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This document is a markup of the Revised Draft August 2017  
SSMP narrative showing changes from the last version  
approved by the NSD Board of Directors (September 2013).

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 Element 10 Appendix - SSMP Program Audits

**List of Terms and Abbreviations**

|                      |                                                                                                                      |
|----------------------|----------------------------------------------------------------------------------------------------------------------|
| ACP                  | Asbestos Cement Pipe                                                                                                 |
| BMP                  | Best Management Practice                                                                                             |
| Cal OES              | California Office of Emergency Services <del>(formerly the California Emergency Management Agency, or Cal-EMA)</del> |
| Cal/OSHA             | California Division of Occupational Safety and Health                                                                |
| CCTV                 | Closed Circuit Television                                                                                            |
| CIP                  | Capital Improvement Program (or Plan)                                                                                |
| CIPP                 | Cured-In-Place Pipe                                                                                                  |
| CIWQS                | California Integrated Water Quality System                                                                           |
| CMMS                 | Computerized Maintenance Management System                                                                           |
| CWEA                 | California Water Environment Association                                                                             |
| DFW                  | California Department of Fish and Wildlife                                                                           |
| District             | Napa Sanitation District                                                                                             |
| FOG                  | Fats, Oils, and Grease                                                                                               |
| FSE                  | Food Service Establishment                                                                                           |
| GIS                  | Geographic Information System                                                                                        |
| I/I (or I&I)         | Inflow/Infiltration                                                                                                  |
| LRO                  | Legally Responsible Official                                                                                         |
| MRP                  | Monitoring and Reporting Program (for the SSS WDR)                                                                   |
| NASSCO               | National Association of Sewer Service Companies                                                                      |
| NSD                  | Napa Sanitation District                                                                                             |
| O&M                  | Operation and Maintenance                                                                                            |
| <u>PACP</u>          | <u>Pipeline Assessment Certification Program</u>                                                                     |
| <u>POTW</u>          | <u>Publicly-Owned Treatment Works (regulatory term for wastewater treatment plants)</u>                              |
| Regional Water Board | San Francisco Bay Regional Water Quality Control Board                                                               |

|                         |                                                                                                                                                                                                      |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SCADA                   | Supervisory Control and Data Acquisition                                                                                                                                                             |
| SSMP                    | Sewer System Management Plan                                                                                                                                                                         |
| SSO                     | Sanitary Sewer Overflow                                                                                                                                                                              |
| SSO Response Plan       | Sanitary Sewer Overflow & Backup Response Plan                                                                                                                                                       |
| SSS WDR                 | Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (State Water Resources Control Board Order No. 2006-0003) and subsequent revisions to the Monitoring and Reporting Program |
| Standard Specifications | Sanitary Sewer and Recycled Water Standards                                                                                                                                                          |
| State Water Board       | State Water Resources Control Board                                                                                                                                                                  |
| TV                      | Television                                                                                                                                                                                           |
| USA                     | Underground Service Alert                                                                                                                                                                            |
| WEF                     | Water Environment Federation                                                                                                                                                                         |

## Introduction

### I-1 Background

This Sewer System Management Plan (SSMP) has been prepared and updated in compliance with the State Water Resources Control Board (SWRCB) Order No. 2006-0003: Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDR), including revisions to the Monitoring and Reporting Program indicated in Order No.

WQ 2013-0058-EXEC. The SSS WDR contains various requirements for controlling sanitary sewer overflows (SSOs), including the development of an SSMP, and reporting of SSOs using the statewide electronic reporting system, also known as the California Integrated Water Quality System (CIWQS).

### I-2 Organization of SSMP

The structure of this document follows the section numbering and nomenclature specified in the SSS WDR. The SSMP includes 11 sections, as follows:

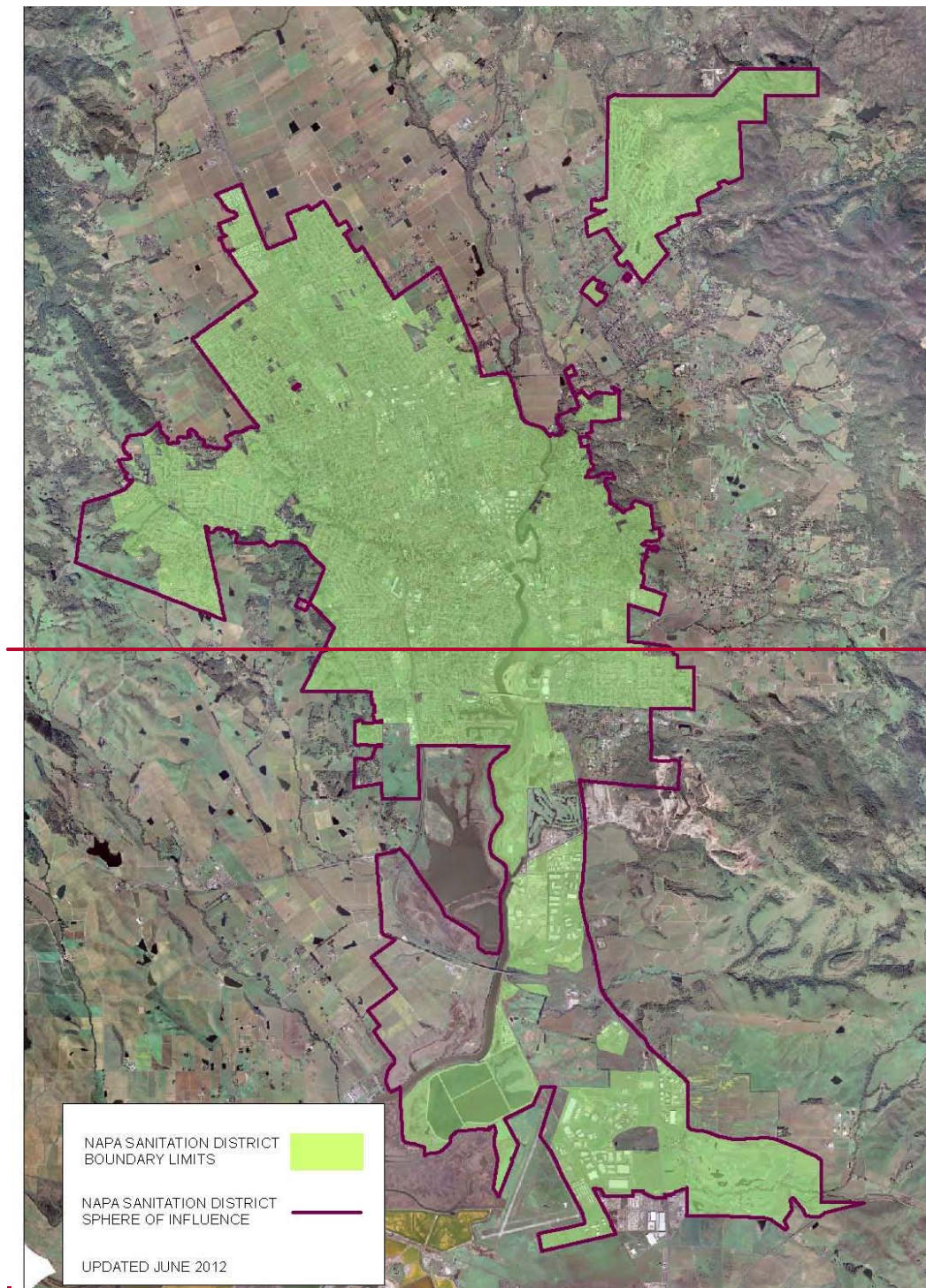
1. ~~Goal~~Goals
2. Organization
3. Legal Authority
4. Operation and Maintenance Program
5. Design and Performance Provisions
6. Sanitary Sewer Overflow & Backup Response Plan
7. Fats, Oils and Grease (FOG) Control Program
8. System Evaluation and Capacity Assurance Plan
9. Monitoring, Measurement, and Program Modifications
10. SSMP Program Audits
11. Communications Program

At the beginning of each section, requirements identified in the SSS WDR are shown verbatim for context, followed by a description of the District's program for that element.

### I-3 Overview of System and Facilities

The District owns, operates, and maintains the wastewater collection system that serves a population of approximately ~~79,360 customers~~82,700 in the City of Napa, Silverado Country Club, and unincorporated areas of Napa County. The District's system consists of approximately 270 miles of gravity sewer, three pump stations, one mile of force mains, 147 miles of lower laterals (for approximately ~~27,000~~36,900 service connections), and 6,100 manholes. Pipe sizes range from 4 inches to 66 inches. The majority of the sewer mains were installed between 1942 and 2006, with some sewers dating back to the early 1900s. The majority of gravity sewer pipe is asbestos cement (ACP) with diameters of 12-inches or smaller. The District's service area is approximately 21 square miles, and is shown in **Figure I-1**.

In June 2013, the District completed the construction of a brand new corporation yard, to replace temporary facilities, consolidate operations and equipment, and improve overall facilities and organization. The new corporation yard is also located adjacent to the District's Soscol Water Recycling Facility, to improve efficiency among the District's administration, engineering, and collection system departments.



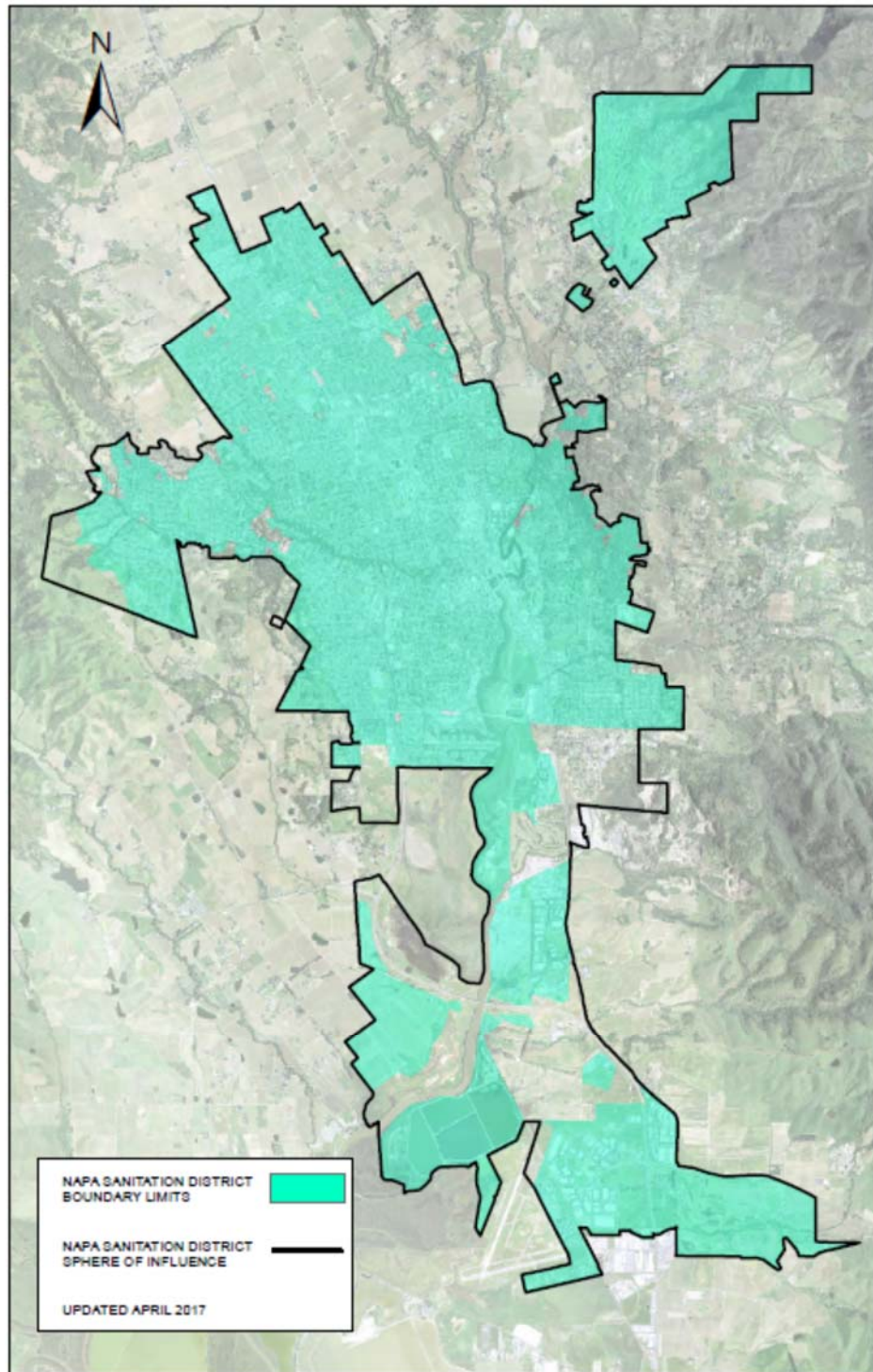


Figure I-1. Napa Sanitation District **BoundaryService Area**

## Element 1. Goals

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### **SSS WDR Requirement:**

*The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.*

---

The goals of the District's Sewer System Management Plan (SSMP) are as follows:

- To properly manage, operate, and maintain the wastewater collection system
- ~~To provide adequate capacity to convey peak flows~~
- To proactively reduce infiltration/inflow
- To minimize the frequency of sanitary sewer overflows (SSOs)
- To mitigate the impact of SSOs

The implementation of these goals is further described in this SSMP.

## Element 2. Organization

### SSS WDR Requirement:

The SSMP must identify:

- The name of the responsible or authorized representative as described in Section J of this Order.
- The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and
- The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).

### 2.a Responsible and Authorized Representatives

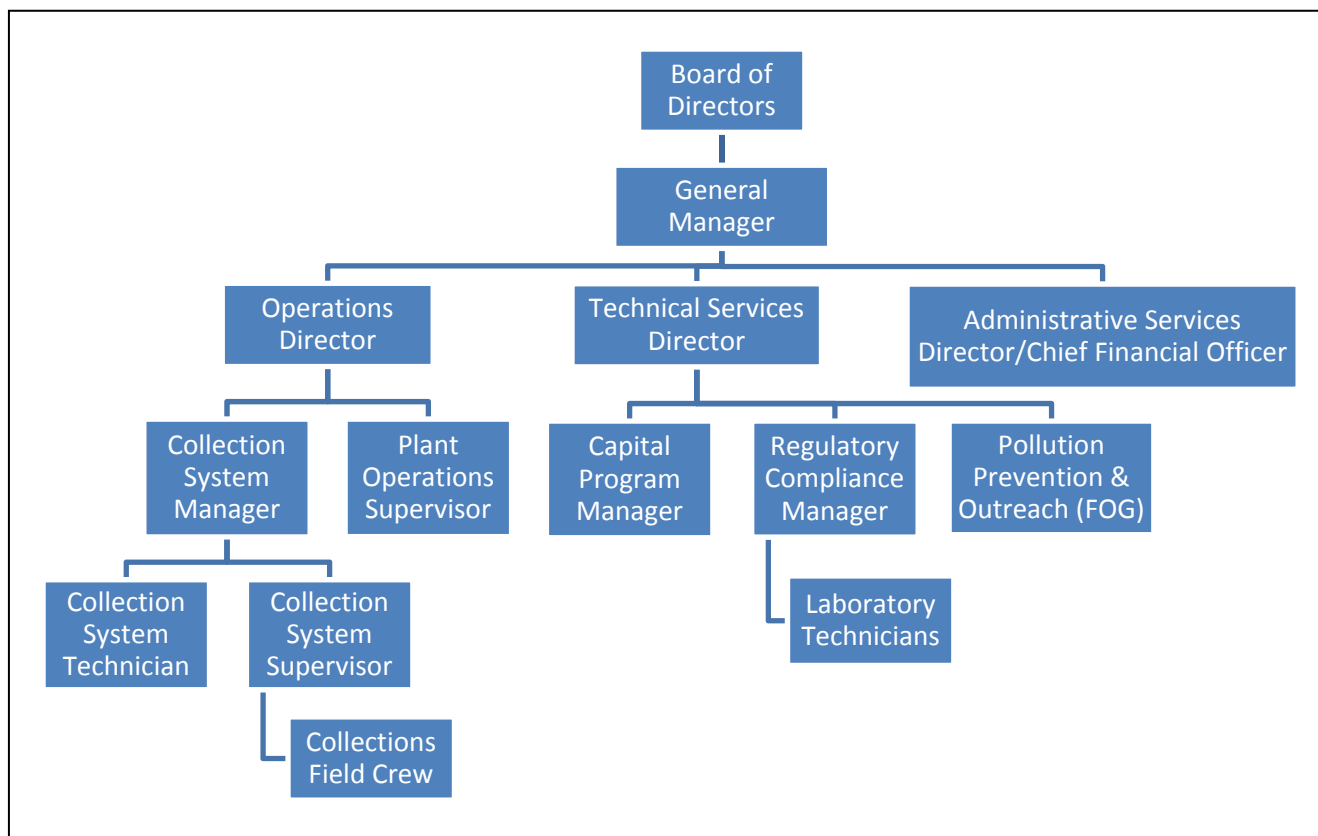
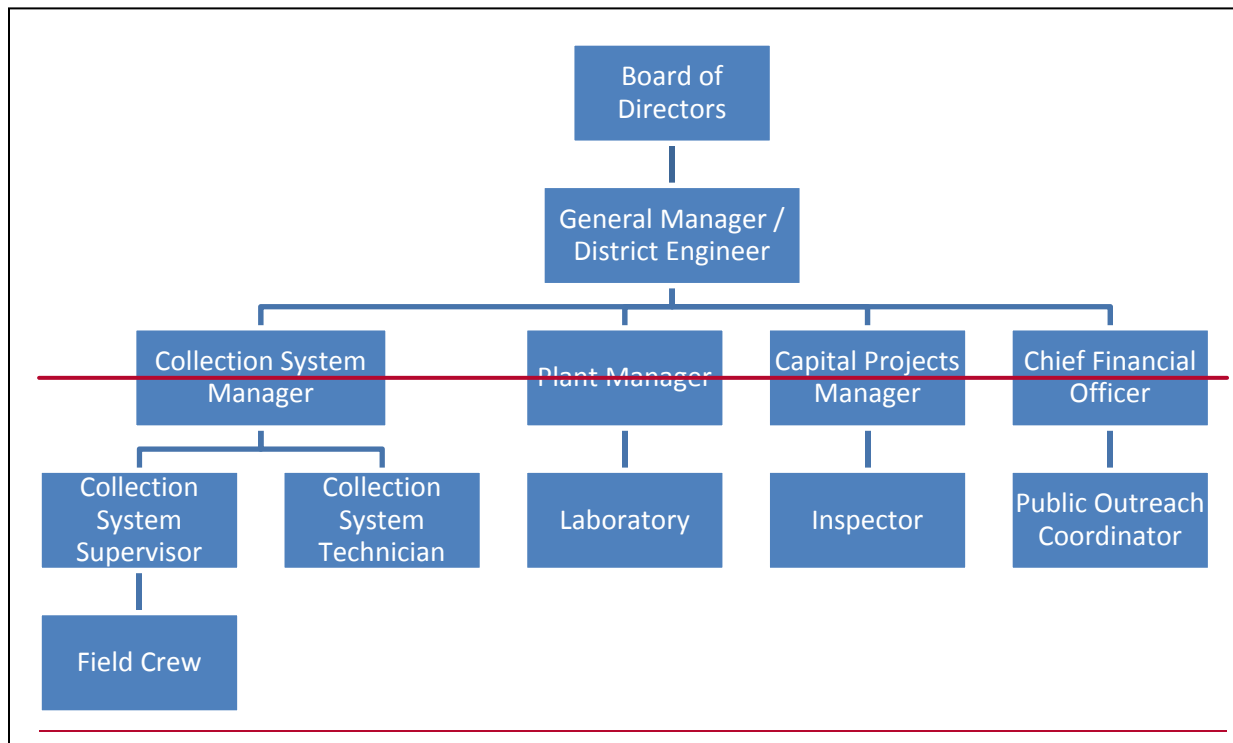
The General Manager/~~District Engineer~~ has ultimate responsibility for District operations. In addition, certain representatives of the District have authority for electronic reporting to the California Integrated Water Quality System (CIWQS) sanitary sewer overflow (SSO) Database, and they are designated as Legally Responsible Officials (LROs), according to CIWQS procedures. The District's responsible and authorized representatives are shown in **Table 2-1**, below.

**Table 2-1. Responsible and Authorized Representatives**

| Type of Authorization                                  | Position                                      |
|--------------------------------------------------------|-----------------------------------------------|
| Principal Executive Officer                            | General Manager/ <del>District Engineer</del> |
| <u>Program Oversight</u>                               | <u>Operations Director</u>                    |
| Legally Responsible Official (LRO) for CIWQS Reporting | Collection System Manager                     |
| Legally Responsible Official (LRO) for CIWQS Reporting | Collection System Technician                  |

### 2.b Staff Responsible for Implementing the SSMP

The District's organization related to the operation of the wastewater collection system is shown in **Figure 2-1**. A description of District staff positions responsible for implementing specific measures in the Sewer System Management Plan (SSMP) program are shown in **Table 2-2**. Job titles are used instead of individual names to accommodate staff changes. A District phone list, which includes names and telephone numbers for these positions, is included in the **Element 2 Appendix**. An additional phone list of alternative numbers for after-hours use in reaching key SSO responders is also included in the **Element 2 Appendix**.



**Figure 2-1. Organization Chart for District SSMP Programmatic Implementation**

Table 2-2. Description of SSMP Implementation Responsibilities by District Staff Position

| Position                                                                          | Responsibility                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Board of Directors                                                                | Establishes policy and approves funding.                                                                                                                                                                                                                                                                                              |
| General Manager/ <del>District Engineer</del>                                     | Plans strategy, leads staff, allocates resources, <del>manages operations and engineering</del> , and delegates responsibility.                                                                                                                                                                                                       |
| <u>Operations Director</u>                                                        | <u>Manages operations of treatment plant and collection system.</u>                                                                                                                                                                                                                                                                   |
| Collection System Manager                                                         | Coordinates development and implementation of the SSMP, manages field operations and maintenance (O&M) activities, and investigates and reports SSOs. Leads emergency response.                                                                                                                                                       |
| Collection System Technician                                                      | Reports SSOs to CIWQS, analyzes CCTV data, prepares schedule for operation and maintenance (O&M) activities, and maintains records.                                                                                                                                                                                                   |
| Collection System Supervisor                                                      | Manages preventive maintenance and repair activities and mobilizes and responds to SSOs.                                                                                                                                                                                                                                              |
| <u>Collections</u> Field Crew                                                     | Conducts preventive maintenance and repair activities, and mobilizes and responds to SSOs. <del>Collects receiving water samples (as applicable) on nights, weekends, and holidays.</del>                                                                                                                                             |
| Plant <del>Manager</del> <u>Operations Supervisor</u>                             | Maintains and responds to pump station issues (pump stations are on a Supervisory Control and Data Acquisition (SCADA) system and fully alarmed).                                                                                                                                                                                     |
| <del>Laboratory</del> <u>Technical Services Director/District Engineer</u>        | <del>Collects and analyzes receiving water samples (as applicable) during business hours.</del> <u>Manages capital projects, engineering, and regulatory compliance activities.</u>                                                                                                                                                   |
| Capital <del>Projects</del> <u>Program</u> Manager                                | Prepares wastewater collection system planning documents, manages capital improvement projects, and documents new and rehabilitated assets. <u>Manages construction and FOG inspectors.</u>                                                                                                                                           |
| <del>Inspector</del> <u>Regulatory Compliance Manager</u>                         | <del>Ensures that new and rehabilitated assets meet agency standards, provides reports to Engineering Department, and inspects restaurants for compliance with the fats, oil, and grease (FOG) program.</del> <u>Manages regulatory compliance activities, including monitoring of permit requirements and laboratory operations.</u> |
| <del>Chief Financial Officer</del> <u>Laboratory Technician</u>                   | <del>Conducts financial activities.</del> <u>Collects and analyzes receiving water samples.</u>                                                                                                                                                                                                                                       |
| <del>Public</del> <u>Pollution Prevention and Outreach</u> <del>Coordinator</del> | Coordinates <del>FOG program</del> and develops <del>other</del> public outreach activities and content for the District's website. ( <a href="http://www.NapaSan.com">www.NapaSan.com</a> ), including FOG.                                                                                                                          |
| <u>Administrative Services Director/Chief Financial Officer</u>                   | <u>Conducts financial activities and manages the process of insurance claims.</u>                                                                                                                                                                                                                                                     |

## 2.c Chain of Communication for Responding to and Reporting SSOs

In response to an SSO event, the Collection System Department immediately implements its Sanitary Sewer Overflow & Backup Response Plan (SSO Response Plan), which is discussed in more detail in **Element 6**. The SSO Response Plan provides detailed direction for notifications and reporting procedures. The chain-of-communication for reporting SSOs, as described in the SSO Response Plan, is summarized in **Table 2-3**.

Table 2-3. Chain of Communication for Reporting and Responding to SSOs

| Step No. | Responsible Party                                                                                         | Description of Activity                                                                                                                                                                                                                               |
|----------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | Member of the public, representative from another agency, or District employee that discovers an overflow | A member of the public or representative of another agency calls the District's answering service to report a potential SSO. If a District staff person discovers an SSO, they notify the on-call Collection System employee (Point Person) directly. |
| 2        | Answering service employee                                                                                | Calls the Point Person.                                                                                                                                                                                                                               |
| 3        | Point Person                                                                                              | Calls the customer for details about the overflow.                                                                                                                                                                                                    |
| 4        | Point Person                                                                                              | Reports to the site of the potential SSO and evaluates the situation.                                                                                                                                                                                 |
| 5        | Point Person                                                                                              | Sends for additional equipment and staffing, if necessary. If other staff arrive at the scene, the most senior Collection System employee on the scene is then the Scene Supervisor.                                                                  |
| 6        | Scene Supervisor or Point Person                                                                          | Notifies the Collection System Manager or Collection System Supervisor of the SSO, as appropriate. Notification criteria are described in the SSO Response Plan.                                                                                      |
| 7        | Collection System Manager or Collection System Supervisor                                                 | Notifies laboratory staff if receiving water samples are to be collected <del>during business hours. (After business hours, Collection System employees collect samples if necessary.)</del> . Calls in additional resources if necessary.            |
| 8        | Collection System Manager, Collection System Supervisor, or Collection System Technician                  | Notifies California Office of Emergency Services (Cal OES) and California Department of Fish and Wildlife within two hours of SSOs greater than or equal to 1,000 gallons that reach a drainage channel or surface water.                             |
| 9        | Scene Supervisor                                                                                          | Completes internal SSO documentation forms.                                                                                                                                                                                                           |
| 10       | Collection System Technician                                                                              | Enters information from internal SSO documentation forms into Hansen (a computerized maintenance management system, or CMMS) and keeps SSO records.                                                                                                   |
| 11       | Collection System Manager or Collection System Technician                                                 | Completes and certifies CIWQS reports.                                                                                                                                                                                                                |
| 12       | Collection System Manager                                                                                 | Provides a monthly SSO report to the General Manager <del>(generated from Hansen)</del> .                                                                                                                                                             |

**List of Documents in Element 2 Appendix:**

- ~~1. NSD Phone List~~
- ~~2. Key SSO Responders—Alternate Phone List~~

## Element 3. Legal Authority

### **SSS WDR Requirement:**

*Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:*

- a) Prevent illicit discharges into its sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc.);*
- b) Require that sewers and connections be properly designed and constructed;*
- c) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;*
- d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and*
- e) Enforce any violation of its sewer ordinances.*

The District's legal authority to prevent illicit discharges, require proper design and construction of sewers and connections, and require proper installation, testing, and inspection of sewers is provided by the Napa Sanitation District Code, which includes all of the regulatory, penal ordinances, and administrative ordinances of the District. Specific District Code sections applicable (or related) to the requirements of the SSMP are outlined below. The District Code also contains other related requirements and is available on the District's website ([www.NapaSan.com](http://www.NapaSan.com)).

### **3.a Illicit Discharge Prevention**

The District has specific legal mechanisms to prevent illicit discharges into its sanitary system as follows:

#### **4.04 Sewer Use Regulations**

##### **4.04.110 Prohibited Wastes**

Except as provided below, no person shall discharge or cause to be discharged any of the following water or wastewaters into public sewers:

##### **A) General Prohibitions**

A User may not introduce into the POTW any pollutant(s), which cause Pass Through or Interference. These specific prohibitions and the general prohibitions apply to each User introducing pollutants into the POTW whether or not the User is subject to other National Pretreatment Standards or any Federal, state, or local pretreatment requirements. (40CFR 403.5)

### **C) Specific Prohibitions**

The following pollutants shall not be introduced into the POTW:

#### **1) Fire or Explosive Hazard**

Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, wastestreams with a closed-cup flashpoint of less than 140°F or 60°C using the test methods specified in 40CFR 261.21. (40CFR 403.5)

#### **3) Obstructions**

Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference. Such substances include but are not limited to, ashes, asphalt, bones, cinders, cement, containers, cups, dead animals or animal parts, diatomaceous earth, entrails, fats, feathers, garbage, glass, gloves, grease, hair, hides, industrial process shavings, leaves, lees, metal, milk containers, mud, offal, oil, paper dishes, paper cups, plants, plastics, paunch manure, rags, resins, rocks, sand, sawdust, seeds, shavings, stems, straw, straws, tar, whole blood, wood, wool, etc. either whole or ground by a garbage grinder. (40CFR 403.5)

#### **6) Mineral Oil**

Any waters or wastes containing petroleum oil, non-biodegradable cutting oil, or products of mineral origin in amounts that will cause Interference or pass through. (40CFR 403.5)

#### **7) Toxic Gases/Vapors/Fumes**

Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems: (40CFR 403.5)

### **G) Local Prohibitions**

#### **1) Stormwater, Surface Water, Groundwater, or Uncontaminated Water**

No person shall discharge, cause or allow or permit any rainwater, storm water, groundwater (with exceptions, see Section 4.04.110(G)(2)), street or yard drainage, subsurface

drainage, water from rainwater leaders or downspouts, yard fountains, ponds or lawn sprays, or any other uncontaminated water into the sanitary sewer system.

No plumbing or piping shall be connected or designed in such a manner as to make possible the discharge of storm, surface and underground waters into the sanitary sewer system.

## **2) Groundwater and Surface Cleaning Projects**

Wastewater generated from the cleanup of spills, leaking underground storage tanks, monitoring wells, surface cleaning operations, or other similar source shall not be discharged through direct or indirect connections to the sanitary sewer without a temporary discharge permit issued by the District.

## **9) Chemical Pesticides and Similar Toxicants**

No chlorinated hydrocarbon, organophosphate or similar chemical compounds used as algaecides, bactericides, fungicides, herbicides, insecticides, or pesticides shall be discharged into the sewerage system in any concentration except as specifically approved by a written permit.

## **10) Oxidizing and Reducing Agents**

Strong oxidizing and reducing agents shall not be discharged into the sewerage system at concentrations exceeding 5 mg/L except by special District-issued permit: Chlorine, Chlorine Dioxide, Potassium Permanganate, Ozone and other strong oxidants, Sulfite, Thiosulfate, Nitrite and other strong reducing agents.

## **11) Radioactive Wastes**

Radioactive wastes of any kind, except where:

- a) The person is authorized to use radioactive materials by the State of California Department of Public Health, Atomic Energy Commission, or other governmental agency empowered to regulate the use of radioactive materials;
- b) The waste is discharged in strict conformity with current California Radiation Control Regulations (California Administrative Code,

Title 17) State of California Department of Public Health, Atomic Energy Commission, or other governmental agency empowered to regulate the use of radioactive materials;

- c) The person discharging the radioactive waste assumes full responsibility for any injury to personnel or damage to the sewerage system that may result from such discharge;
- d) Radioactivity of the treated wastewater prior to disposal does not exceed limits established by the designated agencies of the State of California; and
- e) Residual radioactivity is within limits permitted by State or local regulation in final disposal.
- f) Any person discharging a radioactive waste to the sewerage system in accordance with the provisions of the preceding sections shall apply for a permit from the District to discharge such wastes, and submit a periodic report of discharge occurrences and quantities. In the event of an accidental spill of any radioactive material into the sewerage system, the person responsible shall immediately notify the General Manager.

### **13) Medical Waste**

Human or veterinary hospitals, clinics, offices of medical doctors, medical laboratories, medical facilities, production facilities, pharmaceutical/research institutions, mortuaries, morgues, funeral parlors, animal shelters, tattoo parlors and convalescent homes shall not discharge to the sanitary sewer the following:

- a) Solid wastes including, but not limited to gloves, instruments, utensils, hypodermic needles, syringes or other paper and plastic items of a disposable nature. This applies to households as well.
- b) Any article that may harbor or transmit pathogenic organisms and that is used in the rooms of patients having a suspected or

diagnosed communicable disease, which by the nature of the disease is required to be isolated.

- c) Recognizable portions of the human anatomy.
- d) Waste excluded by other provisions of these regulations.
- e) Any hazardous waste, both California-only hazardous wastes and federal hazardous wastes
- f) Liquid and solid medications or pharmaceutical wastes, such as IV bags containing biologically active materials (e.g., antibiotics, painkillers, and antineoplastics) and controlled substances. This also includes all substances that may be determined an endocrine disruptor.
- g) Pharmaceuticals shall not be disposed of in the sanitary sewer. Waste pharmaceuticals, including over-the-counter medications, shall be disposed of properly such as at take-back events, pharmacies, or taken to the household hazardous waste facility for proper disposal. Controlled substances shall be disposed of as determined by the proper authorities, but may not be disposed into the sanitary sewer.
- h) Undisinfected tissue fluid, diseased human or animal organ tissue, undisinfected whole blood, or other contaminated solid waste.

### **3.b Proper Design and Construction Requirements**

The District has specific legal mechanisms to require proper design and construction of new and rehabilitated sewers and connections, as presented below.

#### **3.01 Building Laterals, Street Laterals and Connections**

##### **3.01.010 Permit Required**

In accordance with Title 5 of this Code, no person shall construct a building lateral, street lateral or make a connection with any public sewer without first obtaining a written permit from the District and paying all fees and connection charges as required herein.

##### **3.01.020 Design and Construction Requirements**

Design and construction of building laterals and street laterals shall be in accordance with the requirements of the district and in accordance with the most recent District Standard Specifications.

#### **3.01.070 Connection to Public Sewer**

The connection of the side sewer into the public sewer shall be made in accordance with the current District Standard Specifications at the applicant's expense. The connection to the public sewer shall be made in the presence of a District Inspector and under his supervision and direction. Any damage to the public sewer shall be repaired in conformance with District Standard Specifications at the cost of the applicant.

#### **3.01.090 Testing**

All building laterals and street laterals shall be tested in accordance with current District Standard Specifications.

### **3.02 Public Sewer Construction**

#### **3.02.010 Permit Required**

In accordance with Title 5 of this Code, no person shall construct, extend or connect to any public sewer without first obtaining a written permit from the District and paying all fees and connection charges and furnishing bonds as required therein. The provision of this section requiring permits shall not be construed to apply to contractors constructing sewers and appurtenances under contracts awarded and entered into by the District.

#### **3.02.020 Design and Construction Standards**

Minimum standards for the design and construction of sewers within the District shall be in accordance with the District Standard Specifications heretofore adopted by the Board, together with the subsequent amendments. Copies are on file at the District Office. The General Manager, may permit modifications or may require higher standards where unusual conditions are encountered.

#### **3.02.030 Plans, Profiles and Specifications Required**

The application for a permit for public sewer construction shall be accompanied by two (2) complete sets of plans, profiles and specifications, complying with all applicable ordinances, rules, and regulations of District, prepared by a Civil Engineer registered in the State of California, showing all details of the proposed work based on an accurate survey of the ground. The application, together with the plans,

profiles and specifications shall be examined by the General Manager who shall within thirty (30) days approve them as filed or require them to be modified as he deems necessary for proper installation. After approval by the General Manager, the appropriate agreements shall be signed by the applicant and shall be submitted to the Board at its next regular meeting for its consideration. When the Board is satisfied that the proposed work is proper, it shall sign the agreement and allow the issuance of a permit predicated upon the payment of all connection charges, fees and the furnishing of bonds and deposits and two (2) complete signed sets of plans, profiles, and specifications as required by the District. The permit shall prescribe such terms and conditions as the Board finds necessary in the public interest.

#### **3.02.060 Persons Authorized to Perform Work**

Only properly licensed contractors shall be authorized to perform work of public sewer construction within the District. All terms and conditions of the permit issued by the District to the applicant shall be binding on the contractor. The requirements of this section shall apply to side sewer installed concurrently with public sewer construction.

#### **3.02.080 Record Drawings**

Prior to acceptance by the District's Board of any sanitary sewer and/or recycled water improvements, the project owner shall provide the District with a complete set of record drawings which shall include one set of full size drawings along with an electronic copy of the record drawings in a CAD format acceptable to the District.

#### **3.02.090 Completion of Sewerage Works Required**

Before acceptance of any sewerage works by the District and prior to the admission of any sewage into the system: The sewerage works shall be tested and shall be complete and in full compliance with all requirements

### **3.c Access for Maintenance, Inspection, and Repairs**

The District has specific legal mechanisms to ensure access for maintenance, inspection or repairs for portions of the lateral owned or maintained by the District:

#### **1.03 Miscellaneous Provisions**

##### **1.03.010 Protection from Damage**

No unauthorized person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is a part of the District sewerage works.

Any person violating this provision shall be subject to the penalties provided by law.

#### **1.03.030 Powers and Authorities of District Employees**

Any duly authorized employee of the District shall carry evidence establishing their position as an authorized representative of the District and upon exhibiting the proper credentials and identification shall be permitted to enter in and upon any and all buildings, industrial facilities and properties for the purposes of inspection, reinspection, observation, measurement, sampling, testing and otherwise performing such duties as may be necessary in the enforcement of the provisions of the ordinances, rules and regulations of the District. All contractors shall be held strictly responsible for any and all acts of agents or employees done under this ordinance. Upon being notified by the General Manager of any defect arising there from in any sewer or of any violation of this ordinance, the person or persons having charge of said work shall immediately correct the same.

### **3.02 Public Sewer Construction**

#### **3.02.050 Easements or Right of Way**

In the event that an easement is required for the extension of the public sewer or the making of connections, the applicant shall procure and have accepted by the General Manager a proper easement or grant of right of way having a minimum width of twenty (20) feet sufficient in law to allow the laying and maintenance of such extension or connection.

### **3.04 Inspections**

#### **3.04.010 Plumbing and Sewers on Private Property**

The installation, use, maintenance, repair and inspection of all plumbing and sewers inside private property shall be subject to and governed by the most recent version of the California Building Code as adopted by City or County ordinance, now existing or as hereafter amended, except the District will inspect building sewers to insure proper line, grade and tightness of joints for infiltration/inflow control.

## **3.d FOG and Debris Discharge Prohibitions**

The District has specific legal mechanisms to limit fats, oil, and grease (FOG) and other debris that may cause blockages or sanitary sewer overflows (SSOs). The District, requires installation and maintenance of grease removal devices, inspects grease-producing facilities, and enforces the District's requirements. Applicable requirements related to FOG from both the District Code and Standard Specifications are presented below:

## **4.04 Sewer Use Regulations**

### **4.04.110 Prohibited Wastes**

Except as provided below, no person shall discharge or cause to be discharged any of the following water or wastewaters into public sewers:

#### **C) Specific Prohibitions**

The following pollutants shall not be introduced into the POTW:

##### **3) Obstructions**

Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference. Such substances include but are not limited to, ashes, asphalt, bones, cinders, cement, containers, cups, dead animals or animal parts, diatomaceous earth, entrails, fats, feathers, garbage, glass, gloves, grease, hair, hides, industrial process shavings, leaves, lees, metal, milk containers, mud, offal, oil, paper dishes, paper cups, plants, plastics, paunch manure, rags, resins, rocks, sand, sawdust, seeds, shavings stems, straw, straws, tar, whole blood, wood, wool, etc. either whole or ground by a garbage grinder. (40CFR 403.5)

##### **4) Pollutant Causing Interference**

Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW.

#### **E) Conditions on Acceptance of FOG**

- 1) Fats, oil and grease shall not be considered a Prohibited Waste as defined in this Code, as long as the waste is produced by a food service establishment and is delivered to the District's FOG receiving station by a permitted waste hauler. In all other ways, waste haulers must comply with this Code, including Section 4.04.130 regulating hauled waste.
- 2) The District shall issue waste discharge permits for FOG hauling in accordance with this Code. The District may issue permits to accept hauled FOG from transportation companies that are permitted by Napa County Environmental Services for the collection and

transportation of FOG from food service establishments.

- 3) The fats, oil and grease accepted shall conform to the Local Limits as established by the Board of Directors in Section 4.04.110(F) of this Code. All would apply with the following exceptions:
  - a) Oil & Grease for polar only
  - b) Oil & Grease concentration limit is none
- 4) Hauled FOG waste shall contain only FOG generated from food service establishments and shall not be mixed with domestic waste or any other waste type.
- 5) The District reserves the right to refuse acceptance or require scheduled delivery of any hauled waste, including FOG, if doing so would be in the best interest of the operation of the wastewater treatment facility. This determination may be made by the General Manager, the Chief Plant Operator, or any designee without any prior notice being required.
- 6) The General Manager, or designee of the General Manager, shall have the authority to establish operating regulation and procedures, including the issuing of permits to haulers, to ensure the efficient and effective operation of the FOG receiving station in accordance with District Code and to protect the integrity of the wastewater treatment plant.

## **G) Local Prohibitions**

### **4) Garbage**

Any garbage excepting properly shredded garbage from dwellings or restaurants engaged in preparation of foods and beverages for consumption is prohibited.

### **6) Suspended Solids**

Any industrial or commercial process water or wastes containing suspended solids of such character and quantity whereby unusual attention or expense is required to handle such material in the sanitary sewer as well as at the sewage treatment facility. Suspended solids discharged in industrial process wastewater shall

have a dimension no larger than that of a 1/4 inch mesh.

## 7) Pretreatment Sludge

Sludge from treatment facilities, settling or holding ponds, solids from soils testing, etc is prohibited for discharge to the sanitary sewer as well as the sewage treatment facility.

### 4.04.170 Implementing Provisions

#### F) Interceptors/Traps Required

Any type of business or establishment where fats, grease, oils or other objectionable materials including sand, oil, sludge, muck, etc. may be discharged into the POTW shall have a grease and/or solids-removal device of a size and design approved by the District in accordance with the current Uniform Plumbing Code.

#### G) Maintenance of Interceptors/Traps

All grease, oil and sand interceptors and traps shall be maintained by the owner, at the owner's expense, to meet limit requirements.

The District Code also provides legal authority under the *Sanitary Sewer and Recycled Water Standards* for design and all work in connection with main sewer and public and private laterals construction within the Napa Sanitation District service area. The Standard Specifications provide standard details for a grease interceptor. Applicable excerpts from the Standard Specifications regarding the requirements for removal devices are included below.

## 6.11 \_ Grease and Oil Collection Systems

### A. General

For the purposes of this specification section, a restaurant is any facility that prepares or serves food to non-family members. This includes full-service restaurants, fast food restaurants, take-out restaurants, recreation facilities, cafeterias for employees, grocery store take-out facilities, catering facilities, bakeries, delicatessens etc.

All restaurants shall be equipped with grease interceptors and/or grease traps designed to limit the discharge of grease and oil to the District's sewer system. The size and type of restaurant shall dictate the size of the grease trap or grease interceptor required. The minimum sizes specified are subject to review by the Engineer and sized and installed according to criteria in the current Uniform Plumbing Code.

**B. Grease Interceptors**

Food service facilities shall have an outside grease interceptor located on private property only, and installed per the requirements of the current edition of the Uniform Plumbing Code.

1. Designation as a grease intensive restaurant shall be as determined by the District Engineer. Grease interceptors shall be two-compartment interceptors with sampling box as shown in the Standard Details and shall be manufactured by Jensen Precast, or approved equal.
2. All new construction for restaurants shall have grease interceptors. Grease interceptors are not allowed within the public right-of-way.

3. The following table shows the plumbing fixture connection requirements:

| <u>Fixture</u>                             | <u>Connect Direct to Sewer</u> | <u>Connect to Grease Interceptor</u> |
|--------------------------------------------|--------------------------------|--------------------------------------|
| <u>Pot Sink</u>                            |                                | <u>X</u>                             |
| <u>Prep Sink</u>                           |                                | <u>X</u>                             |
| <u>3-Compartment Sink</u>                  |                                | <u>X</u>                             |
| <u>Vegetable Prep Sink</u>                 | <u>X</u>                       |                                      |
| <u>Kitchen Mop Sink</u>                    |                                | <u>X</u>                             |
| <u>Floor Drain (in kitchen)</u>            |                                | <u>X</u>                             |
| <u>Hand Wash Sink (in kitchen)</u>         | <u>X</u>                       |                                      |
| <u>Dishwasher</u>                          |                                | <u>X</u>                             |
| <u>Garbage Disposal</u>                    | <u>X</u>                       |                                      |
| <u>Commercial Trash Compactor</u>          |                                | <u>X</u>                             |
| <u>Trash Enclosure</u>                     |                                | <u>X</u>                             |
| <u>Floor Sink (for beverage dispenser)</u> | <u>X</u>                       |                                      |
| <u>Condensate Discharge</u>                | <u>X</u>                       |                                      |
| <u>Walk-in Cooler Discharge</u>            | <u>X</u>                       |                                      |

**C. Grease Traps**

The District may also allow the use of a grease trap in lieu of a grease interceptor for tenant improvement projects where it is not feasible to install a grease interceptor. Grease traps shall be sized and installed per the current edition of the Uniform Plumbing Code.

**A. Connections**

~~All kitchen area pot sinks, prep sinks (not vegetable prep sinks), and three-compartment sinks shall be connected to the grease trap or interceptor. All~~

~~Kitchen mop sinks, floor drains and dishwashers shall be connected to the interceptor.~~

#### **B. Dishwashers**

~~Dishwashers shall not be connected to any grease trap.~~

#### **C. Garbage Disposals**

~~Garbage disposals or grinders are prohibited to connect to traps and interceptors.~~

The following table shows the plumbing fixture connection requirements:

| <u>Fixture</u>                             | <u>Connect Direct to Sewer</u> | <u>Connect to Grease Trap</u> |
|--------------------------------------------|--------------------------------|-------------------------------|
| <u>Pot Sink</u>                            |                                | <u>X</u>                      |
| <u>Prep Sink</u>                           |                                | <u>X</u>                      |
| <u>3-Compartment Sink</u>                  |                                | <u>X</u>                      |
| <u>Vegetable Prep Sink</u>                 | <u>X</u>                       |                               |
| <u>Kitchen Mop Sink</u>                    | <u>X</u>                       |                               |
| <u>Floor Drain (in kitchen)</u>            | <u>X</u>                       |                               |
| <u>Dishwasher</u>                          | <u>X</u>                       |                               |
| <u>Garbage Disposal</u>                    | <u>X</u>                       |                               |
| <u>Floor Sink (for beverage dispenser)</u> | <u>X</u>                       |                               |
| <u>Condensate Discharge</u>                | <u>X</u>                       |                               |
| <u>Walk-in Cooler Discharge</u>            | <u>X</u>                       |                               |

#### **D. Other Requirements**

Grease interceptors shall also be required at commercial trash compactors, trash enclosures, and at other commercial and industrial establishments as deemed necessary by the District.

### **3.e Sewer Ordinance Enforcement**

The District possesses the necessary legal authority to enforce violations of its District Code in the Sewer Use Regulations section of the District Code, some examples of which are as follows. In addition, Section 1.03.030, Powers and Authorities of District Employees (presented in Section 3.c, Access for Maintenance, Inspection, and Repairs) relates to enforcement.

#### **4.01 General Provisions**

##### **4.01.010 Rules and Regulations**

The following rules and regulations respecting sewer construction and disposal of sewage and drainage of buildings and connection to the sewage works of the District are hereby adopted, and all work in respect thereto shall be performed as herein required and not otherwise.

#### **4.01.020 Purpose**

District Code is intended to provide rules and regulations for the use and construction of sanitary sewer facilities hereafter installed, altered or repaired within the District. District Code shall not apply retroactively, and in the event of an alteration or repair hereafter made, it shall apply only to the new materials and methods used herein.

#### **4.01.040 Violation Unlawful**

Following the effective date of this ordinance, it shall be unlawful for any person to connect to, construct, install or provide, maintain and use any other means of sewage disposal from any building in said District except by connection to a public sewer in the manner as in this ordinance provided, unless a waiver is granted by the General Manager.

#### **4.04.170 Implementing Provisions**

##### **B) Notice of Violation**

Whenever the General Manager finds that discharge of any waste is, or threatens to become, a public nuisance or a violation of established requirements, including but not limited to this Ordinance, other ordinances and resolutions, he may issue an order specifying such nuisance, violations, or threatened violations, and ordering compliance within the time schedule specified therein. Noncompliance with such order shall constitute a violation of this Ordinance.

#### **4.04.180 Enforcement Provisions**

##### **B) Judicial Remedies**

If any person discharges sewage, industrial wastes, or other wastes into the wastewater disposal system contrary to the provisions of this Ordinance or any order or permit issued hereunder, the General Manager, through the District's attorney, may commence an action for appropriate legal and/or equitable relief in the Courts of Napa County.

##### **E) Liability for Violation**

Any person violating any of the provisions of the ordinances, rules or regulations of the District shall become liable to the District for any expense, loss or damage occasioned by the District by reason of such violation.

## Element 4. Operation and Maintenance Program

### SSS WDR Requirement:

The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system:

- a) *Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities;*
- b) *Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;*
- c) *Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;*
- d) *Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and*
- e) *Provide equipment and replacement part inventories, including identification of critical replacement parts.*

### 4.a Map of the Sanitary Sewer System

The District maintains comprehensive maps of its collection system in an electronic format, linked to a database through a geographic information system (GIS). The linked GIS database contains the following additional information for manholes, pipes, and pump stations:

#### Pipes

- Date built
- Slope
- Pipe invert elevations
- Plan or as-built ID number
- Direction of flow
- Length
- Material type
- Location of pressure pipes

#### Manholes

- Date built
- Rim elevation
- Invert elevation
- Size
- Depth
- Material type

#### Pump Stations

- ID number
- Location

The City of Napa shares Automated Computer Aided Design (AutoCAD) files with the District, and has developed a separate layer showing the locations of storm drains. This information is integrated into the District's GIS system.

~~The Collection System Technician~~District engineering staff enters as-built plan information on an ongoing basis from paper files into the GIS database. In addition, one of the Collection System crew members field-~~checks~~check map locations regularly and ~~notes~~note any discrepancies, such as missing lateral cleanouts. ~~The Collection System Technician~~District engineering staff updates the maps in the GIS to address these discrepancies. An example of the collection system maps is included in the **Element 4 Appendix**.

Currently, Collection System staff use hard copy map books in the field. The hard copy books are kept in the plug-up truck, TV truck, two combination vacuum/jetting trucks, repair truck, and one "USA truck", which is used to identify and mark District sewer lines when the Underground Service Alert (USA) contacts the District. The system map is divided into about 140 11x17 pages, and staff make notes regarding the different segments in the hard copy books. The Collection System Department holds ~~weekly "Map book Monday"~~regular meetings, where they discuss notes about specific segments of the system and any new information discovered by the crew. Plans are underway to install a computer in a new plug-up truck, so crew will be able to access maps and GIS data (including cleanout locations and record drawings) electronically in the field.

#### 4.b Preventive Operation and Maintenance Program

The District uses a Computerized Maintenance Management System (CMMS) to schedule and maintain records of system maintenance. Pipe segments are identified by upstream and downstream manhole identification numbers, and laterals are identified by street address. The Collection System Technician is responsible for entering preventive maintenance information into the CMMS and for producing prioritized schedules for maintenance in main lines. Maintenance is prioritized based on need, for example fats, oil, and grease (FOG) hot spots are cleaned more frequently. Lateral maintenance is triggered based on a service call. Cleaning occurs daily and repairs generally occur during the summer months; ~~overall about 70 percent of the time spent for preventive maintenance is cleaning and approximately 30 percent is spent on repairs.~~

The Department has a work order system to assign and track cleaning and repair activities. The Collection System Technician generates work orders each day for preventive maintenance on main lines and laterals using information from the CMMS and service calls, and also prepares hard copy maps with highlighted sections for the work orders. The crew then fills out specific forms to document work performed under the work order, such as for main line cleaning, marking facilities for USA, and completed service calls for laterals. Examples of the blank daily sheets and service call sheets are provided in the **Element 4 Appendix**.

During daily routine preventive operation and maintenance (O&M) activities, generally one staff member operates a plug-up truck, another operates the USA truck, and a crew of two operates a combination vacuum/jetter truck. The District also owns an additional two-person combination vacuum/jetter truck, a two-person TV truck, and a second plug-up truck to perform additional

preventive maintenance to ensure that maintenance activities are performed on schedule. In addition, a crew of three to four staff members is ready to perform repairs as needed.

The District ~~recently finished a five-year root foaming project,~~has ongoing and ~~is continuing to conduct routine~~ root foaming as appropriate. A foaming herbicide product has been applied annually to both mains and laterals in areas with known root intrusion. Each application cycle takes approximately three weeks. Before and after inspection videos are being evaluated to determine the effectiveness of this product in the system.

#### **4.b.1 Sewer Main Cleaning and Repairs**

It takes approximately two and one-half years to complete each cycle of cleaning and maintenance of the District's ~~270~~271 miles of mains. The District has a list of hotspots, areas that require more frequent cleaning. The frequency of each line segment on the hotspots list is set according to specific cleaning needs. These frequencies range from 60 to 365 days. The goal of the hotspots list is to prevent blockages and overflows. Cleaning is primarily accomplished using the District's Vactors (combination hydroflusher and vacuum trucks).

The District can clean and televise up to 36-inch diameter pipes. The District has hired a contractor to perform condition assessment on the District's largest main lines, specifically assessing corrosion and sediment buildup and performing laser profiling. ~~No major sediment has been found to date. The District plans to conduct a condition assessment for all of the collection system's unlined concrete pipe over time.~~All RCP greater than 36-inch diameter have been thoroughly inspected in recent years.

Collection system staff developed their own method to inspect siphons, which includes dewatering one side of a double-barreled siphon and video inspection to check for problems. There have been no issues found upon televising siphons after cleaning, and the District aims to televise all siphons at least once every five years.

In addition to cleaning, the Collection System crew is also responsible for routine rehabilitation and replacement activities. These activities include repairing and replacing sections of mainlines, and installing and raising manholes to street grade.

Other periodic maintenance includes FOG control and odor control. Preventive maintenance is performed on main lines with FOG issues; the combination vacuum/jetter trucks jet water and an emulsifying agent to penetrate and remove FOG. A collection system crew member also drops microbe bags throughout these areas in the collection system once per week, and periodically hangs wax blocks with grease-consuming bacteria into main lines. The wax blocks slowly release bacteria over a period of 30 to 90 days. In addition, specialized pumps have been installed to continuously release small doses of grease-consuming microbes upstream of several hot spots. The District also performs odor control at select locations, including the Stonecrest Pump Station, by installing precoated odor-neutralizing media and charcoal filters.

#### **4.b.2 Lower Lateral Cleaning and Repairs**

The District owns and maintains the lower laterals throughout the service area. Similar to the District's hotspot list for main line segments, lower laterals with a history of cleaning needs are also included on a regular maintenance schedule set at prioritized intervals (with cleaning

frequencies of 90 days to 2 years). After a miniature camera (“mini-cam”) is used to televise laterals in response to service calls, the Collection System Technician reviews these videos and decides whether particular laterals need additional preventive maintenance work.

In addition to cleaning, the District’s crew repairs lower laterals, which includes installing or repairing lateral cleanouts, replacing laterals, lining laterals, and performing spot repairs. Since 2010, the District has utilized a liner trailer to install cured-in-place pipe (CIPP) lining, and closed circuit television (CCTV) inspections performed ~~in 2012~~ have indicated that District-installed lining in laterals is functioning well.

#### 4.b.3 Pump Station Preventive Maintenance

There are three pump stations in the District’s collection system (West Napa, River Park, and Stone Crest). The pump stations are all connected to a Supervisory Control and Data Acquisition (SCADA) system.

Maintenance schedules and equipment lists are used for ensuring the District’s pump stations are operating properly. District staff visit each pump station regularly to confirm that the pump stations are operating properly. The SCADA system records the run time for each pump station which is used for maintenance and to estimate the flow. In addition, flow monitoring is periodically performed to monitor the pump stations’ efficiencies. Pump station equipment is replaced when necessary.

The two District mains that convey wastewater under the Napa River have been replaced within the last ~~ten~~fifteen years. The District also replaced the sewer force main from the West Napa Pump Station, and discontinued operations at the North Napa Pump Station after replacing its sewer force main with twin barrel siphons. In addition, the District replaced the Stone Crest Pump Station when the associated force main was replaced in 2007.

The District maintains pump station reliability by performing ongoing maintenance and replacement of the pump station components- and by maintaining a standby pump as well as a generator for power outages. Additionally, the District has developed flow bypass contingency plans for all of its pump stations.

### 4.c Rehabilitation and Replacement Plan

The District uses a Risk-Based Asset Management system in its CMMS to prioritize line inspections. Rehabilitation and ~~gives high inspection priority to lines with any of repair activities~~ are prioritized based on the following ~~conditions (at a minimum); factors:~~

- Blockage
- Recent exposure to construction activities
- ~~A history~~History of failure
- Consequence of failure (under a highway, near a school, near a waterway)
- Pipeline Assessment Certification Program (PACP) rating
- Historical I/I statistics
- Historical overflow occurrences

- Pipe material
- Contracting method
- Soil conditions
- Pipe age
- Other factors

Inspection records ~~help~~are used by District staff to identify system deficiencies. The District also uses the CMMS to develop prioritized schedule of replacement and rehabilitation activities.

~~In addition, District staff recently performed grout injection on more than 40 manholes to reduce inflow/infiltration (I/I). At the present time, District manholes are generally in good condition, and District staff rehabilitate manholes as necessary on a prioritized basis. Details of the rehabilitation and replacement plan are shown in the following paragraphs.~~

#### 4.c.1 CCTV Inspections

The District conducts CCTV line inspections on a nearly daily basis. Inspections occur before or after the following activities:

- **Collection system engineering projects.** Video inspections occur ~~after completion~~as a part of engineering projects, including for the capital improvement program and I/I projects.
- **Emergency calls.** Video inspections provide important information for sewer line emergencies. For instance, staff can perform a CCTV inspection on a main line that was plugged to determine the cause of a blockage. Both the onsite crew and the Collection System Technician investigate the cause and determine the need for preventive maintenance and repair.
- **Root/Grease foaming projects.** Video inspections are performed after root and grease foaming projects, which aim to eliminate accumulation of roots and FOG in the collection system.
- **Food Service Establishment (FSE) areas.** The District televises all laterals in the vicinity of food service establishments each year.
- **Lateral Cleaning.** Collection system staff use a mini-cam to televise smaller diameter pipes, which can travel through a pipe as small as three inches in diameter. The mini-cam is used on every lateral cleaning, and after responding to a plugged lateral call.
- **City paving projects.** When the City of Napa is getting ready to conduct paving, the CCTV crew first video-inspects sewer lines in the area to be paved. The District checks for needed repairs and makes them as appropriate, because the lines generally cannot be repaired for five years after paving.
- **As-needed.** If other reasons indicate that CCTV are needed, a crew is sent to the scene to collect the information.

CCTV inspections are recorded and stored in the District's CMMS for future reference. The Collection System Technician reviews the video inspection results, and identifies and prioritizes system deficiencies to develop short- and long-term plans for rehabilitation or replacement of the collection system.

#### 4.c.2 Capital Improvement Plan

The District updates its Capital Improvement Plan (CIP) annually, to ensure proper management and protection of infrastructure assets. The CIP is contained in the District's Operating and Capital Budget (budget) documents. The budget is developed for each fiscal year and posted online after its adoption by the District Board of Directors. Budget documents are available on the Financial Management page of the District's website ([www.NapaSan.com](http://www.NapaSan.com)). ~~Approximately \$2 million are spent on collection system capital projects each year, and the focus in recent years has been on controlling infiltration/inflow (I/I).~~

As of Winter 2017, goals for percent replacement and repair per year for the collection system are as follows:

**Table 4-1. Percent Replacement/Repair Goals, Subject to Board Approval**

| <u>Year</u> | <u>Percent of System</u> | <u>Budget</u>        |
|-------------|--------------------------|----------------------|
| <u>2017</u> | <u>2.1%</u>              | <u>\$5.3 million</u> |
| <u>2018</u> | <u>1.7%</u>              | <u>\$4.6 million</u> |
| <u>2019</u> | <u>1.6%</u>              | <u>\$4.8 million</u> |
| <u>2020</u> | <u>2.0%</u>              | <u>\$6.0 million</u> |
| <u>2021</u> | <u>2.0%</u>              | <u>\$6.2 million</u> |

**Element 8** of this SSMP provides additional details, including a schedule for implementation of the short- and long-term CIP plans and funding.

#### 4.d Training

The District provides training on a regular basis for all collection system staff. In addition to District-wide annual safety training required for District staff, collection system staff participate in weekly tailgate meetings to discuss SSMP-related concerns and safety topics, such as personal protective equipment and collection system O&M procedures. The Collection System Manager and two crew members also participate in the District's Safety Committee to discuss accidents (as applicable) and implement preventive measures to prevent future accidents. The sanitary sewer overflow (SSO) Response Plan in the **Element 6 Appendix** includes additional information about training for sanitary sewer overflows.

The District encourages collection system staff members to attend at least one external training event per year, such ~~as~~ meetings held by the California Water Environment Association (CWEA), National Association of Sewer Service Companies (NASSCO), ~~and/or~~ Water Environment Federation (WEF). ~~In particular, the~~ The Collection System Manager also recommends training opportunities to different collection system staff members depending upon

staff members' duties; ~~the Collection System Manager also, and~~ records which staff members have attended ~~these~~various events.

The District requires that all of its collection system staff obtain a CWEA certification for Operation and Maintenance of Wastewater Collection Systems within their first year of employment. The CWEA certificate must be renewed annually, and continuing education contact hours are required every two years. The Collection System Manager maintains a compilation of the CWEA certificates (copies) at the District office in hard copy format. In addition to CWEA certification, equipment vendors provide District Collection System workers with training in the use of their products.

The Collection System Department also documents career progression requirements. For example, in order to be promoted from a "Collection System Worker in Training" to a "Collection System Work 1," the crew member must meet certain ~~basic~~ requirements related to experience and certifications, and must demonstrate competency with specific equipment and field-work assignments.

The District typically requires contractors performing construction activities on the sewer system to have certain appropriate and relevant safety programs, as well as follow District safety protocols. Contractors are also required to have an active permit for Class A Confined Space (Immediately Dangerous to Life/Health) and a T1 (Annual Trench/Excavation) permit from the California Division of Occupational Safety and Health (Cal/OSHA).

#### 4.e Equipment and Replacement Part Inventories

The District uses the following major equipment for its sewer system O&M:

- **Combination Vacuum/Jetter Trucks (2):** The combination vacuum/jetter trucks are used for regular sewer line maintenance. The District also uses a high-volume vacuum to remove broken up grit and debris. The hoses can deliver a high-pressure spray to effectively break up blockages in sewer lines and flush out debris. The District owns two combination vacuum/jetter trucks: one larger truck for everyday cleaning and one smaller truck as a backup. This type of truck is also used for hydro-excavation.
- **Rodder Machine:** The Rodder machine removes roots, heavy grease, and other obstructions from inside sewer lines. District staff operate this machine as a backup when the combination vacuum/jetter truck is unable to remove roots, or occasionally to retrieve objects in the sewer. Its usage is limited to special projects or emergencies due to the increased air emissions with this vehicle.
- **TV Truck:** A camera on the TV truck is sent into the sewer to look for sewer line integrity issues such as roots intruding into the pipe, cracked or broken lines, and offset joints or pipes. The video information is transmitted real time to a screen in the TV Truck, and is also recorded digitally for future reference.
- **Plug-up Truck:** The plug-up truck has equipment designed for sewer line emergencies as well as regular maintenance. One of the primary pieces of equipment on the plug-up truck is the gas-powered "eel". The eel is a ~~hand~~motor-driven rodding machine, directed

down a cleanout into a lateral to cut away roots, grease, and other obstructions. After a plug-up is cleared, the mini-cam on the plug-up truck will televise the line to make sure the line is clean before staff leaves the plug-up job site. An inventory of the plug-up truck's contents is performed once per week. An example of the inventory sheet is included in the **Element -4 Appendix**.

- **Water Truck:** The water truck is used to refill the reservoirs on the combination vacuum/jetter trucks to keep them in operation onsite. The water truck is also used for dust control and special projects.

Other important equipment includes a repair truck, the USA truck, a CIPP liner trailer, (for lateral lining and main line spot repairs), a bypass trailer, multiple dump trucks, and two backhoes. The District's inventory of replacement parts is tracked through the CMMS as equipment is used to complete different tasks or projects. District staff perform a physical inventory check annually and an example spare parts inventory list is included in the **Element 4 Appendix**. The District stocks an assortment of tools, pipes, coupling, and manhole materials.

#### **List of Documents in Element 4 Appendix:**

- ~~1.—Collection System Maps (example)~~
- ~~2.—Daily Report Sheet for Main Line Cleaning (blank example)~~
- ~~3.—USA Daily Sheet (blank example)~~
- ~~4.—Daily Service Calls Sheet (blank example)~~
- ~~5.—Emergency Service Summary Sheet (blank example)~~
- ~~6.—Inventory for a Plug-Up Truck (blank example)~~
- ~~7.—Collection System Material Inventory (example)~~

## Element 5. Design and Performance Provisions

### SSS WDR Requirement:

- a) *Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and*
- b) *Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.*

### 5.a Design and Construction Standards

The District first adopted Standard Specifications for Sanitary Sewer Construction in 1962. The document has since gone through ~~three complete~~several comprehensive revisions (in 1982, 1990, 2012, 2016, and 2017). These standards reviews include evaluation of new technologies being used by the industry. The current Sanitary Sewer and Recycled Water Standards (~~September 2012~~June 2017) are available on the District's website ([www.NapaSan.com](http://www.NapaSan.com)).

The Standards provide specifications and standard details for the many aspects of public sewer, private lateral, and pump station construction, including permitting and legal responsibilities, work planning, proper preparation of work sites, specifications for earthwork, pipe work, concrete structures, castings and metal fabrications, materials, pumps and motors, and electrical equipment and controls. The Standards are organized into three volumes, as follows:

- Volume I – General Conditions
- Volume II – Sanitary Sewer
- Volume III – Recycled Water

### 5.b Inspection and Testing

Volume I Section 9.03 requires contractors to notify the District prior to the start of work to coordinate with the District Inspector.

Volume II Section 6.01 indicates that all work performed under the Standards is subject to inspection and must be performed to the satisfaction of the District Engineer. This Section also requires contractors to submit documentation of materials and performance tests at the District's request, and requires District access to the work at all times during construction for inspection.

Volume II Section 7 requires that the contractor test the air tightness of all main and lateral sewers in the presence of under the direction of the District Engineer, and describes procedures and standards for those tests. Section 7 also describes vacuum testing requirements for manholes.

Volume II Section 8 requires television inspection of all sanitary sewer lines (and appropriate corrections of any defects), prior to acceptance by the District.

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## Element 6. Sanitary Sewer Overflow & Backup Response Plan

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### **SSS WDR Requirement:**

*Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:*

- a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;*
  - b) A program to ensure an appropriate response to all overflows;*
  - c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;*
  - d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;*
  - e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and*
  - f) A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.*
- 

The Sanitary Sewer Overflow & Backup Response Plan (SSO Response Plan), included in the **Element 6 Appendix**, was prepared to provide detailed guidance to District staff in responding to Sanitary Sewer Overflows (SSOs) in a safe, orderly, and effective manner. Response, cleaning, reporting, and documentation procedures for both SSOs in the field and backups into buildings are detailed in this plan. In addition, as described in the SSO Response Plan, District personnel are appropriately and regularly trained in SSO emergency response procedures. The SSO Response Plan is designed to be consistent with requirements of the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDR) shown above.

In the event of an SSO that reaches surface water or a drainage channel, District staff provide notification to ~~regulatory officials as follows:~~

- ~~• Cal OES~~
- ~~• California Department of Fish and Wildlife~~

### **Document in Element 6 Appendix:**

~~Sanitary Sewer Overflow & Backup Response Plan~~

## Element 7. FOG Control Program

### SSS WDR Requirement:

*Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:*

- a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;*
- b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;*
- c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;*
- d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;*
- e) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;*
- f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and*
- g) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.*

### 7.a Public Education Outreach Program

The District maintains comprehensive Pollution Prevention information on its website- ([www.NapaSan.com](http://www.NapaSan.com)). The public can access numerous fats, oils, and grease (FOG) materials there. The District also provides public outreach materials during its pollution prevention activities, ~~including the following items which are also~~. FOG-related outreach materials are shown in the **Element 7 Appendix**:

- ~~• Grease disposal container (photo included in the **Element 7 Appendix**)~~
- ~~• Napa Sanitation District grease scraper (image included in the **Element 7 Appendix**)~~
- ~~• Napa Sanitation District semiannual newsletter, "The Pipeline" (Spring 2013 issue included in the **Element 7 Appendix**)~~
- ~~• "Fat Free Sewers" brochure~~
- ~~• "No FOG down the drain!" flyer~~
- ~~• Recycling vegetable oil flyer (Spanish version)~~
- ~~• "Ten ways you can protect your sewer system" flyer~~

- ~~“Update” flyer for the Stonecrest and Upper Alphabet Neighborhood Sewer Improvement Project (English and Spanish versions)~~

Implementation of the District’s public education outreach program, including FOG activities, is documented annually in the District’s Pollution Prevention Report submitted by February 28 each year, and is available upon request. The District has also promoted the proper disposal of FOG during wastewater treatment plant tours, annual Earth Day events, the District’s annual Open House, the regional Holiday FOG Campaign, and the Recycle More Program. The District continues to actively participate in these events.

## 7.b FOG Disposal

Throughout the year, the District accepts hauled grease from the public at a FOG receiving station at the District’s Soscol Water Recycling Facility. There are also several other FOG disposal sites located throughout the San Francisco Bay area. A list of these facilities is available online at [CalFOG.org](http://CalFOG.org).

Food service establishments in the District’s sanitary sewer service area can practice proper disposal of FOG by working with a grease hauler listed online at <http://CalFOG.org/Hauler.html>. Additionally, ~~in 2013,~~ the District ~~partnered~~partners with the City of Napa to develop the Recycle More Program, which offers curbside pickup services for residents to properly dispose of used cooking oil. Napa Recycling also accepts dropped off used cooking oil year round at the Devlin Road Reuse & Recycle Center and Hazardous Waste Collection Facility.

## 7.c Legal Authority

The District Code contains the regulatory, penal, and administrative ordinances for the District and is available on the District’s website- ([www.NapaSan.com](http://www.NapaSan.com)). It prohibits discharges of FOG to the sewer system and provides the District with the legal authority to prevent blockages or SSOs caused by FOG. Applicable excerpts from the District Code are presented in Section 3 of this SSMP.

## 7.d Grease Trap Requirements

The District Code includes requirements to install and maintain grease removal devices. Applicable excerpts from the District Code related to the requirement for interceptors and traps are presented in Section 3 of this SSMP. In addition, the District Code provides legal authority within the *Sanitary Sewer and Recycled Water Standards* (Standard Specifications). The Standard Specifications also ~~provides~~provide standard details for a grease interceptor; these details are presented in Section 3.d, FOG and Debris Discharge Prohibitions, of this SSMP.

FOG-related best management practices (BMPs) are communicated via a "Best Management Practices" fact sheet, which lists BMPs for maintaining and cleaning grease traps, keeping records, and the proper disposal of FOG. The fact sheet is provided in the **Element 7 Appendix**. ~~In addition, the District also provides the following~~Additional grease trap documentation materials, ~~which are also included in the Element 7 Appendix, to assist with the required cleaning and maintenance practices.~~

- ~~Grease Traps and Vaults Cleaning Log~~

- ~~Food Service Employee Training Log~~
- ~~“How to Clean a Grease Trap” Poster~~

## 7.e Facility Inspections and Enforcement

The District’s FOG control program is supported by ~~four~~five staff positions: the Collection System Technician (schedules sewer cleaning for grease control), the ~~Management Analyst~~Pollution Prevention/Outreach Coordinator, a Collection System II Worker, and two District Inspectors. The District maintains a list of FSEs that are inspected for FOG control (example list is included in **Element 7 Appendix**). Facilities whose processes do not generate grease are not included in the program. Inspections are performed approximately once a year and inspection frequency may increase for facilities with enforcement proceedings. Staff also assist new or renovated facilities by making more frequent visits to determine how often grease interceptors should be serviced.

In order to keep the list of FSEs being inspected up to date, one of the District Inspectors maintains regular contact with City of Napa staff regarding new ~~Food Service Establishments~~ (FSEs) or those FSEs undergoing renovations. In addition, a District engineer works with City staff to check the grease removal device sizing in plans for new or updated buildings. City staff also provide the District’s contact information to business owners, to help ensure compliance with the FOG control program. The District uses computer software to streamline and organize various aspects of the FOG control program, including maintenance of the FSE list, inspection scheduling, and inspection results. In addition, the District CCTVs lower laterals annually for FSEs.

During inspections, which are conducted to ensure compliance with the District Code and to prevent sewer blockages, an inspector reviews the grease interceptor/trap cleaning records and grease hauler manifests. The inspector measures the accumulation of fats and solids in the grease trap/interceptor and also verifies each sewer connection to a grease removal device. After the inspection, the inspector provides the facility a digital copy of the completed inspection report. An example blank inspection report form and inspection checklist, as well as an example inspection guide document, are provided in the **Element 7 Appendix**. The District’s authority to inspect grease-producing facilities and enforce when necessary is indicated in Section 3 of this SSMP.

In the case of non-compliance, an inspector requests that facilities resolve their FOG issues within a few days. Subsequently, an inspector re-inspects the facility to confirm the facility has implemented corrective actions. Enforcement of the FOG program is supported by the District Code as indicated in Section 3 of this SSMP.

## 7.f Hot Spots

The District has developed a preventive cleaning schedule for areas of the collection system subject to grease blockages (hot spots). Methods to control FOG include the use of combination vacuum/jetter trucks, as well as the application of emulsifying agent in main lines where known FOG issues exist. A collection system crew member also drops microbe bags throughout these areas in the collection system once per week, and periodically hangs wax blocks with grease-consuming bacteria into main lines. The wax blocks slowly release bacteria over a period of 30

to 90 days. In addition, specialized pumps have been installed to continuously release small doses of grease-consuming microbes upstream of several hot spots. Example documents with “hot spot” data and a cleaning schedule are included in the **Element 7 Appendix**.

## 7.g Source Control

As stated in Section □, the District works closely with the City of Napa to ensure businesses that operate significant FOG-producing processes are listed, and the District regularly inspects FSEs so that sources of commercial FOG discharged to the sanitary sewer system can be effectively controlled. The District has seen positive results after working with FSEs in its service area to prevent grease blockages in the collection system.

In addition to FOG control for hot spots near food establishments, the District also performs FOG control in residential areas, including both work in the sewer, as well as public outreach activities. In addition, ~~in 2013~~ the District has partnered with the City to develop the Recycle More Program, which offers curbside pickup services for residents to properly dispose of used cooking oil. The District will also continue to participate in the regional Holiday FOG Campaign, which encourages retailers that sell deep fryers to provide information on leftover oil and grease recycling.

### List of Documents in Element 7 Appendix (see separate tab):

- ~~1. Grease Disposal Container (photo included)~~
- ~~2. Napa Sanitation District Grease Scraper (image included)~~
- ~~3. Napa Sanitation District semiannual newsletter, “The Pipeline” (Spring 2013 issue included)~~
- ~~4. “Fat Free Sewers” Brochure~~
- ~~5. “No FOG down the drain!” Flyer~~
- ~~6. Recycling Vegetable Oil Flyer (Spanish version)~~
- ~~7. “Ten ways you can protect your sewer system” Flyer~~
- ~~8. “Update” Flyer for the Stonecrest and Upper Alphabet Neighborhood Sewer Improvement Project (English and Spanish versions)~~
- ~~9. “Best Management Practices” Fact Sheet~~
- ~~10. Grease Traps and Vaults Cleaning Log (blank example)~~
- ~~11. Food Service Employee Training Log (blank example)~~
- ~~12. “How to Clean a Grease Trap” Poster~~
- ~~13. Food Service Establishment List (example)~~
- ~~14. FOG Inspection Report for Food Services Form (example)~~
- ~~15. Restaurant Inspection Checklist (example)~~
- ~~16. Restaurant Program Protocol and Inspection Guide (example)~~
- ~~17. Cleaning Schedule (example)~~

## Element 8. System Evaluation and Capacity Assurance Plan

### SSS WDR Requirement:

*The Enrollee shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:*

- a) **Evaluation:** *Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;*
- b) **Design Criteria:** *Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and*
- c) **Capacity Enhancement Measures:** *The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.*
- d) **Schedule:** *The Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a)-(c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D. 14.*

### 8.a Evaluation

The Napa Sanitation District completed a Collection System Master Plan Report in October 2007. This report includes information about current and future capacity requirements based on flow monitoring and hydraulic modeling of the collection system. The District used a 10-year design storm, characterized as a 10-year, 24-hour rainfall event with saturated soil conditions that occurs at the approximate time of a peak diurnal flow, to identify and prioritize capacity and rehabilitation improvement projects. The Master Plan is available on the District's website ([www.NapaSan.com](http://www.NapaSan.com)).

The District continues to implement strategies identified in the Master Plan, including the implementation of projects that address hydraulic capacity needs within the collection system. For example, ~~during fiscal year 2011-2012~~, the District installed 600 feet of 15-inch sanitary sewer main along Browns Valley Road between Thompson Avenue and Larkin Way. The District also completed a 400-foot relief pipe at Morlan Drive to resolve issues with a surcharging manhole in that area. As a result of these two projects, upstream Sanitary Sewer Overflows (SSOs) during heavy rain events in the vicinity of these projects have been effectively controlled.

The District has also recently completed pre- and post-construction inflow & infiltration (I/I) flow monitoring for ~~three~~four projects designed to control I/I: ~~East Spring Street Basin L Upper Lateral Rehabilitation Pilot Project, Upper Alphabet St. & Stonecrest Pipeline Rehab Project, and Basin L – #1, Basin L I&I Reduction Project #4, Basin L I&I Reduction Project #5, and the State Streets Manhole Lining Project.~~ Monitoring data from these projects will support updates to the hydraulic model developed in the Master Plan. In addition, the District aims to video-inspect 10 percent of its sewer main lines annually to assess for condition and maintenance problems, including those involving hydraulic capacity.

## 8.b Design Criteria

As indicated above, the District uses a 10-year design storm for its collection system, characterized as a 10-year, 24-hour rainfall event with saturated soil conditions that occurs at the approximate time of a peak diurnal flow. The District applies this design criterion when establishing pipe sizes for construction projects within the collection system.

## 8.c Capacity Enhancement Measures

The District continues to establish short- and long-term CIP projects to enhance capacity of the collection system. In particular, the District has identified the following goals related to CIP projects for the collection system, as documented in the District's annual Performance Measurement Report:

- Rehabilitate or replace at least 1 percent of all sewer mains annually
- Rehabilitate or replace at least 60 lower laterals annually (by District personnel)
- ~~Continue to prevent sewer pipe collapse to limit collection system failures~~
- Perform cleaning on 40 percent of District sewer main lines annually
- ~~The District also seeks to rehabilitate~~Rehabilitate and replace ~~210~~500 lower laterals as part of contracted mainline CIP projects ~~for mainlines~~.

Short-term rehabilitation and replacement projects are identified on an annual basis as part of the fiscal year budget process. For project planning over the long-term, a Ten-Year CIP is prepared, using an alternatives analysis process to determine cost-effective approaches for selected projects.

Management and supervisory staff are provided an opportunity to identify new capital projects, which are proposed to the Capital Program Manager and the District Engineer. The proposed projects are evaluated further to assess the need and level of priority. Final projects are added to the ten-year CIP as funding allows. The implementation schedule for projects within the ten-year period is based on the condition of existing assets and implications for O&M activities.

The District produces an annual Operating and Capital Budget document, which includes schedules for anticipated projects, as discussed in Section 0 below. Sources of funding for the District's CIP include capacity charges for new developments and sewer service charge revenue allocated to pay for replacement and rehabilitation projects. Grants and intergovernmental revenue also help fund the CIP.

## 8.d Schedule

The District's annual Operating and Capital Budget document includes anticipated timelines for collection system projects identified in the ten-year CIP. An example schedule for CIP projects identified in the budget document for Fiscal Year ~~2012/13~~2017/18 is shown in **Table 8-1** below. Auditing and updates of this SSMP Element are conducted as described in SSMP Element 9 and Element 10.

**Table 8-1. Example Schedule for Collection System Projects (Fiscal Year ~~2012/13~~2017/18)**

| Project/Goal Name                                                                    | Description                                                                                                                                                                                                                                                                                                         | Anticipated Project Timeline                                                         |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| I&I Reduction Program                                                                | Smoke testing and flow monitoring for I&I reduction projects in this program.                                                                                                                                                                                                                                       | <del>To</del><br><del>FY12/13</del> Ongoing                                          |
| <del>Upper Lateral Rehab – Basin L - I&amp;I Reduction Projects Pilot #2, 3, 4</del> | <del>Design and construction project to reduce I&amp;I in Basin L (north of Imola Avenue, south of Napa Creek, and west of the Napa River). Rehabilitation of private laterals within a small area to evaluate effectiveness to reduce I/I.</del>                                                                   | <del>To</del><br><del>FY14/15</del> <del>FY17/18</del>                               |
| <del>Upper Lateral Rehab – Basin I/J - I&amp;I Reduction Project 1L Pilot #3</del>   | <del>Design and construction project Rehabilitation of private laterals within a small area to evaluate effectiveness to reduce I&amp;I in Basins I and J.</del>                                                                                                                                                    | <del>FY15/16 –</del><br><del>FY16/17</del> <del>FY17/18</del><br><del>-FY18/19</del> |
| <del>Manhole Rehab – Nipak Area – Basin H</del>                                      | <del>Manhole rehabilitation to fix manhole infiltration leaks.</del>                                                                                                                                                                                                                                                | <del>FY17/18</del>                                                                   |
| <del>Soscol Ave (8th to Sousa) Trunk CIPP</del>                                      | <del>CIPP rehabilitation of the 45-inch RCP trunk main.</del>                                                                                                                                                                                                                                                       | <del>FY17/18</del>                                                                   |
| <del>Browns Valley Road &amp; First Street Trunk and WNPS Project</del>              | <del>Design project to alleviate surcharging and potential SSOs in the Browns Valley Road and First Street trunk line. Construction of a new trunk main from Browns Valley Road to the West Napa Pump Station. The project also includes improvements to the WNPS to address corrosion and redundancy issues.</del> | <del>FY16/17 –</del><br><del>FY17/18 -</del><br><del>FY19/20</del>                   |
| <del>Collection System Rehab - 2017</del>                                            | <del>Rehabilitation of mains, public laterals, and manholes to reduce I/I in various areas.</del>                                                                                                                                                                                                                   | <del>FY17/18 -</del><br><del>FY18/19</del>                                           |
| <del>Collection System Rehab - 2018</del>                                            | <del>Rehabilitation of mains, public laterals, and manholes to reduce I/I in various areas.</del>                                                                                                                                                                                                                   | <del>FY17/18 -</del><br><del>FY18/19</del>                                           |
| <del>Collection System Rehab - 2019</del>                                            | <del>Rehabilitation of mains, public laterals, and manholes to reduce I/I in various areas.</del>                                                                                                                                                                                                                   | <del>FY18/19 -</del><br><del>FY19/20</del>                                           |
| Mainline Sewer Rehabilitation                                                        | Spot repairs to damaged sewer lines using District crews or an outside contractor, extending the useful life of these assets.                                                                                                                                                                                       | Ongoing                                                                              |
| Manhole Raising / Rehabilitation                                                     | Raising of manhole rims in streets that have been resurfaced. District crews will replace damaged manholes in this program.                                                                                                                                                                                         | Ongoing                                                                              |
| Lateral Replacement / Rehabilitation                                                 | Rehabilitate or replace lower laterals using District crews or an outside contractor.                                                                                                                                                                                                                               | Ongoing                                                                              |
| Cleanout Installation / Rehabilitation                                               | Installation of lateral cleanouts at the property line (where one does not exist).                                                                                                                                                                                                                                  | Ongoing                                                                              |
| Collection System Integrity                                                          | Prevention of sewer pipe collapse to limit collection system failures.                                                                                                                                                                                                                                              | Ongoing                                                                              |

| Project/Goal Name        | Description                                                   | Anticipated Project Timeline |
|--------------------------|---------------------------------------------------------------|------------------------------|
| Sewer Main Line Cleaning | Cleaning of 40 percent of District sewer main lines annually. | Ongoing                      |

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## Element 9. Monitoring, Measurement, and Program Modifications

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### **SSS WDR Requirement:**

*The Enrollee shall:*

- a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;*
  - b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;*
  - c) Assess the success of the preventative maintenance program;*
  - d) Update program elements, as appropriate, based on monitoring or performance evaluations; and*
  - e) Identify and illustrate SSO trends, including: frequency, location, and volume.*
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### **9.a Data Management**

The District maintains relevant sewer-related information in its Computerized Maintenance Management System (CMMS), Geographic Information System (GIS), digital spreadsheets, and word processing documents, as well as the California Integrated Water Quality System (CIWQS) sanitary sewer overflow (SSO) database. The District also uses pipeline inspection software to manage closed circuit television (CCTV) inspection videos.

Examples of the types of data and information maintained by the District include the following:

- Sewer line hot spot locations
- Records of collection system maintenance
- Service call information
- Work order information to assign and track cleaning and repair activities
- Plugged main history
- CCTV inspection results
- Inventory of replacement parts

### **9.b SSMP Implementation and Effectiveness**

The District monitors the implementation of and, where appropriate, measures the effectiveness of, each element of the Sewer System Management Plan (SSMP) during its biennial SSMP program audits, as described in Element 10.

### **9.c Assessment of Preventive Maintenance Program**

To assess the success of the preventive maintenance program, District staff evaluate and report on specific performance indicator data as part of its annual Performance Measurement Report. The current Performance Measurement Report includes the following performance indicators:

- Number of Category 1 sanitary sewer overflows (SSOs)
- Total volume of Category 1 SSOs
- Ratio of planned to unplanned collection system maintenance time
- Average service call response time
- Percent of satisfied customers for plug-up calls
- Percent of satisfied customers for cleanouts and lateral repairs
- Number of plugged main lines
- Number of District-maintained plugged laterals
- Percent of sewer main lines cleaned
- Percent of sewer main lines video-inspected
- Food service establishment inspections
- Sewer main renewal & replacement (by % of system)
- Lower lateral renewal & replacement (quantity)
- Sewer partial or total collapse rate (quantity)

The District may modify the above indicators based on revised District priorities.

## 9.d Program Element Updates

The District updates SSMP program elements, as appropriate, in conjunction with the biennial SSMP audits, as described in Element 10. The District prioritizes its actions and initiates changes to the SSMP based on the results reported in the District's annual Performance Measurement Reports. ~~This SSMP will be updated at a minimum every five years to include significant program changes.~~

## 9.e SSO Trends

Performance indicator data, described in Section 9.c, are useful to assess the success of SSMP programs in meeting the goals listed in **Element 1**. SSO trends are displayed graphically in District's annual Performance Measurement Reports. For example, the frequency and volume of Category 1 SSOs per 100 miles of sewer within the District is compared to California state-wide averages.

The District continues to evaluate overflow records to determine if repeat overflows have occurred. ~~To address~~ When location-specific capacity issues occur, the District ~~has installed~~ installs bypass piping, and this method has proven successful in preventing additional overflows during heavy rain events. The District will continue to evaluate SSO trends to prevent and potentially reduce overflows.

## Element 10. SSMP Program Audits

### **SSS WDR Requirement:**

*As part of the SSMP, the Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.*

The District's Collection System Manager audits the Collection System Program, including the effectiveness of the Sewer System Management Plan (SSMP), biennially. The audit process is documented using a form titled the Biennial SSMP Audit Report; a blank form is included in the **Element 10 Appendix**. This form is organized to provide a systematic review of each SSMP element. If a change to an SSMP element is needed, this information is recorded on the form and steps are taken to implement the changes. The District's annual Performance Measurement Report is also attached to the form (and available on the District's website at [www.NapaSan.com](http://www.NapaSan.com)) to provide a quantitative evaluation of the effectiveness of the SSMP.

The audits documentation is stored in the SSMP Audit Binder. ~~As specified in the San Francisco Bay Regional Water Quality Control Board's October 3, 2012 letter, the~~The next SSMP internal audit and SSMP Audit Report are due on May 2, ~~2014~~2018 and subsequent audits and reports will be due every two years after this date.

### **List of Documents in Element 10 Appendix:**

- ~~1. Form for the Biennial SSMP Audit Report (blank example)~~
- ~~2. San Francisco Bay Regional Water Quality Control Board's October 3, 2012 letter, indicating schedule for biennial audits~~

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## Element 11. Communications Program

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### **SSS WDR Requirement:**

*The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.*

*The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.*

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The District's website ([www.NapaSan.com](http://www.NapaSan.com)) is the primary forum for communication with the public. Within the District's website, the webpage titled, "Sewer Collection System" contains information about the development and implementation of the Sewer System Management Plan (SSMP). In addition, the "Sewer System Management Plan" section of this webpage includes links to information about the State's Sanitary Sewer System Waste Discharge Requirements (SSS WDR) and implementation of the State's sanitary sewer overflow (SSO) Reduction Program. Another section of the webpage titled "Tracking Sewer Overflows" directs users to CIWQS, which provides public access to reported SSO data and information about regulatory actions. The webpage also provides contact information for the District, and encourages the public to provide feedback about the program.