



**TERREBONNE**  
SANITARY DISTRICT

# **District Management Plan**

# **DRAFT**

March 2026

*Prepared by*

**ParametriX**



Terrebonne Sanitary District

# District Management Plan

*Prepared for*

**Terrebonne Sanitary District**

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# 1. Purpose and Authority

## 1.1 Establishment of the District

The Terrebonne Sanitary District (District) exists to provide sanitary sewer service within the District boundary in order to protect public health, reduce groundwater and environmental risks associated with failing or inadequate onsite wastewater systems, and establish a long-term public wastewater utility for the Terrebonne community.

The District was formed to create a public entity capable of financing, owning, administering, and overseeing a community wastewater collection system for Terrebonne. The District's purpose includes serving existing development within its service area, supporting orderly future expansion where appropriate, and providing the governance and utility structure necessary for long-term system ownership and management.

The District was established as a non-taxing district, with utility operations and obligations to be supported through user rates, fees, charges, system development charges, and other lawful revenue sources rather than through ad valorem property taxation (Appendix A; Appendix C).

## 1.2 District Mission

*Support public health and environmental protection by providing reliable, safe, and efficient wastewater service within the District boundaries.*

## 1.3 District service and system role

The District's wastewater infrastructure includes a STEP collection system serving properties within the Terrebonne Sanitary District Boundary and conveying wastewater flows to the City of Redmond wastewater treatment system (Appendix B; Appendix D).

Under this service model, the District's primary role is to own, manage, and oversee the local collection, conveyance, customer service, administrative, financial, and regulatory functions associated with the Terrebonne sewer utility. The District is not intended to operate a standalone wastewater treatment plant in Terrebonne. Rather, it functions as the local public utility responsible for the STEP collection system and related utility governance.

As system construction, startup, and future expansion occur, the District's responsibilities will include administration of customer connections, operations oversight, rate and fee administration, records management, contracting, regulatory coordination, easement and property coordination, and long-term asset stewardship.

## 1.4 Statutory Authority

The District is a special district formed under Oregon law and operates pursuant to applicable authorities under ORS Chapter 198, ORS Chapter 450, and other applicable state and local laws (Appendix A).

- acquire, construct, own, improve, operate, and maintain sanitary sewer facilities and related infrastructure;

- establish and collect rates, fees, charges, and system development charges as authorized by law and District policy;
- enter into contracts and intergovernmental agreements;
- retain professional, technical, administrative, and operational service providers;
- acquire real property interests, including easements, licenses, and access rights necessary for utility purposes;
- undertake annexation proceedings consistent with state law and District policy; and
- adopt resolutions, rules, policies, procedures, and other actions necessary to govern District affairs.

## 1.5 Relationship to other agencies and service partners

**Deschutes County.** Deschutes County supported sanitary district formation, infrastructure funding requests, and ongoing coordination related to implementation, growth, and community wastewater service needs. The District will continue to coordinate with the County regarding community planning, building permits, and sewer work in County rights-of-way. (Appendix A; Appendix D).

**Oregon Department of Environmental Quality (DEQ).** DEQ provides regulatory oversight relevant to wastewater planning, plan approval, compliance, and related funding and permitting requirements (Appendix D).

**City of Redmond.** The District's collection system is planned to discharge to the City of Redmond wastewater treatment system pursuant to applicable agreements, approvals, and downstream service arrangements (Appendix B).

**Oregon Department of Transportation (ODOT).** The District must coordinate design, permitting, and construction where facilities are located within the US Highway 97 state rights-of-way and transportation corridors.

**Utility Providers.** Implementation and operation of the system also require coordination with providers of water, power, communications, gas, irrigation, garbage collection, and mail services.

**Property Owners** Implementation and operation of the system may require coordination with property owners for access, sewer easements, staging areas, and other site-specific needs (Appendix B).

## 1.6 Purpose of the District Management Plan

This District Management Plan (DMP) is the District's core governance and management framework. It is intended to describe how the District will function as a public wastewater utility and how the Board will organize authority, administration, operations, financial management, compliance, and future growth over time.

The DMP is not a ordinance, resolution, design manual, construction specification, or engineering report. Instead, it is a policy and management document intended to:

- define governance and administrative roles;
- establish the framework for utility management and accountability;
- clarify the relationship between Board authority and contractor or consultant responsibilities;

- guide future policy development related to operations, rates, reserves, annexation, and asset management;
- support continuity as the District evolves from project development into utility operation; and
- provide a clear reference for Board members, service providers, partner agencies, customers, and funding entities.

The DMP is also intended to help the District move from reactive issue-by-issue decision-making toward a more deliberate framework based on planning, accountability, and continual improvement.

## 1.7 Guiding principles

**Public health and environmental protection.** The District exists to reduce health and environmental risks associated with inadequate wastewater service.

**Board governance with clear administrative support.** The Board governs by establishing policy, direction, and accountability; contractors, operators, and consultants perform assigned technical, operational, and administrative work.

**Financial sustainability.** Rates, reserves, fees, and capital decisions should support long-term viability of the utility.

**Transparency and accountability.** As a public entity, the District must conduct business through open meetings, lawful records practices, and documented decision-making.

**Equity.** Utility costs and obligations should be allocated fairly among existing and future users consistent with law and adopted policy.

**Scalability.** District policies should support orderly growth and future annexation without undermining current service reliability or financial stability.

**Continual improvement.** The District should periodically reassess its management practices, service responsibilities, asset information, and performance measures so that the utility becomes more capable and resilient over time.

## 1.8 Sustainable Utility Management Framework

The District will use the **Sustainable Utility Management (SUM)** framework for rural and small systems as a guiding management approach for implementation of this District Management Plan. The SUM framework was developed by EPA and USDA specifically for rural and small water and wastewater systems and is intended to help systems assess their strengths and challenges, prioritize improvement actions, and build long-term financial, managerial, and technical capacity over time. See Appendix X.

For Terrebonne, the most relevant SUM management areas are expected to include:

- Financial Viability
- Infrastructure Stability
- Operational Optimization
- Operational Resiliency
- Customer Satisfaction
- Stakeholder Understanding & Support

The District is not adopting SUM as a rigid regulatory requirement or separate planning document. Rather, it is using SUM as a practical management framework to guide implementation of this DMP, prioritize future improvements, and support periodic reassessment as the District grows and matures.

## **2. Governance and Administration**

### **2.1 Board of Directors**

#### **2.1.1 Governing body**

The District is governed by a five-member Board of Directors. Each board member is an elected public official serving the District as a whole and exercising the powers granted to the District under applicable law.

Board members serve in equal governance roles unless specific officer responsibilities or delegated duties have been formally assigned by Board action. Individual board members do not have independent authority to bind the District unless such authority has been expressly delegated (Appendix C).

#### **2.1.2 Role of the Board**

The Board is the District's policy-making and oversight body. Its role is to govern the District, establish utility policy, provide fiscal and administrative oversight, and ensure that the District fulfills its legal and operational responsibilities.

The Board's responsibilities include:

- adopting policies, resolutions, rules, and procedures;
- approving budgets, rates, fees, charges, and system development charge methodologies;
- authorizing major contracts, procurements, and intergovernmental agreements;
- approving significant property, easement, and annexation actions;
- overseeing compliance with applicable public agency requirements;
- establishing long-term direction for operations, growth, and utility management; and
- monitoring District financial, administrative, and strategic performance.

The Board is not intended to perform day-to-day field operations or directly manage technical work except where expressly required by law or approved by Board action. Boards set policy; operators run systems; consultants advise.

#### **2.1.3 Board officers**

The Board may designate officers in accordance with applicable law and adopted District procedures. Officer roles may include President, Secretary, Treasurer, Clerk, or other positions the Board determines are needed to support District administration (Appendix C).

Officer assignments are intended to support meeting administration, recordkeeping, financial oversight, document execution, and related administrative functions. Officer designations do not diminish the Board's collective authority or responsibility.

#### **2.1.4 Meetings and public process**

The Board shall conduct regular and special meetings in accordance with Oregon Public Meetings Law and applicable District procedures. Formal District action shall occur only at duly noticed meetings (Appendix C).

The Board may use regular meetings for routine business and formal actions, work sessions for policy development and Board education, and special or emergency meetings when time-sensitive action is necessary and legally authorized.

The District shall maintain agendas, minutes, and meeting records sufficient to document Board actions and support public transparency.

#### **2.1.5 Delegation of authority**

The Board may delegate limited authority to officers, contractors, consultants, legal counsel, or administrative support providers in order to carry out District business efficiently. Any such delegation should be explicit, documented, and bounded by scope, duration, and, where appropriate, financial thresholds.

In general, the Board retains policy and major financial authority; consultants and administrative support providers prepare recommendations and carry out assigned administrative work; legal counsel advises on governance, contracting, compliance, annexation, and related legal matters; and operations contractors perform field operations and emergency response within the limits of their contracts and District policy.

The Board should retain direct approval authority over adoption and amendment of the DMP, rates and reserve policy, budget adoption and major unbudgeted expenditures, major contracts requiring Board approval under District policy, major agreements affecting system ownership or long-term obligations, and annexation policy decisions and formal annexation actions. Emergency delegation authority should be stated expressly in District policy and revisited again in Section 7 of the DMP.

#### **2.1.6 Board development and oversight expectations**

Because the District is a relatively new public utility, elevated effort may be required from the Board during the early years establishing governance, utility literacy, and management systems appropriate to a functioning sanitary district.

Board oversight includes adoption of foundational policies, regular review of financial and operational reports, periodic review of contractor performance, training regarding public meetings, ethics, budgeting, and utility governance, and staged development of more formal asset management, customer service, and emergency response systems over time.

## **2.2 District administration**

### **2.2.1 Administrative model**

The District is a small public utility and is initially expected to operate under a board-governed, contractor-supported administrative model, particularly during system development, startup, and early years of operation.

Under this model, the Board provides policy direction and oversight, while day-to-day administrative, technical, legal, and operational support is provided through contracted services and designated administrative roles rather than through a large in-house staff structure.

This model is intended to match the scale of the District, make efficient use of limited resources, and allow the District to access specialized expertise as needed. As the District and system grows, it is anticipated that staff will be hired to perform these functions in-house.

### **2.2.2 Core administrative functions**

- Board meeting support, agenda preparation, and minutes;
- legal review and governance support;
- accounting, bookkeeping, and budget support;
- records retention and public records administration;
- contract and procurement administration;
- customer billing and receivables administration;
- coordination related to annexation, easements, and intergovernmental matters;
- engineering and utility planning support; and
- oversight of operations and maintenance contracts.

Some administrative functions may be performed by the same consultant, contractor, or designated District representative depending on Board direction and available resources.

### **2.2.3 Contracted services**

To carry out its responsibilities, the District may retain outside firms or individuals for legal, engineering, financial, administrative, operations, maintenance, and other specialized services.

- legal counsel;
- engineering and technical consultants;
- accounting or bookkeeping support;
- administrative or clerical support;
- customer billing support;
- operations and maintenance contractors; and
- other professional service providers as needed.

District contracts should clearly define scope, deliverables, reporting expectations, compensation, and lines of responsibility. Use of contracted services does not transfer the Board's policy-making responsibility.

### 2.2.4 Decision authority framework

District responsibilities are divided as follows:

Board	Consultants / administrative support	Operations and maintenance provider
Adopt policy	Prepare analyses, recommendations, draft documents, administrative materials, and other professional deliverables.	Perform routine field operations and maintenance, respond to alarms and emergencies within contract scope
Approve budgets, rates, major contracts, and annexation actions		
Set oversight expectations.	Support procurement, compliance, and project implementation.	Report system activities to the District.

This framework is intended to preserve clear accountability and avoid confusion between governance, administration, and field operations.

### 2.2.5 Administrative procedures and continuity

The District should maintain written procedures sufficient to support continuity, accountability, and orderly administration. These procedures may be incorporated into policy manuals, contract scopes, standard operating procedures, or administrative checklists, depending on the function involved.

At minimum, the District should work toward maintaining documented procedures for meeting administration and records, procurement and contract approval, invoice review and payment approval, customer billing and collections, annexation intake and tracking, records requests, emergency contacts and escalation, and operations reporting.

### 2.2.6 Public records and records management

The District shall maintain records in accordance with applicable law and adopted District policy. Records management shall support transparency, continuity, accountability, and efficient utility administration (Appendix C).

- Board agendas, meeting packets, and minutes;
- adopted policies, resolutions, and ordinances;
- contracts, amendments, and procurement records;
- budgets, financial statements, invoices, and payment records;
- annexation records, easements, and property-related documents;
- customer service and utility administration records; and
- regulatory, engineering, and operational records relevant to District business.

The Board may assign records administration duties to a Clerk, administrative contractor, consultant, or other authorized party, but responsibility for District recordkeeping remains with the District.

### **2.2.7 Public contracting and procurement administration**

The District shall procure goods, services, personal services, and public improvement work in accordance with applicable law and adopted District contracting policies and procedures (Appendix C).

- consistent with adopted purchasing thresholds and approval requirements;
- documented appropriately;
- scaled to the size and complexity of the work; and
- carried out in a manner that supports fairness, transparency, and legal compliance.

The Board shall retain approval authority where required by law or District policy. The District's administrative model should also ensure that procurement responsibilities, contractor selection, and contract approval are aligned with the distinction between governance and administration.

### **2.2.8 Financial administration interface**

Although financial management is addressed more fully in Section 6 of this DMP, Sections 1-2 recognize that sound administration requires clear financial controls, documented expenditure approval processes, routine financial reporting, and separation of duties where practical.

- proper authorization of accounts and expenditures;
- documented invoice and payment review;
- secure banking and account access controls;
- regular account reconciliation;
- annual budget monitoring; and
- organized financial records sufficient for audit, review, and lender or grantor requirements.

### **2.2.9 Administrative coordination with growth and annexation**

District administration must also support orderly future growth and annexation. This includes intake, tracking, mapping coordination, legal documentation, County coordination, customer communication, and recordkeeping associated with annexation and future service expansion.

Because growth-related actions have legal, financial, operational, and customer service implications, annexation and expansion shall be administered in a manner consistent with adopted District policy and Board direction (Appendix C).

### **2.2.10 Administrative evolution over time**

The District's administrative structure should be expected to evolve as the utility moves from planning and construction into active operation. Early administrative needs may be weighted toward project implementation, legal agreements, funding coordination, and customer enrollment; later needs may shift toward ongoing billing, system oversight, asset management, rate administration, and service tracking.

Accordingly, the DMP should be understood as establishing an initial framework for administration, while allowing the Board to refine service delivery models, reporting expectations, and contractor scopes as the District matures.

*Key concept: Boards set policy; operators run systems; consultants advise.*

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## 3. System Description

### 3.1 STEP Collection System Overview

Chapter 3 describes the District's wastewater collection system, moving downstream from onsite STEP to the Redmond connection. Chapter 4 explains how it's operated; Chapter 3.2 covers ownership/responsibility.

The Terrebonne Sanitary District sewer system is a STEP collection system. "STEP" stands for Septic Tank Effluent Pump. In a STEP system, wastewater from a home or business first flows into an onsite septic or STEP tank, where solids and grease are retained. The liquid portion of the wastewater is then filtered and pumped from the tank into the District's pressurized sewer collection system. The District's sewer mains carry that effluent away from Terrebonne and ultimately to the City of Redmond wastewater treatment system for treatment and disposal.

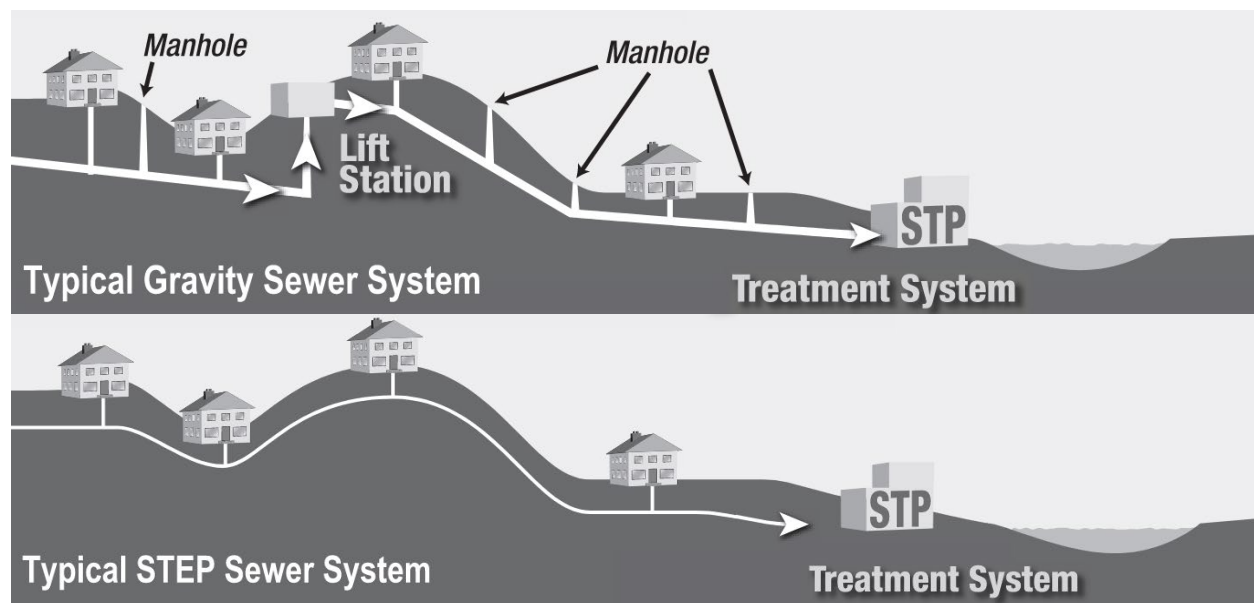


Figure 3-1 Typical Gravity & STEP System Comparison

This means Terrebonne's sewer system is different from a conventional gravity sewer. A conventional gravity sewer carries raw sewage directly from each building into large gravity pipes. By contrast, a STEP system performs the first stage of treatment onsite (on private property) which retains solids, fats, oils, and grease in the septic tank so that liquid-only effluent is pumped into the public sewer. This reduces solids in the public mains, allows smaller diameter pipes, reduces trench depth, and makes the system more practical in places with shallow rock, topographic constraints, or long distances between service areas. STEP systems are common alternatives to conventional gravity sewer in Oregon.

For the Terrebonne STEP collection system, the wastewater path is:

1. Building plumbing carries wastewater from the structures to the onsite tanks.
2. The onsite tanks retain sludge at the bottom and scum floating on the top.
3. Effluent pump move the liquid portion of the wastewater through a filters and out of the tank.
4. Small-diameter service lines carry that effluent to the District's public pressure mains.
5. The District transmission main carries the effluent to the Redmond treatment plant.

### 3.1.1 Onsite STEP components

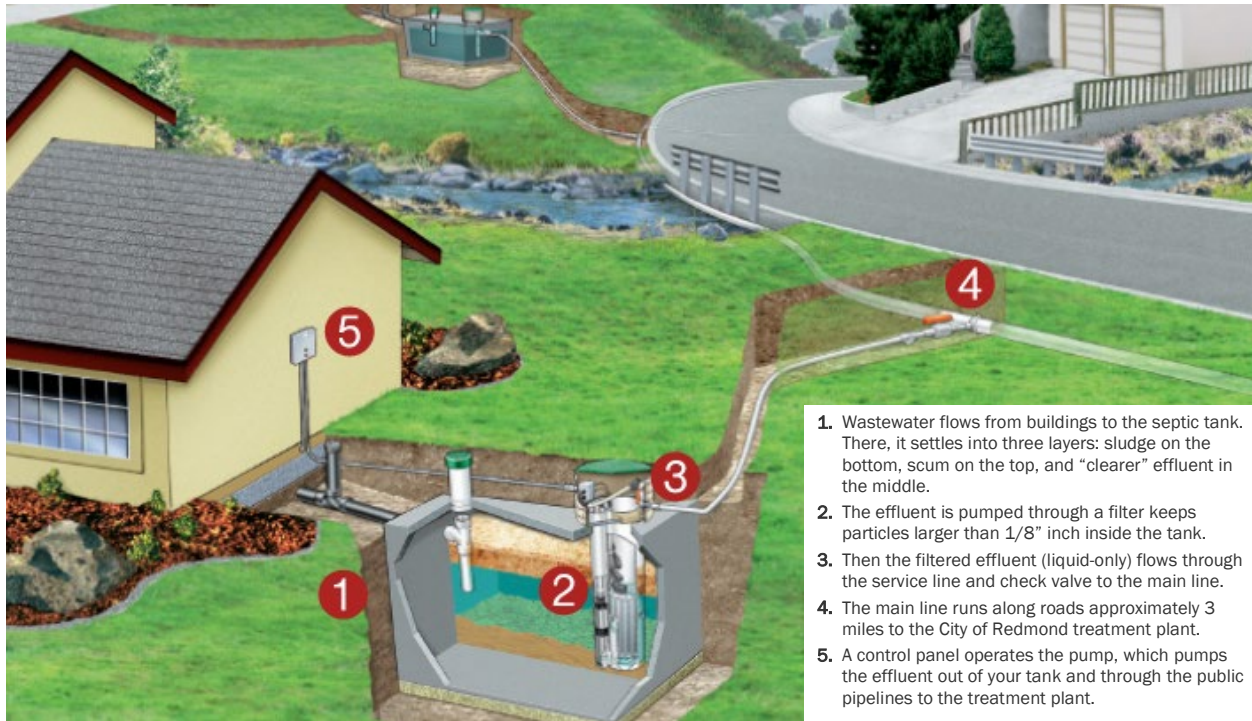


Figure 3-2 Typical Onsite Residential STEP System Components

Typical onsite and service connection components include:

- an onsite septic tank or integrated STEP unit;
- an effluent filter;
- an effluent pump;
- floats, alarms, and controls;
- a pressure service line;
- a check valve;
- a ball valve; and
- a connection to the public main.

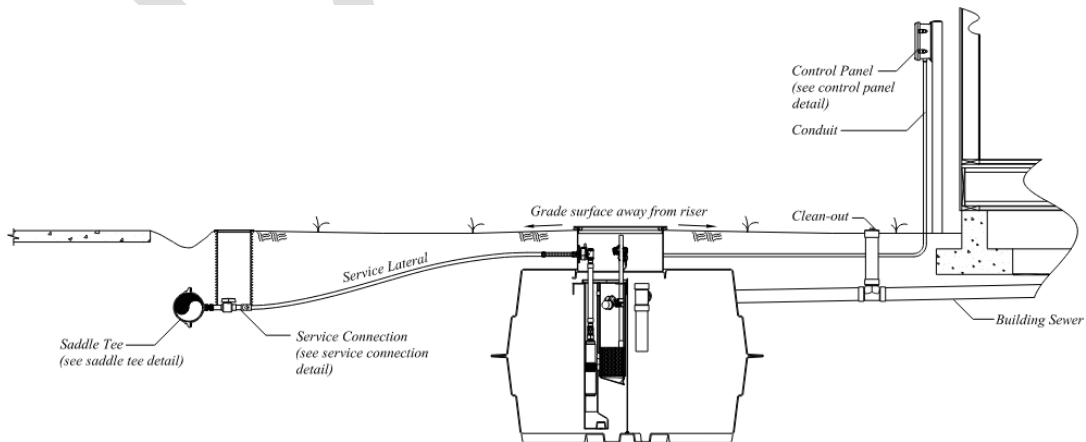


Figure 3-3 Typical Effluent Sewer Service Connection to STEP Main

On private property, the District expects connected properties to use District-approved onsite STEP equipment. Based on current project design assumptions, this may include:

- retrofit of an acceptable existing septic tank using an approved effluent filter and pump package; or
- installation of a replacement integrated STEP unit where an existing tank is not suitable.

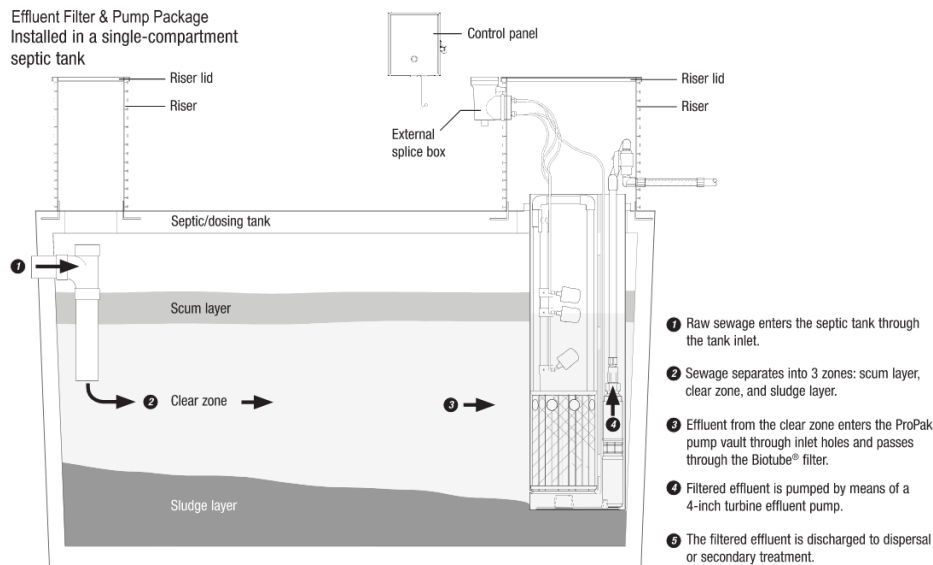


Figure 3-4 Typical Existing Septic Tank Retrofitted with Effluent Pump Package

In either case, the equipment must meet District standards and current manufacturer installation requirements. District acceptance of any onsite system should confirm that the tank is structurally sound and watertight, the pump and alarm systems function properly, the service line is installed to standard, and all required permits and access rights are in place before connection. County permits for plumbing, electrical, and right-of-way work are anticipated required for connection to the tank and for electrical components such as pumps and alarms, and that regular inspection of STEP tanks, sludge levels, filters, pumps, and alarms should be part of the customer agreement or a maintenance contract. Please see Appendix D for STEP system material information and example standard details.

### 3.1.2 Service connection

The District's owned-and-operated (public) sewer system begins at the service connection to the District pressure main. The service connection is designed so the property can be isolated from the public system and so the public main does not drain back toward the private property. A typical service connection includes a PVC or HDPE service pipe, a check valve, a ball valve, and a saddle tap, with a locating wire installed in the trench. Please see Appendix D for STEP system material information and example standard details.

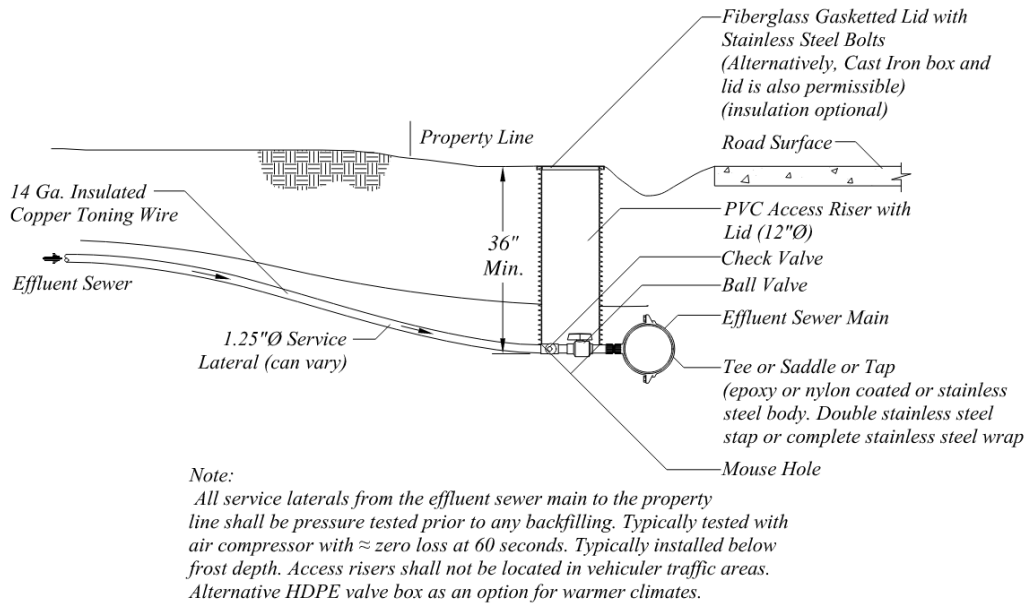


Figure 3-5 Typical Service Connection Detail

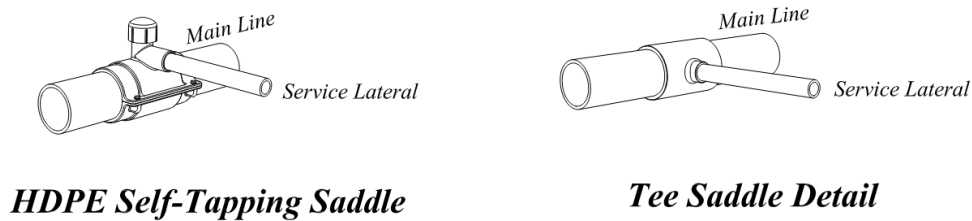


Figure 3-6 Typical Tapping Saddles for Service Connections to Sewer Mains

### 3.1.3 Public STEP collection system

Unlike gravity collection systems, manholes are not required at every junction or deflection point. Instead, as a pressurized system, STEP collection mains include many of the same appurtenances typically required on water system mains, as well as odor mitigation devices. The STEP collection system piping network includes a variety of components installed on the public mains so the pressurized system can operate properly, such as:

- STEP collection mains generally ranging from 3-inch to 6-inch diameter that are typically located in the center of a travel lane or outside the pavement in the road shoulder.
- Mainline fittings and appurtenances such as tees and crosses, bends, reducers, and pipe restraint systems (as needed based on pipe material and joint type).
- Isolation valves to segment the pressure mains for normal operation, maintenance, emergency response, and to facilitate future extensions (often at key intersections and at upstream ends of mains).
- Air release / air-vacuum relief valve assemblies at system high points to prevent air accumulation from restricting flow and to manage vacuum conditions during draining or transients.

- Odor control devices at locations where sewer gas may be released (typically air release valve locations and at the downstream discharge connection), such as activated carbon filters and/or other odor-scrubbing components.
- Pig launch/retrieval capability (or other flushing/cleaning access, including potential ice pigging from air release valve locations) where needed for startup debris removal and periodic maintenance.
- Locate and identification measures such as tracer wire and detectable marking/locate tape installed with mains and services to support utility locating and damage prevention.
- Mainline end caps and other stub-outs for future extension where the collection system is planned to expand.

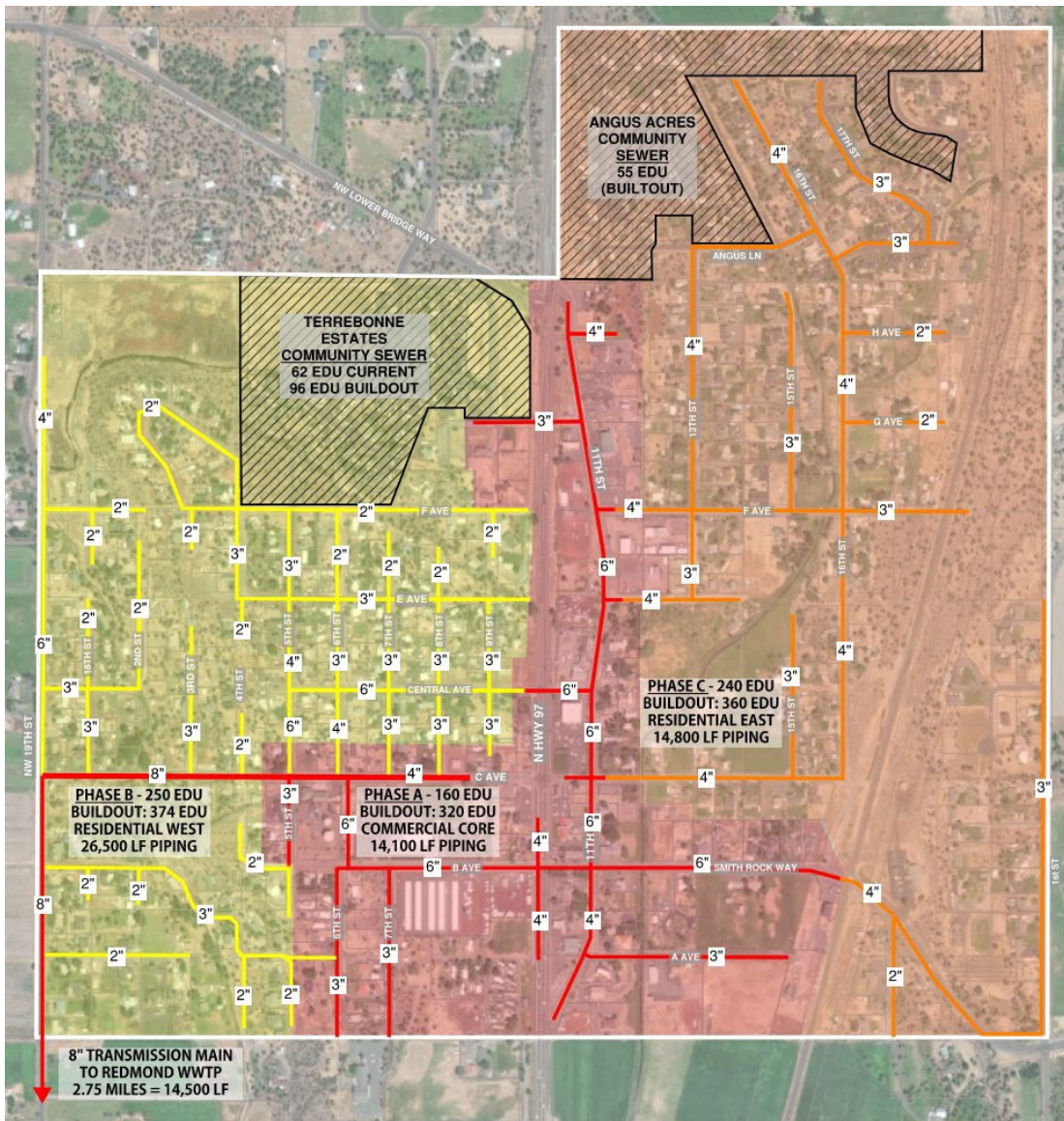


Figure 3-7 Terrebonne STEP Collection System Map

It is estimated that approximately 320 EDUs can be served by this initial collection system layout. As the collection system expands, more EDUs can be served with 1054 EDUs projected at full buildout.

### 3.1.4 Transmission main

Core to the District’s STEP collection system is the 8-inch transmission main, approximately 3 miles in length, which conveys septic tank effluent from Terrebonne to the City of Redmond wastewater treatment system.

Although Terrebonne is generally located at a higher elevation than the Redmond discharge point, the ground profile between the two communities is not uniform. As the transmission main follows the corridor generally along NW 19th Street, Odem Avenue, and Northwest Way, the terrain rises and falls at multiple locations. When no effluent is being pumped into the collection system, the water level in the system will generally “level out” to the discharge elevation around 2825’. When multiple pumps are forcing effluent into the system, the friction from the piping pushes back and raises the Hydraulic Grade Line (where the water level wants to be) higher than the pipe elevation, which creates system pressure. Because of these dynamics STEP pumps will operate against different pressure ranges based on their elevation and location in the collection system.

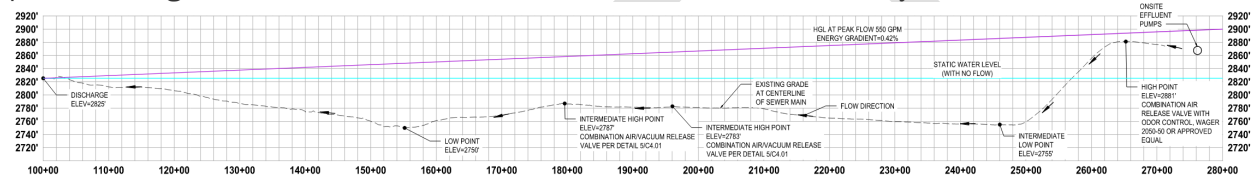


Figure 3-8 Transmission Main Profile

The profile of the main shows several intermediate high and low points between Terrebonne and the Redmond connection. Because of this undulating terrain, the main is designed with air release / air vacuum valve assemblies (ARVs) at high points to prevent air binding and maintain reliable flow through the pressurized system. Low points and other appurtenances are also identified in the design where needed for operation and maintenance.

The transmission main is intended to function primarily as a conveyance main, carrying flow from the Terrebonne collection system to Redmond, rather than as a local distribution main serving properties along its full length. In general, connections to this main are expected to be limited to properties located within the Terrebonne Unincorporated Community boundary, primarily on the east side of NW 19th Street, that annex into the District and apply for sewer service in accordance with District policy.

This distinction is important because the existence of the transmission main does not mean that all property along the route is automatically eligible for direct connection. Service to properties along or near the main remains subject to District boundary, annexation, capacity, and service application requirements.

### 3.1.5 City of Redmond discharge point

The downstream discharge point for the Terrebonne STEP collection system is the City of Redmond wastewater treatment system. Wastewater collected by the District’s pressure sewer system is conveyed by the transmission main to the Redmond system for treatment and disposal. Terrebonne will not operate a standalone wastewater treatment plant; the District’s role is collection and conveyance.

At the Redmond end of the system, the Terrebonne project includes a formal interconnection consisting of a connection to an existing City of Redmond manhole and a meter and sampling vault installed immediately upstream of that connection. See STEP Collection System Plans in Appendix D.

The meter and sampling vault is an important part of the interconnection. It is intended to provide the District and the City of Redmond with a defined location for measuring, monitoring, and sampling Terrebonne flows before they enter the Redmond system. The vault will include an in-line electromagnetic flow meter, a sampling port, and pH monitoring equipment, with communications wiring so the flow meter can interface with the City of Redmond's wastewater operations equipment.

This discharge-point infrastructure serves several purposes:

1. Provides a clear operational and regulatory handoff between the District collection system and the Redmond treatment system.
2. Allows flow measurement for billing, monitoring, and system administration.
3. Provides a defined location for any monitoring or pretreatment-related requirements established through the District's agreement(s) with the City of Redmond.

## **3.2 System Ownership and Responsibility Overview**

The District's STEP collection system includes infrastructure owned and controlled by three distinct parties: private property owners, the Terrebonne Sanitary District, and the City of Redmond. Each owner plays a defined role within the overall wastewater service chain, and understanding where each owner's infrastructure begins and ends is essential to describing how the system functions as a whole.

This section describes the physical organization and ownership structure of the system for system description purposes. Detailed operations, maintenance, inspection, emergency response, and contractor responsibilities are addressed separately in Chapter 4 (Operations and Maintenance Framework).

At a high level, the system functions as a connected sequence:

- Private property owners own the onsite wastewater components that enable connection to the public sewer system.
- The Terrebonne Sanitary District owns and manages the public collection and conveyance infrastructure serving the Terrebonne community.
- The City of Redmond owns and operates the downstream wastewater treatment facilities that receive and treat effluent conveyed by the District system.

For system description purposes, the public sewer system begins at the service valve box near the connection to the District pressure main. Infrastructure upstream of that connection is located on private property. Infrastructure downstream of the District's discharge point is owned and operated by the City of Redmond pursuant to applicable intergovernmental and service agreements.

### **Onsite STEP Components (Private Property Owner Infrastructure)**

On private property, the upstream portion of the STEP system includes components such as septic or STEP tanks, effluent pumps, controls, alarms, service piping, and associated electrical supply. These components enable connection to the public sewer system and are located entirely on private property. As a matter of system configuration, onsite STEP components are owned by private property owners and must be installed to District standards and accepted prior to connection. Acceptance establishes compatibility with the public sewer system and confirms that the system is properly configured for service.

### **Public Collection and Conveyance System (District Infrastructure)**

The Terrebonne Sanitary District owns the public sewer infrastructure that conveys wastewater from the community to the downstream treatment facility. This infrastructure includes public pressure collection mains and associated appurtenances, isolation valves, air-release and air-vacuum valve assemblies, odor control devices, the transmission main conveying effluent to the City of Redmond, and District-owned metering, monitoring, and sampling facilities at the discharge point.

Together, these facilities comprise the District's public sewer system and form the core conveyance backbone serving the Terrebonne community.

### **Downstream Treatment System (City of Redmond Infrastructure)**

Wastewater collected and conveyed by the District system is discharged to the City of Redmond wastewater treatment system for treatment and disposal. Treatment facilities, downstream conveyance, and treatment operations are owned and operated by the City of Redmond in accordance with applicable intergovernmental and service agreements. Terrebonne does not operate a standalone wastewater treatment facility; its role is limited to collection and conveyance.

### **Ownership and Responsibility Summary**

Table 3-1 (Ownership, Maintenance, and Access Responsibility Matrix) summarizes typical ownership and responsibility for major system components across the three ownership categories described above. The table is intended as an at-a-glance system description reference and is implemented through adopted ordinances, executed agreements, easements, and operations contracts.

### **Preventing disputes (rules of interpretation).**

If there is any conflict between informal guidance and binding requirements, the following hierarchy applies:

- (1) the District's adopted ordinances/resolutions and recorded easements,
- (2) executed customer connection/maintenance agreements,
- (3) approved plans and standards incorporated by reference, and
- (4) general informational handouts.

For any given component, ownership does not automatically determine maintenance responsibility; the responsible party is the one identified in the governing agreement/policy. Where this DMP describes a "typical" division of responsibility, the executed agreements and adopted policies control.

### **Future documents to be developed pursuant to this section:**

- Standard onsite STEP connection agreement
- Standard onsite maintenance agreement
- Standard sewer easement for onsite STEP access
- Ownership and maintenance responsibility matrix
- District inspection/acceptance checklist for owner-installed STEP systems
- Customer responsibilities and access requirements handout
- Policy on routine maintenance versus major replacement

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Table 3-1 Ownership, Maintenance, and Access Responsibility Matrix

System component	Typical owner	Routine inspection / O&M	Capital repair / replacement	Access / control
Building plumbing and building sewer to tank inlet	Property owner	Property owner (or plumber)	Property owner	Owner-controlled
Control panel and dedicated electrical supply; electricity consumption	Property owner	Property owner (electrician as needed)	Property owner	Owner-controlled
Onsite tank (septic tank or integrated STEP tank)	Property owner	Typically owner; District may require periodic pumping/inspection via agreement	Property owner	Owner-controlled; District access only if a recorded access right is granted
Effluent filter / pump vault filter cartridge	Property Owner	Property Owner	Property Owner	Owner-controlled; District access only if a recorded access right is granted
Effluent pump, floats, alarms, and controls within the tank	Property Owner	Property Owner	Property Owner	Owner-controlled; District access only if a recorded access right is granted
Pressure service line (private side)	Varies by District policy; typically owner-installed for initial connection	Varies by policy; typically District may maintain after acceptance if included in agreement	Varies by policy; clarify in connection agreement	If District-maintained: District access via easement; otherwise owner
Service connection appurtenances (check valve, shutoff/ball valve, curb box/valve box, locating wire)	District (typical) for the portion in right-of-way / public easement; owner for any private-side components (as defined in agreement)	District (typical)	District (typical)	District-controlled; District may shut off/isolate for maintenance, emergencies, or noncompliance as authorized
Public pressure collection mains and appurtenances	District	District (via O&M provider)	District	District-controlled access within right-of-way/easements
Public isolation valves	District	District (exercise/operate)	District	District-controlled
Air release / air-vacuum valve assemblies and any odor control devices at these locations	District	District (inspect/maintain)	District	District-controlled
Transmission force main to receiving agency	District	District (via O&M provider)	District	District-controlled
Metering/sampling vault and instrumentation at/near discharge point (if required)	District owns STEP piping and meter vault. City owns property.	District (maintain); City of Redmond operates per IGA	District	District and City of Redmond share data and access as defined in IGA
Receiving agency connection point / downstream treatment facilities	City of Redmond	Receiving agency	Receiving agency	Per intergovernmental/service agreement

## 4. Operations & Maintenance Framework

### 4.1 O&M Model

#### 4.1.1 Purpose

The District STEP collection system includes public pressure mains, air release valve assemblies, odor-control features, and a meter/sampling vault at the Redmond connection, all of which require organized ongoing oversight and maintenance. The District's O&M program must address both routine inspection and maintenance and timely response to failures, outages, and service disruptions. The District's operations and maintenance program described in this chapter is intended to keep the public STEP collection system functioning reliably, protect public health and the environment, and provide a clear framework for routine maintenance, emergency response, and system oversight.

The purpose of this chapter is to define:

- the boundary between District and property-owner maintenance responsibility,
- the District's basic operating model for the public sewer system,
- the role of the contracted O&M provider,
- expected service and response levels for the public system, and
- the supporting coordination needed to operate the system safely and consistently.

#### 4.1.2 Public and Private Maintenance Boundary

The District's O&M responsibility begins at the **service valve box** located near the private property line or right-of-way line and continues downstream through the public sewer system. Please see Figure 4-1. Under this model:

- **Property owners** are responsible for the onsite STEP infrastructure serving their property, including the septic or STEP tank, effluent pump, floats, controls, alarms, dedicated electrical service, electrical consumption, and all private-side piping and appurtenances upstream of the service valve box.
- **The District** is responsible for the public-side service connection beginning at the service valve box and continuing through the public pressure collection mains, isolation valves, air release valve assemblies, transmission main, meter and sampling vault, and related public sewer appurtenances.

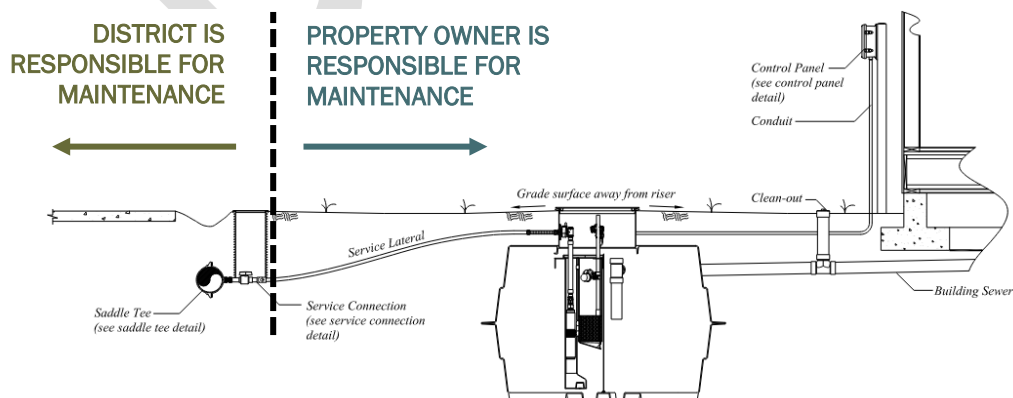


Figure 4-1 Public/Private O&M Responsibility Boundary

This maintenance boundary is intended to create a clear operational handoff between owner-maintained onsite equipment and the District-maintained public collection system. It also allows the District to focus its O&M program on the shared public infrastructure that affects multiple customers and overall system performance.

### 4.1.3 District Operating Model

The District is expected to operate under a **board-governed, contractor-supported O&M model**, in which the Board establishes policy, approves contracts and budgets, and provides oversight, while a qualified contracted O&M provider carries out day-to-day operation and maintenance of the public sewer system.

### 4.1.4 Scope of District O&M Responsibility

The District’s O&M program applies to the public-side sewer facilities and appurtenances beginning at the service valve box and continuing downstream through the collection, conveyance, and discharge-point facilities accepted by the District. Table 4-1 summarizes the assets included in, and excluded from, the District’s O&M program.

- service valve boxes and public-side service connection components;
- public pressure collection mains within Terrebonne;
- public isolation valves;
- air release / air vacuum valve assemblies and associated odor-control devices;
- the transmission main conveying flows to Redmond;
- the meter and sampling vault and related public monitoring/instrumentation facilities; and
- any other public sewer facilities accepted by the District for operation and maintenance.

The District’s O&M program does **not** include owner-side STEP tanks, pumps, controls, alarms, private electrical service, or other private-side facilities unless the District adopts a different program in the future. See Figure 4-1.

**Table 4-1 Public System Assets Included in District O&M Program**

Included in District O&M Program	Excluded from District O&M Program
Service valve boxes and public-side service appurtenances	Owner-side STEP tanks, pumps, controls, alarms, and electrical service
Public STEP collection mains	Private-side service piping upstream of the service valve box
Public mainline isolation valves	Owner-installed onsite STEP equipment
Air release / air-vacuum appurtenances	Power supply and signal wiring & conduit between vault and Operations Building
Public odor-control devices, if installed	Effluent monitoring displays and other related equipment in Operations Building
Transmission main to Redmond	Discharge manhole on City interceptor pipeline
Meter and sampling vault on City property	
Tracer wire and locating features for public assets	

#### **4.1.5 Contracted O&M Provider**

The District should retain a qualified O&M provider with experience in pressure sewer or wastewater collection systems. The provider's contract should define the overall scope of routine operations, preventative maintenance, reporting, and reactive maintenance support for the public system.

At a minimum, the contract scope should address:

- routine inspection and maintenance of public sewer assets;
- valve locating, operation, and exercising;
- ARV inspection, cleaning, and servicing;
- inspection and upkeep of odor-control components;
- inspection of the Redmond meter/sampling vault and associated public instrumentation;

The District may choose to contract separately for specialized services such as electrical/instrumentation support, SCADA support, sampling equipment service, or major repairs. More detailed expectations for reactive maintenance response are addressed in Section 4.3.

#### **4.1.6 Service Expectations and Response Coverage**

The public sewer system should be operated with a defined level of service sufficient to support reliable utility operation and timely response to public-system problems.

The District's O&M program should include:

- 24/7 on-call response for urgent public-system failures;
- same-day response to active sewage release, force main break, or loss of public-system function affecting multiple properties or public health;
- next-business-day response, or other reasonable scheduled response, for non-emergency public-system issues;
- planned maintenance and shutdown coordination where service interruptions are anticipated; and
- clear communication and escalation procedures between the O&M provider and the District.

#### **4.1.7 Coordination with Utilities and Service Partners**

Operation of the District's public sewer system requires coordination with outside utilities, agencies, and service partners where work, access, monitoring, or interconnection issues involve third parties.

This coordination may include:

- utility locate requests before excavation or emergency repairs;
- roadway and right-of-way coordination with Deschutes County and/or ODOT for work in streets or corridors;
- coordination with the City of Redmond regarding the interconnection, discharge-point operations, flow monitoring, or service interruptions; and
- coordination with the Redmond School District for work on the sewer main crossing Terrebonne community school property (within sewer easement).
- coordination with backup contractors, suppliers, or specialty service providers as needed.

The District should maintain a current contact list for these entities.

### **4.1.8 Acceptance of Public Facilities into O&M Service**

The District should not assume O&M responsibility for newly installed public sewer infrastructure until that infrastructure has been inspected, tested, documented, and accepted.

Before public facilities are placed into O&M service, the District should confirm completion of:

- required pressure testing and acceptance testing;
- verification of valve and ARV installation and operation;
- tracer wire continuity and locator readiness;
- completion of as-builts and asset records;
- correction of punch-list items affecting operability or access;
- delivery of relevant warranties, manuals, and vendor data; and
- acceptance by the District or its designated representative.

### **4.1.9 Operations Records and Reporting**

A functioning O&M program depends on clear and consistent recordkeeping. The District should require the contracted O&M provider to maintain records sufficient to document:

- asset inspections;
- maintenance work performed;
- valve and ARV exercising;
- observed deficiencies or failures;
- emergency callouts and corrective actions;
- service interruptions and customer notifications, where applicable; and
- recommendations for repair, replacement, or capital planning.

These records should support day-to-day operations, future asset management, annual budgeting, and emergency review. Keeping current as-built maps and maintenance records for shut-off valves, clean-outs, air release assemblies, and other key system components is critical for efficient operations and maintenance.

### **4.1.10 References and Future Documents**

This O&M model establishes the District's overall framework for operating the public sewer system. More detailed expectations related to inspection frequencies, preventive maintenance practices, emergency response, and asset tracking are addressed in later sections of this chapter.

Customer responsibilities associated with owner-maintained onsite STEP systems are addressed in Chapter 5. Financial planning, reserves, and cost recovery associated with O&M are addressed in Chapter 6.

**Future documents to be developed pursuant to this section:**

- O&M services scope of work / contract template
- Public/private maintenance responsibility handout
- Public sewer asset acceptance checklist
- O&M reporting template
- Utility and agency emergency contact list

## **4.2 Preventative Maintenance**

### **4.2.1 Purpose and Approach**

The purpose of the District’s preventative maintenance program is to reduce failures in the public sewer system, protect public health and the environment, extend asset life, and reduce long-term operating costs. The District’s preventative maintenance program should be practical, documented, and adjusted over time based on actual operating history. The goal is not to over-maintain the system, nor to wait for failures to occur. Instead, the District should establish baseline maintenance intervals for public assets and refine them as the system matures.

This is especially important for Terrebonne because a newly constructed STEP collection system may experience relatively light maintenance needs during its early years, while mature-system maintenance patterns may not emerge until later. A cost-efficient O&M program balances proactive maintenance (PM) and reactive maintenance (RM), with the District refining PM intervals based on maintenance records and cost trends.

Although owner-side STEP equipment is not part of the District’s O&M program, proper preventative maintenance of onsite components is important to minimize on-lot failures and reactive maintenance events. Recommended onsite maintenance procedures and service intervals are addressed in Chapter 5.

### **4.2.2 Public Pressure Mains**

Public pressure mains require routine inspection and follow-up to preserve system integrity and operability. Preventative maintenance activities should include:

- periodic route inspections for signs of leakage, settlement, surfacing effluent, pavement distress, or third-party damage;
- review of recurring problem locations, especially where prior repairs, utility conflicts, or shallow cover conditions exist;
- verification that tracer wire, valve boxes, and locating features remain functional and accessible;
- startup and post-repair verification that mains are functioning as intended; and
- cleaning or flushing access where needed to address startup debris, accumulated material, or localized maintenance concerns.

### **4.2.3 Service valve boxes and Public Service Connection Appurtenances**

Because the District’s maintenance responsibility begins at the service valve boxes, these facilities are a key part of the public O&M system. Preventative maintenance activities should include:

Preventative maintenance activities for service valve boxes should include:

- inspection of vault accessibility and physical condition;
- verification that shutoff valves and check valves remain operable;
- verification that valve boxes, lids, and tracer wire terminations remain intact;
- use of the vault as the operational isolation point when public-side maintenance or emergency response is required; and
- documentation of any damaged, buried, or inaccessible service valve boxes for corrective action.

#### **4.2.4 Isolation Valves**

Isolation valves are critical to routine maintenance, testing, repairs, and emergency response.

Preventative maintenance activities should include:

- locate and map all public isolation valves;
- exercise public isolation valves at least annually during the early years of system operation;
- inspect valve boxes and valve accessibility during each exercise cycle;
- verify operability after any major shutdown, repair, or paving work; and
- adjust exercising frequency over time based on valve performance, size, and system importance.

#### **4.2.5 Air Release / Air-Vacuum Valve Assemblies**

ARVs are among the most maintenance-sensitive components in the Terrebonne public system because they prevent trapped air from restricting flow and help manage air and vacuum conditions.

Preventative maintenance for ARVs should include:

Preventative maintenance for ARVs should include:

- inspection of each ARV site for accessibility, box condition, standing water, vandalism, or physical damage;
- inspection of valve function and associated piping/appurtenances;
- cleaning or servicing of components where needed;
- verification that odor-control features, if present, remain in place and functional; and
- increased inspection frequency at locations with a history of air accumulation, odor release, or hydraulic issues.

Some ARV locations may also require odor-related attention where odor-control devices are installed.

#### **4.2.6 Odor-Control Devices**

Where odor-control devices are installed at public facilities, the District should maintain them to minimize odors and related complaints. Preventative maintenance activities should include:

Preventative maintenance of odor-control devices should include:

- periodic inspection of odor-control canisters, vents, carbon media, or other odor-treatment components;
- replacement or servicing of media and consumables as needed;
- documentation of odor complaints by location and date; and
- coordination of corrective action where recurring odor issues indicate the need for a design adjustment, added maintenance frequency, or different media/application.

#### **4.2.7 Meter and Sampling Vault / Discharge-Point Facilities**

The meter and sampling vault at the Redmond connection supports flow monitoring, sampling, and interconnection operations and is part of the District's public conveyance system up to the Redmond handoff point. In coordination with the City, preventative maintenance activities should include:

- inspection of vault accessibility and structural condition;
- verification of flow meter operation and communications;
- inspection and servicing of pH or sampling equipment where installed;
- cleaning and upkeep of the vault and associated appurtenances; and
- coordination with the City of Redmond where interconnection requirements, data-sharing, or site access require joint awareness.

### 4.2.8 Owner-Side STEP Systems

The District’s preventative maintenance program does not include routine maintenance of owner-side STEP tanks, pumps, alarms, controls, or electrical service. Those facilities are installed, operated, maintained, and replaced by the property owner, or by contractors retained by the owner.

The District may, however:

- establish and publish owner-side installation and maintenance standards;
- provide owner education materials;
- require District review and acceptance before initial connection;
- require correction of owner-side conditions that create a public-system problem or violate District standards; and
- require documentation of owner-side repairs where those repairs affect connection to the public system.

### 4.2.9 Initial Inspection Frequencies

The District should adopt initial preventive maintenance frequencies for public assets and then refine them as actual system performance data becomes available. A reasonable starting framework is shown below.

**Table 4-2 Initial Preventative Maintenance Schedule**

Public asset / component	Initial frequency	Typical PM activity
Public pressure main routes	Annual and after major incidents	Route inspection, leak/settlement review, identify access or locate issues
Service valve boxes	Annual	Inspect vault condition, accessibility, valve/check functionality
Public isolation valves	Annual	Locate, exercise, inspect boxes, verify operability
ARV valve assemblies	Semi-annual initially	Inspect, clean/service, check odor-control components, verify accessibility
Odor-control devices	Semi-annual initially and after odor complaints	Inspect media/housings, replace consumables as needed
Meter/sampling vault	Quarterly or per instrument requirements	Inspect vault, verify meter and monitoring equipment operation
Tracer wire / locate features	At startup, after repairs, and as needed	Verify continuity and locate readiness
Critical spare materials / consumables	Quarterly inventory check	Replenish stock, confirm long-lead items available

This table should be treated as an initial operating framework rather than a fixed rule. Maintenance intervals should be updated as the District accumulates maintenance records and performance history.

### 4.2.10 Operational Spares and Consumables

The District should maintain a practical stock of public-system spares and consumables sufficient to support routine maintenance, minor repairs, and initial emergency response. These materials should be limited to commonly used items and critical components that are difficult to obtain quickly. More detailed spare-parts planning, inventory categories, and long-term stocking philosophy are addressed in Section 4.4.5.

### 4.2.11 Maintenance Records

All preventative maintenance activities should be documented in a consistent format that supports operations, trend tracking, budgeting, and later asset management.

At minimum, records should identify:

- date of inspection or maintenance;
- asset or location serviced;
- work performed;
- observations or deficiencies noted;
- parts/materials used;
- follow-up actions needed; and
- responsible contractor or staff person.

### 4.2.12 Future Documents

Future documents to be developed pursuant to this section:

- Preventative maintenance schedule and checklist set
- Public valve exercising procedure
- ARV inspection and servicing procedure
- Odor-control inspection and media replacement procedure
- Meter/sampling vault inspection checklist
- Public asset PM log template
- Initial operational spare-parts list

## 4.3 Reactive Maintenance

### 4.3.1 Purpose

The purpose of the District's reactive maintenance program is to restore service, protect public health and the environment, and stabilize public sewer assets when unplanned failures or performance problems occur. Reactive maintenance includes both emergency response and non-emergency corrective work needed to address defects, malfunctions, or damage affecting the public sewer system.

### 4.3.2 Reactive Maintenance Approach

The District should operate under a **planned reactive maintenance approach**, not a run-to-fail approach. Preventative maintenance is intended to reduce failures, but reactive maintenance will still be required to address unexpected problems, such as:

- public main breaks or leaks;
- damaged or inaccessible service valve boxes;
- failed or stuck public valves or air release appurtenances;
- tracer wire or locating failures affecting public assets;
- meter/sampling vault malfunctions;
- third-party utility strikes or roadway damage; and
- other unplanned public-system deficiencies identified through inspection, complaints, or operating history.

Reactive maintenance work should be documented and then used to refine preventative maintenance frequencies, identify recurring problem locations, and inform asset management and

capital planning. This aligns with the SUM guidance that small systems should use performance information and action planning to improve over time, rather than treat incidents as isolated events.

### 4.3.3 Levels of Reactive Maintenance

Reactive maintenance may occur at different levels of urgency.

**Emergency reactive maintenance** includes failures or conditions requiring immediate response to protect health, safety, the environment, or continuity of public sewer service. Examples include:

- a public force main break or active effluent release;
- failure of a key isolation valve needed to control a spill or shutdown;
- damage to the public system caused by excavation or roadway work; or
- a malfunction at the Redmond discharge-point facilities that materially affects system operation.

**Urgent non-emergency reactive maintenance** includes problems that do not present an immediate health or spill risk, but should be corrected promptly to avoid escalation. Examples include:

- an inoperable service valve box component;
- an ARV or air-vacuum appurtenance not functioning as intended;
- recurring odor release at a public venting location;
- damaged tracer wire or locate features; or
- a malfunctioning meter, sampling, or communications component.

**Scheduled corrective maintenance** includes repair items discovered through inspection or routine operation that can reasonably be addressed through normal work planning.

### 4.3.4 O&M Provider Role

During reactive maintenance events, the District's contracted O&M provider should serve as the primary responder for public-side failures within the scope of its contract. Detailed step-by-step emergency standard operating procedures (SOPs) should be developed with the O&M contractor for prompt and decisive response actions. During such events, the provider's responsibilities should include:

- receiving and evaluating reports of STEP system problems;
- identifying whether the issue is on the public side or owner side of the maintenance boundary;
- responding to emergency callouts and urgent field conditions;
- isolating affected sections of the public system as needed;
- coordinating excavation, repair, restoration, and specialty services;
- notifying the District when Board-level direction, major cost authorization, outside agency coordination, or public communication is needed; and
- documenting the incident and corrective action taken.

The O&M provider should also maintain relationships with backup excavation, electrical/instrumentation, and specialty repair contractors so the District can respond quickly when in-house contractor capability is insufficient. This fits the SUM guidance for small systems to develop contractor relationships, assign responsibilities clearly, and maintain operational resiliency despite limited staffing.

### 4.3.5 Public/Private Boundary During Reactive Maintenance

Because the District's maintenance responsibility begins at the **service valve box**, reactive maintenance must clearly distinguish between:

- **public-side failures**, which are the District's responsibility; and
- **owner-side failures**, which remain the property owner's responsibility.

If a reported problem originates upstream of the service valve box, the District should notify the property owner that corrective action is required on the private side. If the owner-side problem causes or threatens a public-system problem, the District may isolate service at the vault and require correction before service is restored.

If the problem is at or downstream of the service valve box, the District should respond in accordance with its public O&M and emergency response procedures.

### 4.3.6 Force Main Breaks and Public Leaks

Public force main breaks, leaking fittings, and other loss-of-integrity failures are among the most significant reactive maintenance events the District may face. The PER specifically notes that isolation valves are provided to isolate line sections and reroute flows in the event of a line break or other emergency.

When a public main break or leak is reported or detected, the District's reactive maintenance response should generally include:

- verifying the location and apparent severity of the problem;
- isolating the affected public segment using available valves and providing temporary bypass routing or piping if an extended closure is anticipated;
- protecting public health and safety and controlling access to the area;
- coordinating utility locates, traffic control, and excavation as needed;
- repairing or replacing the failed public component;
- pressure testing or otherwise verifying integrity before returning the segment to service; and
- documenting the cause, corrective action, and any follow-up work needed.

### 4.3.7 Air Release / Air-Vacuum Appurtenance Failures

Reactive maintenance at public air release or air-vacuum locations may be needed when:

- a manual or automatic relief valve is not functioning properly;
- trapped air is affecting flow;
- venting is causing recurring odor complaints;
- excessive liquid discharge or leakage is observed;
- the appurtenance is damaged or inaccessible; or
- maintenance records indicate a recurring issue at the same high point.

Because Terrebonne is a small-diameter liquid-only system, the District should not assume high-intensity ongoing ARV maintenance at all locations. Instead, reactive work at these sites should be guided by actual field performance and documented history. Effluent sewer design guidance supports this more targeted approach, especially after the operating pattern of the line becomes better understood.

### 4.3.8 Meter, Sampling, and Communications Failures

Reactive maintenance should also address failures at the Redmond discharge-point facilities, including issues affecting:

- the flow meter;
- pH sampling equipment;
- communications or telemetry associated with the vault;
- the sump pump, and
- vault access or safety

Because these facilities support measurement, monitoring, and operational coordination with Redmond, malfunctions at this location should be treated as high-priority corrective maintenance even if they do not immediately interrupt physical flow.

### 4.3.9 Owner Notifications and Customer Interface

Although owner-side STEP equipment is not part of the District's reactive maintenance program, reactive maintenance events on the public side may still require communication with affected customers. Depending on the event, the District or its O&M provider may need to:

- notify customers of planned or unplanned collection system shutdowns;
- advise customers on temporary measures to avoid tank overflows during power outages;
- inform customers when service has been isolated at the service valve box;
- explain whether the problem appears to be on the public side or private side; and
- provide direction on who is responsible for next steps.

Customer communication expectations and owner education materials should be coordinated with Chapter 5.

### 4.3.10 Documentation and Follow-Up

Each reactive maintenance event should be documented in a consistent format sufficient to support incident tracking, immediate operational follow-up, and any needed insurance, claims, or regulatory reporting.

At minimum, reactive maintenance records should identify:

- date and time of incident;
- location and affected asset;
- problem observed;
- immediate response taken;
- repairs performed;
- materials used;
- service restoration date/time; and
- any follow-up repair, replacement, or policy action recommended.

Reactive maintenance records should also identify any near-term follow-up repair, monitoring, or procedural adjustment needed after the incident.

### 4.3.11 References and Future Documents

Reactive maintenance addresses the District's response to unplanned public-system problems. It should be coordinated with:

- **Section 4.2 Preventative Maintenance**, which is intended to reduce the likelihood of failures;

- **Section 4.4 Asset Management**, which uses maintenance history to identify critical assets, replacement priorities, and reserve needs; and
- the District's future emergency response procedures, spending authority, and contractor backup arrangements.

**Future documents to be developed pursuant to this section:**

- Reactive maintenance response checklist
- Force main break response SOP
- Service valve box isolation and restoration procedure
- Public leak and spill reporting procedure
- Meter/sampling vault malfunction response procedure
- Reactive maintenance log template
- Emergency contractor and supplier contact list

## **4.4 Asset Management**

### **4.4.1 Purpose**

The purpose of the District's asset management program is to identify, track, maintain, and plan for the public sewer assets that the District owns or is responsible to operate and maintain. Asset management supports reliable service, informed maintenance planning, orderly replacement of aging components, and development of appropriate reserves and capital planning over time.

For Terrebonne, asset management applies to the **public-side system**, including service valve boxes, public pressure mains, isolation valves, air release / air-vacuum appurtenances, odor-control devices where installed, the transmission main, the meter and sampling vault, and related public appurtenances.

This section establishes the District's basic asset management framework. It is not intended to create a fully developed capital improvement program or detailed replacement schedule at this stage.

### **4.4.2 Asset Inventory**

The District should maintain a current inventory of public sewer assets that are part of the District's O&M program. The inventory should be sufficient to support routine maintenance, emergency response, budgeting, and future replacement planning.

At minimum, each inventoried asset should include:

- asset ID or unique reference number;
- asset type;
- location or map reference;
- ownership and maintenance responsibility;
- installation date, if known;
- manufacturer, model, material, or size, as applicable;
- condition or status;
- maintenance history, if available; and
- notes regarding access, easement, or special operating conditions.

The inventory may initially be simple, but it should be organized in a way that allows the District to expand it over time as more detailed condition and maintenance information becomes available.

### 4.4.3 Critical Assets

Not all public assets carry the same operational importance. The District should identify and track **critical assets** first – meaning the assets whose failure would be most likely to:

- interrupt service to multiple users;
- create a significant risk of spill or environmental release;
- impair the District’s ability to monitor or meter flows;
- require difficult or expensive emergency repair; or
- interfere with the District’s ability to convey flow to the City of Redmond.

For Terrebonne, likely critical assets include:

- the transmission main;
- key isolation valves used to segment large portions of the system;
- air release or air-vacuum appurtenances at major high points;
- the meter and sampling vault at the discharge point; and
- any difficult-to-access public facilities or locations with a history of recurring maintenance issues.

### 4.4.4 Expected Service Life Assumptions

The District should assign planning-level expected service life assumptions to major public asset categories for budgeting and reserve planning. These assumptions should be used as a planning tool, not as a guarantee of actual replacement timing.

Expected service life should be refined over time based on:

- manufacturer information;
- construction records;
- maintenance history;
- observed field condition; and
- the operational importance of the asset.

Different asset classes will have different expected service lives. Some buried pipe assets may have long service lives, while exposed, mechanical, electrical, instrument, or consumable components may require more frequent repair or replacement.

### 4.4.5 Spare Parts Philosophy

The District should maintain a practical spare-parts philosophy for the public sewer system. The intent is not to stock every possible replacement component, but to keep enough critical materials and common repair items available to support routine maintenance and timely emergency response.

In general, the District should:

- maintain a small inventory of critical public-system repair materials and consumables;
- prioritize parts that are difficult to obtain quickly or that are needed to restore service after a common failure;
- review and update the spare-parts list periodically based on actual maintenance history; and
- coordinate spare-parts planning with the contracted O&M provider.

Examples of likely public-side spares include:

- repair couplings and clamps;
- valve box lids and extensions;
- common fittings, restraints, gaskets, and tracer wire repair materials;

- parts for air release / air-vacuum appurtenances; and
- media or consumables for any public odor-control devices or monitoring facilities.

#### **4.4.6 As-Builts and Asset Records**

Accurate as-built drawings and asset records are essential to effective asset management. The District should maintain current record drawings showing the location of public mains, service valve boxes, isolation valves, air release appurtenances, meter/sampling facilities, and other key public assets.

These records should be updated as construction is completed and as repairs, replacements, or field changes occur. Current as-builts and asset records are particularly important for:

- locating buried infrastructure;
- supporting emergency response;
- avoiding damage during excavation;
- orienting new contractors or staff; and
- planning future maintenance or extensions.

#### **4.4.7 Condition Tracking and Maintenance History**

The District should maintain basic condition and maintenance history for its public assets. This does not need to begin as a sophisticated software system. At minimum, the District should be able to document:

- what asset was inspected or maintained;
- when the work occurred;
- what condition was observed;
- what work was performed;
- what materials were used; and
- whether follow-up repair or replacement is needed.

Over time, this information should be used to:

- identify recurring problem locations;
- refine preventative maintenance intervals;
- inform replacement priorities; and
- support budgeting and reserve planning.

#### **4.4.8 Relationship to Financial Planning**

Information from the asset inventory, service life assumptions, and maintenance history should be used to support:

- capital replacement reserve planning;
- budgeting for short-lived public assets;
- identifying future repair or replacement needs; and
- long-term rate planning.

More specific reserve, replacement funding, and budget policies should be addressed in Chapter 6.

#### **4.4.9 Initial Implementation Approach**

The District's initial asset management program is intended to establish the foundation for a longer-term asset management and fiscal sustainability program by creating a reliable inventory of public

assets, documenting maintenance history, identifying critical assets, and informing future reserve and replacement planning.

Because Terrebonne is a newly formed District and the public sewer system is still being developed, the District's initial asset management program should focus on the essentials:

- create and maintain a reliable public asset inventory;
- keep current as-builts and location records;
- identify critical assets;
- track maintenance history; and
- develop basic service life and spare-parts assumptions for budgeting purposes.

The District can add more formal condition scoring, lifecycle analysis, and replacement modeling later as the system matures.

#### **4.4.10 References and Future Documents**

**Future documents to be developed pursuant to this section:**

- Public sewer asset inventory template
- Critical asset list
- Planning-level expected service life table by asset category
- Spare parts and consumables list
- Asset condition and maintenance history log template
- As-built standards / record drawing update procedure
- Capital replacement planning worksheet

## **5. Customer Service & Communication**

**5.1 Customer onboarding and education**

**5.2 Alarm response expectations**

**5.3 Complaint handling (odor, noise, outages)**

**5.4 District vs homeowner responsibilities**

## **6. Financial Management**

### **6.1 Rates & Charges**

### **6.2 User rates (O&M + debt service)**

### **6.3 SDC methodology (capacity buy-in, infrastructure credits, etc.)**

### **6.4 Late fees, penalties, lien authority**

### **6.5 Budgeting & Reserves**

### **6.6 Billing & Collections**

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## **7. Regulatory Compliance**

- 7.1 DEQ approvals and conditions**
- 7.2 Reporting requirements**
- 7.3 Recordkeeping**
- 7.4 Inspection and audit readiness**

## 8. Annexation & Growth

### 8.1 Introduction

The Terrebonne Sanitary District was formed to provide sanitary sewer service over time within Terrebonne and, where appropriate, to expand that service to additional eligible properties. Growth and annexation are therefore part of how the District is expected to develop. Annexation is the legal process used to bring additional territory into the District boundary so that the property may be planned for future sewer service.

Under the District's current Annexation Policy, property within the Terrebonne Unincorporated Community boundary is eligible for annexation. The policy states that annexation is voluntary and subject to approval by the District Board. It also states that annexation will result in property being included in the District service area boundary and set up to be served by the District when a sewer main is provided for connection.

This means annexation has an important but limited effect. Annexation brings property into the District boundary. It does not, by itself, build a sewer main or guarantee immediate service. The District's Annexation Policy expressly states that annexation does not guarantee that sewer service will be made available within a specified timeframe.

The same policy also states that the District Board will use the location of annexed parcels to help prioritize future sewer main extensions. In other words, annexation helps the District identify where future service demand exists, but annexation alone does not commit the District to construct a sewer extension on a fixed schedule.

The County's 2025 annexation order reinforces this same concept. The order and incorporated District resolution state that annexation will result in property being included in the District boundary and set up to be served by the District when a sewer main is provided for connection. The County order also notes that the District is a non-taxing district.

For property owners, the basic annexation questions are:

- **Who can annex?** Property within the Terrebonne Unincorporated Community boundary
- **Is annexation voluntary?** Yes. The current policy states that annexation is voluntary and subject to District approval.
- **What does annexation do?** It adds the property to the District boundary and positions the property to be served by the District when a sewer main becomes available.
- **What does annexation not do?** It does not guarantee that service will be available right away or within a specific timeframe.
- **When do District charges apply?** The policy states that annexed property becomes subject to District rules, regulations, SDC fees, and monthly sewer charges upon connection to the sewer system.

### 8.2 Mainline Extension Evaluation Framework

The District intends future sewer main extensions to be evaluated using a consistent framework so that expansion occurs in an orderly, cost-effective, and financially sustainable manner. While annexation may be approved in advance of service availability, annexation alone does not guarantee

immediate construction or connection. Decisions to extend sewer mains and authorize new connections are separate actions and are evaluated independently. Annexation establishes eligibility for future service planning; extension decisions determine when and whether infrastructure investment occurs.

As a baseline principle, the District will consider extending sewer service only when doing so can be accomplished without adversely impacting affordability for existing customers. In general, the District expects that the cost of extending mainlines can be reasonably recovered through system development charges (SDCs) from new connections within a practical timeframe, rather than being subsidized by existing ratepayers.

Before advancing a sewer main extension or prioritizing construction, the District will complete a documented evaluation that addresses, at a minimum, the following considerations:

- Availability of collection, transmission, and downstream treatment capacity (or identification of funded upgrades);
- Financial stability, including consistency with adopted rates, reserves, and funding plans;
- Defined cost allocation consistent with the principle that growth should pay for growth;
- Feasibility of required permits, easements, and right-of-way access; and
- Operational readiness, including the ability of existing O&M coverage and emergency response arrangements to absorb the expanded service area.

### 8.3 Minimum Service and Screening Criteria

To support consistent decision-making and early screening of proposed extensions, the District intends to use minimum service criteria as a practical planning tool. Unless modified by later adopted policy, these criteria are intended to help distinguish between extensions that can reasonably distribute costs across multiple users and extensions that may impose disproportionate cost on the existing system.

In general:

- A proposed mainline extension should have the potential to serve **at least 1 EDU per 50 linear feet** of extension at buildout; and
- The District should generally expect sewer service applications or commitments representing **at least 1 EDU per 100 linear feet** of proposed extension before prioritizing construction.

These thresholds are not absolute requirements, but rather screening benchmarks to guide planning, prioritization, and funding discussions. Meeting these benchmarks does not, by itself, obligate the District to construct an extension. **Table 9-1** provides an example of how minimum service criteria may be applied for planning purposes.

Table 11-1 Example Minimum Service Criteria for Mainline Extensions

Proposed Extension Length (LF)	Potential EDUs served by extension	Near-term EDUs to be served by extension	Meets Potential EDU Screening (1 EDU / 50 LF)	Meets Near-Term EDU Screening (1 EDU / 100 LF)
500	12	6	Yes	Yes
500	8	3	No	No
1,000	25	12	Yes	Yes

Proposed Extension Length (LF)	Potential EDUs served by extension	Near-term EDUs to be served by extension	Meets Potential EDU Screening (1 EDU / 50 LF)	Meets Near-Term EDU Screening (1 EDU / 100 LF)
1,000	15	6	No	No

## 8.4 Mainline Extensions by Property Owners & Developers

In some cases, a property owner or developer may propose to construct a sewer main extension on behalf of the District. Any such extension must be designed, installed, tested, and inspected in accordance with District standards and accepted by the District before being placed into service.

Subject to later policy development, the District may allow all or a portion of the eligible cost of a developer-constructed extension to be applied as a credit against sewer system development charges otherwise due for the development. Any such credit would generally be limited to the portion of the work that:

- Is required by the District;
- Is constructed to District standards;
- Is accepted by the District; and
- Provides capacity or public benefit beyond the immediate needs of the constructing property.

This framework is intended to support future developer participation while avoiding case-by-case negotiation each time an extension is proposed. Any such arrangements would be documented through separate agreements and implemented consistent with adopted District policy.

## 8.5 Board decision framework and documentation

For any annexation-related service expansion, the Board should document: (1) the area and EDUs to be served; (2) the capacity basis (including downstream capacity/requirements, as applicable); (3) the funding approach and cost allocation; (4) required easements/access rights and customer agreement requirements; and (5) schedule/phasing and any conditions precedent. Clear documentation helps prevent disputes about who pays, who maintains, and when service becomes available.

## 8.6 Relationship to Future Policy Development

This section establishes the overall framework for evaluating annexation-related growth and future mainline extensions. More detailed rules and procedures will still need to be developed through adopted policy, including:

- Annexation decision criteria;
- Methods for evaluating capacity and phasing;
- Criteria for District-funded versus developer-funded extensions;
- Calculation and documentation of SDC credits;
- Circumstances under which annexed properties may be required to connect; and
- Prioritization among multiple eligible extension areas.

For now, the key point is straightforward: annexation is the District's mechanism for orderly future growth, while infrastructure extension decisions are guided by minimum service, cost-effectiveness, and system-readiness considerations.

## **9. Plan Review & Updates**

### **9.1 Annual review**

### **9.2 Triggers for updates (rate changes, expansion, incidents)**

### **9.3 Board adoption and amendment process**

A subsection on:

- periodic SUM self-assessment,
- action plan updates,
- progress review,
- and Board discussion of priority areas.

The Guidebook explicitly recommends repeating the self-assessment and updating the sustainable management improvement plan as operations and infrastructure change.

## Appendices

### **Appendix A – District Formation and Organizational Documents**

- Formation orders and petition materials
- District boundary / organizational references
- Non-taxing district basis and board structure references

### **Appendix B – Intergovernmental and Utility Service Agreements**

- City of Redmond treatment agreement / IGA
- Easement MOU(s) and recorded easements
- Other key agency coordination agreements

### **Appendix C – Adopted District Policies and Governance Documents**

- Board Duties and Responsibilities Policy
- Financial Management Policy
- Public Records Request Policy
- Public Contracting Rules and Procedures
- Annexation Policy and Criteria
- Sewer Use Ordinance

### **Appendix D – System Planning and Engineering References**

- Preliminary Engineering Report
- Current STEP collection system design basis / plans / specifications / estimate
- Relevant funding and regulatory planning documents

### **Appendix E – Administrative Forms and Implementation Tools**

- Annexation application materials
- Records request procedures/forms
- Procurement threshold summary
- Delegation / decision authority matrix

### **Appendix F – Operations and Asset Management Support Materials**

- Initial asset inventory framework
- SOP list and adopted SOPs
- Emergency contacts / escalation framework
- Key operational reporting templates