DRAFT

SPALDING COMMUNITY SERVICES DISTRICT

Sewer System Management Plan (SSMP)

Integrated Operations, Asset Inventory, Continuity Manual, and SCADA Monitoring Addendum

Prepared for: Spalding Community Services District

Prepared by: Brad Mallory, Sewer Technician

With operational input from field observations, prior district documents, as-built records, O&M binders, emergency planning materials, asset inventory findings, maintenance practices, and SCADA review information gathered during development of this plan.

Date: _____

Purpose of this manual: to give the District one practical, readable document that explains how the system works, what equipment exists, what is currently wrong, what is done each day, week, month, and quarter, and what future staff should do if the current operator is unavailable.

DRAFT

Revision Log

Use this page to track formal updates so future staff, management, auditors, contractors, and regulators can see what changed, when it changed, and why.

Revision	Date	Prepared By	Summary of Change
0	Initial integrated issue	Brad Mallory / Spalding CSD	Comprehensive SSMP assembled from field observations, historical records, inventory work, O&M manuals, inspection schedules, emergency response materials, budget information, and known system deficiencies.
1	SCADA integration	Brad Mallory / Spalding CSD	Inserted Chapter 10 SCADA interpretation guidance, flow review methods, alarm procedures, and inflow and infiltration evaluation language into the master SSMP.

Table of Contents

DRAFT

Acronyms, Definitions, and References

Acronym	Definition
SSMP	Sewer System Management Plan
SERP	Sewer Emergency Response Plan
SSO	Sanitary Sewer Overflow
CIWQS	California Integrated Water Quality System
SWRCB	State Water Resources Control Board
RWQCB	Regional Water Quality Control Board
EDU	Equivalent Dwelling Unit
SCADA	Supervisory Control and Data Acquisition
O&M	Operations and Maintenance
CIP	Capital Improvement Plan
HDPE	High-Density Polyethylene
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
ARV	Air Relief Valve
ATS	Automatic Transfer Switch
NOV	Notice of Violation
CQA	Construction Quality Assurance

Key Definitions

- Sanitary Sewer Overflow (SSO): Any discharge of untreated or partially treated wastewater from the sewer system.
- Freeboard: The vertical distance between the water surface and the top of the pond berm. For District operations, 2 feet is the key minimum threshold.
- Force Main: A pressurized pipeline used to convey wastewater from lift stations to the evaporation pond disposal system.

Reference: This SSMP is developed in accordance with Appendix G of the State Water Resources Control Board SSMP requirements, including General Waste Discharge Requirements Order No. 2006-0003-DWQ and subsequent amendments.

DRAFT

1. Purpose, Policy, and Goals

The Spalding Community Services District (SCSD) has developed this Sewer System Management Plan to document how the District operates, monitors, maintains, evaluates, and improves its wastewater collection and disposal system. The intent of this plan is practical as well as regulatory. It is meant to serve as a working field and office reference for daily operations, weekly and monthly inspections, emergency response, maintenance planning, regulatory reporting, and capital improvement prioritization.

This SSMP is based on information gathered from day-to-day operations, field observations, as-built drawings, prior district draft documents, O&M manuals, emergency response planning materials, asset inventory work, and historical construction information. Where records remain incomplete, the plan states that plainly and identifies follow-up actions rather than guessing. The goal is to maintain a defensible and useful plan that reflects actual system conditions.

The District policy is to protect public health and the environment, prevent sanitary sewer overflows to the maximum extent practical, maintain reliable wastewater service, document operations consistently, and correct deficiencies as staffing and funding allow. This plan also supports communication with Lahontan, the California State Water Resources Control Board, contractors, and the Board of Directors.

1.1 SSMP goals

- Protect public health and the environment by operating the sewer system in a controlled and documented manner.
- Prevent sanitary sewer overflows through routine monitoring, field inspection, maintenance, and emergency response readiness.
- Maintain regulatory compliance with the Statewide Sanitary Sewer System General Order, CIWQS reporting expectations, and Lahontan oversight requirements.
- Provide clear explanation of who performs what task, when the task is done, how it is done, and why the task matters.
- Document current system deficiencies so they can be tracked, communicated, and prioritized for repair or replacement.
- Support long-term infrastructure management through asset inventory development, budgeting, and capital improvement planning.

1.2 Use of this plan

This SSMP should be used by the Sewer Technician, General Manager, Board of Directors, consultants, and contractors as appropriate. It should be kept at the District office and updated as more complete asset data, mapping, and project information become available. It should also be referenced when responding to Notices of Violation, applying for grants or Technical Assistance, preparing for audits, and training additional personnel.

2. Ownership, Organization, and Responsibility

The sewer system is owned and operated by the Spalding Community Services District, a California Community Services District. Operational work is performed locally, with support from management and outside contractors when specialized equipment, repairs, or technical assistance are needed.

2.1 Responsible roles

Role	Primary responsibility	Current person/party
Board of Directors	Policy oversight, budget approval, and support for capital projects	Spalding CSD Board
General Manager	Administrative oversight, regulatory coordination, project management, and board communication	Mike Garcia
Sewer Technician	Daily operation, inspection, monitoring, sampling, maintenance tracking, emergency response, and recordkeeping	Brad Mallory
Certified operator / mentor support	Technical mentoring, certification support, troubleshooting, compliance support	Kathy Stone (mentor support)
Contractor support	Repairs, pumping, cleanup, SCADA support, and construction assistance as needed	Various contractors listed in SERP call sheet

The District currently functions with a lean staffing structure. Because the system depends heavily on one primary field operator, documentation, checklists, and the emergency call chain are especially important. This SSMP is part of the District continuity strategy.

2.2 Operational chain of communication

- Brad Mallory is the first contact for all sewer spills and emergencies.
- Mike Garcia is the second contact for all sewer spills and emergencies.
- If specialized repair, pumping, hazardous material, construction, SCADA, or regulatory communication is needed, the District escalates based on the SERP call sheet and the conditions observed in the field.

2.3 Operator development

The Sewer Technician is actively working toward Grade 1 wastewater operator certification. The District has approved mentorship support from Kathy Stone, a Grade 5 operator, to provide hands-on training, operational guidance, and phone support within budget limits. This training effort is part of the District continuity and compliance strategy and is intended to strengthen in-house system knowledge over time.

3. Legal Authority and Regulatory Framework

The District operates and maintains the wastewater collection and disposal system under authority granted by California law, local district authority, and the State Water Board requirements for sanitary sewer systems. District authority includes the ability to require proper sewer connections, regulate discharges into the system, prohibit improper discharges, inspect and maintain publicly owned infrastructure, require maintenance of private components where applicable, bill and collect sewer service charges, allocate administrative and operational costs to the sewer enterprise, enforce local requirements, and recover costs associated with system misuse or damage.

The system is under regional oversight by the Lahontan Regional Water Quality Control Board and statewide oversight by the California State Water Resources Control Board. Prior district materials state that the system is enrolled under the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-0003-DWQ, as amended), and that the District has received Notices of Violation related to system compliance and is actively working toward corrective actions. Prior draft language also noted that a Corrective Action Plan was submitted for review on January 21, 2026. These items should continue to be tracked as part of the active compliance file.

3.1 Core compliance obligations

- Maintain and periodically update an SSMP.
- Monitor the system and respond to abnormal conditions or overflows promptly.
- Report SSOs through CIWQS within required timelines based on category and receiving water impact.
- Maintain operational documentation, inspection records, maintenance notes, sampling records, and communication logs.
- Support regulatory review, respond to enforcement actions, and pursue corrective actions for known deficiencies.

3.2 Agencies and oversight

Agency / system	Function for Spalding CSD
California State Water Resources Control Board	Statewide wastewater regulatory oversight; administers SSO reporting program through CIWQS.
Lahontan Regional Water Quality Control Board	Regional oversight agency for wastewater compliance, pond integrity, monitoring, and enforcement actions.
Lassen County Environmental Health	Notified for spills impacting human health or similar local health concerns.
CIWQS	State online reporting platform for sanitary sewer spills and monthly no-spill certification.

4. System Description and Asset Overview

The Spalding wastewater system serves an isolated rural lakefront community in Lassen County with approximately 250 year-round residents and seasonal population increases according to prior district materials. For planning and system loading purposes, the wastewater system currently serves approximately 862 Equivalent Dwelling Units (EDUs). Prior draft district materials also reference approximately 600 service connections historically; however, the working operating value used in the current SSMP is 862 EDUs, and the District should continue reconciling EDU counts with billing and connection records as part of its asset and customer inventory process.

4.1 Overall system configuration

Wastewater flows from residential and service connections into the collection system, then to lift stations, where it is pumped through force mains to the evaporation ponds. The system includes gravity sewer mains, service connections, cleanouts, air relief valves, temporary vented services, street venting components, lift stations, valve vaults, force mains, evaporation ponds, monitoring wells, and SCADA monitoring. The system does not discharge to a surface water treatment plant; rather, wastewater is managed through lined evaporation ponds.

4.2 Lift stations

The system consists of four lift stations. Prior district information states that each lift station includes three wet wells, float tree control systems, multiple pumps engaged sequentially based on wastewater level, check valves, pitless configurations, and on-site generators for emergency power redundancy. During development of this plan, the Sewer Technician also confirmed that the lift stations are monitored through field checks of wells, pumps, lift station condition, vaults, and generators.

Lift Station	Location	Primary field notes
LS1	The Strand - south end	Routine lift station and generator inspection point; historical spill, bypass, and settlement concern.
LS2	The Strand - north side near marina	Routine lift station and generator inspection point; prior Pump 3 runtime issue corrected.
LS3	Corner of Acacia Way and Madrone	Known check valve issue causing inaccurate flow behavior.
LS4	Laurel Way	Routine lift station and generator inspection point; asphalt settlement concern.

4.3 Force mains

Based on historical district documentation, the system includes approximately 29,000 linear feet of 6-inch and 8-inch transmission force main, or about 5.5 miles. Based on the Asset Management Manual, the force main transmission line is described as 8-inch ductile iron pipe and includes special infrastructure such as the Pine Creek bridge crossing, insulated pipeline sections, heat trace protection, and air release valves located at high points. These details should continue to be verified against mapping and as-built review as the District develops an updated electronic system map.

4.4 Collection system materials

The sewer system uses multiple pipe materials. Prior district documentation describes most of the system as PE3408 HDPE pipe meeting ASTM D3350 standards, with sizes including 2-inch, 3-inch, 4-inch, 6-inch, and 8-inch. Ductile iron pipe conforming to ANSI/AWWA C110 / A21.10 is referenced for lift station and structural piping applications. PVC Schedule 40 is used for smaller connections and auxiliary piping. These material notes are important for future repair and replacement decisions because they affect fitting compatibility, corrosion expectations, and repair methods.

4.5 Evaporation ponds

The District operates three lined evaporation ponds. The pond system is a critical part of wastewater disposal and one of the District highest-risk assets because liner failure, low freeboard, seepage, or berm problems can trigger enforcement, increase groundwater risk, and require significant funding to correct.

Pond	Liner area (sq ft)	Approximate area (acres)	Current note
Pond 1	422,925.76	9.71	In service; monitored visually and by freeboard measurement.
Pond 2	257,235.48	5.91	Known liner tear; high-priority asset risk.
Pond 3	274,390.84	6.30	In service; part of active pond management.
Total	954,552.08	21.92	Approximate total pond surface area.

According to the official Construction Quality Assurance report referenced by the District, approximately 916,000 square feet of 60-mil HDPE geomembrane liner was installed and tested between October 9, 2006 and July 28, 2007 for the Spalding Tract evaporation ponds. Additional asset management information indicates pond design characteristics include geotextile underlayment, anchor trench liner termination, and approximate operating depth of about 6 feet. The difference between total pond surface area calculations and installed liner quantity is not unusual and can be attributed to geometry, slope treatment, overlap, anchoring, and construction methods.

4.6 Monitoring wells

Prior district materials state that three monitoring wells surround the ponds to provide early indication of leakage or groundwater contamination. Monitoring wells are sampled quarterly by the sewer technician, and laboratory analysis is conducted by a third-party laboratory located in Reno, Nevada. Specific analytical parameters were noted as under review in prior documentation and should remain part of the active monitoring record.

4.7 Major system asset summary

- 4 lift stations
- 12 submersible pumps (3 per lift station)
- 12 check valves
- 12 isolation valves
- 4 backup generators
- 1 force main transmission line
- 1 Pine Creek bridge crossing
- 3 evaporation ponds
- 3 stop log structures
- 1 pond control vault / distribution structure
- 1 spray pump system
- 1 circulation pump
- 1 meteorological monitoring station
- 1 Class A evaporation pan

5. Design and Performance Provisions

The purpose of this section is to summarize known design data and expected system performance. Because some records are still being organized, this section uses only information the District has identified through official construction records, as-built information, historical district documents, O&M manuals, asset inventory work, and current field knowledge.

5.1 Expected functional performance

- The collection system should convey wastewater from service connections to the appropriate lift station without surfacing or uncontrolled release.
- Lift stations should cycle pumps based on wastewater level using float tree controls and should maintain emergency power capability through on-site generators.
- Force mains should convey flow from lift stations to the ponds without uncontrolled leakage, sustained pressure loss, or backflow caused by failed check valves.
- The pond system should maintain adequate freeboard and liner integrity so wastewater remains contained within the leveed disposal area.

5.2 Known operating indicators

The District uses SCADA alarms, daily flow review, pump run observations, pond levels, freeboard checks, and field observations to determine whether the system is operating normally. Average daily system flow has been described in prior district materials as approximately 12,000 gallons per day, though the District also recognizes that abnormal mechanical conditions can skew flow data. Lift Station 3 is a known example: a stuck-open check valve has produced false continuous-flow behavior that affects monitoring accuracy.

5.3 Design limitations and record gaps

The District still has record gaps in areas such as exact pipe footage by segment, some equipment specifications, and some detailed as-built metadata. Rather than leaving those items unstated, the District is actively developing an inventory and mapping system. This SSMP should be updated as additional design details are confirmed. Exact pump horsepower, generator model numbers, valve sizes, air release valve locations, and more complete manhole and cleanout counts should continue to be verified in the field.

5.4 SCADA-based flow monitoring and operational performance

The District uses SCADA flow data as one of its primary operational monitoring tools. Daily flow values are reviewed for each lift station to identify abnormal trends, pump issues, potential inflow and infiltration, and unusual changes in wastewater loading. Current review indicates that Lift Station 3 carries the majority of District wastewater flow, while Lift Station 2 serves as the second largest basin. Lift Stations 1 and 4 appear to serve smaller collection areas.

- LS1: approximately 2,400 gallons per day
- LS2: approximately 5,200 gallons per day
- LS3: approximately 10,500 gallons per day
- LS4: approximately 1,600 gallons per day
- Typical total District flow appears to range between approximately 18,000 and 22,000 gallons per day during normal dry weather conditions.

The District recognizes that mechanical problems can affect the accuracy of SCADA data. A known example is Lift Station 3, where a stuck-open check valve caused distorted flow readings and false continuous-flow behavior.

6. Scheduled Inspections and Condition Assessment

The District follows a tiered inspection schedule. This schedule is one of the strongest parts of current operations because it provides repeatable, field-based review of critical assets on a daily, weekly, monthly, and quarterly basis. The purpose of the schedule is to identify abnormal conditions before they become emergencies, provide defensible evidence of active system management, and ensure that the Sewer Technician is reviewing the highest-risk parts of the system at appropriate intervals.

6.1 Daily inspections

- Check operation of lift stations.
- Check daily flows.
- Check for alarms at lift stations.
- Check pond levels.
- Check evaporation panels.

These daily observations are important because they let the operator detect unexpected flow changes, alarm conditions, power issues, pump behavior problems, and abnormal pond conditions quickly. Daily review also creates a running operational history that can be used later to explain why a system condition developed.

6.2 Weekly inspections

- Visual check of ponds.
- Inspect temporary vented services.
- Check pump flows.
- Inspect valve vaults.
- Inspect street cleanouts.
- Check coolant, oil, and fuel levels in emergency generators.
- Inspect street venting.

Weekly inspections are critical for finding conditions that a SCADA screen cannot show, such as physical leaks, structural wear, corrosion, blocked cleanouts, vent damage, unsafe access conditions, and signs of deterioration around pond berms or valve vaults.

6.3 Monthly inspections

- Exercise sprayers and pond valves.
- Check air valves and combination air valves in the streets and system.
- Access and review SSO reporting records.
- Check ballast at ponds.
- Print monthly flows.

6.4 Quarterly inspections

- Conduct monitoring of wet wells.
- Conduct monitoring of ponds.
- Clean and service combination air valves.
- Weeding as necessary.

6.5 Condition assessment ratings

Condition	Meaning	Typical action
Good	Operating normally with no significant defect observed.	Continue routine monitoring.
Fair	Minor wear or issue observed, but no immediate threat to service.	Track and recheck.
Poor	Clear defect or deterioration present; repair planning needed.	Schedule maintenance or evaluate replacement.
Critical	Immediate risk to service, compliance, or containment.	Take action immediately and notify management.

7. Operations and Maintenance Program

The District operations and maintenance program is field-driven. It is based on daily review, weekly physical inspection, practical observation, and risk-based action. The District does not claim to have a fully mature computerized maintenance management system at this time. Instead, the program relies on direct operator knowledge, logs, historical records, contractor support, and increasing documentation discipline. This program is still valid and defensible because the tasks are real, recurring, and tied directly to system performance.

The Sewer Technician begins by reviewing SCADA alarms and notifications, checking flows, and confirming lift station status. This is done because alarms often provide the earliest warning of pump, power, or control problems. Flow readings are reviewed because abnormal flow behavior can signal a mechanical issue even when an overflow has not yet occurred. Lift station status is checked to make sure pumps, wells, and generator systems appear normal.

Pond levels are also checked daily. The reason is simple: the ponds are the end point of the disposal system, and pond conditions directly affect compliance. If pond levels begin trending in the wrong direction, the District needs to know early enough to monitor more closely, make operational adjustments, or notify the appropriate parties if risk increases.

Weekly work is more physical and observational. The operator inspects valve vaults, cleanouts, vents, pump behavior, and generator fluid levels because these are common points where developing failures become visible before they become emergencies. This weekly interval is a practical balance between the District staffing limitations and the need to maintain field awareness.

7.3 Maintenance philosophy

Priority level	Description	Examples for Spalding CSD
High	Immediate or near-term risk to compliance, containment, or system reliability.	Pond 2 liner tear; LS3 check valve stuck open; spill or overflow condition; generator problem during power loss.
Medium	Issue that does not currently threaten containment but could worsen if ignored.	Minor leaks, early corrosion, valve resistance, abnormal but manageable flow behavior.
Low	Non-critical condition or housekeeping item.	Cosmetic wear, minor organization issues, routine cleanup outside critical path.

7.4 Current maintenance limitations

Earlier district materials stated that the District did not yet have a formal written preventive maintenance schedule and that maintenance activities were often based on operator experience and system alarms. The District has improved that condition by defining the recurring inspection schedule described in this plan, but the system still depends heavily on operator knowledge and continuing documentation. This SSMP is intended to formalize that knowledge so it is not lost.

7.5 Daily SCADA review procedure

- Review all active and historical alarms.
- Review daily flow totals for each lift station.
- Compare current flow totals to prior days.
- Review pump starts and pump runtime information.
- Review wet well levels and alarm history.
- Review communication status for each lift station.
- Identify any unusual increase or decrease in flow.
- Document abnormalities in the daily log.
- Prioritize field inspections based on alarm history or abnormal data.

Daily SCADA review is important because it allows the District to identify developing failures before they become spills, overflows, or major equipment problems.

7.6 Weekly SCADA trend review

- Comparison of each lift station's total weekly flow.
- Review of unusual increases in pump runtime.
- Review of repeated alarm conditions.
- Review of power interruptions or generator activity.
- Review of communication interruptions.
- Identification of lift stations with abnormal changes in flow.
- Comparison of wet-weather flow versus dry-weather flow.

8. Lift Station and Valve Vault Program

Lift stations and valve vaults are among the most operationally sensitive components in the District wastewater system. They are where alarms, pump issues, control issues, check valve failures, and backup power issues are most likely to be identified. The District lift station program is therefore focused on practical field observation backed by SCADA review.

8.1 What is checked at lift stations

- Wet well condition and wastewater level behavior.
- Pump operation, including signs of abnormal cycling, vibration, or noise.
- Float tree condition and whether controls appear to be responding normally.
- Electrical and panel condition, including alarms and obvious faults.
- Generator readiness, including coolant, oil, and fuel levels during scheduled inspection.
- General site condition, safe access, visible damage, leaks, or unusual conditions.

The point of these checks is not just to verify that equipment is running. It is to identify the beginning of failure while there is still time to react. For example, unusual sound or vibration can indicate pump wear; rising wet well levels can point to control or pumping issues; inconsistent SCADA data can point to valve or instrumentation problems.

8.2 Valve vault inspection

Valve vaults are inspected weekly because they contain critical check valves and isolation components. The operator visually checks for leaks, abnormal sounds, unusual flow behavior, backflow indicators, standing water, corrosion, and general condition. A vault that appears quiet on SCADA may still reveal a significant problem when viewed in person.

8.3 Known issue: LS3 check valve failure

Lift Station 3 is a known high-priority maintenance issue. The operator has identified a check valve that is stuck open, causing continuous or false high flow readings. This issue affects monitoring accuracy and can mask true system behavior. Based on markings and geometry documented in the field and in photos, the valve body is municipal-grade ductile iron with SIGMA / DFTA3 / AFC503 / AWWA 3200W markings. Because the valve environment is wastewater service and repeated partial repairs tend to create recurring problems, replacement is preferred over simple low-cost repair where feasible.

8.4 Generator checks

Emergency generators are part of the lift station reliability program. The operator checks coolant, oil, and fuel levels weekly and also verifies general readiness. This is done because lift stations remain vulnerable during power outages, and a generator problem during a power event can quickly escalate to rising wet well levels and potential overflow conditions.

8.5 Additional station condition notes

- Lift Station 1 experienced a pump failure in April of the previous year that resulted in a spill and installation of a bypass. That bypass condition has not yet been fully corrected and remains a priority item in the District repair planning.
- Lift Station 1 also experienced settlement issues in prior years and was excavated and raised approximately 3 feet.
- Lift Station 2 experienced a Pump 3 runtime issue that was reset with assistance from Jon Densmore and appears normal again.
- Lift Station 4 currently shows asphalt settlement and sinking around the station area and has a gate that may need lubrication.

8.6 Known major equipment and manufacturers

Equipment Type	Manufacturer	Model / Series	Notes
Lift station pumps	Orenco Systems	PF Series	4-inch high-head effluent pumps; two-wire, three-wire, single-phase and three-phase configurations from 1/3 HP through 5 HP.
Wastewater pumps	Goulds Pumps	5-inch and larger submersible pumps	At least one identified at each station from O&M binder.
Pump motors	Franklin Electric	Submersible motors	Likely paired with Goulds pumps.
Float assemblies	Orenco Systems	MF Float Assembly	Used for low level, lead, lag, high level, and alarm control.
Pump control panels	Orenco Systems	TCOM Custom Panel	Pump operation and alarm control.
Telemetry boards	ATTRU	PCMNet	SCADA communication and remote alarm support.
Circuit breakers	General Electric	Spectra RMS	GEH-5686 installation instructions located.
Transfer switch	Unknown	OTPCA-5773065	O&M information found in Sundt engineer binder.

8.7 Float control sequence

- Lo-Lo Level
- Pump Off Level
- Lead Pump On
- Lag Pump On
- High Level Alarm
- High-High Level Alarm

Each lift station appears to contain three pumps with automatic lead-lag operation. As wastewater rises in the wet well, additional pumps are activated automatically to keep up with flow.

8.8 Typical SCADA alarm types

- High wet well level
- High-high wet well level
- Pump failure
- Pump overload
- Power failure
- Generator running
- Generator failure
- Communication failure
- Excessive pump runtime
- Flow meter error
- Float failure

9. Pond Capacity and Risk Management Program

The pond system is the District primary wastewater disposal and containment system. As a result, pond management is one of the most important functions in the SSMP. A lift station issue may create an immediate response event, but a pond issue can create a sustained compliance problem with significant funding consequences.

The District has identified official construction information showing that the evaporation ponds were lined with 60-mil HDPE geomembrane installed and tested between October 9, 2006 and July 28, 2007. The CQA information states that approximately 916,000 square feet of liner was installed. Asset Management Manual information adds that the pond design also includes geotextile underlayment, anchor trench liner termination, and approximate operating depth of about 6 feet.

9.2 Pond freeboard standard

The operator visually inspects pond levels and uses a tape measure to determine freeboard. For District operations, 2 feet of freeboard is the key minimum threshold. Two feet or less of freeboard is treated as a violation risk and a danger zone. At the time the operating information for this SSMP was gathered, there were no active overflow concerns, but the District recognizes that maintaining this buffer is essential.

Freeboard condition	Operational meaning	Required response
> 2 feet	Within target operating range.	Continue routine monitoring and document observations.
At or below 2 feet	Violation risk / danger zone.	Increase monitoring, notify management, evaluate options, and prepare for escalation if trend continues.
Rapid unexplained change	Potential structural, liner, or flow-management concern.	Document immediately, compare against inflow/SCADA data, and begin focused inspection.

9.3 Current pond risks

- Pond 2 liner tear. This is the District highest identified pond asset risk.
- Aging liner system. At approximately 19 years old, the 60-mil HDPE liner system is now within the period where degradation risk becomes more important for planning purposes.
- Low water exposure risk. Very low pond levels can expose liner material to UV, thermal cycling, drying, and seam stress, which can accelerate degradation.
- Berm and perimeter risk. Erosion, seepage, animal activity, and physical disturbance can affect containment reliability.
- Monitoring well risk indicators. Because the pond system has three surrounding monitoring wells, signs of leakage or groundwater impact can trigger additional regulatory attention.

9.4 How pond conditions are assessed

Ponds are checked daily at a general level and visually inspected weekly. Monthly and quarterly tasks add additional attention to pond valves, ballast, and broader pond monitoring. If abnormal conditions are suspected, the District scenario-based SERP materials call for focused inspection of pond levels, weather conditions, recent SCADA / inflow behavior, berms, liner exposure points, inlet and outlet structures, and the pond perimeter. The guidance also calls for increased monitoring and daily logging until the condition is resolved.

9.5 Current capacity statement

Based on current operating information and in the absence of active overflow conditions, the system appears to be operating within available disposal capacity under normal conditions so long as pond freeboard remains above the 2-foot threshold and no major mechanical failures or containment failures occur.

9.6 Pond control infrastructure

- Pond inlet/outlet sump structure
- Fontaine Series 97 aluminum stop logs
- Pond level control valve vault
- Multiple control valves for flow routing
- Spray pump system used for enhanced evaporation
- Circulation pump used to move water between ponds

10. Monitoring, Sampling, and Data Management

The District monitors the system through both automated and manual means. Monitoring data is important because it tells the District whether current operations are normal, trending toward a problem, or showing evidence of a defect that must be investigated.

DRAFT

10.1 SCADA

The system is monitored through SCADA, which tracks alarm conditions, pump run times, and flow data. Prior district materials describe the system as cloud-hosted with real-time alarm notification capability. The operator uses SCADA data daily to check for lift station alarms, observe flow behavior, and identify anomalies that may require field investigation.

10.2 Flow review

Historical district materials described average daily flow as approximately 12,000 gallons per day. The District understands, however, that the raw flow number is only as reliable as the mechanical condition of the system. A known example is Lift Station 3, where a stuck-open check valve has affected flow behavior. For this reason, flow values are never reviewed in isolation; they are compared with field observations and known mechanical issues.

10.2A SCADA system purpose and operator use

- The District SCADA system is one of the most important tools used to monitor the wastewater system on a daily basis.
- SCADA stands for Supervisory Control and Data Acquisition.
- It provides real-time information regarding lift station operation, alarm conditions, pump activity, and flow totals.
- SCADA should be reviewed at the beginning of every workday, after storms, after power outages, and any time a field issue is suspected.
- The system is used to review daily flow, identify abnormal changes, review pump runtimes, monitor alarms, compare lift station basins, support regulatory reporting, and help prioritize maintenance.

10.2B Lift stations monitored through SCADA

- LS1.TODAYS_FLOW
- LS2.TODAYS_FLOW
- LS3.TODAYS_FLOW
- LS4.TODAYS_FLOW

10.2C Understanding SCADA flow totals

- SCADA totalized flow values appear to be scaled by approximately 1,000.
- Displayed SCADA totals should be divided by approximately 1,000 to estimate actual gallons per day.
- Example: 10,533,794 displayed equals approximately 10,533 gallons per day.

10.2D Example daily flow interpretation

- LS1: approximately 2,405 gallons/day
- LS2: approximately 5,225 gallons/day
- LS3: approximately 10,533 gallons/day
- LS4: approximately 1,610 gallons/day
- Estimated total daily system flow: approximately 19,773 gallons/day
- Normal dry-weather flow appears to range between approximately 18,000 and 22,000 gallons per day.

DRAFT

10.2E SCADA alarm review procedure

- Review active alarms and cleared alarms from the prior 24 hours.
- Review high wet well conditions, pump runtime abnormalities, communication failures, and power outages.
- Review unusual flow spikes, continuous flow conditions, and low-flow conditions.
- Compare SCADA values to field observations before making conclusions.
- Lift Station 3 remains a known example where a stuck-open check valve caused false continuous-flow readings.

10.2F Using SCADA to detect inflow and infiltration

- Determine average dry-weather flow.
- Record rainfall or snowmelt events.
- Compare wet-weather flow totals to dry-weather totals.
- Calculate the increase in flow.
- Identify lift stations with the largest increase in flow.
- Investigate those areas for groundwater intrusion, leaking laterals, damaged cleanouts, or stormwater entry.

10.2G Recommended future SCADA improvements

- Save daily flow screenshots.
- Print monthly flow reports.
- Keep alarm history logs.
- Track rainfall and pump runtimes.
- Create trend graphs for each lift station.
- Compare monthly flows year over year.
- Use SCADA information to support updated mapping and capital planning.

10.3 Monitoring wells and laboratory sampling

Three monitoring wells surround the ponds. Monitoring wells are sampled quarterly by the sewer technician and samples are analyzed by a third-party laboratory in Reno, Nevada. The District also indicated during SSMP development that samples are taken from ponds and wet wells to help verify whether contamination is occurring. Chain-of-custody, lab reports, and interpretation of trends should remain part of the monitoring record.

10.4 Use of monitoring data

- Identify trends and abnormal conditions.
- Support maintenance prioritization.
- Support regulatory reporting and response to NOVs.
- Support capital planning by showing recurring risk or degradation.
- Provide defensible documentation that the District is actively operating the system.

10.5 Monitoring and environmental equipment

- SCADA system and ATTRU PCMNet telemetry boards
- Siemens MAGFLO flow meter
- Monitoring wells
- Meteorological monitoring station for wind, rainfall, and temperature
- Class A evaporation pan for evaporation rate monitoring
- Gas detector / sniffer for confined space entry
- GoPro camera for field documentation

10.6 SCADA equipment and communications

- ATTRU PCMNet telemetry boards
- HyperTAC or DFS remote communications hardware
- Remote alarm notification systems
- Siemens MAGFLO flow meters
- Pump control panels
- Float tree control systems
- Cellular or DSL communication equipment
- Generator monitoring systems

10.7 Use of SCADA for inflow and infiltration evaluation

A preliminary dry-weather baseline appears to be approximately 18,000 to 19,000 gallons per day for the entire District. If wet-weather flow rises substantially above this baseline, the increase may indicate infiltration from groundwater or inflow from stormwater. The District should continue collecting daily SCADA flow totals and compare them against weather events to determine which lift station basin may have the largest increase.

11. Sanitary Sewer Overflow Response and SERP Integration

The District has developed practical SSO response logic based on the Sewer Technician real response process and on scenario-based SERP planning materials. The emergency response objective is simple: protect life safety first, stop or reduce the release, contain it, recover what can be recovered, disinfect as appropriate, document the event thoroughly, and complete required reporting.

For all spills and emergencies, Brad Mallory is called first and Mike Garcia second, using the current SERP call sheet. The operator then reports to the issue, determines what can be done safely, attempts to contain and correct the problem, and escalates to contractors when the problem cannot be handled in-house.

11.2 Practical field steps used by the District

- Respond to the location and assess hazards.
- Identify the source and determine whether the issue is a lift station alarm, collection/force main release, or pond-related condition.
- Stop or reduce the flow if possible and safe to do so.
- Contain the discharge and protect drains, waterways, and public areas.
- Recover wastewater or arrange pumping/cleanup support if needed.
- Document time, location, observed conditions, actions taken, and contacts made.
- Complete or initiate required CIWQS and agency reporting.

11.3 Contractor escalation

Dillon Silkwood is called for sewer repairs when the issue is a septic or sewer line repair problem. Big Valley Sanitation is called when a truck or pumping service is needed for spill cleanup and sanitation. Frank Muse is identified for spills involving hazardous materials. Jon Densmore is listed for SCADA support, and BMC Construction / Todd Carroll is listed for construction-related repairs.

11.4 Regulatory notification expectations

Lahontan South Lake Tahoe office must be notified for major spills of 1,000 gallons or more or for spills that affect surface water or human health within 2 hours. Lassen County Environmental Health is called when a spill affects human health. All spills are to be logged in CIWQS, and when no spill occurs, the operator should complete the required no-spill certification according to the quick response guide and SERP materials.

11.5 Minimum documentation

- Date and time discovered, estimated start time, and end time.
- Exact location and nearby receiving water or drainage concerns.
- Cause determination if known and photos before, during, and after response.
- Spill volume estimate method and values for spilled, recovered, and unrecovered wastewater.
- Cleanup actions, disinfectant used if any, and disposal method for recovered material.
- Names of responders, contractors, and equipment used.
- Final condition, follow-up actions, and required reporting steps.

12. Asset Management and Inventory Program

The District is actively developing a full inventory of tools, parts, and equipment in addition to the major infrastructure assets already identified in this plan. That work is important because a small district cannot manage what it cannot identify. A real inventory turns operator knowledge into a permanent management tool.

A real inventory supports maintenance planning, emergency readiness, budgeting, replacement prioritization, training, grant applications, and continuity of operations. It also reduces the risk that a district becomes dependent on memory or past staff without written records.

12.1 Inventory categories

- Collection system assets such as sewer mains, cleanouts, vents, and service-related appurtenances.
- Lift station assets including pumps, wet wells, float trees, generators, controls, check valves, and vault components.
- Pond system assets including liners, valves, stop logs, berm-related components, monitoring wells, and access points.
- Equipment and tools used for maintenance and emergency response.
- Spare parts and repair materials used for routine and emergency work.

DRAFT

12.2 Current known condition priorities

Asset / system	Current condition	Reason
Pond 2 liner	Poor / high-risk	Known tear in aging 60-mil HDPE liner.
LS3 check valve	Critical	Stuck open; causing inaccurate flow behavior and requiring replacement planning.
Remaining lift stations	Fair to Good	Routine monitoring continues; no current overflow issue reported.
Pond system overall	At-risk but stable	No current overflow concern, but freeboard and liner condition remain critical compliance points.

12.3 Detailed asset inventory summary

Asset Category	Asset / Equipment	Manufacturer	Model / Series	Estimated Service Life	Current Notes
Lift Station Pumps	High-head effluent pumps	Orenco Systems	PF Series, 4-inch	15-20 years	Two-wire, three-wire, single-phase, and three-phase configurations ranging from 1/3 HP to 5 HP.
Lift Station Pumps	Wastewater pumps	Goulds Pumps	5-inch and larger submersible pumps	15-20 years	At least one identified at each lift station; verify exact model and serial number from field nameplates.
Pump Motors	Submersible motor units	Franklin Electric	Unknown	15-20 years	Likely paired with submersible pumps; verify in field.
Float Controls	Float tree / float assembly	Orenco Systems	MF Float Assembly	10-15 years	Used for low level, pump off, lead pump on, lag pump on, high level alarm, and high-high alarm control.
Control Panels	Pump control panels	Orenco Systems	TCOM Custom Panel	15-20 years	Controls pump sequencing and alarms.
Telemetry	SCADA communication board	ATTRU	PCMNet	10-15 years	Used for remote alarm notification and system monitoring.
Flow Meter	Wastewater flow meter	Siemens	MAGFLO	10-15 years	Used for wastewater flow tracking and operational review.

DRAFT

Circuit Breakers	Electrical breakers	General Electric	Spectra RMS	25-30 years	GEH-5686 installation instructions located in O&M binder.
Transfer Switch	Automatic transfer switch	Unknown	OTPCA-5773065	20-25 years	O&M information found in Sundt engineer binder.
Motor Starters	Magnetic motor starters	Various	Ambient compensated starter	15-20 years	Used for overload protection and pump starting.
Vent Filters	Carbon vent filters	Orenco Systems	CF3 / CF4	5-10 years	Used for odor control.
Check Valves	Municipal sewage check valves	SIGMA	DFTA3 / AFC503 / AWWA 3200W	20-25 years	LS3 valve currently stuck open and should be replaced.
Isolation Valves	Gate / isolation valves	Unknown	Unknown	20-30 years	Additional field verification needed.
Air Valves	Combination air valves	Unknown	Unknown	20-30 years	Serviced quarterly.
Force Main	Transmission piping	Various	6-inch and 8-inch pipe	50-75 years	Approximate total length is 29,000 linear feet.
Gravity Sewer Main	Collection piping	Various	2-inch through 8-inch pipe	50-75 years	Mostly HDPE, DIP, and PVC.
Pond Liners	HDPE geomembrane liner	Unknown	60-mil HDPE	30-40 years	Pond 2 liner tear present.
Monitoring Wells	Groundwater wells	Unknown	Unknown	30-50 years	Sampled quarterly.
Generators	Backup generators	Unknown	Unknown	20 years	Weekly checks required.
Pond Structures	Stop logs	Fontaine	Series 97 aluminum stop logs	25-40 years	Used for pond level control and pond isolation.
Pond Pumps	Spray pump system	Unknown	Unknown	15-20 years	Used for evaporation enhancement.
Pond Pumps	Circulation pump system	Unknown	Unknown	15-20 years	Used to move water between ponds.
Environmental Monitoring	Meteorological station	Unknown	Unknown	10-15 years	Measures rainfall, temperature, and wind.
Environmental Monitoring	Evaporation pan	Class A Evaporation Pan	Unknown	10-20 years	Used to estimate evaporation rates.
Vehicles	District work truck	Ford F-350	Unknown	10-15 years	Seat belt repairs and safety improvements underway.

DRAFT

Vehicles	Tractor	Unknown	Unknown	15-25 years	Requires battery replacement, oil change, tire repair, and lighting work.
Field Equipment	Gas detector / sniffer	Unknown	Unknown	5-10 years	Needs calibration gas and calibration service.
Field Equipment	Miller hoist system	Miller	Unknown	20+ years	Used for confined space entry support.
Field Equipment	Manhole rails	Unknown	Unknown	20+ years	Used with hoist system.
Field Equipment	Ventilation fan	Unknown	Unknown	10-20 years	Used for confined space ventilation.
Field Equipment	GoPro camera	GoPro	Unknown	5-10 years	Being configured for field use.
Field Equipment	Hammer drill	Unknown	Unknown	10-20 years	Located in machine shop.
Field Equipment	PVC pipe welding equipment	Unknown	Unknown	15-20 years	Stored in large black case on top shelf in machine shop.
Communications	DSL internet boxes	Unknown	Unknown	Obsolete	Old DSL boxes should be removed from lift stations and returned to the office.
SCADA Equipment	SCADA software and cloud-hosted monitoring system	Unknown	Unknown	10-20 years	Supports remote monitoring, alarms, and flow review.
SCADA Equipment	HyperTAC or DFS communications hardware	Unknown	Unknown	10-20 years	Remote telemetry and communications hardware; verify model numbers in the field.
SCADA Equipment	Alarm dialers and remote notification equipment	Unknown	Unknown	10-20 years	Supports alarm notification and operator response.
SCADA Equipment	Wet well level sensors / runtime meters / flow totalizers	Unknown	Unknown	10-20 years	Should be inventoried by station as SCADA field devices are confirmed.

12.4 Inventory development standard

As the inventory is built, each asset entry should identify at a minimum the asset ID, location, asset type, material or manufacturer if known, model number, serial number, install year if known, estimated life expectancy, current condition, last inspection date, maintenance need, priority, and recommended action of repair, replacement, or monitoring. This inventory will support the SSMP, the capital improvement plan, grant applications, and continuity of operations.

12.5 Assets still requiring more field verification

- Pump serial numbers and horsepower.
- Generator manufacturer, serial numbers, and KW ratings.
- Valve sizes and exact manufacturers.
- Force main pipe sizes by segment and exact footage of each gravity sewer segment.
- Air relief valve locations.
- Lift station electrical panel information and breaker sizes.
- Transfer switch manufacturer.
- Wet well dimensions.
- Pond stop log dimensions and more detailed control structure documentation.
- Monitoring well construction details.
- Manhole counts and locations.
- Cleanout counts and locations.
- Spare parts currently stored by the District.

13. Financial Planning and Budget

The sewer system is funded primarily through annual sewer operations and maintenance fees. The current annual fee is $515.55 per household. With approximately 500 bills being paid on time, this produces roughly $257,775 per year in gross annual revenue for the sewer system. The District uses this collected money for system operations and budget needs. Administrative fees are also pulled from these funds based on the percentage of total District income represented by each department. This means the sewer enterprise does not only fund direct field costs; it also supports an allocated share of district administrative operations.

Budget category	Purpose
Materials and Services	Repair materials, outside services, supplies, and routine operating needs.
Salaries and Wages	Field labor and any wage-related sewer operations cost.
Equipment	Tools, equipment, and related operating assets.
Administrative Allocation	Shared district overhead allocated based on revenue share by department.
Capital Improvement	Major repairs, replacement projects, and infrastructure upgrades.

13.1 Revenue limitations and collection reality

Although the annual fee and on-time account count provide a planning baseline, the District has also reported that only about 75 to 80 percent of customers are paying their sewer bill on time. That means the theoretical annual revenue and the actual timing of cash collection are not always the same. This affects repair timing, reserve capacity, and project scheduling. Earlier budgeting guidance reviewed during SSMP development noted that many small sewer districts assume 90 to 95 percent collection for budget planning, but the District current local reality appears lower and should be tracked carefully.

13.2 Why the financial section matters

This section is included because an audit-ready SSMP should not pretend that infrastructure decisions are made in a financial vacuum. The District ability to replace check valves, address Pond 2, maintain equipment, train staff, and respond to NOVs is directly tied to available funding and timing of collections. Explaining that reality helps the Board, regulators, and funding agencies understand why the District prioritizes work the way it does.

14. Capital Improvement and Funding Strategy

The District uses a risk-based capital improvement approach. Projects are prioritized according to their effect on containment, overflow risk, compliance exposure, and operational reliability. The current strategy is to focus first on assets that can lead directly to regulatory problems or system instability.

14.1 Current priority projects

Priority project	Why it matters	Current status
Pond 2 liner repair / rehabilitation	Containment risk, seepage concern, regulatory significance, aging liner system.	High priority; repair or broader liner strategy under evaluation.
Check valve replacement program, beginning with LS3	False flow behavior, efficiency concern, maintenance burden, potential future reliability issue.	LS3 identified as immediate known issue; broader phased replacement planning recommended.
Improved mapping and asset documentation	Needed for SSMP completeness, emergency response, and grant support.	In progress using as-builts and field verification.
Inventory development	Needed to support maintenance, budgeting, and continuity.	Actively being built by the District.

14.2 Funding strategy

The District has pursued Technical Assistance and other outside support because major infrastructure issues cannot always be funded quickly through local sewer fee revenue alone. The District has described itself as a severely disadvantaged community based on State Water Board economic criteria, which strengthens the case for Technical Assistance, engineering support, mapping support, and future capital funding. This strategy is not optional; it is part of how the District expects to stabilize the system while continuing to provide service.

14.3 Priority repair and replacement plan

Priority	Asset / location	Issue	Reason for priority	Recommended action	Rough cost range
1	LS1 pump and temporary bypass	A pump failure at Lift Station 1 caused a spill in April of the previous year. A temporary bypass was installed and has not yet been permanently corrected.	This is the District highest mechanical reliability concern because bypass operation is not a preferred long-term condition and increases operational risk.	Replace failed pump, confirm controls and associated components, remove bypass condition, and restore normal station operation.	$10,000 - $25,000
2	Pond 2 liner	Known liner tear in a roughly 19-	This is one of the District highest	Evaluate patch versus broader	$15,000 - $150,000+

		year-old 60-mil HDPE lined pond.	compliance and environmental risks because the pond system is the final containment and disposal point.	rehabilitation, obtain engineering input if needed, and plan repair or liner replacement strategy.	
3	LS3 check valve	Check valve is stuck open and creates false or distorted flow behavior.	This affects monitoring accuracy and can hide true system conditions while also creating reliability concerns.	Replace valve rather than relying on repeated temporary repair.	$5,000 - $15,000
4	Distribution box at ponds	Distribution box lid and casting are not secure; lid and casting can be lifted.	This is a safety hazard and an operational risk because unsecured access points can allow debris entry or create fall hazards.	Investigate lid, frame, and surrounding structure; repair or replace lid and frame and secure site in the interim.	$1,000 - $5,000
5	LS4 surface settlement	Asphalt at Lift Station 4 is settling and sinking.	Surface settlement may indicate base instability, poor drainage, or future stress on station access and appurtenances.	Investigate subsurface condition, stabilize and repair affected area, and monitor for progression.	$5,000 - $20,000
6	LS1 historical settlement	Lift Station 1 had settlement issues in prior years and was excavated and raised approximately 3 feet.	The issue appears to have been addressed historically, but it indicates that settlement has occurred before and should remain on the watch list.	Continue to monitor for movement, cracking, grade change, or structural stress during inspections.	Monitoring / evaluate if recurring

14.4 Repair versus replacement decision approach

The District uses a practical repair-versus-replace decision standard. Repair is preferred when a defect is isolated, short-term correction is reasonable, and the underlying asset still has meaningful remaining life. Replacement is preferred when an asset has already failed, when repeated repairs would only delay a larger failure, when a defect undermines monitoring accuracy or containment, or when the total life-cycle cost of repeated temporary work is higher than replacing the asset once. This is why LS3 is treated as a valve replacement issue rather than a repeated repair issue, and why Pond 2 is being framed as a liner rehabilitation or replacement question rather than only a short-term patch question.

DRAFT

14.5 Long-term replacement planning and major asset life summary

Asset	Typical life expectancy	Estimated current age	Condition / risk	Notes
Gravity Sewer Main (HDPE/PVC)	50-75 years	Approximately 20 years	Fair to Good	Installed around 2006-2007. Some sections may last much longer if protected from root intrusion and settlement.
Force Main (HDPE / DIP)	40-75 years	Approximately 20 years	Fair	Main risks are settlement, leaks, air locking, and valve failures.
Pond Liner (60-mil HDPE)	20-40 years	Approximately 19-20 years	Fair to Poor	Pond 2 already has a liner tear; long-term liner replacement planning is needed.
Lift Station Wet Wells	40-60 years	Approximately 20 years	Fair	Concrete wet wells appear serviceable but should be monitored for cracking, corrosion, and settlement.
Lift Station Pumps	10-20 years	Unknown	Poor to Fair	LS1 has experienced pump failure and bypass operation. Pump replacement planning is needed.
Check Valves	10-20 years	Unknown	Poor	LS3 has known check valve problems. All lift station check valves should be inspected and likely replaced in phases.
Gate Valves	20-40 years	Unknown	Fair	Some gates are becoming difficult to operate and may need lubrication or replacement.
Float Controls / Float Trees	10-15 years	Unknown	Fair	Float systems should be tested regularly and replaced as needed to avoid false alarms or pump failures.
Generators	20-30 years	Approximately 20 years	Fair	Fuel systems, batteries, and transfer switches should be maintained closely.
Transfer Switches	20-30 years	Approximately 20 years	Fair	Existing transfer switch model OTPCA-5773065 should be monitored and serviced.
Electrical Panels / Breakers	20-40 years	Approximately 20 years	Fair	GE Spectra RMS breakers and panel equipment may remain serviceable but should be inspected regularly.
SCADA Equipment	10-20 years	Unknown	Fair	Communication equipment and old DSL boxes may be nearing end of life.

Air Relief Valves	10-20 years	Unknown	Fair	Require quarterly cleaning and inspection.
Distribution Box / Pond Structures	20-40 years	Approximately 20 years	Poor to Fair	Distribution box lid and casting are loose and require repair.
Asphalt Around Lift Stations	10-20 years	Approximately 20 years	Poor	LS4 asphalt is settling and sinking.
LS1 Structural Area	20-40 years	Approximately 20 years	Poor	LS1 previously settled and had to be raised approximately 3 feet.
Vehicles (Truck / Tractor)	10-20 years	Unknown	Fair	Truck and tractor remain operational but require ongoing maintenance.
Safety Equipment (Gas Detector, Hoist, Fan)	10-20 years	Unknown	Fair	Gas detector requires calibration; hoist and fan should be inspected before each use.

15. Staffing, Training, and Continuity of Operations

The system currently relies heavily on one primary field operator supported by management and contractors. This creates operational vulnerability if the primary operator is unavailable, so the District continuity strategy includes documentation, contractor relationships, emergency call chains, and operator development.

15.1 Current continuity approach

- Document recurring inspection and maintenance tasks in this SSMP and related logs.
- Maintain a current SERP call sheet for emergency escalation.
- Use contractors for specialized pumping, repair, SCADA, hazardous material, and construction support.
- Develop operator skill and certification through mentorship and structured exposure to system troubleshooting.

15.2 Kathy Stone training and budget context

The District approved Kathy Stone, a Grade 5 sewer operator, to provide mentorship support at an hourly rate. The purpose of the mentorship is to increase system understanding, support Grade 1 certification progress, and improve the operator ability to diagnose and prioritize issues correctly. Because the District is financially constrained, mentoring time is expected to be used for higher-value system review, troubleshooting, certification development, and training rather than basic routine tasks.

15.3 Continuity note

This document is intended to preserve operational knowledge so that if current staff are unavailable, future staff can understand the system layout, major equipment, inspection schedule, emergency call chain, critical asset risks, and current repair priorities.

16. Communication Program and Public Interface

The District maintains communication procedures with State and regional regulatory agencies, district leadership, contractors, and the public. Internal communication occurs primarily between the Sewer Technician and the General Manager. Operational updates are also provided through monthly public board meetings. Communication with regulators may occur by telephone, email, CIWQS, and other required online systems.

The purpose of the communication program is to ensure that the District does not discover a problem in the field and then fail to report it appropriately. Communication is part of compliance, not a separate administrative step.

16.1 Public education and outreach

The District encourages residents to protect the sewer system by avoiding flushing wipes or debris, preventing grease discharge into sewer lines, and reporting sewer system concerns. Because Spalding has only one seasonal food service establishment operating during summer weekends, the District does not maintain a full formal FOG program, but grease-related operational concerns are still monitored during routine inspections.

17. SSMP Audit, Updates, and Record Retention

The SSMP should be reviewed at least every two years and updated at a minimum every five years, or sooner after major system changes, significant operational events, enforcement actions, or major new information such as verified construction records or newly completed asset inventories. Inspection records, maintenance notes, sampling records, SSO reporting records, and key communications should be retained in an organized manner. Prior district material referenced a five-year record retention expectation for compliance-related records, which is consistent with good practice for SSO and operational documentation.

The District should treat this SSMP as a living document. Several sections already reflect that approach by acknowledging that mapping, inventory, and equipment information are still being improved. Updating the plan as more information becomes available is a sign of active management, not a weakness.

18. FOG, Inflow/Infiltration, and Public Education

The District primarily serves residential users and has limited commercial food service activity. Spalding currently has only one seasonal food service establishment operating during summer weekends. Because of that limited commercial food service base, the District does not maintain a full formal FOG control program at this time. However, grease buildup is still watched for during routine inspection and maintenance because even a small number of grease sources can cause local operational problems in a small system.

The District also monitors for inflow and infiltration through daily flow monitoring, lift station inspection, and observations during storm events. Unusual increases in flow should be investigated, especially when they cannot be explained by seasonal use, known mechanical issues, or specific operational events. Public education remains part of prevention. Residents should understand that wipes, grease, and other improper discharges increase operational burden and can contribute to overflows or maintenance costs.

DRAFT

Appendices

Appendix A. Daily Operations Log

Date	SCADA checked	Daily flows recorded	Lift stations checked	Pond levels checked	Alarms / abnormal conditions	Actions taken	Initials

Appendix B. Weekly Inspection Checklist

Date	Ponds	Temporary vented services	Pump flows	Valve vaults	Street cleanouts	Generator fluids	Street venting	Issues / actions

Appendix C. Monthly Maintenance Log

Date	Sprayers / pond valves exercised	Air valves checked	SSO reporting records reviewed	Ballast checked	Monthly flows printed	Notes

Appendix D. Quarterly Inspection Log

Date	Wet wells monitored	Ponds monitored	Combination air valves serviced	Weeding completed	Issues	Actions / follow-up

Appendix E. SSO Incident Report Form

Field	Entry
Date and time discovered	
Estimated start time / end time	
Location (address / landmark / lift station ID)	
Receiving water or storm drainage proximity	
Cause / suspected cause	
Estimated volume and calculation method	
Responders / contractors used	
Cleanup and disinfection actions	

Notifications made and times	
CIWQS status	
Final condition and follow-up actions	

Appendix F. Asset Inventory Log

Asset	Location	Condition	Last inspected	Maintenance needed	Priority	Notes

Appendix G. SERP Call Sheet

Name / Agency	Role / use	Phone
Brad Mallory	Sewer Tech - all spills / emergencies	530-249-5715
Mike Garcia	General Manager - all spills / emergencies	530-249-3997
Frank Muse	Spills involving hazardous materials	530-524-7485
Lassen County Environmental Health	Spills that have impact on human health	530-251-8269
Lahontan South Lake Tahoe office	Major spills 1000 gal or affect surface water or human health within 2 hours	530-542-5400
Big Valley Sanitation	Contractor for spill clean up and sanitation	530-243-0657
Jon Densmore	SCADA IT support	530-409-7336
Dillion Silkwood	Repairs to sewer	530-249-1481
BMC Construction / Todd Carroll	Construction repairs	530-520-7843

DRAFT

Chapter 10 Supplemental SCADA Operational Guidance

10.8 Pump Discharge Reference Rates

Pump Station	Approximate Discharge Rate
PS1	43 GPM
PS2	80 GPM
PS3	37 GPM
PS4	37 GPM

These discharge rates can be used together with pump runtime information to estimate wastewater flow when SCADA flow meters fail or when operators need to verify the reasonableness of totalized flow values.

10.9 SCADA Accumulator Report Procedure

20. Open the SCADA web interface.
21. Go to Reports.
22. Select 'Accumulator Report'.
23. Select address 1001 (CELL_RTU_DC).
24. Add LS1.TODAYS_FLOW, LS2.TODAYS_FLOW, LS3.TODAYS_FLOW, and LS4.TODAYS_FLOW.
25. Set the desired date range.
26. Select Daily output.
27. Run the report.

10.10 Key SCADA Tags

SCADA Tag	Purpose
TODAYS_FLOW	Total gallons pumped today
YEST_FLOW	Previous day total flow
FLOW_INT	Flow integrator value
P1_TODAY_STARTS	Pump 1 start count
P1_TODAY_ETM	Pump 1 runtime

10.11 Flow Distribution by Lift Station

Lift Station	Approximate Daily Flow	Percent of Total System Flow
LS1	16,615 gallons/day	10%
LS2	36,479 gallons/day	23%
LS3	85,964 gallons/day	54%
LS4	21,472 gallons/day	13%

Lift Station 3 carries the majority of system flow and should be considered one of the most critical pieces of infrastructure in the District. Lift Station 2 also carries a large percentage of system flow and should be monitored closely.

10.12 Pump Start and Runtime Monitoring

Pump starts and runtime are key indicators of pump health, float control performance, and lead-lag rotation. Runtime between pumps should remain relatively balanced. Significant differences in starts or runtime may indicate control problems, pump wear, clogging, float issues, or improper lead-lag rotation.

- LS1 Pump 1: 15 starts
- LS1 Pump 2: 8 starts
- LS1 Pump 3: 7 starts
- LS2 Pump 1: 25 starts
- LS2 Pump 2: 10 starts

- LS2 Pump 3: 16 starts
- LS3 Pump 1: 44 starts
- LS3 Pump 2: 41 starts
- LS3 Pump 3: 43 starts
- LS4 Pump 1: 9 starts
- LS4 Pump 2: 9 starts
- LS4 Pump 3: 15 starts

10.13 Alarm Response Guidance

28. Acknowledge the alarm.
29. Verify station status remotely if possible.
30. Travel to the lift station if needed.
31. Check float tree operation, breakers, wet well levels, and pump status.
32. Document the cause of the alarm and corrective action taken.

10.14 Monthly Board Reporting Expectations

- Total monthly system flow
- Flow by lift station
- Pump starts and runtime totals
- Alarm events
- Maintenance performed
- System observations and known issues

10.15 Future Engineering and Maintenance Uses of SCADA

- Wet well drawdown volume calculations
- Pump cycle volume calculations
- Infiltration detection
- Pump efficiency trends
- Station loading comparisons
- Preventive maintenance indicators
- Budget justification for repairs or upgrades