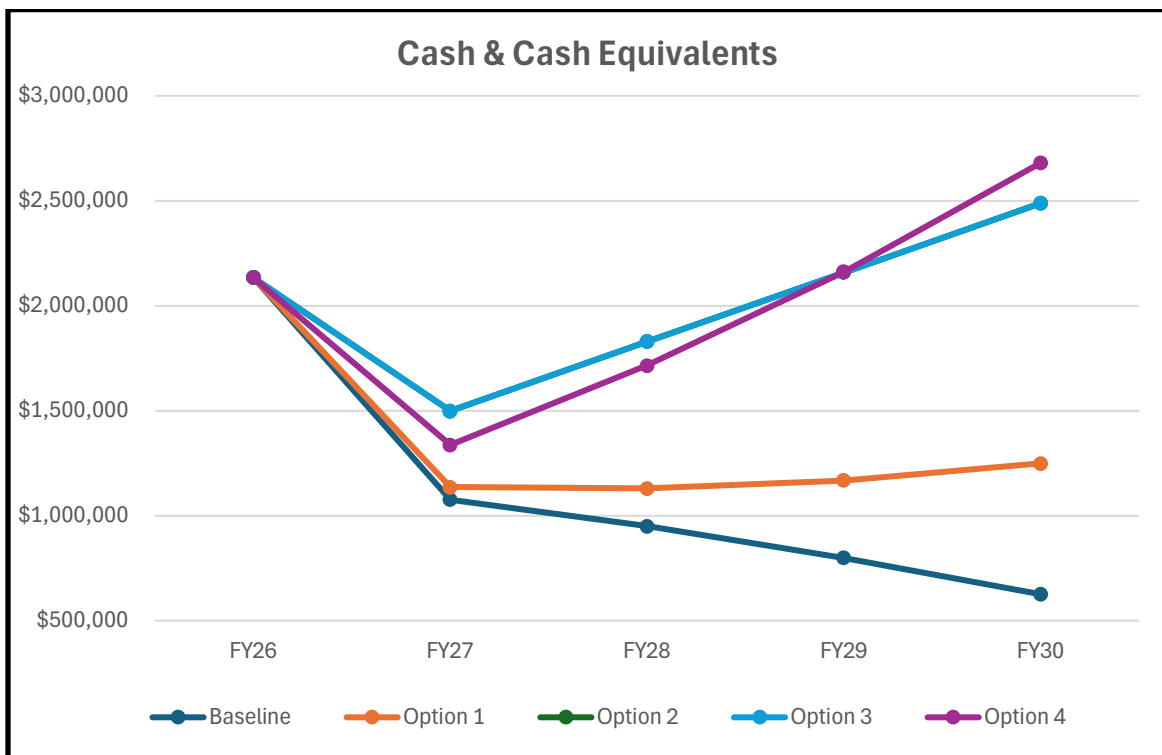
The baseline and four options developed by MTAS are as follows:

- Baseline - No Change (Not Viable)
- Option 1: Uniform Minimum Bill Increase (4.6%)
- Option 2: Incremental Minimum Bill Increases
- Option 3: Incremental Additional Usage Rate (per 1,000 gallons above minimum)
- Option 4: Hybrid - Minimum Bill Increase + Additional Usage Rate Increase (Recommended)

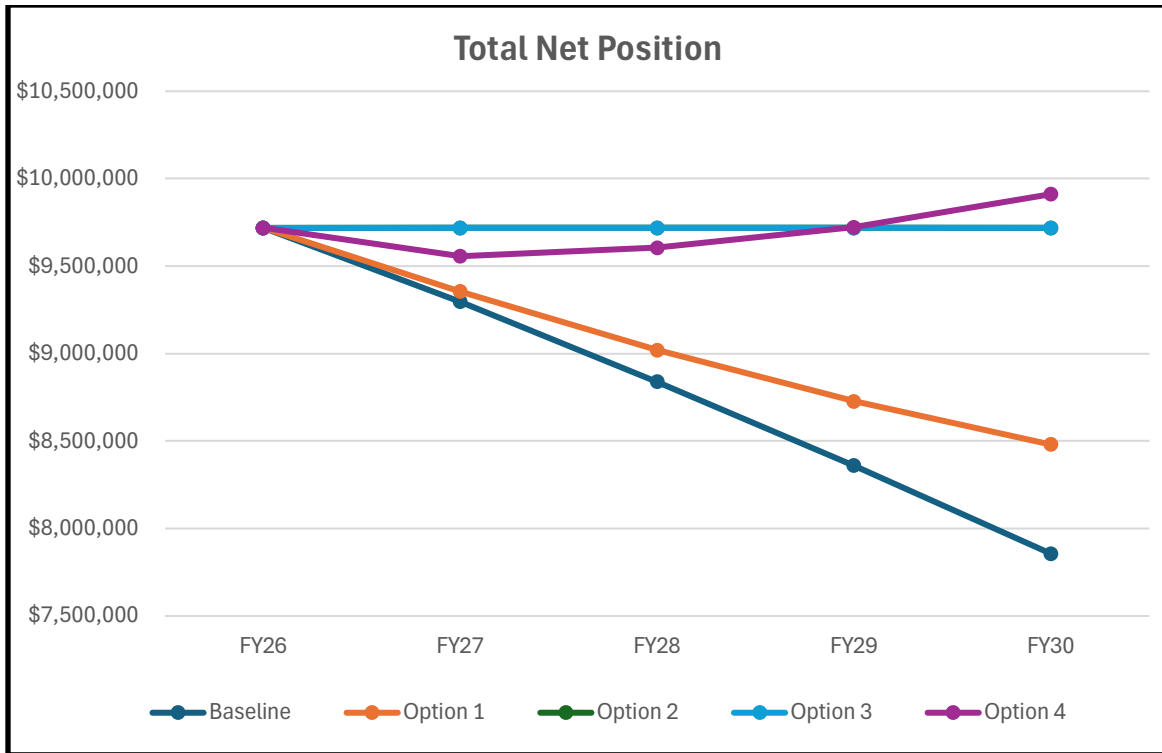
The following charts compare statutory change in net position, cash, and total net position for each option. Detailed breakdowns of the options follow in subsequent sections of this report.



Note: the data for Option 2 and Option 3, respectively, is almost identical. The graph line for Option 3 is on top of Option 2.



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## Baseline - Maintain Current Rates (Not Viable)

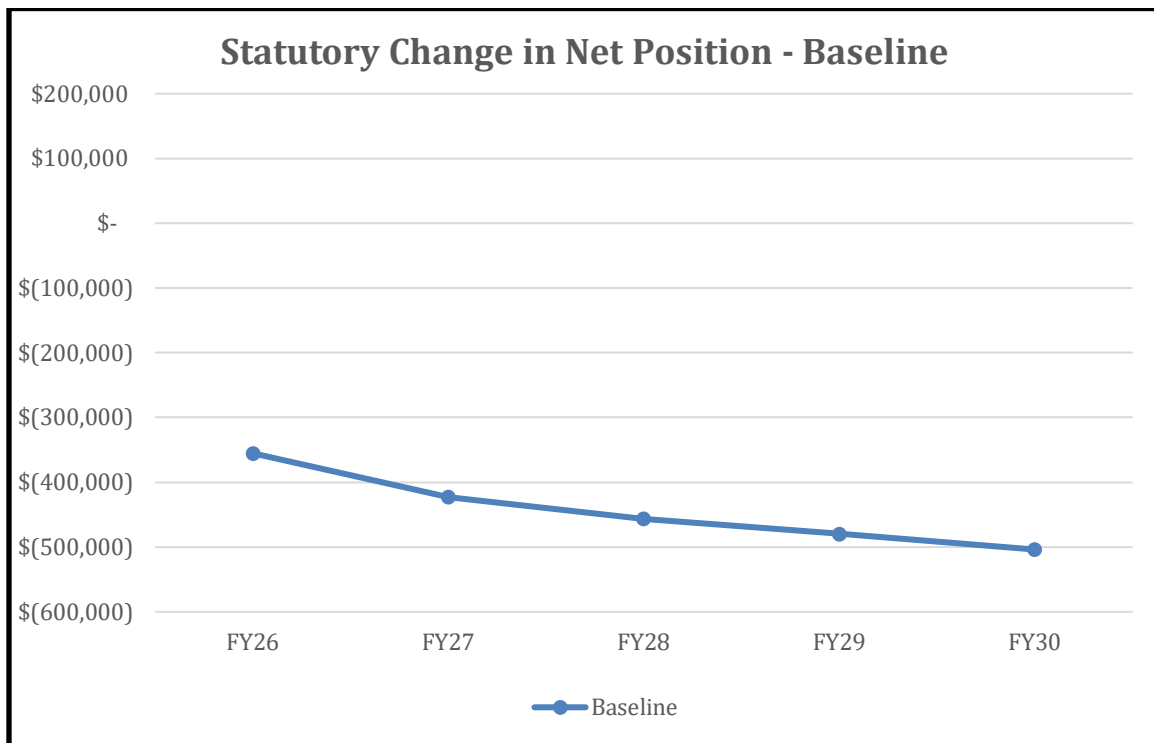
This model illustrates financial conditions if no increases are implemented.

### Rate Structure and Typical Bills – No Baseline

| Fiscal Year | Minimum Bill<br>(includes 2,000<br>gal.) | Additional<br>Usage Rate (per<br>1,000 gal.) | Typical Bill -<br>2,000 gal. | Typical Bill -<br>5,000 gal. |
|-------------|------------------------------------------|----------------------------------------------|------------------------------|------------------------------|
| FY 26       | \$45.90                                  | \$7.41                                       | \$45.90                      | \$68.13                      |
| FY 27       | \$45.90                                  | \$7.41                                       | \$45.90                      | \$68.13                      |
| FY 28       | \$45.90                                  | \$7.41                                       | \$45.90                      | \$68.13                      |
| FY 29       | \$45.90                                  | \$7.41                                       | \$45.90                      | \$68.13                      |
| FY 30       | \$45.90                                  | \$7.41                                       | \$45.90                      | \$68.13                      |

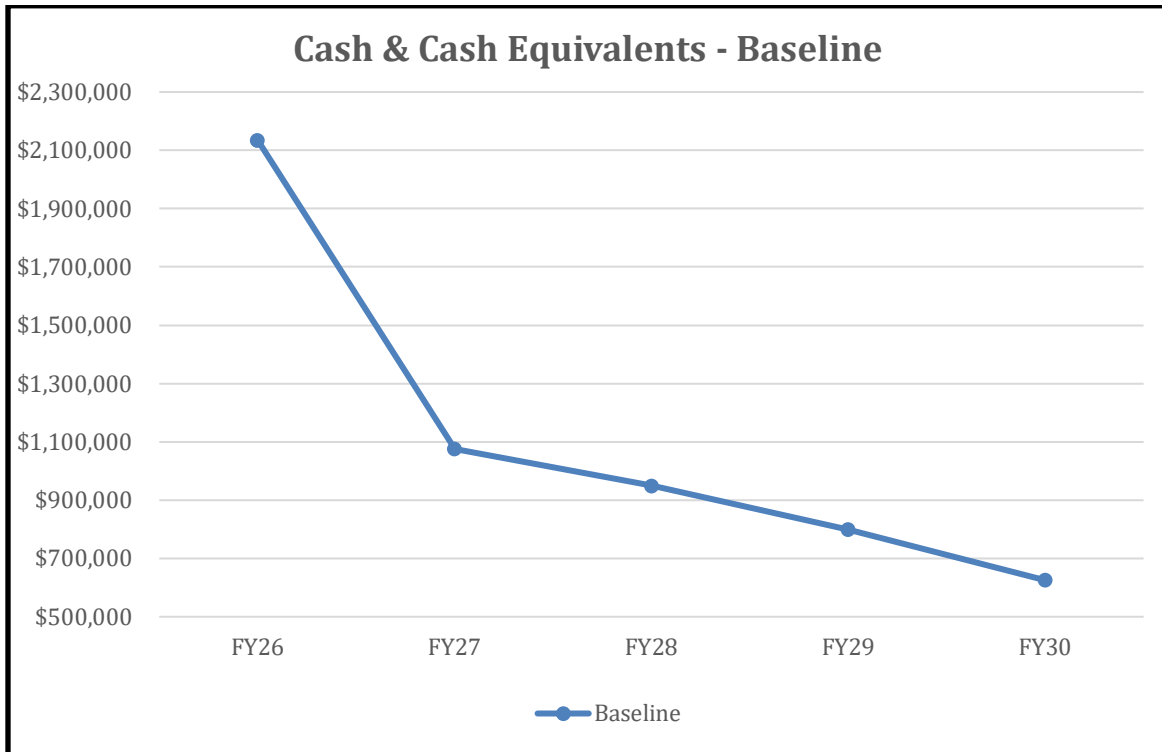
### Projected Statutory Change in Net Position – Baseline

| Fiscal Year | Option 1    |
|-------------|-------------|
| FY 26       | \$(355,281) |
| FY 27       | \$(363,498) |
| FY 28       | \$(396,738) |
| FY 29       | \$(419,964) |
| FY 30       | \$(443,839) |



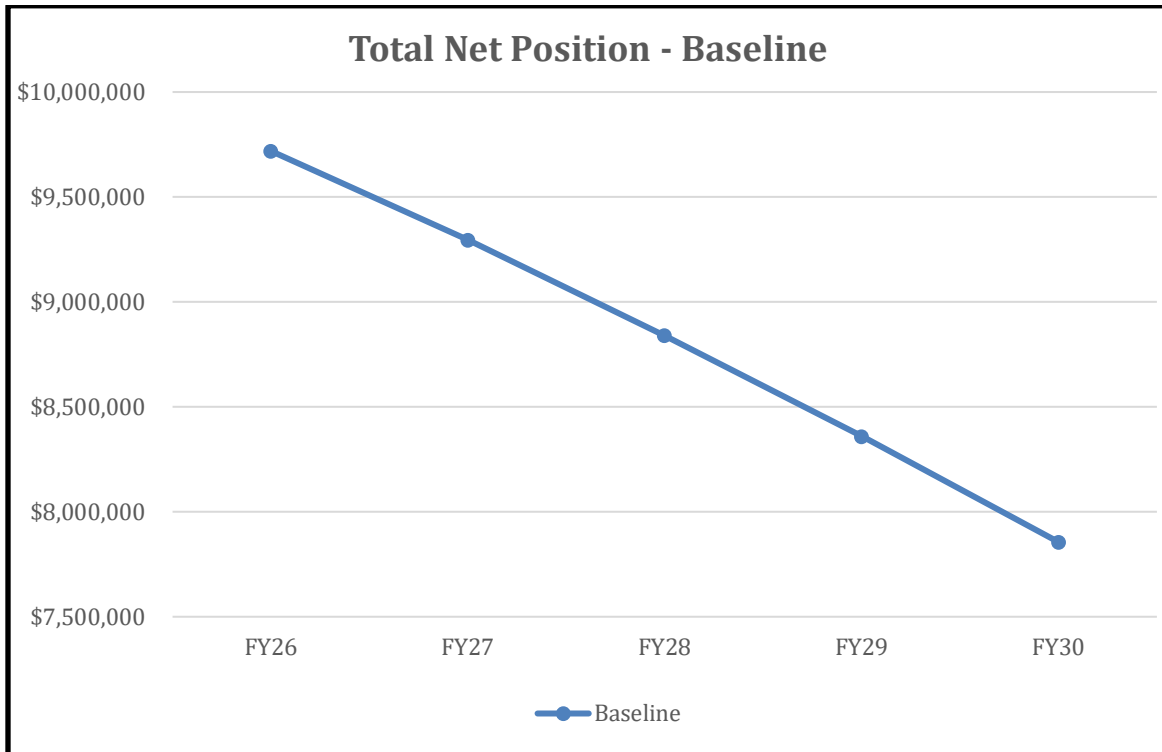
### Projected Cash – Baseline

| Fiscal Year | Baseline    |
|-------------|-------------|
| FY 26       | \$2,134,843 |
| FY 27       | \$1,076,050 |
| FY 28       | \$949,477   |
| FY 29       | \$799,431   |
| FY 30       | \$625,262   |



### Total Net Position – Baseline

| Fiscal Year | Baseline    |
|-------------|-------------|
| FY 26       | \$9,718,733 |
| FY 27       | \$9,295,934 |
| FY 28       | \$8,839,464 |
| FY 29       | \$8,359,885 |
| FY 30       | \$7,856,001 |



### Key Observations

- Statutory change in net position is projected to be negative from FY 2027 through FY 2030.
- Cash balances decline over the study period as operating revenues do not keep pace with operating costs and capital needs.

## Option 1 - Uniform Minimum Bill Increase

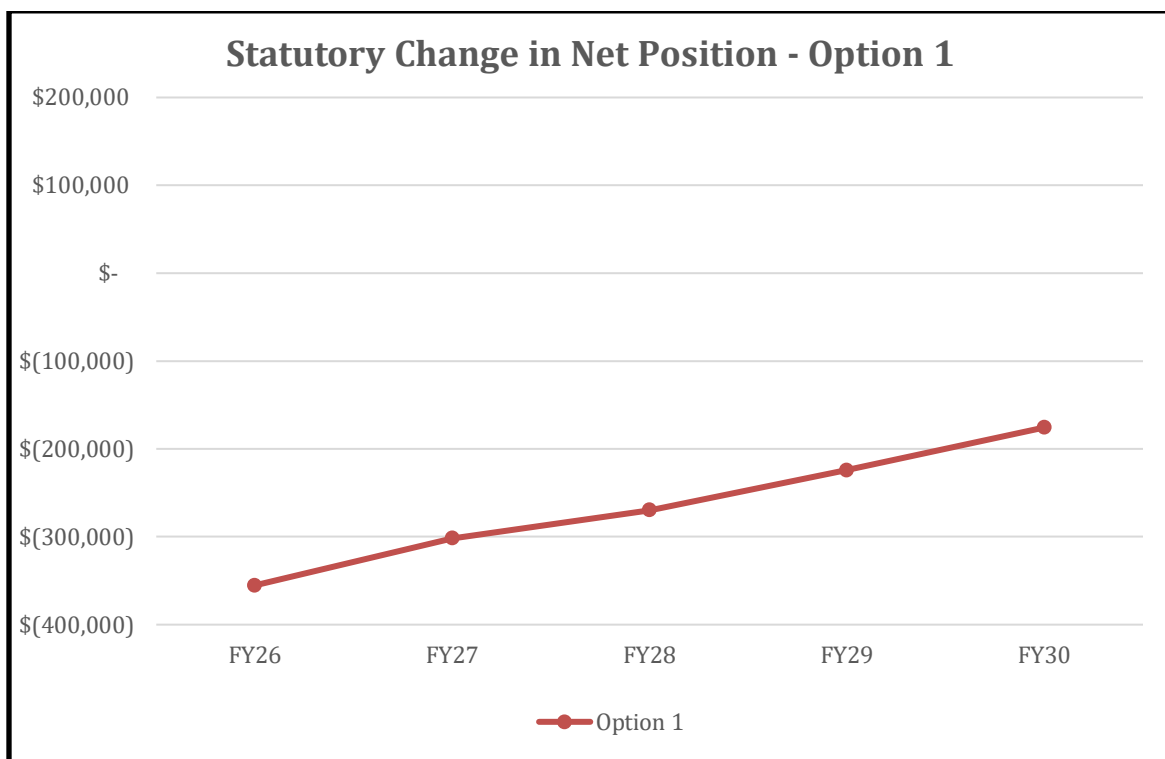
This option increases the minimum bill each year and additional volumetric rate (per 1000/gal) annually by 4.6%. The results are below.

### Rate Structure and Typical Bills

| Fiscal Year | Minimum Bill<br>(includes 2,000<br>gal.) | Additional<br>Usage Rate (per<br>1,000 gal.) | Typical Bill -<br>2,000 gal. | Typical Bill -<br>5,000 gal. |
|-------------|------------------------------------------|----------------------------------------------|------------------------------|------------------------------|
| FY 26       | \$45.90                                  | \$7.41                                       | \$45.90                      | \$68.13                      |
| FY 27       | \$48.01                                  | \$7.75                                       | \$48.01                      | \$71.26                      |
| FY 28       | \$50.22                                  | \$8.11                                       | \$50.22                      | \$74.54                      |
| FY 29       | \$52.53                                  | \$8.48                                       | \$52.53                      | \$77.97                      |
| FY 30       | \$54.95                                  | \$8.87                                       | \$54.95                      | \$81.56                      |

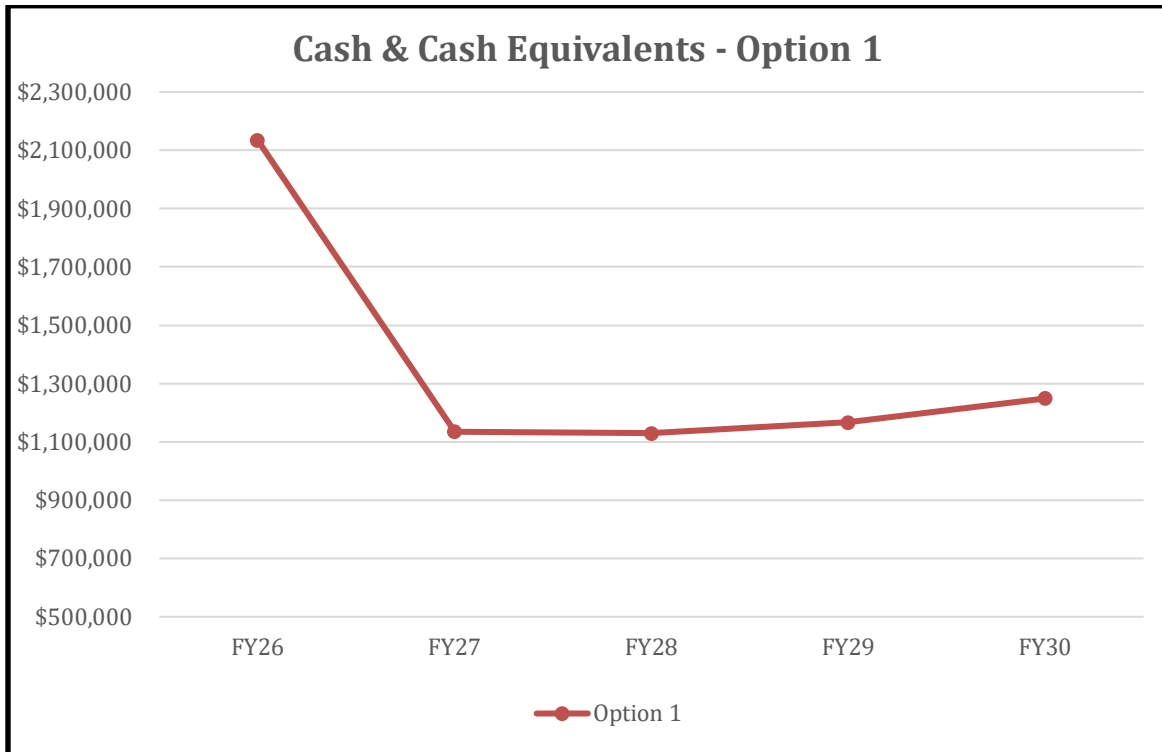
### Projected Statutory Change in Net Position – Option 1

| Fiscal Year | Option 1    |
|-------------|-------------|
| FY 26       | \$(355,281) |
| FY 27       | \$(301,680) |
| FY 28       | \$(269,730) |
| FY 29       | \$(224,223) |
| FY 30       | \$(175,650) |



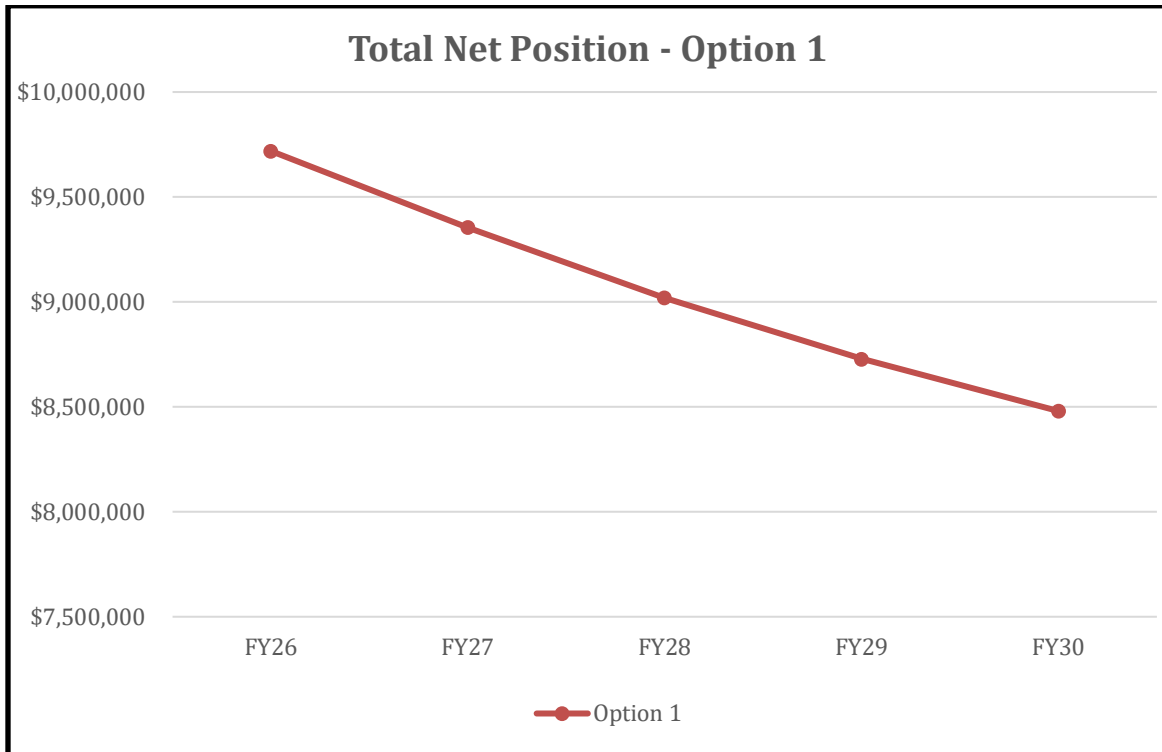
### Projected Cash – Option 1

| Fiscal Year | Option 1    |
|-------------|-------------|
| FY 26       | \$2,134,843 |
| FY 27       | \$1,197,169 |
| FY 28       | \$1,257,155 |
| FY 29       | \$1,362,647 |
| FY 30       | \$1,516,712 |



### Total Net Position – Option 1

| Fiscal Year | Option 1    |
|-------------|-------------|
| FY 26       | \$9,718,733 |
| FY 27       | \$9,417,053 |
| FY 28       | \$9,147,324 |
| FY 29       | \$8,923,101 |
| FY 30       | \$8,747,451 |



### Key Observations

- Provides immediate and stable revenue improvement by increasing both the minimum bill and the volumetric charge by CPI-U (4.6%).
- Does not result in a statutory positive change in net position for any year in the study.

## Option 2 - Incremental Minimum Bill Increases (beginning FY 2027)

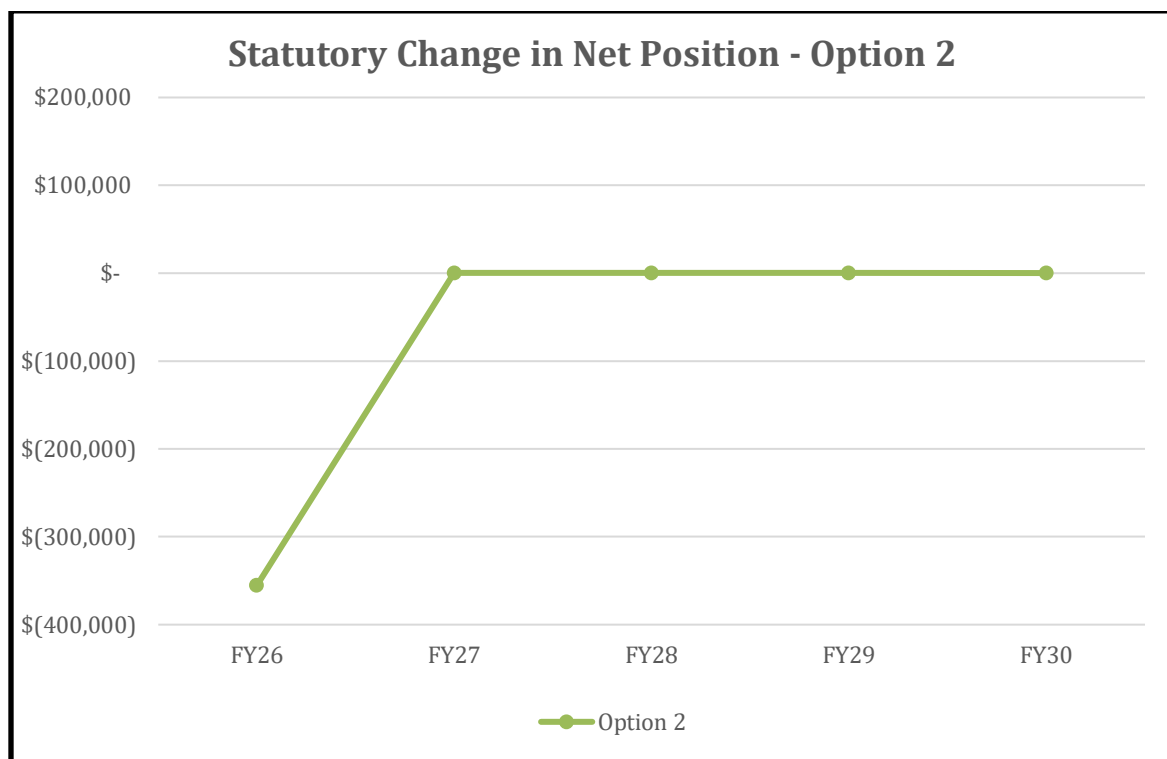
This option sets the minimum bill each year so that the utility reaches a positive statutory change in net position. The additional volumetric rate (per 1000/gal) does not change. The results are below.

### Rate Structure and Typical Bills

| Fiscal Year | Minimum Bill<br>(includes 2,000<br>gal.) | Additional<br>Usage Rate (per<br>1,000 gal.) | Typical Bill -<br>2,000 gal. | Typical Bill -<br>5,000 gal. |
|-------------|------------------------------------------|----------------------------------------------|------------------------------|------------------------------|
| FY 26       | \$45.90                                  | \$7.41                                       | \$45.90                      | \$65.12                      |
| FY 27       | \$62.55                                  | \$7.41                                       | \$62.55                      | \$83.79                      |
| FY 28       | \$63.92                                  | \$7.41                                       | \$63.92                      | \$85.16                      |
| FY 29       | \$64.84                                  | \$7.41                                       | \$64.84                      | \$86.08                      |
| FY 30       | \$65.78                                  | \$7.41                                       | \$65.78                      | \$87.02                      |

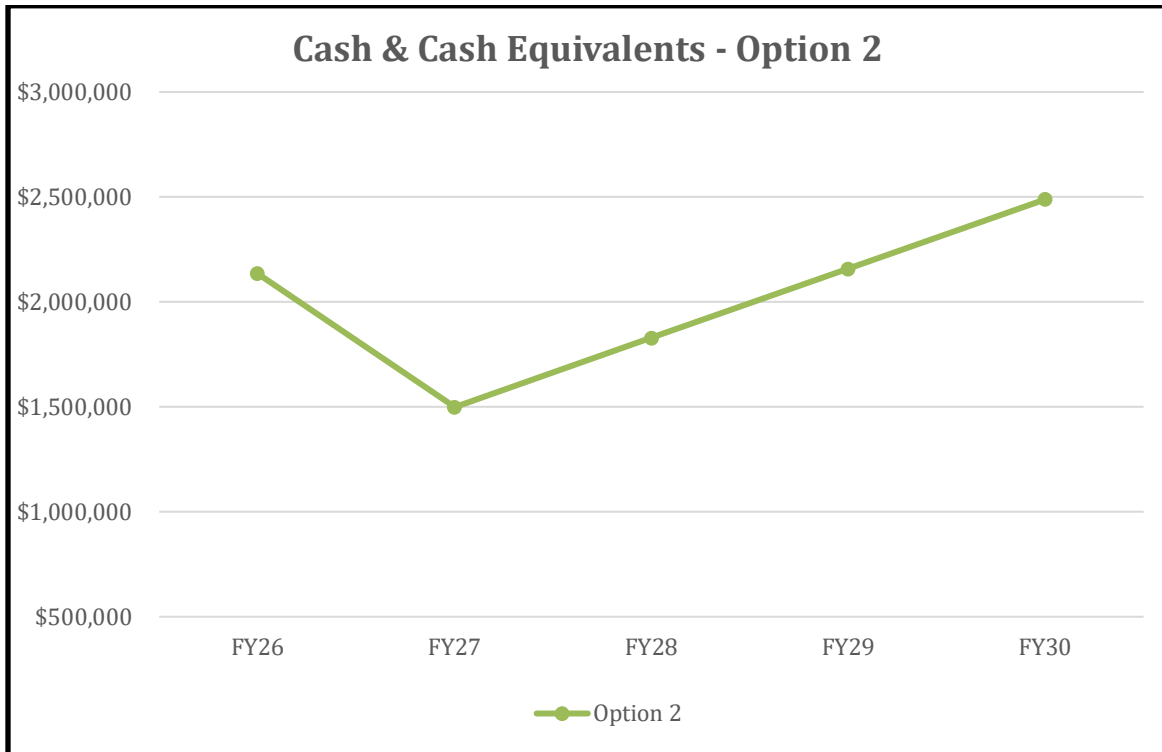
### Projected Statutory Change in Net Position – Option 2

| Fiscal Year | Option 2    |
|-------------|-------------|
| FY 26       | \$(355,281) |
| FY 27       | \$43        |
| FY 28       | \$40        |
| FY 29       | \$86        |
| FY 30       | \$168       |



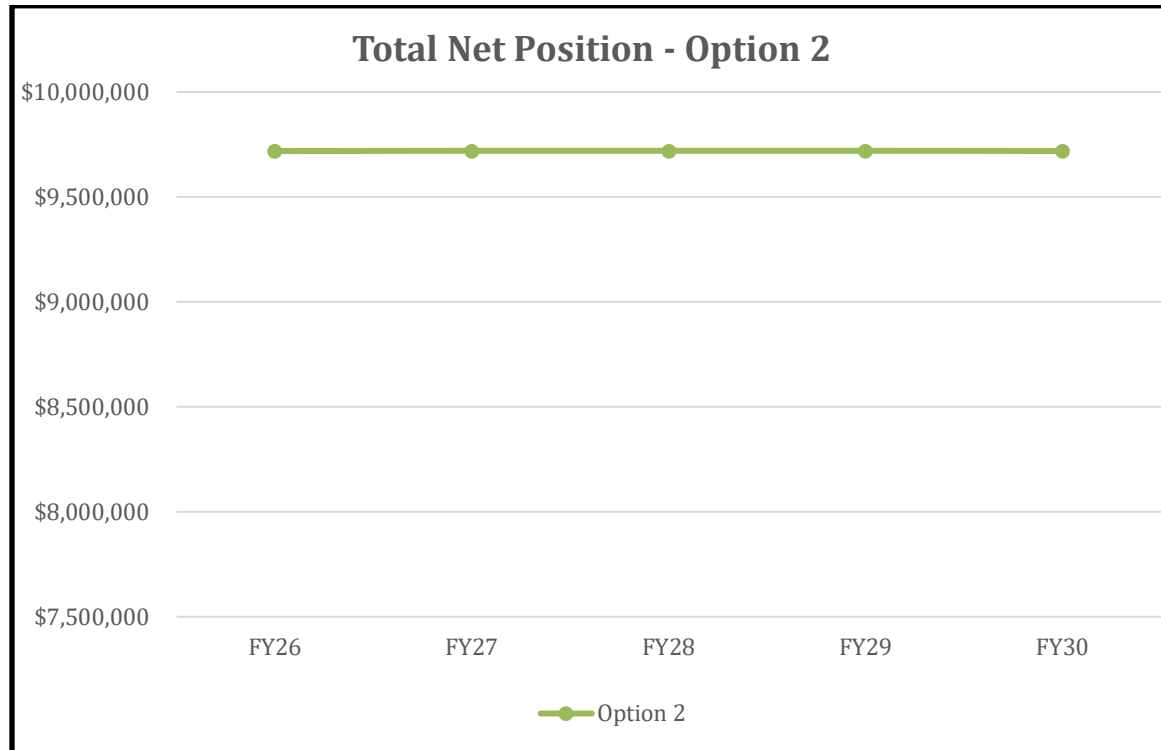
### Projected Cash – Option 2

| Fiscal Year | Option 2    |
|-------------|-------------|
| FY 26       | \$2,134,843 |
| FY 27       | \$1,498,893 |
| FY 28       | \$1,828,647 |
| FY 29       | \$2,158,448 |
| FY 30       | \$2,488,331 |



### Total Net Position – Option 2

| Fiscal Year | Option 2    |
|-------------|-------------|
| FY 26       | \$9,718,733 |
| FY 27       | \$9,718,776 |
| FY 28       | \$9,718,816 |
| FY 29       | \$9,718,903 |
| FY 30       | \$9,719,071 |



### Key Observations

- Implements minimum bill increases over time beginning in FY 2027.
- Statutory change in net position remains slightly positive in each year of the study period.
- Spreads the additional cost evenly across the customer base.
- Provides no additional cash for capital expenses.

### Option 3 - Increase Additional Usage Rate (per 1,000 gallons above minimum)

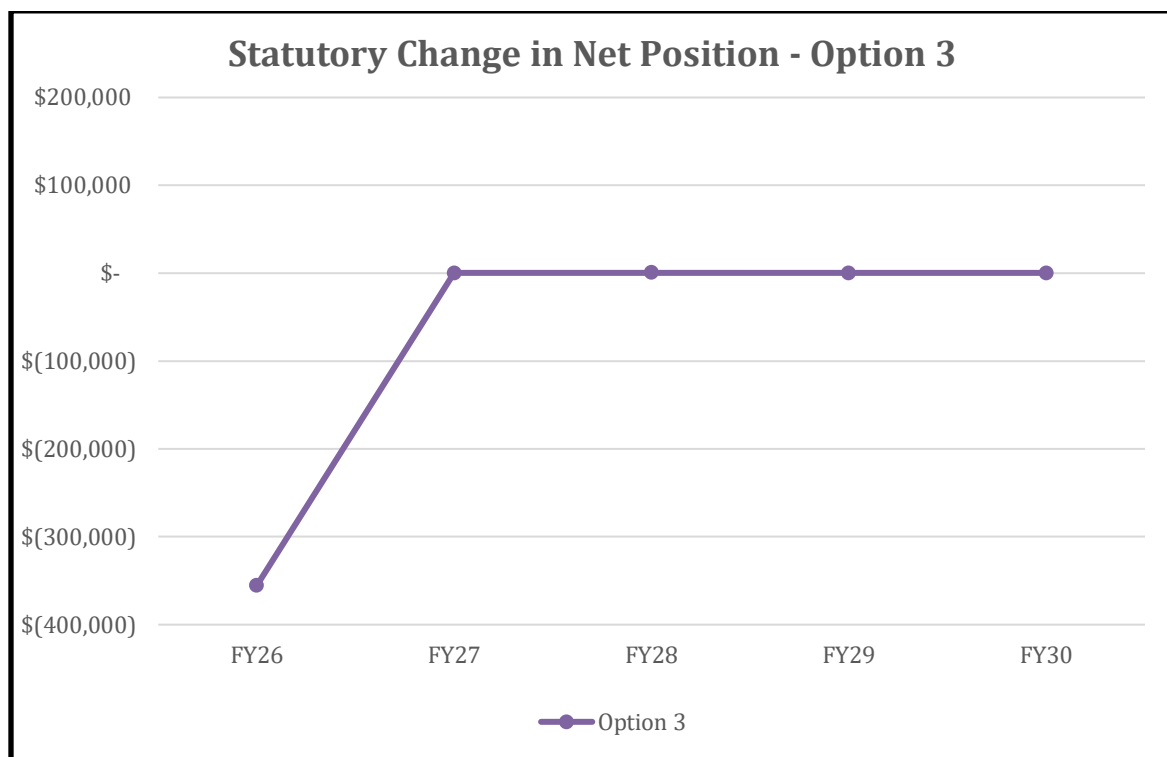
This option keeps the minimum bill at its current level and increases the additional volumetric rate (per 1000/gal) so that the utility achieves a positive statutory change in net position annually. The results are below.

#### Rate Structure and Typical Bills

| Fiscal Year | Minimum Bill<br>(includes 2,000<br>gal.) | Additional<br>Usage Rate (per<br>1,000 gal.) | Typical Bill -<br>2,000 gal. | Typical Bill -<br>5,000 gal. |
|-------------|------------------------------------------|----------------------------------------------|------------------------------|------------------------------|
| FY 26       | \$45.90                                  | \$7.41                                       | \$45.90                      | \$68.13                      |
| FY 27       | \$45.90                                  | \$16.30                                      | \$45.90                      | \$94.80                      |
| FY 28       | \$45.90                                  | \$17.20                                      | \$45.90                      | \$97.50                      |
| FY 29       | \$45.90                                  | \$17.80                                      | \$45.90                      | \$99.30                      |
| FY 30       | \$45.90                                  | \$18.25                                      | \$45.90                      | \$100.65                     |

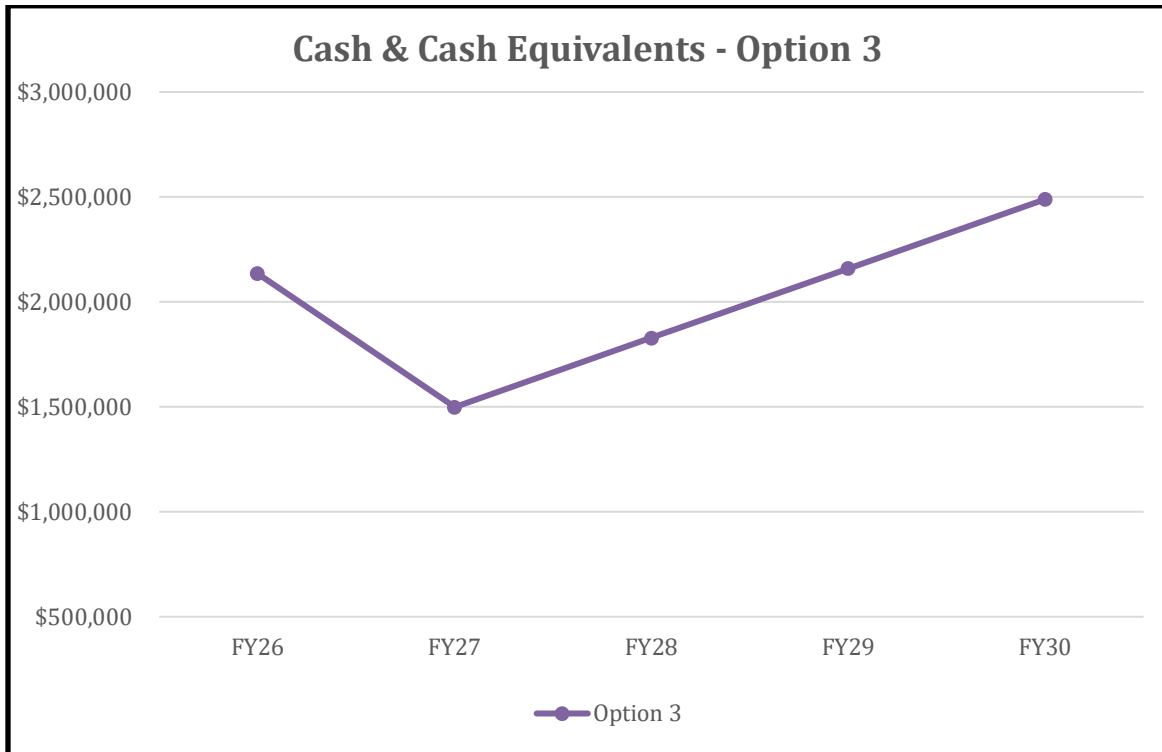
#### Projected Statutory Change in Net Position – Option 3

| Fiscal Year | Option 3    |
|-------------|-------------|
| FY 26       | \$(355,281) |
| FY 27       | \$1,593     |
| FY 28       | \$5,313     |
| FY 29       | \$6,728     |
| FY 30       | \$1,333     |



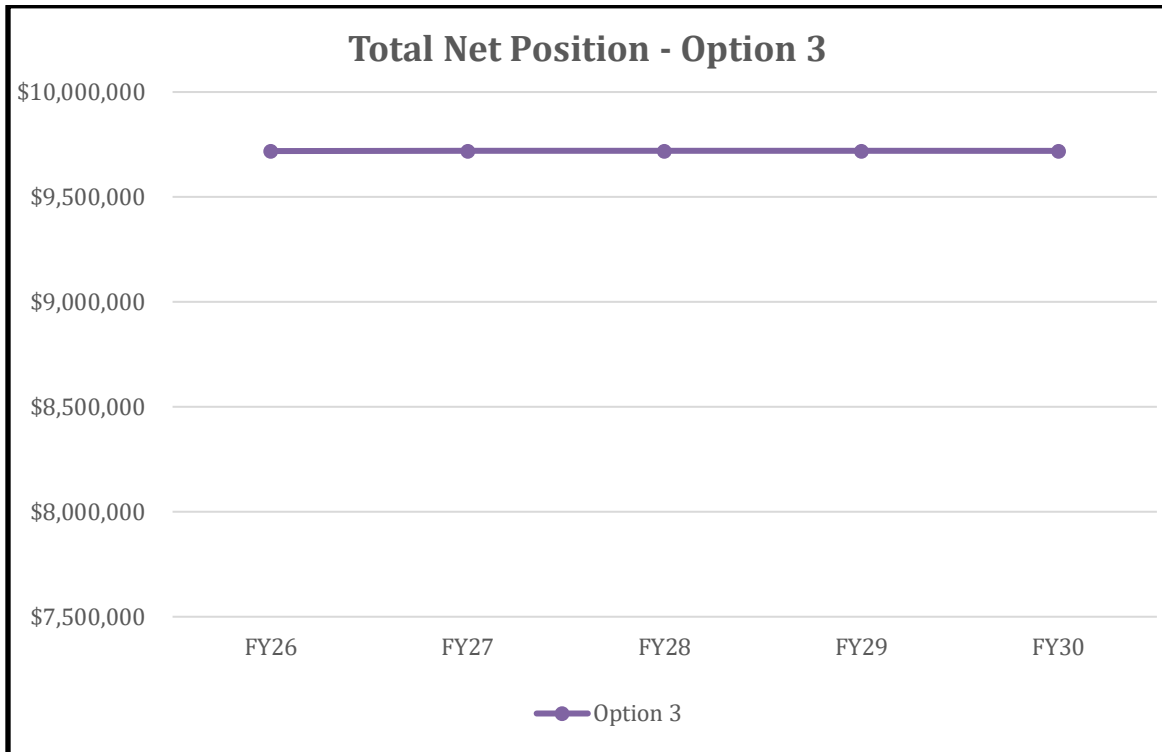
### Projected Cash – Option 3

| Fiscal Year | Option 3    |
|-------------|-------------|
| FY 26       | \$2,134,843 |
| FY 27       | \$1,500,442 |
| FY 28       | \$1,835,470 |
| FY 29       | \$2,171,912 |
| FY 30       | \$2,502,960 |



### Total Net Position – Option 3

| Fiscal Year | Option 3    |
|-------------|-------------|
| FY 26       | \$9,718,733 |
| FY 27       | \$9,720,326 |
| FY 28       | \$9,725,639 |
| FY 29       | \$9,732,367 |
| FY 30       | \$9,733,700 |



### Key Observations

- Shifts revenue recovery toward higher-volume users by increasing the additional usage rate per 1,000 gallons.
- Statutory change in net position is projected to be positive, but the margin is small and is more sensitive to consumption variability.
- Does not build reserves or provide cash for capital improvements.

## Option 4 - Hybrid (Minimum Bill Increase + Additional Usage Rate Increase) – Recommended

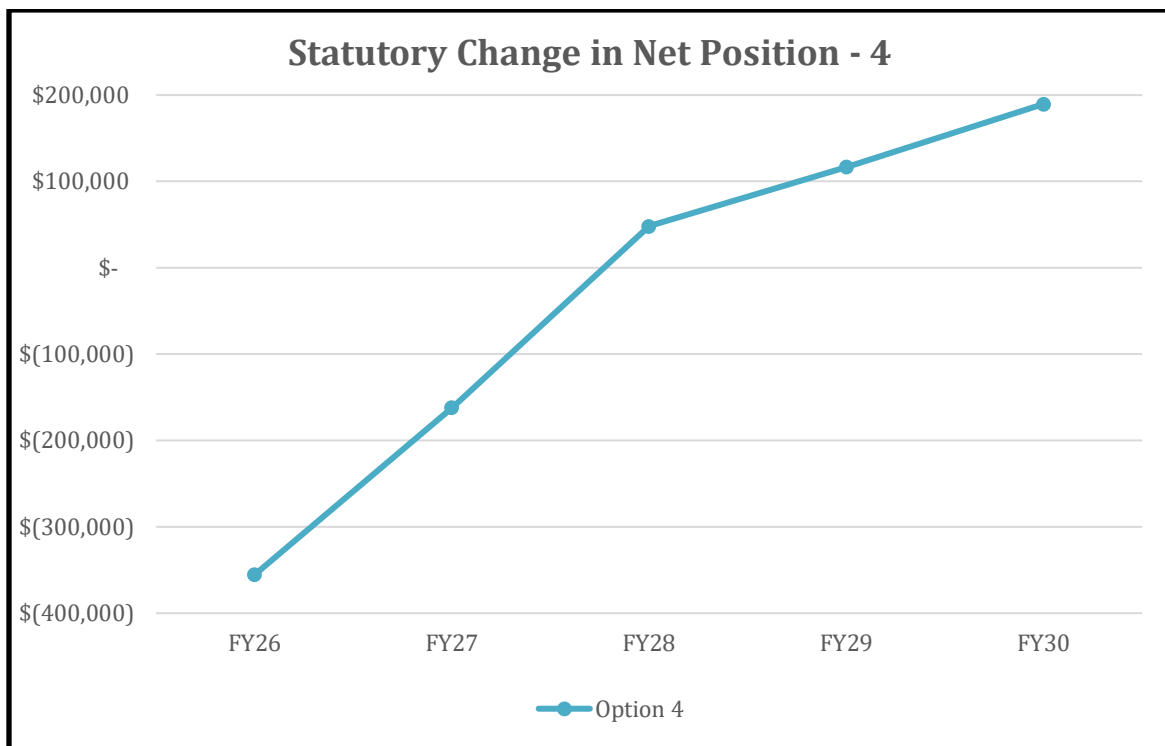
This option increases the minimum bill by 15% in FY27, 15.6% in FY28, and 5% in successive years. The additional volumetric rates (per 1000/gal) increase by the same percentage.

### Rate Structure and Typical Bills

| Fiscal Year | Minimum Bill<br>(includes 2,000<br>gal.) | Additional<br>Usage Rate (per<br>1,000 gal.) | Typical Bill -<br>2,000 gal. | Typical Bill -<br>5,000 gal. |
|-------------|------------------------------------------|----------------------------------------------|------------------------------|------------------------------|
| FY 26       | \$45.90                                  | \$7.41                                       | \$45.90                      | \$68.13                      |
| FY 27       | \$52.79                                  | \$8.52                                       | \$52.79                      | \$78.35                      |
| FY 28       | \$61.04                                  | \$9.85                                       | \$61.04                      | \$90.59                      |
| FY 29       | \$64.09                                  | \$10.34                                      | \$64.09                      | \$95.11                      |
| FY 30       | \$67.27                                  | \$10.86                                      | \$67.27                      | \$99.85                      |

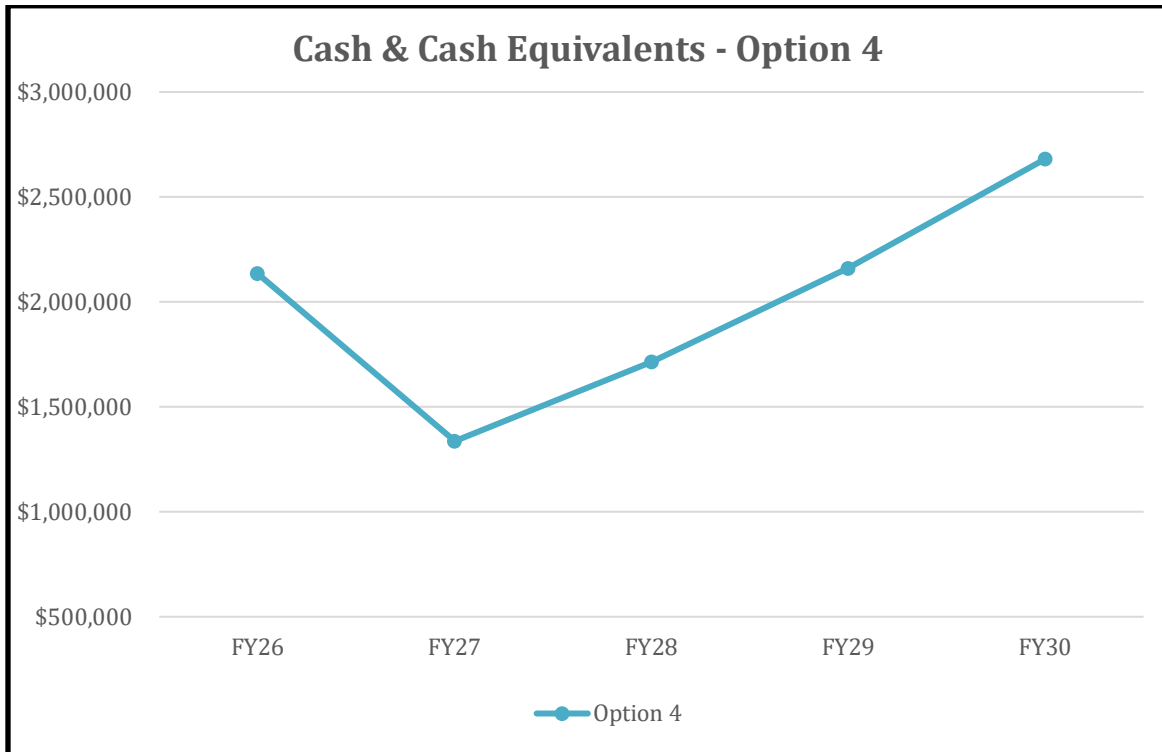
### Projected Statutory Change in Net Position – Option 4

| Fiscal Year | Option 4    |
|-------------|-------------|
| FY 26       | \$(355,281) |
| FY 27       | \$(161,867) |
| FY 28       | \$48,217    |
| FY 29       | \$116,796   |
| FY 30       | \$189,697   |



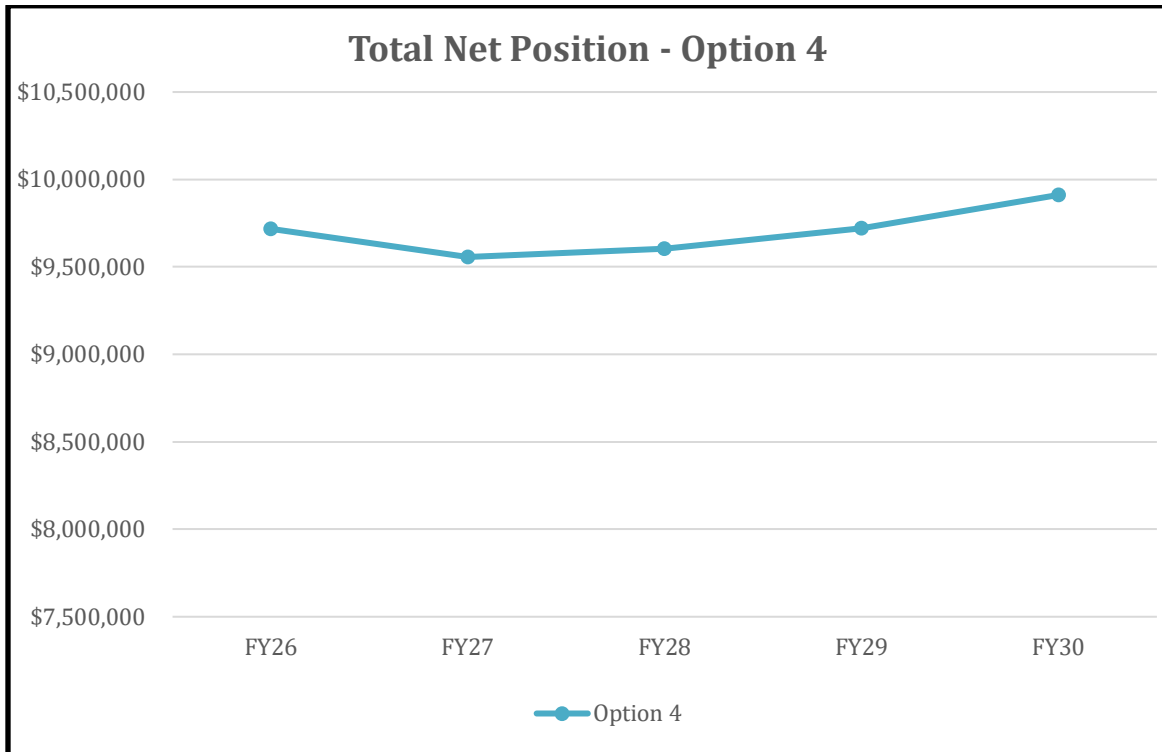
### Projected Cash – Option 4

| Fiscal Year | Option 4    |
|-------------|-------------|
| FY 26       | \$2,134,843 |
| FY 27       | \$1,336,983 |
| FY 28       | \$1,714,915 |
| FY 29       | \$2,161,426 |
| FY 30       | \$2,680,838 |



### Total Net Position – Option 4

| Fiscal Year | Option 4    |
|-------------|-------------|
| FY 26       | \$9,718,733 |
| FY 27       | \$9,556,867 |
| FY 28       | \$9,605,084 |
| FY 29       | \$9,721,880 |
| FY 30       | \$9,911,577 |



### Key Observations

- Balances revenue stability and equity by combining a minimum bill increase with an additional usage rate increase.
- Statutory change in net position is projected to remain positive through FY 2030.

## Recommendations

Options 1-4 are all viable for the utility because they increase cash balances by funding depreciation and generating operating surpluses. These balances represent capital replacement reserves and are a positive indicator of financial sustainability – not excess revenue.

Based on the four financial options evaluated, MTAS recommends Option 4 - Hybrid. This approach restores and maintains a positive statutory change in net position through FY 2030 while balancing customer impacts between minimum-volume and higher-volume users.

Under Option 4, the wastewater utility will be positioned to:

- Maintain a positive statutory change in net position each year through FY 2030
- Generate sufficient revenue to fund operating costs and inflationary increases
- Fund depreciation through rates, supporting future capital replacement
- Maintain and rebuild cash reserves over the study period

The Town should review and update the rate structure and multi-year financial analysis annually to reflect actual operating results, updated cost estimates, and future capital needs.

## Other Items

### Capitalization Policy

On January 22, 2026, the Town passed Resolution 26-667, “A Resolution of the Town of Mount Carmel Board of Mayor and Aldermen Adopting a Capitalization Policy.” A copy of the Resolution is included in Appendix I of this report.

### Debt Management Policy

On January 22, 2026, the Town passed Resolution 26-668, “A Resolution of the Town of Mount Carmel Board of Mayor and Aldermen Adopting a Debt Management Policy.” A copy of the Resolution is included in Appendix II of this report.

### Capital Asset Budget

The TBOUR referral requires “the creation of a five-year capital asset budget, to be taken from the current capital asset list and to include future anticipated needs.” Section 2.6 of the “Wastewater Treatment Plant Operation and Maintenance Agreement”, signed April 24, 2025, between the Town and Inframark, LLC states the following:

“Within the first ninety (90) days of the Commencement Date, Operator shall provide Client with a listing of any recommended Capital Improvements that the Operator believes will be required for the Facilities. Thereafter, Operator may recommend Capital Improvements or operations changes to the Client as are necessary or recommended to

perform the Services in compliance with the terms of this Agreement and Applicable Law....”

MTAS requested a list of capital improvements from Inframark, which is included as Appendix III. Most of the items provided appear to be maintenance and repair in nature. Because the list did not include an implementation schedule or estimated costs, these items were not evaluated as part of this report.

### **Board Training Requirements**

Utility Board continuing education requirement verification shall be the responsibility of the Town.

# Appendix I

## Capitalization Policy



## **RESOLUTION 26-667**

### **A RESOLUTION OF THE TOWN OF MOUNT CARMEL BOARD OF MAYOR AND ALDERMEN ADOPTING A CAPITALIZATION POLICY**

**WHEREAS**, the Town of Mount Carmel is responsible for maintaining accurate and consistent financial records in accordance with generally accepted accounting principles and applicable state law; and

**WHEREAS**, the Governmental Accounting Standards Board (GASB) establishes accounting and financial reporting standards for state and local governments; and

**WHEREAS**, the Town has historically followed standard accounting practices for capitalizing and expensing assets but has not previously adopted a formal, written capitalization policy; and

**WHEREAS**, adoption of a written capitalization policy is considered a best practice in municipal financial management and is recommended by the Tennessee Comptroller of the Treasury and the Municipal Technical Advisory Service (MTAS); and

**WHEREAS**, the Town is currently participating in a sewer rate study evaluation being conducted by MTAS, which requires consistent classification and documentation of capital and operating expenditures within the Sewer Fund; and

**WHEREAS**, adoption of a formal capitalization policy will codify the Town's existing practices, promote consistency and transparency in financial reporting, and support long-term capital planning and infrastructure management;

**NOW, THEREFORE, BE IT RESOLVED**, by the Board of Mayor and Aldermen meeting at Mount Carmel, Tennessee, on this 22<sup>nd</sup> day of January, 2026, that

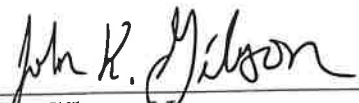
**SECTION 1.** The Capitalization Policy attached hereto and incorporated herein by reference is hereby adopted as the official capitalization policy of the Town of Mount Carmel.

**SECTION 2.** The policy shall apply town-wide to all departments and funds and shall govern the capitalization, depreciation, and disposition of capital assets for budgeting, accounting, financial reporting, and audit purposes.

SECTION 3. Adoption of this policy is intended to formalize and document existing capitalization practices and does not constitute a substantive change to current accounting procedures.

This Resolution shall take effect immediately, the public welfare requiring it.

ADOPTED this 22<sup>nd</sup> day of January, 2026

  
John Gibson, Mayor

Attest:

  
Tyler Williams, Town Recorder





## **Town of Mount Carmel Capitalization Policy**

### **Purpose**

This Capitalization Policy is designed to ensure a uniform understanding of the Town of Mount Carmel's capitalization practices for assets. This policy establishes the method of maintaining fixed asset information and the minimum cost (capitalization amount) that shall be used to determine the fixed assets that are to be reported in the financial statements in accordance with standards established by the Governmental Accounting Standards Board (GASB).

### **Capital Asset Classifications**

- **Land** - Land is the surface on earth, which may be used to support structures. Land improvements consist of betterments, site preparation, and site improvements (other than buildings) of a permanent nature that ready the land for its intended use. The costs associated with improvements to land are added to the cost of the land. Land and land improvements are inexhaustible assets and do not depreciate over time.
- **Buildings** - A structure that is permanently attached to the land and is not intended to be transportable or moveable. Building improvements are capital events that materially extend the useful life of a building, increase the value of a building, or both. A building improvement should be capitalized and recorded as an increase to the value of the existing building if the cost of the improvement meets or exceeds the capitalization threshold and increases the estimated useful life.
- **Improvements other than Buildings**- Include depreciable improvements and betterments made to land of a permanent nature, other than buildings that add value to land, but do not have an indefinite useful life.
- **Machinery and Equipment** - An apparatus, tool, or conglomeration of pieces to form a tool, or purchased equipment, used in operations. These items can be fixed or movable tangible assets. They will stand alone and not become a part of a basic structure or building.
- **Furniture and Fixtures** - Represents items that are not permanently affixed to a building and are easily removable.
- **Vehicles** - Vehicles for which title and license must be obtained such as cars, trucks, boats, road-going trailers, etc.
- **Infrastructure** - Long-lived capital assets that normally can be preserved for a significantly greater number of years than most capital assets. Infrastructure assets include drainage, water distribution, and sewer collection system rehabilitation, streets and parking lots, curbs and gutters, streetscape enhancements, bridges and tunnels, sidewalks, traffic signals and streetlights.

- **Construction in Progress** - Represents the temporary accumulation of costs, such as labor, materials, equipment, and any ancillary charges directly attributable to the construction of the project. The accumulation of costs continues in the CIP account until the project is complete. Once the asset is complete and placed into service, the costs are transferred from CIP to the appropriate capital asset category.

### **Capitalization Thresholds**

Assets purchased, constructed, or received through capital lease or donation must be uniformly grouped into capital asset types. The following table summarizes the capitalization thresholds for the town's capital asset types. Amounts are capitalized when the individual cost equals or exceeds the applicable threshold amount.

| Type                 | Threshold Amount |
|----------------------|------------------|
| Land                 | Purchase Price   |
| Buildings            | \$5,000          |
| Improvements         | \$5,000          |
| Infrastructure       | \$5,000          |
| Mach & Equipment     | \$5,000          |
| Furniture & Fixtures | \$5,000          |
| Vehicles             | \$5,000          |

### **Capital Asset Costs**

Capital assets are stated at historical cost or, in some instances, estimated historical cost. Donated capital assets are reported at acquisition value. Major outlays for capital assets and improvements are capitalized as projects are constructed. The cost of normal maintenance and repairs that do not add to the value of an asset or materially extend the asset's life is not capitalized.

Capital assets, except for land, land improvements and intangible assets with an indefinite useful life are depreciated over their estimated useful lives.

### **Depreciation**

Depreciation is the systematic and rational allocation of net cost (cost less estimated residual value) over the depreciable asset's estimated useful life. Depreciation is calculated on a straight-line basis over the estimated useful life. Depreciation begins in the first month of use for a full month, or if the starting month is not known, depreciation is assumed for half of the fiscal year of implementation.

Residual value is the estimate of what an asset may be sold for at the end of its service life. The town utilizes capital assets until they are deemed worthless, so a residual value of zero (0) is assigned to all capital assets.

### **Useful Life**

The useful life of an asset is that period during which the asset provides benefits. Estimates of useful life consider factors such as physical wear and tear and technological changes that bear on the economic usefulness of the asset. They typically have a useful life of more than one year. The city uses straight-line depreciation over the estimated useful life of the capital asset. Listed below is schedule used for its capital assets.

| Type                 | Est Life (Years)  |
|----------------------|-------------------|
| Land                 | Not Depreciated   |
| Buildings            | 20 - 50           |
| Improvements         | 20 - 50           |
| Infrastructure       | 30 - 50           |
| Water & Wastewater   |                   |
| Pumps & Treatment    | 15 - 20           |
| Transportation Equip | 5 - 10            |
| Lines and Storage    | 40 - 50           |
| Well/Dam             | Engineer Estimate |
| Wastewater System    | 40 - 50           |
| Mach & Equipment     | 5 - 20            |
| Furniture & Fixtures | 7 - 10            |
| Vehicles             | 5 - 10            |

### **Surplus Property- Disposition of Capital Fixed Assets**

Surplus property is defined as assets retained by the city that are not currently in use. Once an asset is determined to be surplus, it is the responsibility of the governing body to declare the property as surplus and determine the method of disposal, which should be consistent with methods allowed under state law.

### **Procedures and Exceptions**

The Finance Department will implement procedures that are in accordance with this policy. If a capital assets situation arises that is not covered within this policy, the governing body may authorize the method of handling. Assets not meeting the requirements above will be inventoried for tracking purposes to reduce the risk of loss.

# Appendix II

## Debt Management Policy



## **RESOLUTION 26-668**

### **A RESOLUTION OF THE TOWN OF MOUNT CARMEL BOARD OF MAYOR AND ALDERMEN ADOPTING A DEBT MANAGEMENT POLICY**

**WHEREAS**, the Town of Mount Carmel, Tennessee, is authorized under state law to issue debt for lawful municipal purposes and is responsible for managing such obligations in a prudent, transparent, and fiscally responsible manner; and

**WHEREAS**, Tennessee law and guidance from the Tennessee Comptroller of the Treasury require local governments to adopt a formal debt management policy governing the issuance and management of debt obligations; and

**WHEREAS**, the Town has historically managed debt in accordance with applicable law, Comptroller guidance, and sound financial practices, but has not previously adopted a comprehensive written debt management policy approved by the governing body; and

**WHEREAS**, the Municipal Technical Advisory Service (MTAS) and the Government Finance Officers Association (GFOA) recommend adoption of a written debt management policy as a best practice in municipal financial management; and

**WHEREAS**, the Town is currently participating in a sewer rate study evaluation being conducted by MTAS, which requires the adoption of formal financial governance policies, including a debt management policy, in order to evaluate existing obligations, debt service requirements, and long-term financial impacts on utility rates; and

**WHEREAS**, adoption of a Debt Management Policy will formalize the Town's existing practices, promote consistency and transparency, minimize financial risk, and provide a clear framework for future debt decisions;;

**NOW, THEREFORE, BE IT RESOLVED**, by the Board of Mayor and Aldermen meeting at Mount Carmel, Tennessee, on this 22<sup>nd</sup> day of January, 2026, that

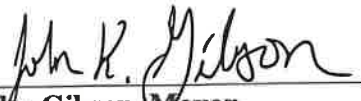
SECTION 1. The Debt Management Policy attached hereto and incorporated herein by reference is hereby adopted as the official Debt Management Policy of the Town of Mount Carmel.

SECTION 2. The policy shall apply to all debt obligations of the Town, including general obligation debt, revenue debt, notes, loans, financing leases, and any other debt permitted by law, and shall govern the planning, issuance, management, and reporting of such obligations.

SECTION 3. Adoption of this policy is intended to formalize and document existing debt management practices and does not, by itself, authorize the issuance of new debt or constitute a material change to current procedures.

This Resolution shall take effect immediately, the public welfare requiring it.

ADOPTED this 22<sup>nd</sup> day of January, 2026

  
John Gibson, Mayor

Attest:  
  
Tyler Williams, Town Recorder





**Town of Mount Carmel**  
**Debt Management Policy**

The purpose of this debt policy is to establish a set of parameters by which debt obligations will be undertaken by the Town of Mount Carmel, TN. This policy reinforces the commitment of the Town and its officials to manage the financial affairs of the Town to minimize risk, avoid conflicts of interest and ensure transparency while still meeting the capital needs of the Town. A debt management policy signals to the public and the rating agencies that the Town is using a disciplined and defined approach to financing operating and capital needs and fulfills the requirements of the State of Tennessee regarding the adoption of a debt management policy.

The goal of this policy is to assist decision makers in planning, issuing and managing debt obligations by providing clear direction as to the steps, substance and outcomes desired. In addition, greater stability over the long-term will be generated by the use of consistent guidelines in issuing debt.

**Definition of Debt:** All obligations of the Town to repay, with or without interest, in installments and/or at a later date, some amount of money utilized for the purchase, construction, or operation of Town resources. This includes but is not limited to notes, bond issues, financing leases, and loans of any type (*whether from an outside source such as a bank or from another internal fund*).

**Approval of Debt:** Bond anticipation notes, capital outlay notes, grant anticipation notes, tax and revenue anticipation notes (including any interfund loans) and certain non-exempt financing leases will be submitted to the State of Tennessee Comptroller's Division of Local Government Finance and the Board of Mayor & Aldermen prior to adoption of the authorizing resolution for capital outlay notes and prior to issuance or entering into all other notes. A plan for refunding debt issues will also be submitted to the Comptroller's Office prior to adoption of the authorizing resolution by the governing body and issuance.

**Transparency:**

- The Town shall comply with legal requirements for notice and for public meetings related to debt issuance.
- All notices shall be posted in the customary and required posting locations, including as required local newspapers, bulletin boards, and websites.
- All costs (including principal, interest, issuance, continuing, and one-time) shall be clearly presented and disclosed to the citizens, Board of Mayor & Aldermen, and other stakeholders in a timely manner.

- The terms and life of each debt issue shall be clearly presented and disclosed to the citizens/members, Board of Mayor & Aldermen, and other stakeholders in a timely manner.
- A debt service schedule outlining the rate of retirement for the principal amount shall be clearly presented and disclosed to the citizens/members, Board of Mayor & Aldermen, and other stakeholders in a timely manner.

#### Role of Debt:

- Long-term debt shall not be used to finance current operations. Long-term debt may be used for capital purchases or construction identified through the capital improvement, regional development, transportation, or master process or plan. Short-term debt may be used for certain projects and equipment financing as well as for operational borrowing; however, the Town will minimize the use of short-term cash flow borrowings by maintaining adequate working capital for enterprise funds, available cash for governmental funds, and close budget management.
- In accordance with Generally Accepted Accounting Principles and state law,
  1. The maturity of the underlying debt will not be more than the useful life of the assets purchased or built with the debt, not to exceed 30 years; however, an exception may be made with respect to federally sponsored loans, provided such an exception is consistent with law and accepted practices.
  2. Debt issued for operating expenses must be repaid within the same fiscal year of issuance or incurrence.

#### Types and Limits of Debt:

- The Town will seek to limit total outstanding debt obligations to 20% of the assessed value of the taxable property of the Town according to the most recent complete assessment, excluding overlapping debt, enterprise debt, and revenue debt.
- The limitation on total outstanding debt must be reviewed prior to the issuance of any new debt.
- The Town's total outstanding debt obligation will be monitored and reported to the Board of Mayor & Aldermen by the Chief Financial Officer (CFO). The CFO shall monitor the maturities and terms and conditions of all obligations to ensure compliance. The CFO shall also report to the Board of Mayor & Aldermen any matter that adversely affects the credit or financial integrity of the Town.
- The Town is authorized to issue General Obligation bonds, Revenue bonds, TIFs, loans, notes, financing leases, and other debt allowed by law. The Town has determined it currently will not issue complex debt instruments such as swaps or derivatives.
- The Town will seek to structure debt with *level or declining* debt service payments

- over the life of each individual bond issue, loan, or other debt obligation.
- As a rule, the Town will not backload, use “wrap-around” techniques, balloon payments or other exotic formats to pursue *the financing of* projects. When refunding opportunities, natural disasters, other non-general fund revenues, or other external factors occur, the Town may utilize non-level debt methods. However, the use of such methods must be thoroughly discussed in a public meeting and the mayor and governing body must determine such use is justified and in the best interest of the town, as well as submitted to the Comptroller’s Office for approval.
- The Town may use financing leases (formerly called capital leases) to finance projects. The Town will follow the guidance established by the Comptroller of the Treasury, Division of Local Government Finance when assessing potential financing leases. This guidance is pursuant to TCA 9-24-101 “Uniformity in Local Government Lease Financing Act of 2021” and the Division of Local Government Finance’s Debt Manual. ([Tennessee Debt Manual for Local Governments](#))
- Bonds backed with a general obligations pledge often have lower interest rates than revenue bonds. The Town may use its General Obligation pledge with revenue bond issues when the populations served by the revenue bond projects overlap or significantly are the same as the property tax base of the Town. The Board of Mayor & Aldermen and management are committed to maintaining rates and fee structures of revenue supported debt at levels that will not require a subsidy from the Town’s General Fund.

#### Use of Heightened Risk Debt:

- As defined in state law, heightened risk debt is debt that contains: a variable interest rate; an interest rate reset provision; or a put option where the holder of the debt can demand repayment with a certain notice. The Town recognizes the value of heightened risk debt obligations and that municipalities have greatly benefitted from the use of heightened risk debt in the financing of needed infrastructure and capital improvements.
- However, the Town also recognizes there are inherent risks associated with the use of heightened risk debt and will implement steps to mitigate these risks, including:
  1. When considering heightened risk debt, municipal officials will:
    - Use such obligations only when they fully understand the associated risks; and
    - Evaluate alternative financing options that avoid heightened-risk terms.
  2. The Town will annually include in its budget an interest rate assumption for any outstanding variable rate debt that takes market fluctuations affecting the rate of interest into consideration.
  3. Prior to entering into any heightened risk debt obligation that is backed by insurance and secured by a liquidity provider, the Board of Mayor & Aldermen shall be informed of the potential effect on rates as well as any additional costs that might be incurred should the insurance fail.
  4. Prior to entering into any heightened risk debt obligation that is backed by

a letter of credit provider, the Board of Mayor & Aldermen shall be informed of the potential effect on rates as well as any additional costs that might be incurred should the letter of credit fail.

5. Prior to entering into any heightened risk debt obligation, the Board of Mayor & Aldermen will be informed of any terms, conditions, fees, or other costs associated with the prepayment of heightened risk debt obligations.
6. The Town shall consult with persons familiar with the arbitrage rules to determine applicability, legal responsibility, and potential consequences associated with any heightened risk debt obligation.
7. The Town will not consider any debt obligation with a put option, as defined in TCA 9-21-409, unless the put option date is clearly stated in the obligation and the obligation requires at least 120 days' notice of ability to force repayment before the final maturity.
8. The Town will not consider any debt obligation with an interest rate reset provision as defined in TCA 9-21-409, unless the interest rate reset date or interval is clearly stated in the obligation and the obligation requires at least 60 days' notice of an interest rate change.
9. Prior to entering into any heightened risk debt obligation, the Town shall obtain approval from the Comptroller's Office.
10. The State Funding Board suggests that public entities may wish to include a maximum amount, level, or percentage of heightened risk debt that the public entity is willing to have outstanding at any time. We, the Town of Mount Carmel, believe that heightened risk debt should not exceed 5% of our total debt.

#### Use of Derivatives:

- The Town chooses not to use derivative or other exotic financial structures in the management of the Town's debt portfolio.
- Prior to any reversal of this provision:
  1. A written management report outlining the potential benefits and consequences of utilizing these structures must be submitted to the Board of Mayor & Aldermen; and
  2. The Board of Mayor & Aldermen must adopt a specific amendment to this policy concerning the use of derivatives or interest rate agreements that complies with the State Funding Board Guidelines.

#### Costs of Debt:

- All costs associated with the initial issuance or incurrence of debt, management and repayment of debt (including interest, principal, and fees or charges) shall be disclosed prior to action by the Board of Mayor & Aldermen in accordance with

- the notice requirements stated above.
- In cases of variable interest or non-specified costs, detailed explanation of the assumptions shall be provided along with the complete estimate of total costs anticipated to be incurred as part of the debt issue.
- Costs related to the repayment of debt, including liabilities for future years, shall be provided in context of the annual budgets from which such payments will be funded (i.e., General Obligations bonds in context of the General Fund, Revenue bonds in context of the dedicated revenue stream and related expenditures, loans and notes).

#### Refinancing Outstanding Debt:

- The Town will refund debt when it is in the best financial interest of the Town to do so, and the CFO shall have the responsibility to analyze outstanding bond issues for refunding opportunities. The Comptroller's Office must review the refunding plan prior to the decision being approved by the governing body, and all plans for current or advance refunding (no longer tax- exempt) of debt must be in compliance with state laws and regulations.
- The CFO will consider the following issues when analyzing possible refunding opportunities:
  1. Onerous Restrictions – Debt may be refinanced to eliminate onerous or restrictive covenants contained in existing debt documents, or to take advantage of changing financial conditions or interest rates.
  2. Restructuring for Economic Purposes – The Town will refund debt when it is in the best financial interest of the Town to do so. Such refunding may include restructuring to meet unanticipated revenue expectations, achieve cost savings, mitigate irregular debt service payments, or to release reserve funds. Current refunding opportunities may be considered by the CFO if the refunding generates positive present value savings, and the CFO must establish a minimum present value savings threshold for any refinancing.
  3. Term of Refunding Issues – The Town will refund bonds within the term of the originally issued debt. However, the CFO may consider maturity extension, when necessary to achieve a desired outcome, provided such extension is legally permissible. The CFO may also consider shortening the term of the originally issued debt to realize greater savings. The remaining useful life of the financed facility and the concept of inter-generational equity should guide this decision.
  4. Escrow Structuring – The Town shall utilize the least costly securities available in structuring refunding escrows. Under no circumstances shall an underwriter, agent or financial advisor sell escrow securities to the Town from its own account.
  5. Arbitrage – The Town shall consult with persons familiar with the arbitrage rules to determine applicability, legal responsibility, and potential consequences associated with any refunding.

### Professional Services:

The Town shall require all professionals engaged in the process of issuing debt to clearly disclose all compensation and consideration received related to services provided in the debt issuance process by both the Town and the lender or conduit issuer, if any. This includes “soft” costs or compensations in lieu of direct payments.

- Counsel: The Town shall enter into an engagement letter agreement with each lawyer or law firm representing the Town in a debt transaction. *(No engagement letter is required for any lawyer who is an employee of the Town or lawyer or law firm which is under a general appointment or contract to serve as counsel to the Town. The Town does not need an engagement letter with counsel not representing the Town, such as underwriters’ counsel.)*
- Financial Advisor: The Town shall enter into a written agreement with each person or firm serving as financial advisor for debt management and transactions. Written agreements with a financial advisor should be limited to a specific transaction; or, if the Town desires to maintain an ongoing relationship with a financial advisor, then the agreement should be reviewed by the governing body annually. The written agreement should define a clear notice period for termination by either party.
  - Whether in a competitive sale or negotiated sale, the financial advisor shall not be permitted to bid on, privately place or underwrite an issue for which they are or have been providing advisory services for the issuance or broker any other debt transactions for the Town.
- Underwriter: The Town shall require the Underwriter to clearly identify itself in writing as an underwriter and not as a financial advisor from the earliest stages of its relationship with the Town with respect to that issue. The Underwriter must clarify its primary role as a purchaser of securities in an arm’s-length commercial transaction and that it has financial and other interests that differ from those of the Entity. The Underwriter in a publicly offered, negotiated sale shall be required to provide pricing information both as to interest rates and to takedown per maturity in advance of the pricing of the debt. Underwriter relationship will be reviewed at each new issuance of debt by the Town.

### Conflicts:

- Professionals involved in a debt transaction hired or compensated by the Town shall be required to disclose to the Town existing client and business relationships between and among the professionals to a transaction (including but not limited to financial advisor, swap advisor, bond counsel, swap counsel, trustee, paying agent, liquidity or credit enhancement provider, underwriter, counterparty, and remarketing agent), as well as conduit issuers, sponsoring organizations and program administrators. This disclosure shall include that information reasonably sufficient to allow the Town to appreciate the significance of the relationships.

- Professionals who become involved in the debt transaction as a result of a bid submitted in a widely and publicly advertised competitive sale conducted using an industry standard, electronic bidding platform are not subject to this disclosure. No disclosure is required that would violate any rule or regulation of professional conduct.

Review of Policy:

This policy shall be reviewed at least every five (5) years by the Board of Mayor & Aldermen. Any amendments shall be considered and approved in the same process as the initial adoption of this Policy.

Compliance:

Town Administration is responsible for ensuring compliance with this policy.

*References:*

T.C.A. §§ 7-51-901 thru 911 - Contracts, Leases, and Lease Purchase Agreements  
T.C.A. § 9, Part 21 – Local Government Public Obligations Law  
T.C.A. § 9-24-101 - Uniformity in Local Government Lease Financing Act of 2021  
Government Finance Officers Association (GFOA) [Debt Management Policy \(gfoa.org\)](https://www.gfoa.org/debt-management-policy)

Version 1.0- January 2026

# Appendix III

## Capital Improvement Analysis

# Asset Evaluation and Improvement Considerations for the Wastewater Treatment Plant and Lift Stations



**SEPTEMBER 2025**

**PREPARED BY**

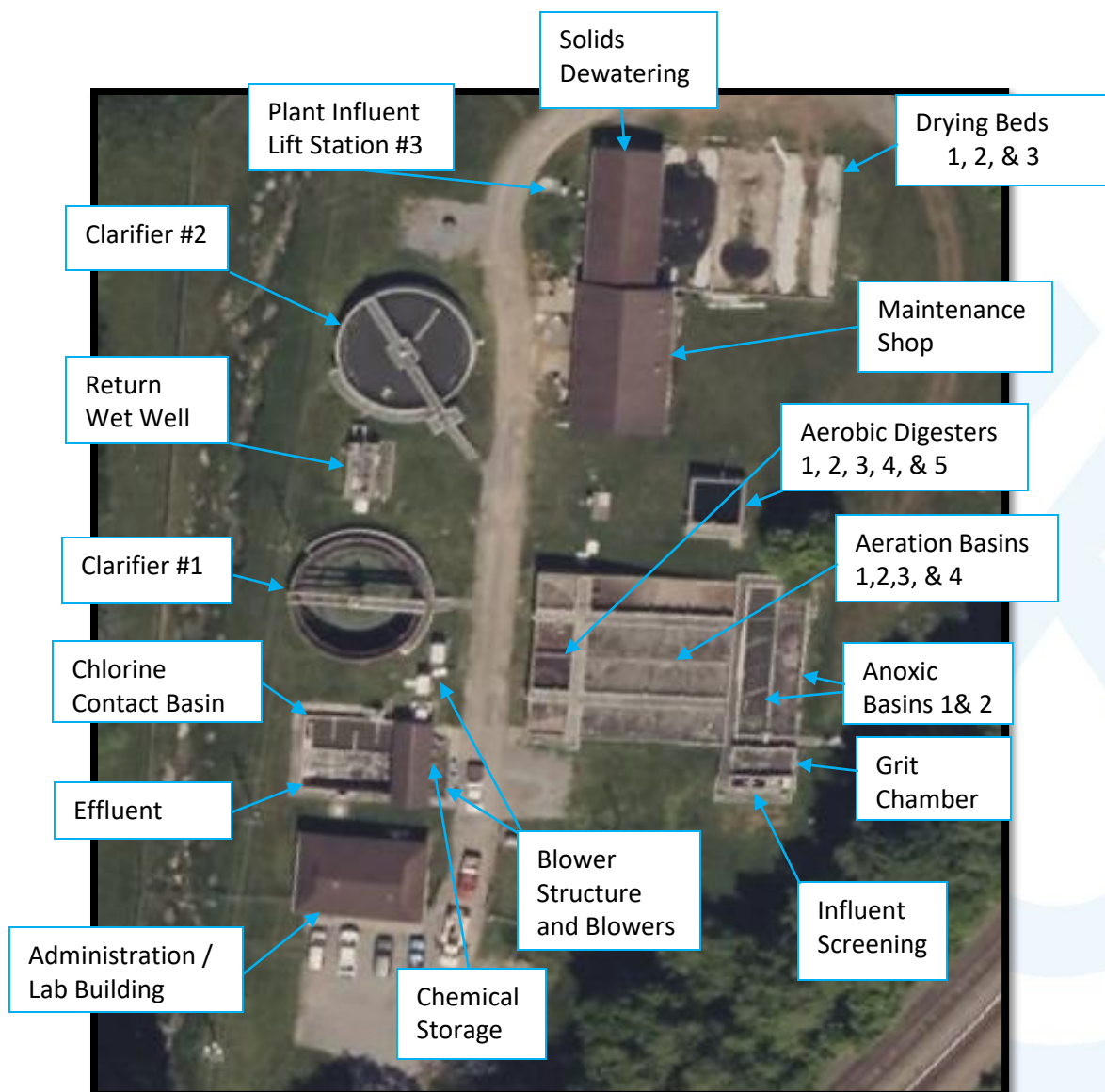
**INFRAMARK, LLC**



## Mount Carmel WWTP

### Introduction

Inframark's Asset Management and Reliability Team is proud to provide this assessment service. This report is intended to provide summary documentation on the condition of specific wastewater assets and suggested improvements. This document focuses on the infrastructure of the wastewater treatment plant and lift stations. The perspective presented is intended to be strategic and holistic. The scope of work for proposed individual asset improvements should be developed in detail.



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## **WASTEWATER TREATMENT PLANT and LIFT STATION INFRASTRUCTURE**

- 1. Treatment Process Systems Overview**
- 2. Influent Screening and Grit Chamber**
- 3. Anoxic Basins**
- 4. Aerobic Biological Treatment Systems**
- 5. Clarification Systems**
- 6. Dewatering and Stabilization of Biosolids Systems**
- 7. Disinfection Systems & Plant Effluent**
- 8. Onsite Laboratory**
- 9. Facility General**
- 10. Lift Stations**

# Treatment Process Systems Overview

**The Mount Carmel Wastewater Treatment Plant utilizes seven major wastewater treatment processes:**

- 1. Drum Screen Solids Removal, and Grit Aeration**
- 2. Denitrification Through Anoxic Zones**
- 3. Aerobic Biological Treatment of BOD**
- 4. Break Down of Organic Matter Through Digesters**
- 5. Clarification via Clarifiers 1 & 2**
- 6. Disinfection**
- 7. Dewatering and Stabilization of Biosolids**

**These processes are designed to accommodate a flow of .472 MGD, the average daily flow is approximately .2 MGD. Surge flows rarely meet or exceed design flow capacity.**

**Detailed recommendations for capital improvements, organized by process and process asset, are provided in subsequent sections of this document, below.**

**Each of the wastewater treatment processes is supported by specific infrastructure in the form of pumps, screens, aeration systems, presses, compressors, pipes, valves, instrumentation, controls, loaders and trucks, and chemical storage/injection systems. These items are considered capital assets. Recommendations for improvements to specific assets and how specific recommended improvements are relevant will be provided.**

# Influent Screening and Grit Removal Systems

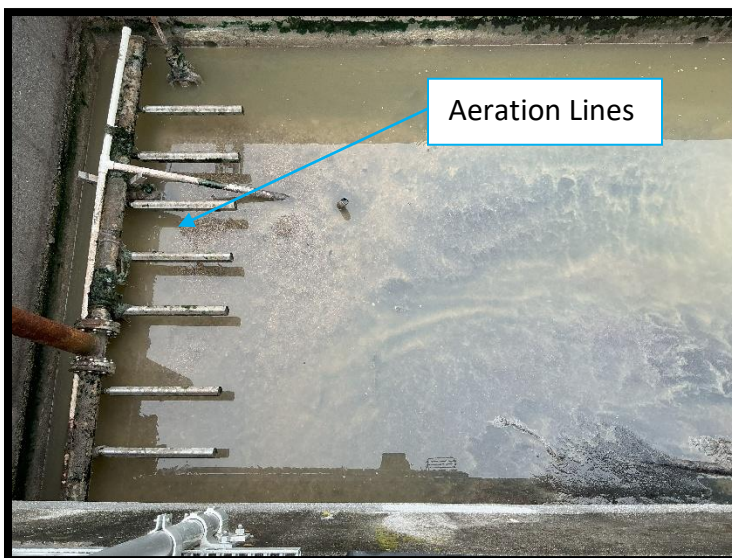
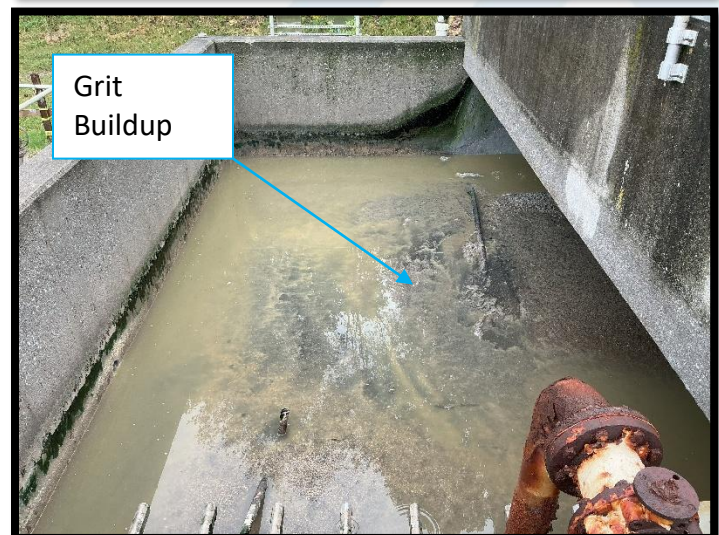
The influent drum screen and grit removal systems serve specific functions. The drum screen prevents coarse, dense solids such as rags, wood, stones, sand, leaves, and similar debris from entering the biological treatment process. The grit removal system removes settle-able solids that include granular sand, glass, plastics, and similar small-scale debris that have a higher density than water. The influent drum screen is in great condition as it was recently installed and placed into service in April of 2025. The grit chamber that allows the grit to settle before it moves to the Anoxic zones is not functioning to its full potential.

The following issues were identified at the Influent Screening and Grit Chamber:

- Aerated Grit Chamber is not currently functioning as intended. Currently being used as an EQ basin. Chamber is full of grit and needs cleaning.

## **Recommendations:**

1. Install new awning or cover for new influent sampler and influent flow meter.
2. Clean out Grit Chamber.
3. Fix aeration lines to basin.



# Anoxic Basins

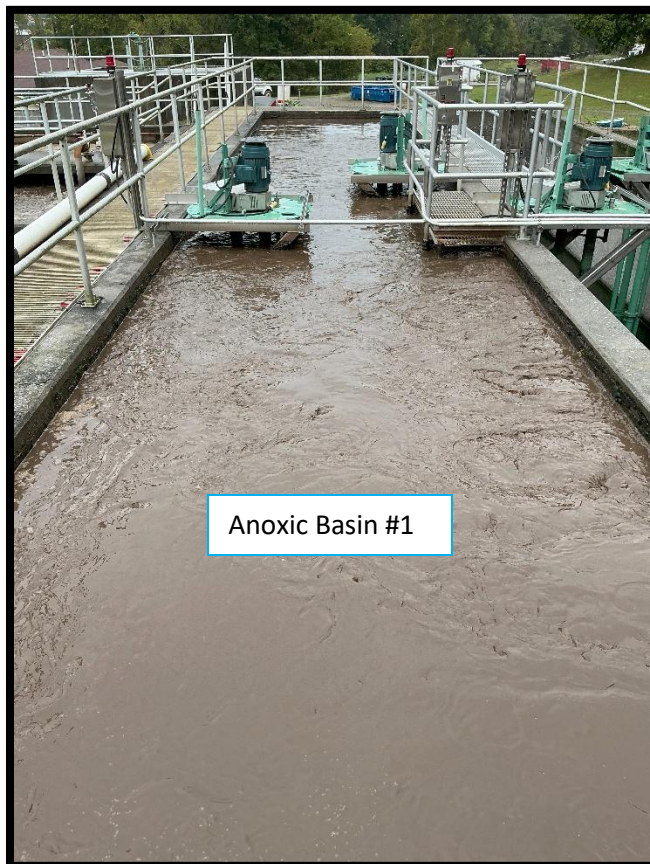
The anoxic basin is a tank or zone within a wastewater treatment plant where oxygen is absent, but nitrate ( $\text{NO}_3^-$ ) is present. This environment is ideal for denitrification, a microbial process that converts nitrate into nitrogen gas ( $\text{N}_2$ ), which is then released harmlessly into the atmosphere. The anoxic basins were converted from existing primary clarifiers, and the mixers are new, installed in April of 2025. They are functioning as intended.

The following issues were identified at the Anoxic Basins:

- Railing and grating around the basins are missing and/or unstable.

## **Recommendations:**

1. Replace all missing railing.
2. Secure the grating for a safe walkway.



# Aerobic Biological Treatment System

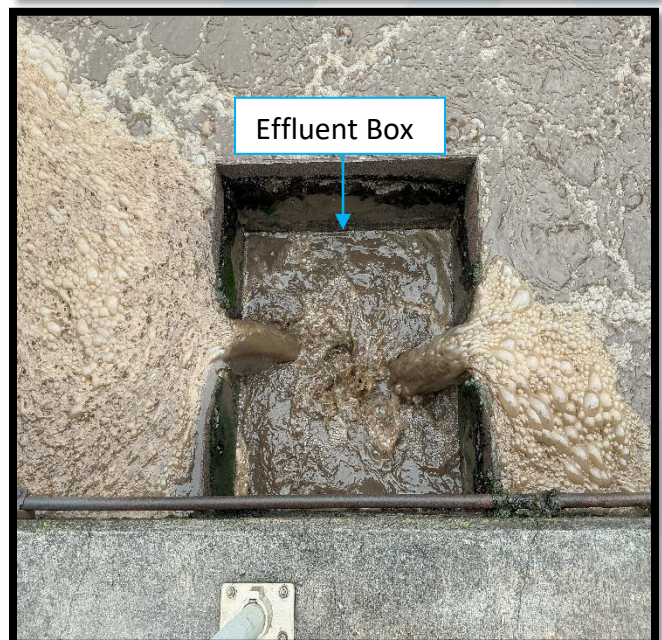
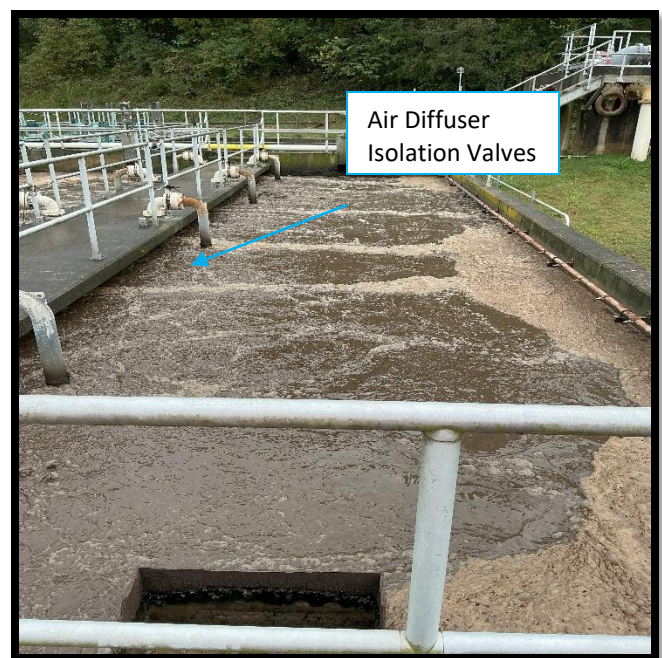
The Mount Carmel WWTP's Aerobic Biological Treatment System consists of two main process areas, the Aeration Basins and the Aerobic Digesters. An aeration basin is where air (or pure oxygen) is introduced into wastewater to promote the growth of aerobic bacteria. These bacteria consume organic matter and nutrients, cleaning the water biologically. The aerobic digesters are specialized tanks used in wastewater treatment to stabilize and reduce the volume of biological sludge through aerobic digestion—a process where microorganisms break down organic matter in the presence of oxygen. Wastewater treatment plants use Blowers to add the air into these treatment processes.

The following issues were identified at the Aeration Basins:

- There are signs of missing or misaligned air headers at the aeration basins.
- The isolation valves on almost all the air diffusers are seized or are missing pieces.
- The effluent boxes on each basin are corroded with metal loss.

## Recommendations:

1. Drain and clean each basin inspecting and replacing air headers as needed.
2. Compile list of isolation valves on the diffuser lines that need replacement and plan replacement.
3. The effluent boxes will need to be replaced within the next 5 years.

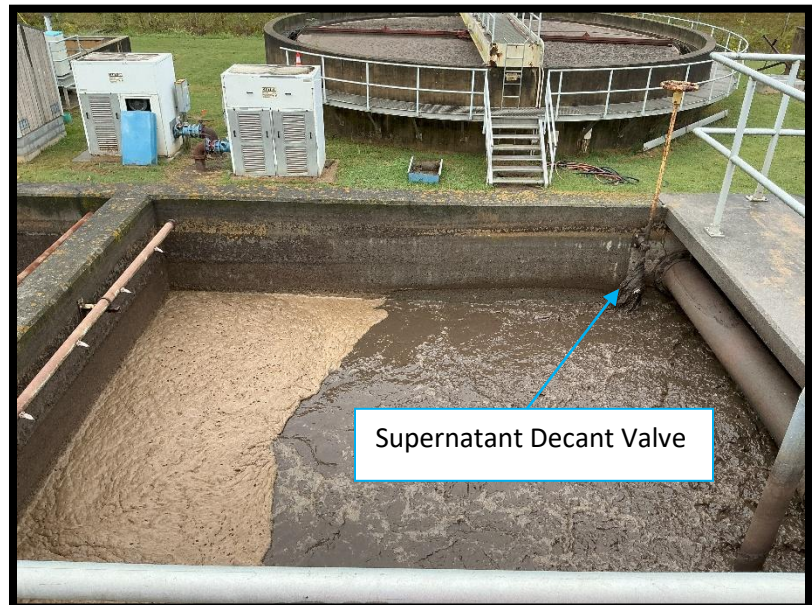


The following issues were identified at the Aerobic Digesters:

- Digester #1 has spalling and stress cracks.
- Digester #2 has a leak in the waste line.
- Digester #2 sludge feed valve is out of service. **\*Repaired since Evaluation\***
- Digester #4 sludge feed valve is out of service. **\*Repaired since Evaluation\***
- The supernatant decant valves on all basins are corroded and seized.
- Digester #5 is out of service.

**Recommendations:**

1. Repair leak in Digester #2 waste line. Repair can be made by replacing the blind flange.
2. Repair or replace Digester #2 feed valve. **\*Repaired since Evaluation\***
3. Repair or replace Digester #4 feed valve. **\*Repaired since Evaluation\***
4. Attempt to exercise supernatant decant valves on all basins and repair or replace valves as needed.
5. Digester #5 needs cleaned out and inspected to prepare for potential use.



The following issues were identified with the Blowers and Blower Area:

- New Blower #1 needs the access door repaired.
- Blower #1 is out of service.
- Blower #2 is out of service.
- Blower #3 is out of service.
- Air is leaking through the ground in the road which indicates a leak in the air line.

**Recommendations:**

1. Repair or replace access door to New Blower #1.
2. Not all blowers need to be repaired since the new blowers can handle the workload, but redundancy is recommended for backups.
3. Dig up air line that runs under the road and repair leak.
4. Install Air Flow Meter to accurately judge the amount of air being introduced to the system.



New Blower #2  
Access Door



Blowers #1, #2, #3, & #4

# Clarification System

The Mount Carmel WWTP Clarification System is composed of two components. Clarifiers #1 & #2 receive mixed liquor (a combination of wastewater and microorganisms) from the aeration basin, allowing solids to settle and clear water to overflow. The RAS (Returned Activated Sludge) Wet-Well, RAS is the portion of settled biomass (microorganisms and solids) that is pumped from the bottom of the secondary clarifier back into the aeration basin. This recycling maintains a high concentration of active microbes needed to treat incoming wastewater effectively.

The following issues were identified with the Clarifiers:

- Clarifier #1 has no scum box.
- Clarifier #1 has spalling and stress cracks.
- Clarifier #2 has no visible issues.

## Recommendations:

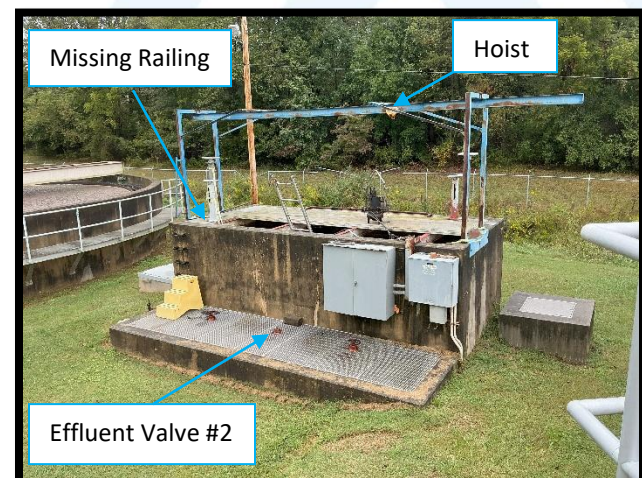
1. Replace scum box in Clarifier #1.
2. Monitor Clarifier #1 for stress cracking.

The following issues were identified with the RAS Wet Well:

- Hoist over wet well needs inspection and possible repair.
- Effluent valve #2 needs repair, missing handle.
- No safety railing on platform.

## Recommendations:

1. Have hoist inspected and serviced.
2. Repair Effluent valve #2 and exercise all other valves.
3. Place railing around platform, including hand railing for access ladder.



# Dewatering of Biosolids

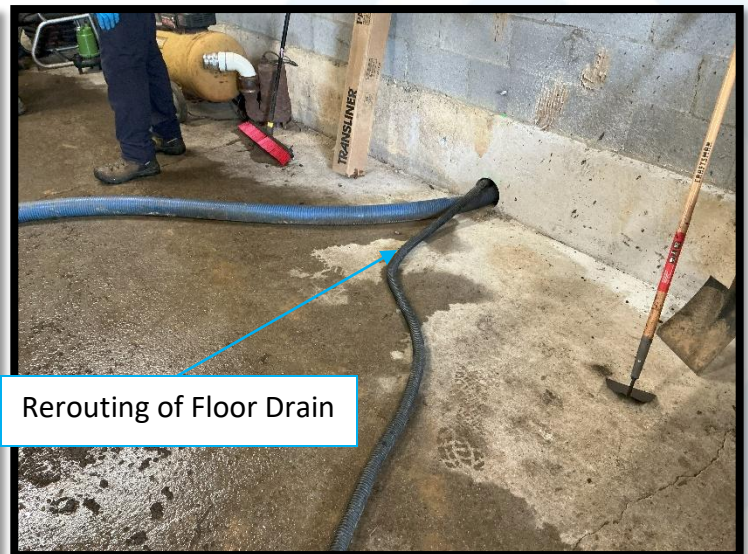
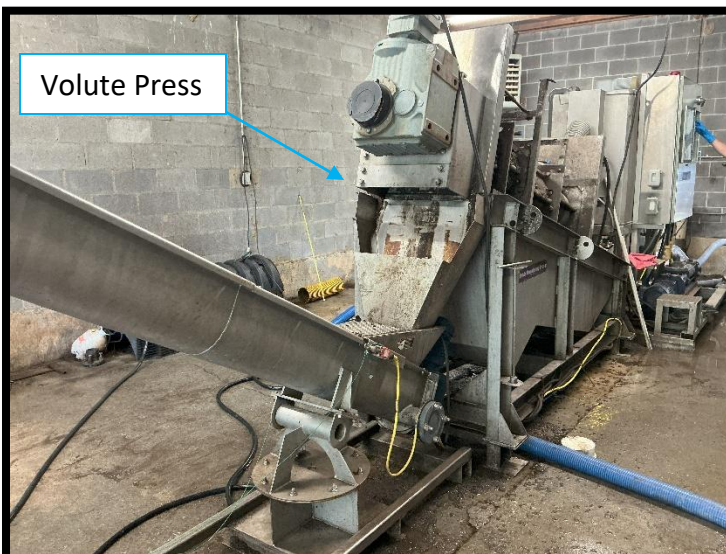
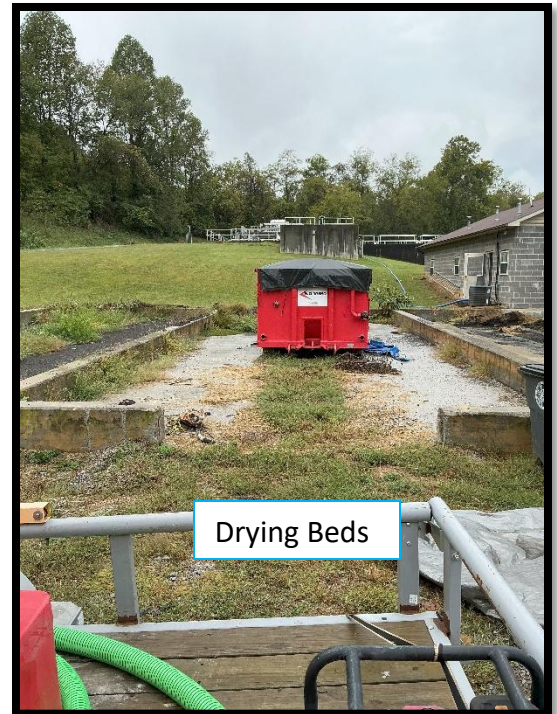
The purpose of dewatering is to reduce the water content of sludge to decrease its volume and weight, making it easier and cheaper to handle, transport, and dispose of. Stabilization of Biosolids is the reduction of pathogens, odors, and putrescibility (tendency to rot), making biosolids safer for disposal or beneficial reuse.

The following issues were identified with the Dewatering and Stabilization of Biosolids:

- All drying beds are not currently in use and are overgrown.
- The rental volute press that is currently in use is not functioning properly and is constantly having issues.
- The floor drain in the press room is not functioning; staff are currently having to pump and reroute water out of the building.

## Recommendations:

1. Clean out drying beds and inspect valves.
2. Repair floor drain in dewatering building or install new drain.
3. Replace volute press.
4. Inspect heaters and have them ready for Winter.  
**\*Completed and on\***
5. Install exhaust fan in press room for adequate ventilation.



# Disinfection System & Plant Effluent

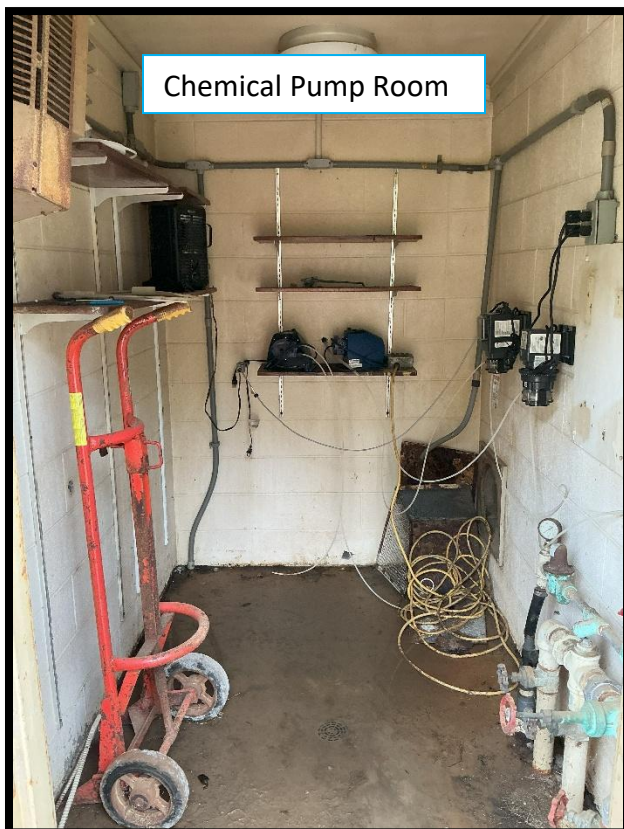
The disinfection system in wastewater treatment is the final step in the treatment process, designed to kill or inactivate pathogenic microorganisms (bacteria, viruses, protozoa) before the treated water is discharged or reused. The Mount Carmel WWTP currently utilizes sodium hypochlorite for disinfection of treated effluent. Sodium hypochlorite is introduced immediately upstream of the chlorine contact basin. The chloring contact basin feeds into the plant effluent basin where it is then discharged from the plant.

The following issues were identified with the disinfection system:

- Minor spalling and stress fractures on the basin itself.
- Lack of automation in dosing can lead to over/under dosing.
- The floor drain in the chemical pump room does not drain.
- No adequate ventilation in the chemical pump room.

## Recommendations:

1. Monitor cracks periodically for potential issues.
2. Automation of sodium hypochlorite treatment including the installation of an analyzer.
3. Have the floor drain in the chemical pump room repaired.
4. Install a ventilation system for the chemical pump room.

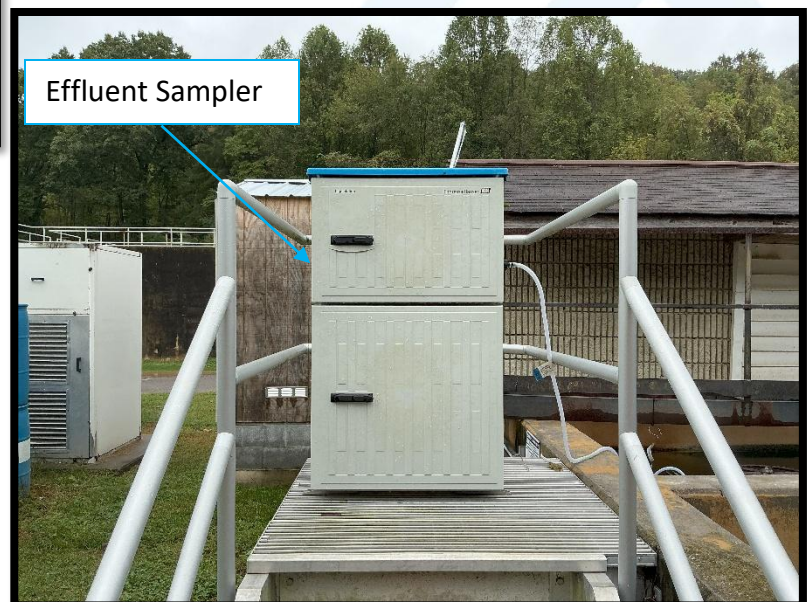
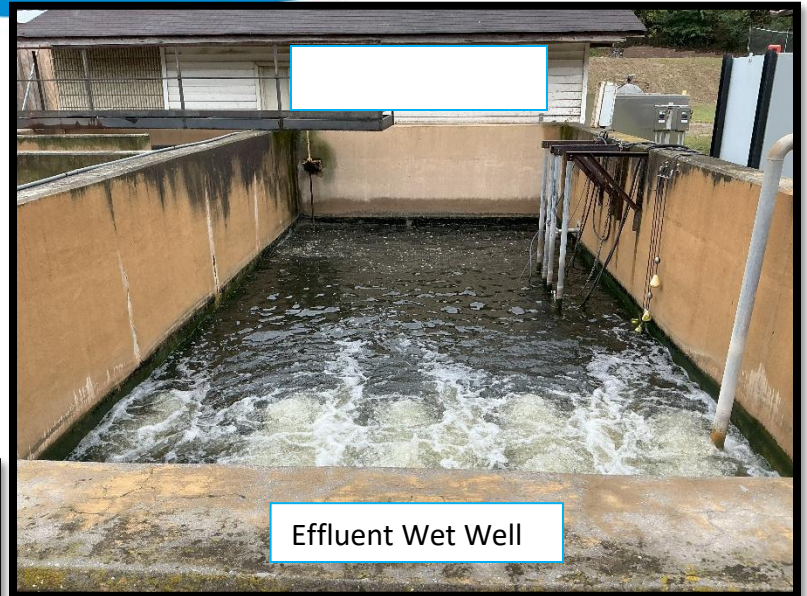


The following issues were identified with the plant effluent:

- Effluent sampler is exposed to the elements.
- The effluent flow meter is outdated and possibly unreliable.
- Effluent basin has minor cracking.

**Recommendations:**

1. Install awning or cover for effluent sampler.
2. Monitor cracks in basin and repair if it worsens.
3. Install newer, more accurate flow meter.
4. Effluent pumps work well but would benefit from a spare pump.



# Onsite Laboratory

The onsite laboratory at the wastewater treatment plant is a crucial part of the treatment process. It's primarily used for monitoring, testing, and ensuring compliance with environmental regulations. Here are the main purposes:

## 1. Water Quality Analysis

- **Influent and Effluent Testing:** Measure parameters like pH, turbidity, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), and nutrients (nitrogen, phosphorus).
- **Microbiological Testing:** Detect pathogens or indicator organisms (e.g., *E. coli*) to ensure treated water meets health standards.

## 2. Process Control

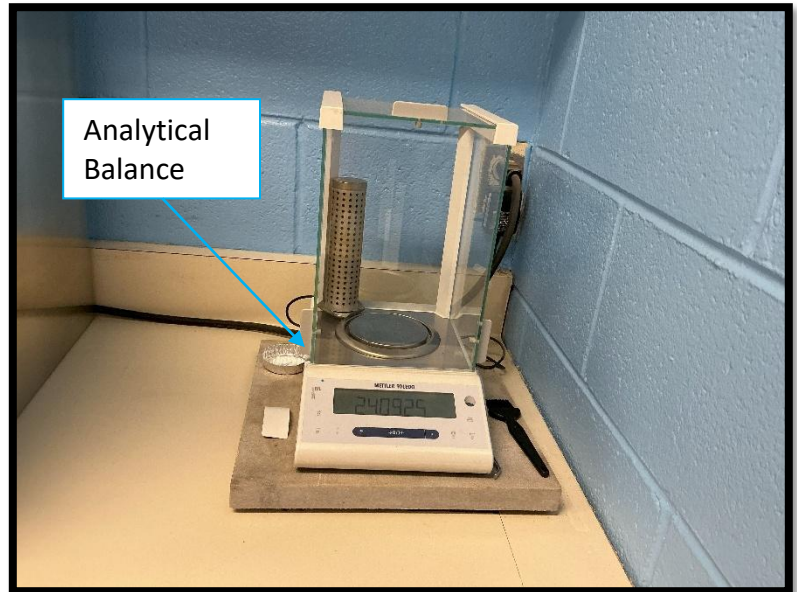
- **Real-Time Adjustments:** Operators use lab data to optimize aeration, chemical dosing, sludge handling, and other treatment steps.
- **Troubleshooting:** Identify issues like toxic shocks, high organic loads, or imbalances in biological processes.

## 3. Regulatory Compliance

- **Permit Requirements:** Labs verify that discharge meets local, state, and federal limits set by agencies like the EPA.
- **Reporting:** Generate data for monthly or quarterly compliance reports.

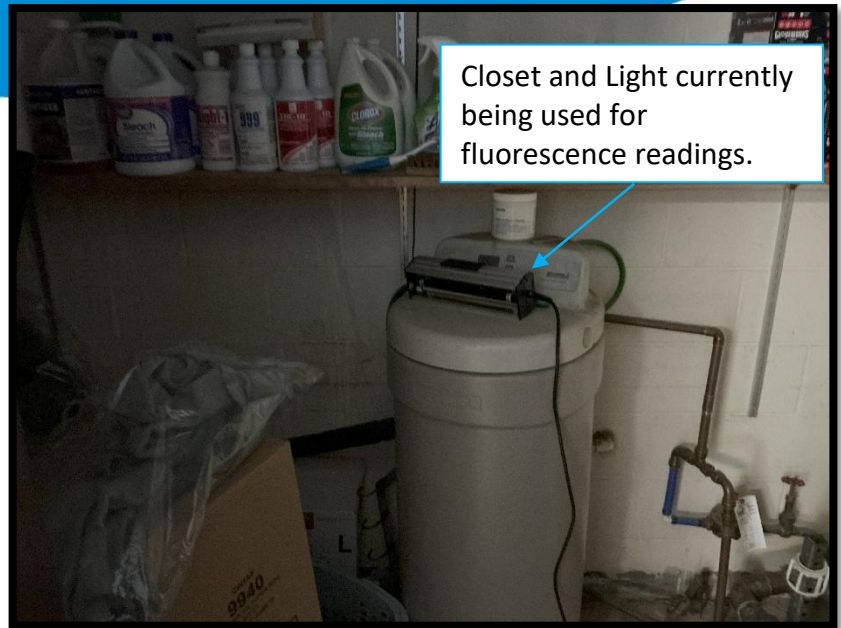
## 4. Research and Optimization

- **Pilot Testing:** Evaluate new treatment technologies or chemicals.
- **Performance Monitoring:** Track trends to improve efficiency and reduce costs.



The following issues were identified with the onsite Laboratory:

- The Analytical Balance appears to be malfunctioning, bringing into question the accuracy of the unit.
- The Autoclave is leaking.
- The Drying Oven is not opening as it should. It is also currently on the countertop and may present a safety issue.
- The Quanti-Tray Sealer is periodically malfunctioning causing tears where it should be sealing the trays.
- The techs are currently using a blacklight in the closet to read the fluorescence-based biological results.
- The counters in the Lab are not level and seem to be loose.



**Recommendations:**

- Replace Analytical Balance.
- Repair or Replace Autoclave.
- Replace Drying Oven.
- Repair Quanti-Tray Sealer.
- Purchase UV Viewer Plus for use instead of light in closet.
- Explore options for counter replacement or repair.



# Facility General

The Facility General is in overall good condition with only a few minor issues found with certain items. The grounds are well kept, and the lighting is sufficient. Emergency power generation is in place and functioning. Monitoring systems are in place as well but are lacking in some respects. The onsite buildings and structures are in good condition with only minor issues evident.

The following issues were identified with items that are part of the Facility General:

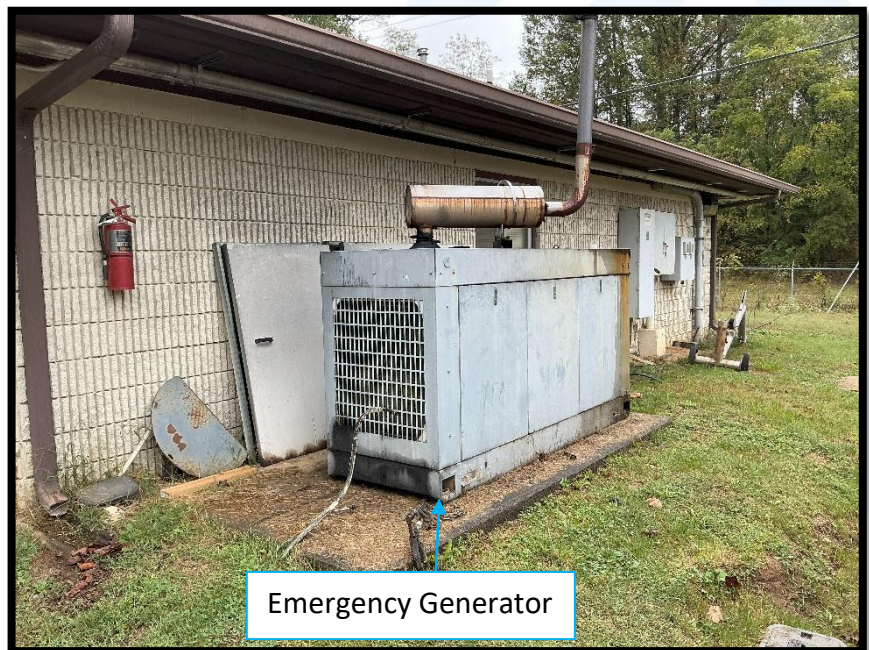
- Limited control of the facility with the SCADA system.
- The generator will run when power outages occur, but there is no system in place to notify staff when generator is running.
- Office building HVAC unit is not functioning properly.  
\*Replaced by Town since Evaluation\*
- Limited office space.

## Recommendations:

- Explore options for upgrading the SCADA system to include more monitoring and control capabilities.
- Install an alarming system that notifies staff when the generator is running.
- Replace existing HVAC unit
- \*Replaced by Town since Evaluation\*
- Office space is extremely limited and would benefit from an addition to the office building.



Office HVAC Unit



Emergency Generator

# Lift Stations

The Sewer Lift Stations are critical infrastructure components that help transport wastewater from lower to higher elevations. They are typically used in areas where the natural slope of the terrain does not allow for gravity-driven flow towards the treatment plant or higher point of discharge.

## Lift Station #1

The following issues were identified with the lift station:

- Discharge piping corroded with metal loss.
- Pump #2 is currently removed from site for repair.  
\*Pump 2 back in service since Evaluation\*
- Control Panel is not sealing properly.

## Recommendations:

- Replace discharge piping.
- Repair seal on control panel door.



## Lift Station #2

The following issues were identified with the lift station:

- Discharge piping corroded with metal loss.
- The step up to the wet well is steep with no handrail and is a safety hazard.

### Recommendations:

- Replace discharge piping.
- Install steps and a handrail for safety.



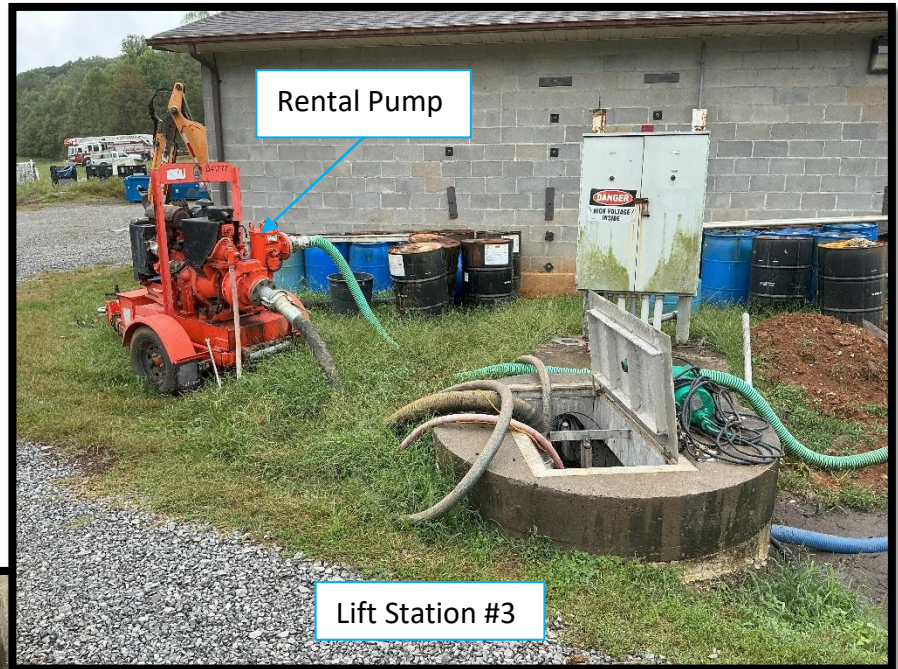
### Lift Station #3

The following issues were identified with the lift station:

- No working pumps in place. Rental pump is being used.
- Discharge lines are also being bypassed.
- Control Panel not sealing properly.

#### Recommendations:

- Replace discharge lines and route them to the influent drum screen.
- Install new pumps.
- Repair seal on control panel door.



### Lift Station #4

The following issues were identified with the lift station:

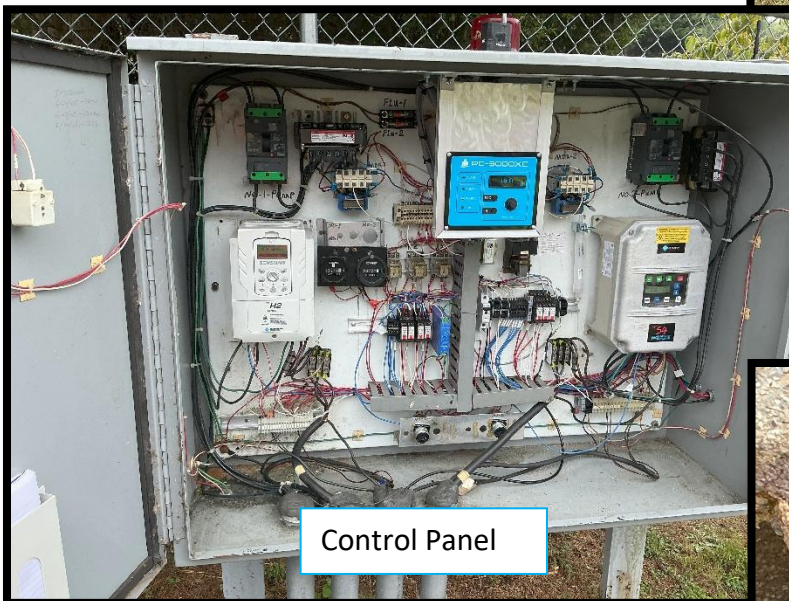
- Discharge piping corroded with metal loss.
- Pump #2 keeps faulting and won't make it through a full cycle most of the time.
- Pump rails are rusted at mount point.

### Recommendations:

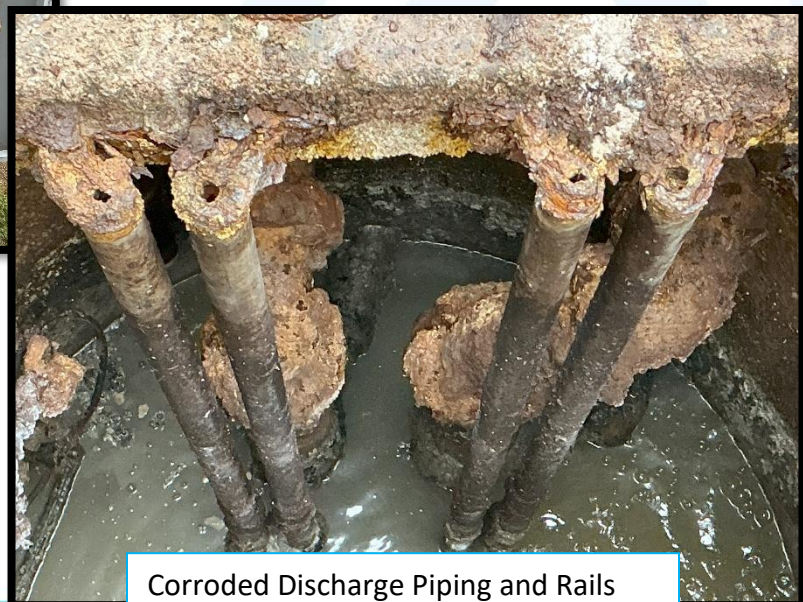
- Replace discharge piping.
- Pull Pump #2 and perform troubleshooting of the pump and the electrical system.
- Replace pump rails.



Lift Station #4



Control Panel



Corroded Discharge Piping and Rails

## Lift Station #5

The following issues were identified with the lift station:

- Discharge piping corroded with metal loss.
- Fencing around lift station down.
- Discharge valves are seized or need extra force to open.
- Wet well is in poor condition.
- Control Panel not sealing properly.

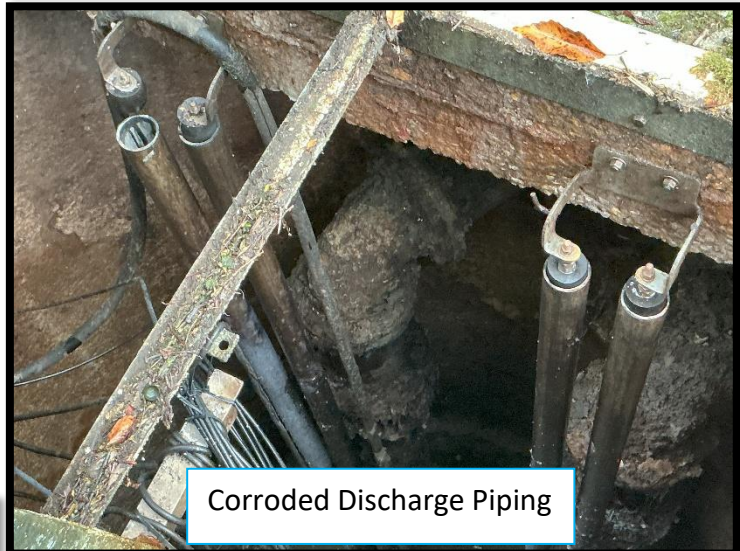
### Recommendations:

This lift station is the main station for the influent flow to the plant therefore it is a crucial part of the entire process.

- Replace discharge piping.
- Repair or replacement of discharge isolation valves.
- Repair fencing around station.
- Complete rehab of lift station is recommended.
- There needs to be an emergency generator installed for this station.
- Repair seal on Control Panel.



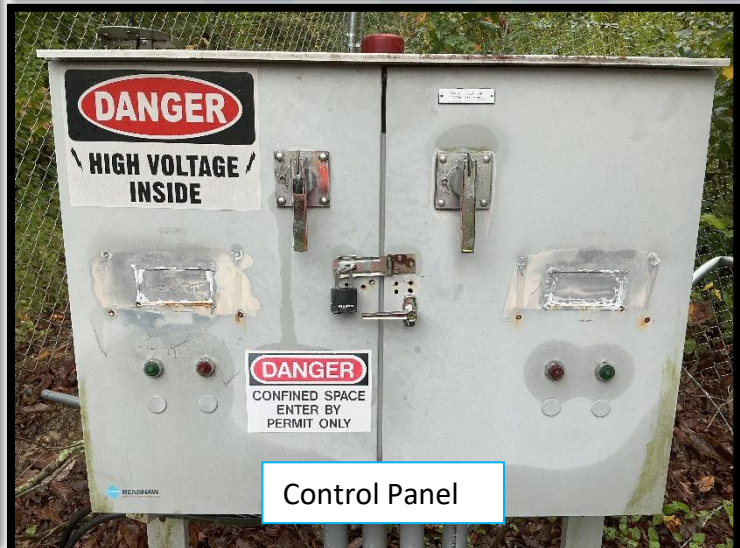
Broken Fencing



Corroded Discharge Piping



Discharge Valve Vault



Control Panel

### **Lift Station #6**

The following issues were identified with the lift station:

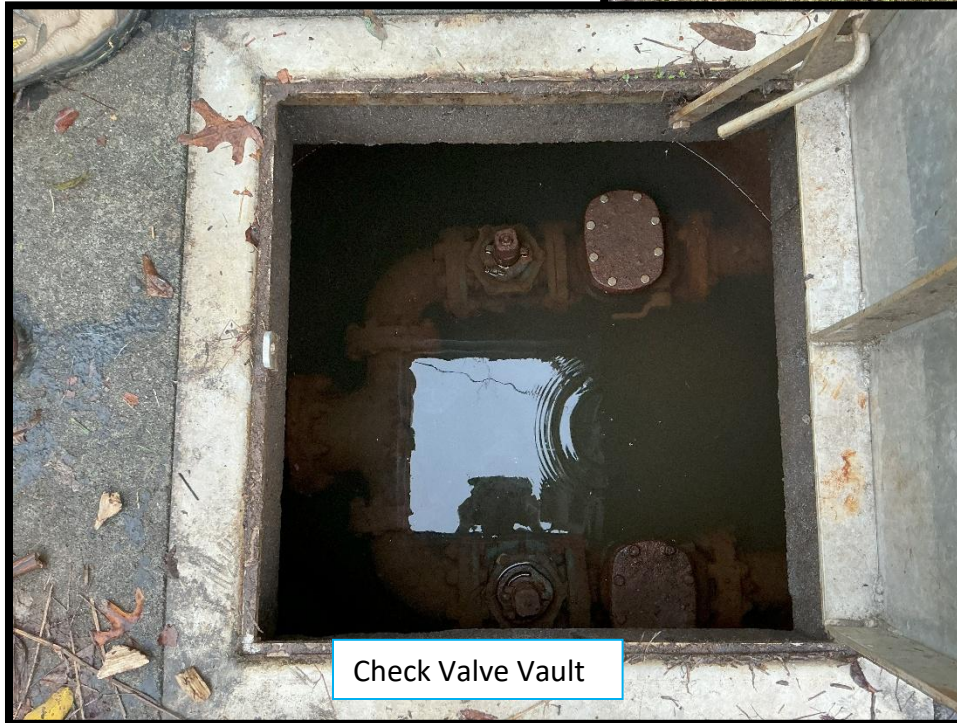
- Excess water keeps entering the check valve vault.

### **Recommendations:**

- Addition of a bypass line may help resolve the excess water issue.



Lift Station #6



Check Valve Vault

### Lift Station #7

The following issues were identified with the lift station:

- Pump #2 only runs in hand.
- Check valve vault periodically holding water.

#### Recommendations:

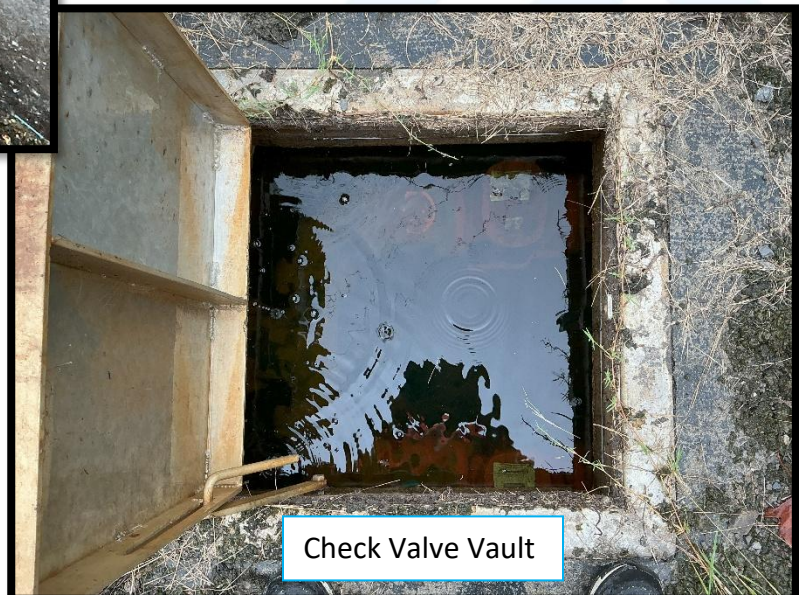
- Inspect electrical system and pump #2 for the issue. Repair or replace as needed.
- Inspect check valve vault for source of leak. Repair when found.



Lift Station #7



Corroded Discharge Piping



Check Valve Vault

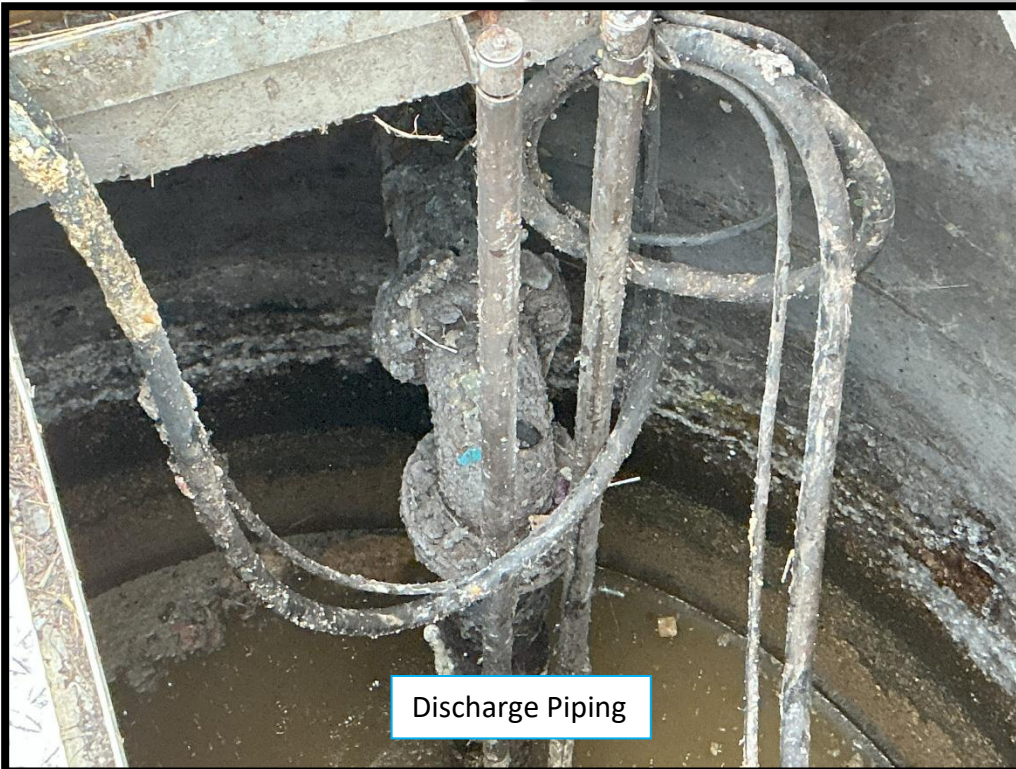
### Lift Station #8

The following issues were identified with the lift station:

- No immediate issues found.



Lift Station #8



Discharge Piping

### Lift Station #9

The following issues were identified with the lift station:

- Pump #2 is removed for repair.  
\*Pump 2 installed since evaluation\*
- Wet well is metal and is corroded with some metal loss.

#### Recommendations:

- Replace existing wet well before it rusts through.



Lift Station #9



Corroded Wet Well

### Lift Station #10

The following issues were identified with the lift station:

- Replace Pump 2. New pump is on hand.



### Lift Station #11

The following issues were identified with the lift station:

- Frequent power surges at the station causing faults.

#### Recommendations:

- Install a power filter to stabilize incoming electrical currents.

