

# Tennessee Infrastructure Scorecard



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## Background

Tennessee's communities and economy rely on access to clean, reliable, and abundant water resources. Water makes Tennessee thrive and supports many significant activities, from agriculture, business, drinking water, sewer, and stormwater services for residents, and major industrial operations. Transportation of goods on navigable waters and recreational activities on lakes, rivers, and streams also rely on healthy, abundant water resources. The critical role of water infrastructure is often overlooked by many until there is a crisis, such as a water shortage or public health concern. However, our communities and systems that manage our water infrastructure understand the important role it plays. Quality water resource infrastructure support a community's economic health and vitality.

Tennessee's water infrastructure needs are significant. Current requests for financial assistance through TDEC's [Drinking Water and Clean Water State Revolving Loan Funds](#) (CWSRF and DWSRF) exceed \$489 million. These requests represent just a fraction of the full scope of the challenge Tennessee faces in addressing water infrastructure needs. Reports produced by the Tennessee Advisory Commission on Intergovernmental Relations (TACIR), the U.S. Environmental Protection Agency (EPA), and the multidisciplinary TN H2O Plan cite necessary investment in Tennessee water infrastructure ranging from \$5 to 15 billion between now and 2040. This massive level of investment is critical to reliably supply our state with water resources amidst rapid economic and population growth.

Tennessee, like many states across the county, faces water infrastructure challenges. Comprehensive asset management, chronic compliance concerns, aging water distribution and collection lines, outdated treatment facilities at or near capacity are just a few of our critical needs. Further, systems have limited financial resources for necessary maintenance, upkeep, and expansions

TDEC's State Revolving Fund loan program has partnered with the Tennessee Association of Utility Districts to develop a tool to assist communities prioritize critical needs. The Tennessee Infrastructure Scorecard is a simple tool that brings financial, operational, managerial, and technical components of your water infrastructure system into one place. This allows systems to focus on basic, critical infrastructure elements and use the results to demonstrate needs for loans and grants.

## Introduction

The Tennessee Infrastructure Scorecard (Scorecard) is designed to assist utilities, technical assistance providers and agencies benchmark a water infrastructure system's financial, managerial, and technical performance. Results from the Scorecard highlight critical system needs. Utilities can use this information to prioritize projects based on Scorecard results. The Scorecard is divided into sections covering general system information, finances, asset management, optimization, system compliance, and performance. A Scorecard should be completed for all water infrastructure systems managed and operated by the City, County, or Utility District.

The Scorecard is not intended to be used in regulatory compliance issues but is designed to help highlight successes and opportunities for improvement. Communities can use this assessment to demonstrate critical needs, develop a business action plan, address management issues, identify simple cost-effective actions, and improve optimization and performance of a system. In addition, the Scorecard will guide the state in determining the prioritization of distribution of funds through the American Rescue Plan.

To begin, select the appropriate system for which you are filling out the Scorecard. A utility with both water and wastewater will complete the combined card. If you account for your water and wastewater systems as separate enterprise or proprietary funds, complete both the water and wastewater cards rather than the combined card. Only fill out the portions of the Scorecard that apply to your system.

## General

The General Section is designed to collect basic information about the utility system and the community it serves. Input in this section establishes where the system is located, the population, an Ability To Pay index score, number and type of connections, as well as important contact information. Every water infrastructure system managed by the city, county, or utility district should be accounted for in the General Section. Permit and Public Water System ID numbers are required for each facility. If the utility system has more than one water or wastewater plant, add the additional permit numbers to the appropriate fields.

Note: If the community population and the population served do not match, please use the population served by the utility system.

Each individual contributing to Scorecard information should place their contact information in the Utility Contact List section. This may include, but is not limited to, the utility manager or Mayor, utility office manager or bookkeeper, water superintendent and wastewater superintendents.

Regionalization is an effort to combine utility services for areas where one treatment facility or distribution system is more economical than having multiple treatment facilities or distribution facilities in the same geographic area. The State has a vested interest in promoting

## Financial

The financial integrity of a water infrastructure system is vital to ensuring sustainability as well as providing an adequate level of service for its customers. Connecting the financial health of a system with technical or operational challenges can assist in better decision making for current and future needs. Financial information for all water infrastructure systems should be readily accessible. If information is not easily obtained from office records, data can be retrieved from the audited financial statements submitted to the State of Tennessee Comptroller. Annually, local

governments are required to submit financial audits to the TN Comptroller and can find a particular audit at <https://comptroller.tn.gov/advanced-search.html>.

Financial and operating reports should be produced and presented to the governing board of the utility regularly and may be required by law. These reports can be used internally to help utility staff operate more effectively and efficiently. The contents of these reports will differ for most utilities.

Annual audits performed by a certified public accountant are required by law for utilities operated by governmental entities. Utilities regulated by TPUC must submit annual financial reports to TPUC on the appropriate form. Annual audits may also be required by lenders and grant agencies. Annual audits and financial statements should be reviewed by management and presented to the governing body for its review.

For governmental utilities, audit findings are found at the end of the audit report and must be addressed by the board and management before the final audit report is completed. In addition, the governmental utility must submit a corrective action plan to the Comptroller's Office to address these findings.

To complete the financial section of the Scorecard, the utility should review its most recent audit or financial statements and fill in all appropriate fields. Audits of governmental utilities can be found on the Comptroller's website at <https://comptroller.tn.gov/advanced-search.html>.

### Performance

Information for the Performance section should be available from annual audits or other internal financial statements. The three main financial statements in the audit are: 1. Statement of Net Position, 2. Statement of Revenues, Expenses, and Changes in Net Position, and 3. Statement of Cash Flows. Operating Revenue and Operating Expenses are typically found on the Statement of Revenues, Expenses and Changes in Net Position. Total depreciation expensed during the year can be found in the list of operating expenses. Debt Service includes interest and principal payments on outstanding debt for the fiscal year. Annual interest payments are found on the Statement of Revenues, Expenses and Changes in Net Position. The utility's principal payments for the fiscal year are found on the Statement of Cash Flows and the notes to the financial statements. The notes will also include changes in debt amounts and payments. Capital Assets, Accumulated Depreciation, and Cash Reserves can be found on the Statement of Net Position.

*Note:* For a municipal or county utility system, its, Statement of Revenues, Expenses, and Changes in Net Position will be found on separate financial statements identified as **Enterprise** or **Proprietary Funds** in the audit. If the municipal or county utility accounts for its water and wastewater system as separate enterprise or proprietary funds, the audit may have a separate set of financial statements for each fund. **NOTE: If your system has separate financials, it is recommended that completion of the Scorecard should be done for "water only" and "wastewater**

only” by selecting the Settings option on the task bar in the Scorecard. For further assistance, please contact TAUD.

### Ratios

Information for the Ratios section will be automatically transferred from the Performance section of the Scorecard. These ratios provide a benchmark for the financial condition for the utility and the minimum recommended standard for each ratio is outlined on the form. Two operating ratios are included. The first ratio takes operating revenues minus operating expenses (including depreciation) and should be 1.0 or higher. The second ratio excludes depreciation and should be 1.25 or higher which indicates the utility’s capacity to generate the cash necessary to meeting its operating expenses.

The Debt Service Coverage Ratio is computed by taking operating revenue minus operating expenses and adding back depreciation expense, then dividing this amount by the utility’s annual principal and interest payments. A utility’s bond covenants may require that this the ratio be 1.2 or higher. Some lenders may require either a lower or higher Debt Service Coverage Ratio as a condition of issuing debt to the utility. The utility may use the Debt Service Coverage Ratio to gauge its ability to incur additional debt for capital improvements.

### Rates

Information for the Rates section should be available at the utility office. Water and wastewater utilities should be charging rates that are sufficient to cover all operating expenses and debt payments necessary to provide safe, reliable service to their customers. For governmental utilities and utilities not regulated by TPUC, rates should further provide sufficient revenues to fund reasonable reserves established by the utility’s governing board. For utilities regulated by TPUC, rates should further provide sufficient revenues to fund cash reserves and the rate of return approved by TPUC. Municipal and county water and wastewater utilities cannot use their water and wastewater revenues for other municipal or county purposes. **NOTE: If you do not have a rate for any of the selections, leave the cell blank.**

A cost of service study may be conducted to determine appropriate rates/rate structures for a customers. Cost of service studies can be conducted for the entire utility system or for selected operations of the utility. A water utility may want to know its cost of water production/treatment or its cost to distribute water. A sewer utility may want to know the cost of its wastewater treatment or cost to provide treatment service for a wholesale collection system.

Cost of service studies can also be conducted to establish usage rates (also known as variable rates) and base rates (also known as the minimum bill) for different customer classes. Usage rates are generally based upon variable costs, base rates are usually based upon fixed costs.

### Reserves

Information for the Reserves section should be available from the annual audit but may need clarification from the utility finance staff. A utility's cash reserves may be unrestricted or may be restricted to specific uses and are found on the Statement of Net Position and may be further explained in the Notes to financial statements. Reserve accounts may be labeled with different names, and the utility finance staff should be able to identify those.

Debt service reserves are established to create a fund from which debt payments can be made. Debt service reserves are usually required in the utility's bond covenants or are required by its lender. Debt service reserves are sometimes called a bond sinking fund or just a sinking fund.

Other restricted reserves may be established by the utility's governing board. A restricted reserve for the repair and replacement of utility infrastructure is a common restricted reserve. A repair and replacement reserve is generally funded by the cash generated from the utility's annual depreciation expense (which is a non-cash expense) but may be further funded by utility fees or revenue from monthly rates set to provide funds for capital improvements. Other restricted cash reserves may include reserves to finance several months of operating expenses to withstand cash flow fluctuations or to finance expenses associated with natural disasters or other catastrophic events.

### Operating Budget

An annual operating budget is required by Tennessee law for governmental utilities and is a common practice for non-governmental utilities. The operating budget provides an annual spending plan for utility's decision makers and management to ensure the utility's water and wastewater systems are financially self-supporting. A budget should be, prepared by the utility's management and approved by the utility's governing board before each new fiscal year. Budgets of governmental utilities must be reviewed and approved by the Comptroller's Office. Budgets should be followed closely to ensure financial capacity and sustainability of the utility.

### Long-term Debt

The amount of a utility's long-term debt and its debt per customer connection is a very useful measure of financial capacity and sustainability. Long term debt is defined as debt with a maturity of longer than 12 months. Information about a utility's long-term debt can be found in the annual audit.

## **Asset Management**

Asset management plans are the foundation of sustainability for utility systems of all sizes and types. These plans identify, map, and support an operation and maintenance plan for all assets the utility system is responsible for managing to ensure the system is providing the appropriate level of service to its customers, while tracking needed upgrades, repairs, and maintenance.

Asset management can be defined simply as 1. understanding your current utility assets, 2. ensuring a high level of customer service by actively operating, maintaining, and repairing current assets, and 3. working to identify and prepare for future service needs and potential critical asset failure.

Having a plan can reduce the cost, stress and anxiety when the inevitable failure occurs by preventing or early identification of costly compliance issues or damages. Robust asset management plans also prepares the system for any needed capital expansion project.

Sometimes communities and utility systems have plans, but they are not all in one location. Fiscal Sustainability Plans (FSP) are required to secure funding from the TN State Revolving Fund (SRF) loan program. These plans compliment new or expanding treatment works. If your community has secured an SRF loan on or before October 2014, you may have an FSP that contains most this information.

The CMOM or Capacity, Management, Operation and Maintenance Plan is required by TN Department of Environment and Conservation, Division of Water Resources, when expanding or updating collection lines. These documents can be part of or the majority of a system's Asset Management Plans. Other items, including old and new maps, operation and maintenance manuals, or condition assessments of facilities and ancillary equipment may qualify as part of your asset management plan.

Key questions in the Asset Management Plan section help systems identify strengths and potential opportunities for building a comprehensive plan to support the foundation of a strong and sustainable utility system.

## Water Assessment

### System Information

The water assessment section collects basic information about your drinking water infrastructure via, water treatment plant, purchased water or potentially both along with the distribution systems. Most facility operators should know if the system they are operating has compliance issues or significant water loss. Asset maps, asset inventories and condition assessments, as well as the system PWSID information and any compliance letters are useful in completing the requested information.

### Water Treatment Plant

Most operators are familiar with this basic information for the plant they are operating. If more information is needed, please refer to the [SDWIS database](#). Engineering documents, asset inventory and condition assessments, as well as regulatory and compliance documentation may be useful when completing this section.



## Water Distribution System

Operators are familiar with system information for the distribution system they are operating. Fiscal sustainability plans, asset management plan, or any other document that tracks distribution line age, length, connection types and other pertinent information may be useful.

## Water Loss

This information can be accessed from your most recent AWWA audit report, located in your latest financial audit, which is also coordinated with the system's reported fiscal year. Please review that report and reference the information here where applicable.

## Wastewater Assessment

### System Information

This section collects basic information about your wastewater treatment works and collection system. Most facility operators should know if the system they are operating have compliance issues, aging facilities, or significant inflow and infiltration (I/I) concerns.. Asset maps, asset inventories and condition assessments, as well as your current permit information and any compliance letters can assist you in completing this section.

Permit information can be found on-line at The Division of [Water Resources \(DWR\) Water Resources website](#). Select the icon Water Resources Data & Map Viewers, then select [Permit Information](#). This will provide access to TDEC's searchable permit database.

### Wastewater Treatment Plant

Operators should be familiar with this basic information for the plant they are operating. If more information is needed, please refer to your NDPES permit and project design engineering reports.

### Collection System

Operators should be familiar with information for the plant's collection system they are operating. If more information is needed, please refer to your NDPES permit, fiscal sustainability plans, asset management plan, CMOM, project design engineering reports, as-built engineering plans or any other document that tracks collection line age, length, connection types, manholes, overflows, and other pertinent information.

Sanitary Sewer Overflows (SSO) & Releases. The data for the various types of overflows should be based on the last two years of current data. For of each overflow type, a total number of overflows based on rolling 2-year period starting with the most recent completed month is required to compete each question.

## Inflow and Infiltration (I/I)

Tennessee specific inflow and infiltration terminology and calculations are in reference to the State of Tennessee's [Design Criteria for Review of Sewage Works](#) Construction Plans and Documents Chapter 2, Appendix 2-C, Sewer Integrity Metrics, page 2-59.

The system's Monthly Operating Reports (MOR or EMOR), Discharge Monitoring Reports (Net DMR), National Pollutant Discharge Elimination System (NPDES) Permit or State Operating Permit (SOP) are additional resources for collecting information.

When calculating Average Daily Flow (ADF) and the Average Daily Dry Weather Flow (ADDWF), the data will be based on 12 months of Influent flow during the latest audited fiscal year (usually from July 1<sup>st</sup> to June 30<sup>th</sup> the following year). If you do not know your fiscal year end, please contact the utility system finance and administration department.

**Average Daily Flow (ADF):** The calculation is based on the latest audited fiscal year time period. This is calculated based on the sum of 12 months total influent flow for each month in MGD divided by 365 days.

**Average Daily Dry Weather Flow (ADDWF):** What is the lowest 7-day low flow average within latest audited fiscal year in MGD. The calculation is based on a normal low flow 7-day period with industrial and commercial flows present. Using flows during Holidays and when Industry is not running (weekends) should not be included in the 7-day low flow calculation.

**NOTE:** If the utility accepts flow from a satellite collection system, that flow will need to be removed from the plants ADF and ADDWF for accuracy of the systems infrastructure.

## Wastewater Optimization

The Wastewater Optimization section assists in determining the system's level of potential energy savings from simple measures. Wastewater treatment experts have compiled lists of actions an operator can take to optimize or conserve energy and water while still operating a plant safely and within regulatory limits. These simple, low to no cost operational adjustments can optimize energy savings and improving the utility's budget bottom line.

## Drinking Water Optimization

The Drinking Water Optimization section assists in determining the system's level of potential energy savings as well as self-identification of challenges maintaining compliance with emerging contaminant.

Drinking water treatment experts have compiled long lists of actions an operator can take to optimize or conserve energy and water while still operating a plant safely and within regulatory

limits. These simple, low to no cost operational adjustments you can make to optimize energy savings and improving your budget bottom line.

Some drinking water systems struggle to maintain compliance with emergent contaminants or elements of the treatment process. In this section operators can self-identify challenges they may face working through issues such as disinfection by-products, or other emergent issues they may struggle with in the future.

## Risk & Resiliency

The Risk and Resiliency section targets a system's critical assets during emergency and disaster situations. Designated staff with the appropriate risk management training should be engaged to answer these questions. Appropriate staff members are those that deal with Incident Command. These individuals are critical in high risk/high hazard situations and are essential in asset protection. Systems should take great care in how these assets are managed and used in times where critical infrastructure is at risk.

## Stormwater

Stormwater runoff can be harmful to water quality and communities. Many cities and counties across the state are required to regulate stormwater and address pollutant runoff. In Tennessee the NPDES program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). The following section identifies key areas of a robust stormwater program. Most MS4s should have these elements or are currently working to develop them. This checklist can identify areas of opportunity to develop a more robust stormwater program.

Only systems that have an MS4 should complete this section. The NPDES MS4 permit, stormwater program plan, and recent audit information can assist in the completion of this section.

## Water Infrastructure Summary

In the Summary section, Scorecard results are combined to assist communities in identifying areas of critical water infrastructure needs. Systems are encouraged to use this information to support Business Action Plans, address management issues, and identify a range of cost saving actions and efficiencies. Areas highlighted in red indicate opportunities for improvement where communities can work towards appropriate levels of operational performance. If Scorecard results indicate multiple areas for improvement, systems should begin addressing foundational issues. It is recommended that all systems strive meet the minimum expectations for asset management plans and address all significant compliance issues. Next, addressing water loss, inflow and infiltration, and replacing aging and failing infrastructure could be a priority. As a system works to resolve and mitigation critical needs, the financial integrity and sustainability of the utility should improve.