

# Big Bear City Community Services District



## Sewer System Management Plan



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**Appendix A – Water and Sewer Policy Manual**

**Appendix B – 2009/10 Fiscal Year Budget and Work Plan**

**Appendix C – Inventory List**

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**Appendix E – OERP Plan**

**Appendix F - Increased Schedule of Routine Cleaning**

**Appendix G - List of 17 Food Establishments**

## List of Abbreviations

BBCCSD	Big Bear City Community Services District
BBARWA	Big Bear Area Regional Wastewater Agency
BMP	Best Management Practices
BWF	Base Wastewater Flow
CCTV	Closed Circuit Television
CDFG	California Department of Fish and Game
CIP	Capital Improvement Plan
CWEA	California Water Environment Association
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System
FOG	Fats, Oils and Grease
FSE	Food Service Establishment
GPM	Gallons per Minute
GW	Groundwater Infiltration
HIMCAD	History Inventory Maintenance and Condition Assessment Database
I/I	Infiltration and Inflow
ISDHH	Imminent and Substantial Danger to Human Health
MGD	Million Gallons per Day
MRP	Master Reclamation Permit
NPDES	National Pollution Discharge Elimination System
OERP	Overflow Emergency Response Plan
OES	Office of Emergency Services
OSHA	Occupational Safety and Health Administration
RDI/I	Rainfall-dependent Infiltration and Inflow
RWQCB	Regional Water Quality Control Board
SCBA	Self Contained Breathing Apparatus
SHECAP	Sewer Hydraulic Evaluation and Capacity Assessment Plan
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SWRCB	State Water Resources Control Board
TM	Technical Memorandum
WDR	Waste Discharge Requirements

## Introduction and Background

This Sewer System Management Plan (SSMP) has been prepared to meet the requirements of Santa Ana Water Quality Control Board (RWQCB) Order No. 2006-0003, which also meets the requirements of Section 13267 of the California Water Code, as described in the letter from the RWQCB to the District dated July 7, 2005. The RWQCB letter mandates that the Big Bear City Community Services District (District) prepare an SSMP following the guidelines in the SSMP Development Guide prepared by the RWQCB in cooperation with the Santa Ana Water Quality Control Board Region 8 (SAWQCB).

The District must also comply with RWQCB sanitary sewer overflow (SSO) electronic reporting requirements issued in November 2004. More recently, the State Water Resources Control Board (SWRCB) acted at its meeting on May 2, 2006, to require all public wastewater collection system agencies in California with greater than one mile of sewer to be regulated under General Waste Discharge Requirements (WDR).

The SWRCB action, which will apply to the District, also mandates the development of an SSMP and the reporting of SSOs using an electronic reporting system. The SWRCB SSMP requirements are similar to those required by the RWQCB but differ in organization and some details.

The District's SSMP is being revised and updated by the District. This SSMP is to meet the requirements of both the RWQCB and the Statewide WDR. The organization of this document is consistent with the RWQCB guidelines. The contents, when the document is fully completed, will address both the RWQCB and SWRCB requirements.

The SSMP, when fully complete, will include eleven sections, as follows:

1. Goals
2. Organization
3. Legal Authority
4. Operation and Maintenance Program
5. Overflow Emergency Response Plan
6. Fats, Oils, and Grease (FOG) Program
7. Design and Performance
8. System Evaluation and Capacity Assurance Plan
9. Monitoring, Measurement, and Plan Modifications
10. SSMP Program Audits
11. Communication Plan

## System Overview

BBCSD provides wastewater collection service to Big Bear City and in the areas know as Sugarloaf, Erwin Lake, Whispering Forest, and a portion of Moonridge.

The District has over 115 miles of pipeline, ranging in size from eight to 18-inches and serving a population of more than 5800 people. The District operates seven pumping stations varying in size from 300 gallons per minute (GPM) to 900 GPM. Average daily influent flow to BBARWA (based on the BBARWA Flow Summary for 2007) is 832,096 gallons per day. Influent flows from the District are treated at BBARWA and the effluent is transferred to an alfalfa farm in Lucerne Valley.

## **Section 1 Goals**

This SSMP element identifies goals the District has established for the management, operation and maintenance of the sewer system and discusses the role of the SSMP in supporting these goals. These goals provide focus for District staff to continue high-quality work and to implement improvements in the management of the District's wastewater collection system. This section fulfills the goals requirement of the RWQCB and the SWRCB SSMP requirements.

### **1.1 Regulatory Requirements for Goals Element**

The summarized requirements for the goals element of the SSMP are as follows:

#### **RWQCB Requirement:**

The collection system agency must develop goals to manage, operate, and maintain all parts of its collection system. The goals should address the provision of adequate capacity to convey peak wastewater flows, as well as a reduction in the frequency of sanitary sewer overflows (SSOs) and the mitigation of their impacts.

#### **SWRCB Requirement:**

The collection system agency must develop goals to properly manage, operate, and maintain all parts of its wastewater collection system in order to reduce and prevent SSOs, as well as to mitigate any SSOs that occur.

### **1.2 Goals Discussion**

The District seeks to provide high quality and cost-effective wastewater collection for its constituents by meeting these goals:

- a. Be available and responsive to the needs of the public, and work cooperatively with local, state, and federal agencies to reduce, mitigate impacts of, and properly report SSOs.
- b. Properly manage and operate the District's facilities to minimize SSOs.
- c. Identify, prioritize, and continuously renew and replace sewer system facilities to maintain reliability.
- d. Provide capacity for peak wastewater flows as shown in the Sewer Master Plan.
- e. Implement regular, proactive maintenance of the system to remove roots, debris, fats, oils, and grease in areas prone to blockages that may cause sewer backups or SSOs.
- f. Uphold the District's standards and specifications on newly constructed public and private sewers.

## **Section 2 Organization**

The intent of this section of the SSMP is to identify District staff that is responsible for implementing this SSMP, responding to SSO events, and meeting the SSO reporting requirements. This section also includes the designation of the Authorized Representative to meet SWRCB requirements for completing and certifying spill reports. This section fulfills the organization requirement of both the RWQCB and the SWRCB SSMP requirements.

### **2.1 Regulatory Requirements for Organization Element**

The summarized requirements for the organization element of the SSMP are as follows:

#### **RWQCB Requirement:**

The collection system agency's SSMP must identify staff responsible for implementing measures outlined in the SSMP, including management, administration, and maintenance positions. Identify the chain of communication for reporting and responding to SSOs.

#### **SWRCB Requirement:**

The collection system agency's SSMP must identify:

- a. The name of the responsible or authorized representative;
- b. The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. Include lines of authority as shown in an organization chart or similar document with a narrative explanation; and
- c. 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)).

### **2.2 Organization Discussion**

The following sections outline the District's organization, general and SSMP responsibilities of personnel, authorized representative, and chains of communication for SSO response and reporting. Names and contact information for current staff are available in Exhibit "A" of the Overflow Emergency Response Plan (OERP)(Appendix E of this SSMP).

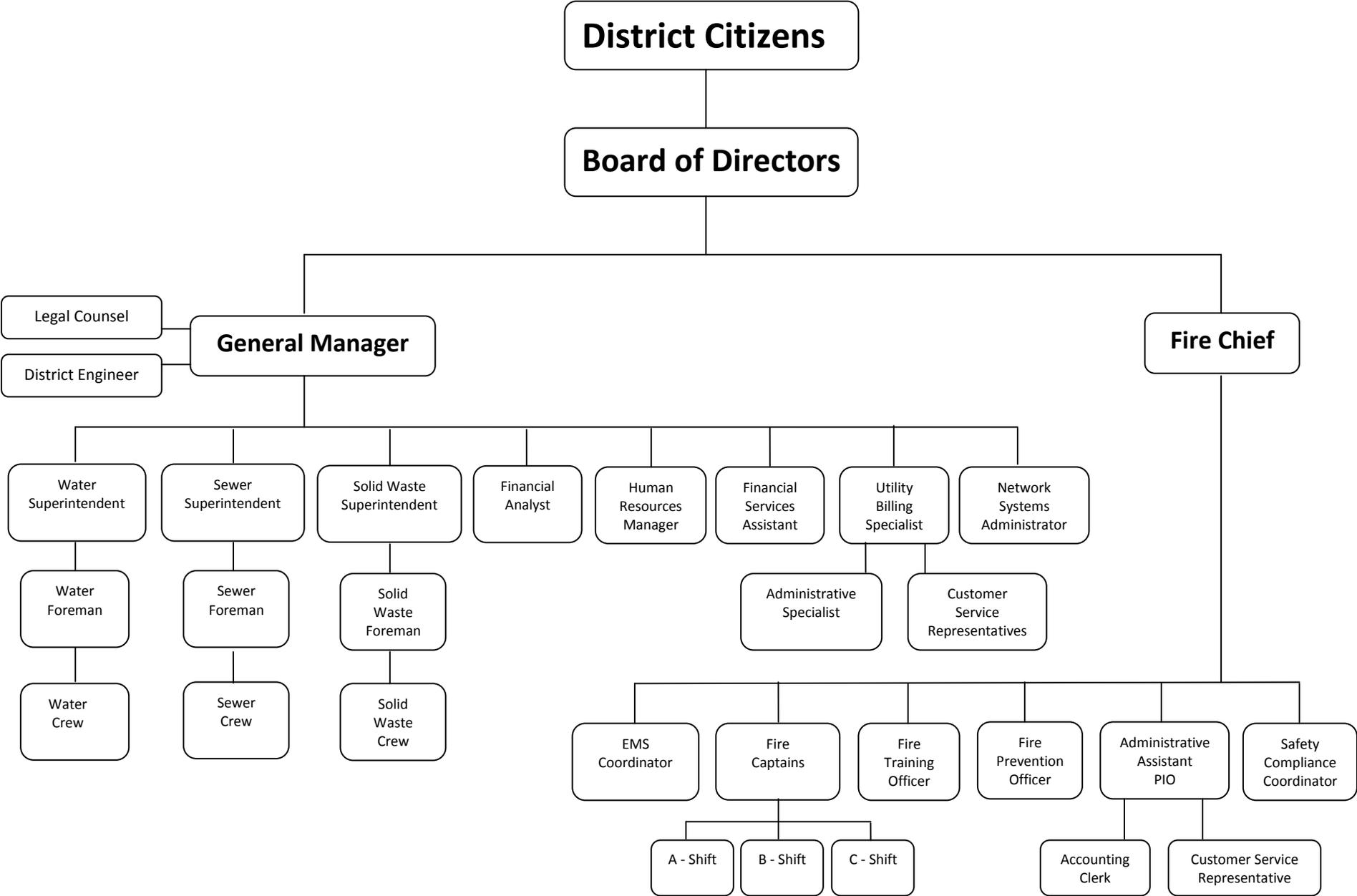
#### **2.2.1 District Organization**

BBCSD is a Community Services District (CSD) organized in 1966. The CSD was formed through the consolidation of three districts: the Big Bear Sanitation District; the Big Bear Fire Protection District;

and the Big Bear City Street Lighting District. In 1967, the shareholders of the Big Bear City Mutual Service Company voted to turn over their water system to the CSD. The District is governed by a 5-member Board of Directors elected at large. Election of Directors is consolidated with the June Primary Election, with three and two Directors being elected in alternating, even numbered years. Directors are elected to serve four-year terms. The District Board routinely meets on the first and third Monday of each month, with special meetings called as necessary. Daily management is carried out by the General Manager who oversees the District's staff and reports directly to the Board of Directors. Chart 2-1 illustrates the BBCCSD organizational structure.

**Chart 2-1 BBCCSD Organization Chart**

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### **2.2.2 Description of General Responsibilities**

**Board of Directors** - Set policy and user rates.

**General Manager** - Under administrative direction from the Board of Directors, the General Manager plans and manages the affairs of the District and directs the staff in all functions and operations. The General Manager represents Board policy and programs with employees, community organizations, and the general public. The General Manager reviews budget requests and makes recommendations to the Board on final expenditure levels, manages all labor/management activities, and performs all related work as required.

**Sewer Superintendent** - Under general direction of the General Manager, the Sewer Superintendent plans, directs, manages, and reviews the activities of the Maintenance Department of the District. The Maintenance Department maintains, cleans, and repairs the District's wastewater collection system, pump stations, and related appurtenances.

**Sewer Foreman** - Under general direction of the Sewer Superintendent, the Sewer Foreman is responsible for the planning and supervision of the District's fieldwork and maintenance record keeping activities. The Foreman provides a variety of responsible professional assistance in the areas of maintenance, operations, sewer system condition inspections, and performs related work as assigned.

**District Engineer** - The District Engineer provides highly technical professional assistance to the General Manager and Sewer Superintendent. The District Engineer performs the full range of civil engineering and office work of a routine to complex nature, including development review, design, management, and upgrading facilities.

**Maintenance Workers** - Under supervision of the Sewer Foreman, the Maintenance Worker performs a variety of tasks related to the maintenance, cleaning, and repairs of the District's wastewater collection system, pump stations, and related appurtenances.

### **2.2.3 Authorized Representative**

The Sewer Superintendent, Sewer Foreman, and two additional sewer department personnel are the Districts authorized representatives registered with the Santa Ana Regional Water Quality Control Board SSO eReporting Program and the California Integrated Water Quality System (CIWQS) to certify SSO reports. The District Superintendent prepares and submits electronic reports. Name and contact information for the current authorized representatives are available in Appendix B.

### **2.2.4 Responsibility for SSMP Implementation**

The District Sewer Superintendent is responsible for overseeing the overall implementation of the

SSMP. Various individuals within the District’s organization are responsible for implementing one or more of the SSMP elements. Below is an outline of the District Representatives and responsibilities in implementing this SSMP section by section.

Figure 2.1

SSMP Section	Responsible Party(s)
1. Goals	General Manager
2. Organization	Sewer Superintendent
3. Legal Authority	General Manager
4. Operations and Maintenance Program	Sewer Superintendent
5. Design and Performance Provisions	Engineer
6. Overflow Emergency Response Program	Sewer Superintendent
7. FOG Control Program	Sewer Superintendent
8. System Evaluation and Capacity Assurance Plan	Engineer/Superintendent
9. Monitoring, Measurement, and Plan Modifications	Sewer Superintendent
10. SSMP Program Audits	Sewer Superintendent
11. Communication Program	Sewer Superintendent

**Responsibility for Section 1 – Goals**

The General Manager is responsible for leading staff in the implementation of the District’s goals.

**Responsibility for Section 2 – Organization**

The Sewer Superintendent is responsible for updating the organizational structure, SSMP implementation assignments, and SSO responding and reporting chains of communication, as needed.

**Responsibility for Section 3 – Legal Authority**

The General Manager is responsible for upholding the District’s General Sewer Regulations (Ordinance 73) and drafting new ordinances, as needed.

**Responsibility for Section 4 – Operations and Maintenance Program**

The Sewer Superintendent is responsible to oversee the operations and maintenance of the District’s sewer infrastructure. The District uses a computerized maintenance management system (CMMS) and has a complete set of maps, both full sized and digitized, of the complete sewer system.

### **Responsibility for Section 5 – Design and Performance Provisions**

The District Engineer is responsible for reviewing design and construction documents to ensure that all construction projects meet the District’s standards. The District Engineer is also responsible for updating standards for installation, rehabilitation and repair, as needed. The assigned inspection personnel are responsible for inspecting all construction projects to ensure the District’s construction standards have been followed. The inspection personnel are also responsible for updating standards for inspections and testing of new and rehabilitated facilities, as needed.

### **Responsibility for Section 6 – Overflow Emergency Response Plan**

The Sewer Superintendent is responsible for implementation of the Overflow Emergency Response Plan, including revisions to the plan and annual trainings for maintenance crew members.

### **Responsibility for Section 7 – Fats, Oil and Grease (FOG) Program**

The Sewer Superintendent is responsible for establishing and assessing “Hot Spots” within the collections system where flow is greater and the potential for grease buildup is more likely to occur. The District schedules preventive cleaning on a schedule based on one, three, six or 12 months. The higher frequency schedules are used on the lines most likely to cause a SSO in the system due to grease and debris.

### **Responsibility for Section 8 – System Evaluation and Capacity Assurance Plan**

The District Engineer is responsible for establishing and assessing capacity requirements for the District’s collection system and for preparation and implementation of the District’s System Evaluation and Capacity Assurance Plan. The General Manager is responsible for development and implementation of the District’s long-term Capital Improvement Plan including updating budgets and schedules.

### **Responsibility for Section 9 – Monitoring, Measurement, and Plan Modifications**

The District Engineer and Sewer Superintendent are responsible for monitoring flow profiles to determine which lines, or areas of lines, need to be increased to accommodate times of peak flows. If a line, or area of lines, needs an increase of capacity, the District Engineer will develop a Sewer Relief Line project for that area.

### **Responsibility for Section 10 – SSMP Audits**

The Sewer Superintendant is responsible for overseeing annual SSMP Audits

## **Responsibility for Section 11 – Communication Plan**

The Sewer Superintendent is responsible for communicating with the public and nearby agencies regarding the status of the District's SSMP.

### **2.2.5 Chain of Communication for Responding and Reporting SSOs**

The communication chain for responding to a SSO is shown in BBCCSD Overflow Emergency Response Plan (OERP), and is detailed on the Spill Response Flow Chart on page 11. Available BBCCSD emergency personnel is detailed, including phone contact numbers and job titles on Exhibit "A" on page 20 of the OERP. Reporting requirements can be found starting on page 5 of the OERP.

## **Section 3 Legal Authority**

This section of the SSMP discusses the District's Legal Authority, including its Water and Sewer Policy Manual and agreements with other agencies. This section fulfills the Legal Authority requirement for the RWQCB (Section 5) and the SWRCB (Section 3).

### **3.1 Regulatory Requirements for Legal Authority Section**

The requirements for the Legal Authority section of the SSMP are summarized below:

#### **RWQCB Requirement**

The District must demonstrate that it has the legal authority (through ordinances, and other binding procedures) to control infiltration and inflow (I/I) from collection systems and private service laterals; require proper design, construction, installation, testing, and inspection of new and rehabilitated sewers and laterals; and enforce violation of ordinances.

#### **SWRCB Requirement**

The District must demonstrate, through collection system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

- a. Prevent illicit discharges into its wastewater collection system (examples may include infiltration and inflow (I/I), storm water, 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.

### **3.2 Legal Authority Discussion**

The District has the legal authority to:

- Assign responsibility for private laterals,
- Prevent illicit discharges,
- Require proper design and construction of sewers and connections,
- Access facilities for maintenance, inspection and repairs,
- Limit the discharge of fats, oils and grease, and debris
- Enforce the provisions of their General Sewer Regulations.

#### **3.2.1 General Sewer Regulations**

The District's Water and Sewer Policy Manual, adopted in 2009, includes several provisions that establish the District's legal authority to control discharges and maintain their sanitary sewer system. A full copy of the District's Water and Sewer Policy Manual is included as Appendix A.

#### **Responsibility for Maintenance of Laterals**

The District's Code of Regulations (Title 5.5.14) establishes the property owners as the responsible party for ownership and maintenance of the sewer lateral on property.

*The District's responsibility for maintenance , liability of any type and damages for and to lateral sewers ends at the property line of the premises served thereby or, in the case of any special installations approved by the district, at the point where the District's facilities end.*

### **Prevention of Illicit Discharges**

The District's Sewer Regulations, Title 5 (Sections 5.6.1 through 5.6.12 of the District's Code of Regulations) prohibits illicit discharges to the District's sanitary sewers as follows:

*6.01 Drainage into Public Sewers Prohibited. No roof leaders, cellar drains, yard or area drains, floor drains, foundation drains, cooling water drains or other sources or of other drainage or surface runoff shall be connected to any Public Sewer.*

*6.02 Types of Water Prohibited. Except as hereinafter provided, no Person shall discharge or cause to be discharged to any Public Sewer all prohibited wastes as listed in Chapter 7.12, Sections 7.12.10 – 7.12.100 Paragraphs 2.1 and 2.2 of the BBARWA Ordinance No. 69.*

*6.03 Grease Traps or Grease Interceptors Required. Grease, oil and sand traps or Grease Interceptors shall be provided on all drain lines leading from kitchens in all eating establishments or as determined by the District. They shall be sized, located and constructed pursuant to Appendix H of the Uniform Plumbing Code which provides recommended procedures for sizing Commercial Kitchen Grease Interceptors. All Grease Traps and Grease Interceptors shall be so located as to be readily and easily accessible for cleaning and inspection.*

*6.04 Maintenance of Grease Traps and Grease Interceptors. All grease, oil and sand traps and Grease Interceptors shall be maintained at the Legal Owner's expense, and shall remain in continuous effective operation at all times.*

*6.05 Admission of Prohibited Discharges. If any waters or wastes are discharged or are proposed to be discharged to a Public Sewer which contain the substances or possess characteristics prohibited by Section 6.02, and which in the judgment of the General Manager or Superintendent may have a deleterious effect upon the sewer system processes, equipment or receiving waters or may otherwise create a hazard to life or constitute a public nuisance, the General Manager may:*

*(a) Reject the wastes.*

*(b) Require pretreatment to an acceptable condition for discharge to the Public Sewer.*

*(c) Require control over the quantities and rates of discharge.*

*(d) Require payment to cover the added cost of handling the treatment of wastes not covered by existing sewer charges.*

*6.06 Industrial Wastes. Pretreatment of Industrial Wastes shall be in accordance with the Environmental Protection Agency Pretreatment Standards, which have been promulgated for specific industrial classes, and in accordance with Chapter 7.12, Sections 7.12.050 and 7.12.060 of BBAWRA Ordinance No.69.*

*6.07 Pretreatment. Where required, in the opinion of the General Manager or Superintendent, the Legal Owner of Premises from which Industrial Wastes will be discharged to a Public Sewer shall provide at his or her own expense such pretreatment or handling of such wastes as may be necessary to meet the requirements of these Regulations and District Standards. Any plans, specifications or other pertinent information relating to proposed preliminary treatment, interceptors, or handling facilities shall be prepared and submitted by the Legal Owner of the subject Premises, at his or her own cost, for District approval, and no construction of such facilities shall be commenced until approval of the District is obtained.*

*6.08 Maintenance of Pretreatment Facilities. When pretreatment facilities are provided for any waters or wastes to meet the requirements of these Regulation or District Standards, they shall be maintained in satisfactory and effective operation by the Person discharging the water or wastes and at his or her expense.*

*6.09 Monitoring.*

*(a) When required by the General Manager or Superintendent, the Legal Owner of any property serviced by a Building Sewer carrying Industrial Wastes shall install a suitable control access point together with such necessary meters and other appurtenance in the Building Sewer to facilitate observation, sampling and measurement of the wastes. Such access point, when required, shall be accessibly and safely located, and shall be constructed in accordance with plans approved by the District's Engineer, General Manager, or Sewer Superintendent. The access point shall be installed at the Legal Owner's expense, and shall be maintained by the Legal Owner so as to be safe and accessible at all times.*

*(b) All measurements, tests and analyses of the characteristics of waters and wastes to which reference is made in these Regulations or District Standards shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater," published by the American Public Health Association, and shall be determined at the control manhole provided, or upon suitable samples taken at the control manhole. In the event that no special access point has been required, the control access point used for this determination shall be the downstream manhole in the Public Sewer nearest to the point at which the Building Sewer is connected. Sampling shall be carried out by customarily accepted methods to reflect the effect of constitutes upon the Wastewater Treatment Plant and to determine the existence of hazards to life, limb and property.*

*6.10 Backwater Valve Required. In accordance with the Uniform Plumbing Code drainage piping serving fixtures which have flood level rims located at or below the elevation of the next upstream manhole cover of the Public Sewer serving such drainage piping shall be protected from backflow of Sewage by installing an approved type Backwater Valve. The Backwater Valve, as required, shall be installed at the Legal Owner's expense in the Building Sewer at a location that is acceptable to the District.*

*6.11 Maintenance of Backwater Valves. All Backwater Valves shall be maintained by the Legal Owner, at the Legal Owner's expense, and shall remain in continuously efficient operation at all times.*

*6.12 Swimming Pools. It shall be unlawful for any person to discharge the contents of a swimming pool into a Public Sewer except in the manner specified in this section. The rate of Inflow to the Public Sewer shall not exceed 100 gallons per minute. Each swimming pool discharging to a Public Sewer shall be equipped with an approved separator to preclude any possibility of a backflow of sewage into the swimming pool or piping system.*

### **Proper Design and Construction of Sewers and Connections**

The District's Code of Regulations Title 5 (Sewer Regulations), Title 6 (Standards for Sewer Main Installation), and Title 7 (Standards for Sewer Service Connections and Inspections -SSSCI), outline the District's authority regarding proper design and construction of sewers and connections including:

- PROHIBITING CONNECTIONS TO THE PUBLIC SEWER WITHOUT A PERMIT (Title 5.5.1)

*No person shall uncover, make a connection with or opening into, use, alter or disturb any Public Sewer, Lateral Sewer or other part of the sewer system without first applying for and obtaining a written Permit from the District, paying all applicable fees and connection charges, and complying with the requirements of sections 4.05 and 4.06.*

- SPECIFYING REQUIREMENTS FOR MINIMUM PIPE STANDARDS (Title 6.2.2)

#### ***Armco Pipe***

All Armco Truss pipe (ABS) shall conform to ASTM Designation 2680, latest revision, for eight inch (8") pipe and larger, and to ASTM 2751, latest revision, for four inch (4") and six inch (6") pipe. All Armco Truss pipe shall be Class SDR 23.5 (extra-strength) and shall have type SC couplings.

**Polyvinyl Chloride (PVC) Pipe**

For 4-inch through 15-inch pipe diameters, PVC sewer pipe and fittings shall conform to ASTM D3034. The minimum allowable wall thickness shall correspond to a Standard Dimension Ratio (SDR) of 35. For 18-inch through 27-inch diameters, PVC sewer pipe and fittings shall conform to ASTM F679 with a T-1 wall thickness. All pipe shall have a minimum pipe stiffness of 46 psi when tested in accordance with ASTM D2412. All straight pipe shall be furnished in lay lengths not to exceed 20 feet.

- **REQUIRING SEPARATE SEWERS FOR EVERY HOUSE AND BUILDING (Title 5.5.8)**

Every assessor parcel number (APN) property, as identified by the County Assessor's Office, shall be provided with at least one (1) separate lateral sewer if a Public Sewer exists in the street or in an easement which will serve said property

- **SPECIFYING REQUIREMENTS FOR CONSTRUCTION MATERIALS (Title 6.1.6)**

All materials, parts and equipment furnished by the Contractor in the work shall be new, high grade, and free from defects. Quality of work shall be in accord with generally accepted standards. Materials and work quality shall be subject to the District's approval. Materials and work quality not conforming to the requirements of these Standards shall be considered defective and will be subject to rejection.

- **SPECIFYING REQUIREMENTS FOR DEPTH OF LATERAL SEWERS (Title 6.4.10)**

Sewer laterals shall have a minimum cover of ninety inches (90") at the graded flow line or gutter, unless otherwise directed by the District.

- **REQUIRING WYE CLEAN-OUT FITTINGS FOR LATERAL SEWERS (Title 7.5 - CLEAN OUT REQUIREMENTS)**

Property Line Cleanout - 7.5 feet deep (raise cleanout to 12-inches below finished grade with yard box, Standard Drawing S-12, Title 4).

On-Property Cleanouts - 2006 Uniform Plumbing Code, Sections 707.0 and 719.0

(a) Cleanouts shall be placed inside the building near the connection between the building drain and building sewer or installed outside the building at the lower end of a building drain and extended to grade.

Additional building sewer cleanouts shall be installed at intervals not to exceed 100 feet in straight runs.

(b) When a building sewer or a branch thereof does not exceed ten feet (10') in length and is a straight line projection from building drain which is provided with a cleanout, no cleanout will be required at its point of connection to the building drain.

(c) Every change in alignment or grade in excess of twenty-two and one-half degrees (22-1/2 ) in a building sewer be served by a cleanout, except that no cleanout shall be required for not to exceed one (1) forty-five degree (45°) change of direction or one (1) forty-five degree (45°) offset. All required building sewer cleanouts shall be extended to grade. When building sewers are located under building, the cleanout requirements of Sections 707.0 and 719.0 of the 2006 Uniform Building Code shall apply.

(d) Each cleanout shall be installed so that it opens in a direction opposite to the flow of the soil or waste or at right angles thereto, and except in the case of "wye" branch and end-of-line cleanouts, vertically above the flow of the pipe.

(e) Cleanouts installed under concrete or asphalt paving shall be made accessible by yard boxes, or extending flush with paving with approved materials and be adequately protected.

(f) Approved manholes may be installed in lieu of cleanouts when first approved by the Administrative Authority. The maximum distance between manholes shall not exceed 300 feet.

**On Property Cleanouts - 2006 Uniform Plumbing Code, Sections 707.0 and 719.0**

(a) Each horizontal drainage pipe shall be provided with cleanout at its upper terminal, and each run of piping, which has more than 100 feet in total developed length shall be provided with a cleanout for each 100 feet or fraction thereof, in length of such piping.

**Exceptions:**

1. Cleanouts may be omitted on any horizontal drain line less than five feet (5') in length unless such line is serving sinks or urinals.

2. Cleanouts may be omitted on any horizontal drainage pipe installed on a slope of seventy-two degrees (72°) or less from the vertical angle (angle of 1/5 bend).

3. Excepting the building drain and its horizontal branches, a cleanout shall not be required on any pipe or piping which is above the first floor of the building.

4. An approved type of two-way cleanout fitting installed inside the building wall near the connection between the building drain and building sewer or installed outside of a building at the lower end of a building drain and extended to grade may be substituted for an upper terminal cleanout.

(b) An additional cleanout shall be provided in a horizontal line for each aggregate change of direction exceeding 135°.

(c) Each cleanout shall be installed so that it opens in a direction opposite to the flow of the soil or waste or at right angles thereto and, except in the case of "wye" branch and end-of-line cleanouts, shall be installed vertically above the flow line of the pipe

(d) Each cleanout extension shall be considered as drainage piping and each ninety degree (90°) cleanout extension shall be extended from a "Y" type fitting or other approved fitting of equivalent sweep.

(e) Each cleanout for an interceptor shall be outside of such interceptor.

(f) Each cleanout, unless under an approved cover plate, shall terminate at grade with yard box, readily accessible, and so located as to serve the purpose for which it is intended. Cleanouts located under cover plates shall be so installed as to provide the clearances and accessibility required by this section.

(g) Each cleanout in piping two inches (2") or less in size shall be so installed that there is a clearance of not less than twelve inches (12") in front of the cleanout. Cleanouts in piping larger than two inches (2") shall have a clearance of not less than eighteen inches (18") in front of the cleanout. Cleanouts in under floor piping shall be extended to or above the finished floor or shall be extended outside the building when there is less than eighteen inches (18") vertical and thirty inches (30") horizontal clearance from the means of access to such cleanout. No under floor cleanout in any residential occupancy shall be located more than twenty feet (20') from an access door, trap door or crawl hole.

(h) Cleanout fittings shall be not less in size than that given in Table 2-3.

(i) Cleanouts, shall be provided for pressure drainage system as classified under Section 409 (g) of the Uniform Building Code.

- REQUIRING PERMITS FOR PUBLIC SEWER EXTENSIONS (Title 5.4.1)

No person shall uncover, make a connection with or opening into, use, alter or disturb any Public Sewer, Lateral Sewer or other part of the sewer system without first applying for and obtaining a written Permit from the District, paying all applicable fees and connection charges, and complying with the requirements of sections 4.05 and 4.06.

- **REQUIRING PLANS, PROFILES AND SPECIFICATIONS PREPARED BY A REGISTERED CIVIL ENGINEER FOR ALL PUBLIC SEWER CONSTRUCTION APPLICATIONS (Title 1.1)**

*The words "District Engineer" used in these Standards shall mean civil engineer registered as such in the State of California, appointed by the District Board of Directors acting either directly or through his properly authorized agents, engineers, assistants, inspectors and superintendents.*

**AND**

*The District requires that plans and profiles be prepared by the Developer and signed by the Developer's Civil Engineer, and submitted for checking and approval by the District's Engineer before any construction is commenced either in public streets, alleys, easements, or private systems connecting thereto. The Developer's Civil Engineer shall be registered in the State of California.*

- **Requiring sewer design and construction in accordance with District Standards (Title 5.8.5)**

*The size, type and quantity of materials for any Public Sewer main extension and the location and grade thereof, shall be specified by the District. The Applicant shall be responsible for the design and preparation of construction drawings for the installation of the water sewer main extension. Construction shall be done by a licensed and bonded Contractor acceptable to the District and in accordance with these Regulations and District Standards.*

### **Access for Maintenance, Inspection and Repairs**

The District's Code of Regulations, Title 5.5.1 (Access to Premises) details the District's authority to enter buildings for the purpose of protecting the public sewer system and enforcing provisions of the Water and Sewer Policy Manual as follows:

*The District, or its duly authorized representatives, shall at all reasonable times have the right to enter or leave premises to which sewer service is provided for inspection purposes as well as for any purpose properly connected with District operations.*

The District's Code of Regulations Title 5.5.3 (Work to Be Inspected) provides the District with the authority to inspect all sewer construction work prior to connection to the public sewer as follows:

*All sewer construction work and building sewers shall be inspected by an inspector acting for the District to insure compliance with all requirements of the District. No sewer shall be covered to any point until it has been inspected and passed for acceptance. No sewer shall be connected to the District's public sewer until the work covered by the permit has been completed, inspected and approved by the District Inspector. Public sewer extension shall be inspected, tested for deflection, hydrostatically test, cleaned and televised. If all requirements are met and all prove satisfactory, the District Inspector shall issue a certificate of satisfactory completion.*

### **Limit Discharges of Fats, Oils and Grease, and Debris**

As discussed in Section 7 – Fats, Oils and Grease Control Program, the District has the legal authority to control the discharge of fats, oils and grease (along with other substances) to the public sewer.

The District's Code of Regulations Title 5.6.2 sites the BBARWA Ordinance 69, 7.12.020, Prohibited discharges, to list types of wastes prohibited:

**7.12.020 Prohibited discharges.**

**A. General prohibition.** No person shall discharge, or cause to be discharged, to the regional system or a community system a quantity or quality of material which causes, or is capable of causing, either alone or by interaction with other substances, pass through, interference, nuisance, abnormal or uncontrollable odors, damage to any part of the regional system, abnormal maintenance of the regional system, a threat to public health, or a violation of federal, state, or local law, including this title.

**B. Specific prohibited discharges.** The following is a non-exclusive list of substances, materials, and pollutants, which shall not be discharged to the regional system or a community system. As used herein, "excessive" shall mean any concentration or quantity of material or substance that by itself or in combination with other discharge may cause a violation of this section.

1. Any liquids, solids, gases or pollutants such as gasoline, diesel oil, benzene, naphtha, solvents, and fuel oils that would cause or tend to cause flammable or explosive conditions including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit (60 degrees Centigrade) using the test methods specified in Title 40 CFR section 261.21.

2. Any solids or viscous substances of such size or in such quantities that may cause an obstruction to flow in the sewer or be detrimental to regional system operations. These objectionable substances include, but are not limited to, asphalt, concrete, earth, construction debris, dead animals, ashes, diatomaceous earth, mud, straw, industrial process shavings, metal, glass, rags, feathers, grass clippings, tar, plastics, wood, blood, paunch manure, grease, bones, hair, flashings, entrails, paper cups, paper dishes, milk cartons, or other similar paper products, either whole or ground.

3. Any waste except from community systems with a pH of less than 7.0 or greater than 9.0 pH units. Sanitary wastes are prohibited if they have a pH of less than 6.0 or greater than 10.0 pH units.

4. Any discharge that results in toxic gases, vapors, or fumes in a quantity that may cause acute worker health or safety problems.

5. Any waste containing excessive quantities or concentrations of benzene or other volatile organic compounds, or any other waste constituent that alone or in combination with other materials adversely affects air quality.

6. Any amounts of petroleum oil, non-biodegradable cutting oil, or products of mineral origin which form persistent water emulsions or that will cause interference or pass through.

7. Any biodegradable oils, fats, or greases, such as lard, tallow, or vegetable oil, in concentrations that may cause adverse effects on the regional or a community system except as allowed in section 7.12.030.

8. Any waste which causes excessive incrustations or scale, or precipitates on sewer walls, or has any corrosive or detrimental characteristics that may cause damage to the regional system or a community system or injury to service and maintenance personnel.

9. Any excessive amounts of dissolved or undissolved solids.

10. Any waste containing excessive quantities or concentrations of chlorides, fluorides, nitrogen, sulfates, borates, or any other materials that can pass through treatment facilities and degrade water quality or limit reuse of the wastewater.

11. Any amount of a hazardous substance except as allowed in section 7.12.030. "Hazardous substance" includes, but is not limited to, the substances, compounds, mixture, or solution listed or identified as hazardous or having hazardous characteristics pursuant to the following laws: Title 40 CFR Part 300.6 (1988); sections 307 and 311(b)(2) (A) of the Clean Water Act; section 13050(p) of the California Water Code; section 102 of Comprehensive Environmental Response, Compensation, and Liability Act; section 3001 of the Solid Waste Disposal Act; section 112 of the Clean Air Act; section 7 of the Toxic Substances Control Act.

- 12.** Any hazardous waste discharged to any portion of the regional system or treatment plant by truck or dedicated pipeline.
- 13.** Any slug load.
- 14.** Any radioactive waste except as permitted by local, state, or federal law.
- 15.** Any waste containing toxic or poisonous solids, liquids, or gases in such quantities that alone, or in combination with other substances, may create a hazard for humans, animals, or local environment, interfere with wastewater treatment processes, cause a public nuisance, cause any hazardous condition in the regional system, or cause interference, upset, or pass through.
- 16.** Any strongly odorous waste or waste tending to create odors.
- 17.** Any substance listed in section 307 (a) of the Clean Water Act containing quantities toxic to humans, animals, the local environment, or to biological wastewater treatment processes except as allowed in section 7.12.030.
- 18.** Any rainwater, storm water, groundwater, street drainage, sub-surface drainage, roof drainage, yard drainage, water from yard fountains, ponds or lawn sprays, or any other uncontaminated water.
- 19.** Any waste with excessively high BOD, COD, or other oxygen demanding substances, except as permitted in section 7.12.030.
- 20.** Any waste containing excessive quantities or concentrations of ammonia or nitrate ions, except as permitted in section 7.12.030.
- 21.** Any single pass cooling or heating water. "Single pass" means once through the equipment or process and does not come in contact with the object being cooled or heated.
- 22.** Any excessive quantities of deionized water, steam, condensate, or distilled water.
- 23.** Any waste having a temperature of 140 degrees Fahrenheit (60 degrees Centigrade) or higher, or which causes the wastewater flowing to the regional plant to exceed 104 degrees Fahrenheit.
- 24.** Any waste containing excessive quantities or concentrations of thiosulfate or any other waste constituents, which require chemical applications above levels, used in the normal operation of the regional system.
- 25.** Any recognizable portions of the human anatomy.
- 26.** Any waste containing substances that may precipitate, solidify, gel, polymerize, or become viscous at temperatures between 40 degrees Fahrenheit and 100 degrees Fahrenheit.
- 27.** Any quantity of chlorinated hydrocarbons, pesticides, or fertilizers, which cause interference, upset, or pass through.
- 28.** Any water added for the purpose of diluting waste.
- 29.** Any waste generated outside the agency boundaries unless otherwise approved by the General Manager.
- 30.** Any waste requiring an excessive quantity of chlorine or other chemical compound used for disinfection purposes.
- 31.** Any waste containing detergents, surface-active agents, or other substances, which may cause excessive foaming in the regional system.
- 32.** Any discharge that discolors wastewater flowing into the treatment plant such that it is detrimental to treatment plant operations or causes the agency to violate any federal, state, or local law.
- 33.** Any discharge of sanitary wastes except at discharge points designated by the agency.

34. Any infectious waste except where prior written approval for such discharge is given by the General Manager.

35. Any waste that violates this title or any applicable federal, state, or local law, regulation, standard, or discharge limitation, or any requirements established by the agency in a permit ordinance, resolution, or other rule.

### **Enforcement Measures**

The District's Code of Regulations Title 5.11 (General Enforcement and Penalty Provisions) details the District's ability to enforce provisions of the Code of Regulations as follows:

#### **GENERAL ENFORCEMENT AND PENALTY PROVISIONS**

11.01 Violation. Except for disputes to sewer service rates and charges governed by Article 10, any Person violating any provision of these Regulations or any ordinance, resolution or rule adopted hereunder shall be notified by the General Manager in writing. Such notice shall set forth the nature of the violation and provide a reasonable time of not less than two (2) nor more than seven (7) working days for satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations, and the Person having charge of, or responsibility for, the offending work, operations, activities or conditions shall immediately correct the same. All Persons shall be held strictly responsible for any and all acts of agents or employees.

11.02 Mandatory Sewer Connection. The maintenance or use of any cesspool, septic tank or other local means of Sewage disposal, in an Area where sewer service is available, constitutes a public nuisance. All Buildings or structures maintained or used by human beings in which any Sewage is produced and which are situated upon property contiguous to, abutting, adjacent to or within 200 feet of any street, roadway or easement in which the District sewer system designed to serve the particular parcel exists shall be connected to said sewer system within sixty (60) days after notice by the District to do so. Necessary sewer system extensions shall be made by the Legal Owner in accordance with Article 8 hereof. Notice pursuant to this section shall be deemed given by the District to the Legal Owner or apparent Legal Owner of any such Building or structure upon deposit of same in the United States mail, properly addressed, certified and postage prepaid. Connection pursuant to this section shall be at the expense of the Legal Owner of the particular Building or structure and in accordance with these Regulations and District Standards. Enforcement of this section may be undertaken by the District in accordance with any procedure authorized by law, and any person in violation of this section shall pay the District's reasonable attorney's fees and court costs in the event of lawsuit.

11.03 Misdemeanor. Any person who willfully violates any provision of these Regulations or any ordinances, resolutions or rules adopted hereunder, including the failure to pay any fees or charges imposed or authorized hereby, or any condition or limitation of a Permit issued pursuant thereto, is guilty of a misdemeanor.

11.04 Separate Offenses. A violation of these Regulations or any ordinance, resolution or rule adopted hereunder shall constitute a separate offense for each and every day such violation occurs.

11.05 Civil Liability. The District may initiate legal action to recover any amounts due the District under the provisions of these Regulations or any ordinances, resolutions or rules adopted hereunder. Such remedy shall be in addition to any other remedy or penalty provided herein.

11.06 Disconnection. As an alternative method of enforcing the provisions of these Regulations, the District shall have the power to disconnect the User from the sewer system of District. Upon disconnection, the General Manager shall estimate the cost of disconnection from and reconnection to the sewer system and such User shall deposit that cost as estimated with the District before such User is reconnected to the sewer system. The District shall refund any part of the deposit remaining after payment of all costs of disconnection and reconnection.

11.07 Means of Enforcement Only. The District hereby declares that the foregoing procedures are established as a means of enforcement of the terms and conditions of these Regulations, and not as a penalty.

11.08 Liability for Violation. Any Person violating any of the provisions of these Regulations shall become liable to the District for any expenses, loss or damage occasioned by the District by reason of such violation.

*11.09 Relief on Application. When any Person, by reason of special circumstances, is of the opinion that any provision of these Regulations is unjust or inequitable as applied, that Person may make written application to the Board stating the special circumstances, citing the provision complained of, and requesting suspension or modification of that provision as applied to his or her Premises. If such application is approved, the Board may suspend or modify the provision complained of, as applied to such Premises, to be effective as of the date of the application and continuing as long as the special circumstances exist.*

*11.10 Special Relief on Own Motion. The Board may, on its own motion, find that by reason of special circumstances a provision of these Regulations should be suspended or modified as applied to a particular Premises and may order such suspension or modification of such provision with respect to such Premises during the period of such special circumstances.*

## **Section 4 Operation and Maintenance Program**

### **4.1 Regulatory Requirements for Operation and Maintenance Program**

The requirements for the Measures and Activities section of the SSMP are summarized below:

#### **4.1.1 Map**

##### **RWQCB Requirement**

The District must maintain current maps of its collection system facilities.

##### **SWRCB Requirement:**

The District shall maintain an up-to-date map of its wastewater collection system facilities, showing all gravity line segments, manholes, pumping facilities, pressure pipes, valves, and applicable storm water conveyance facilities.

#### **4.1.2 Resources and Budget**

##### **RWQCB Requirement:**

The District must demonstrate that adequate resources are allocated for the operation, maintenance, and repair of the District's collection system.

##### **SWRCB Requirement:**

There is no requirement.

#### **4.1.3 Preventive Maintenance**

##### **RWQCB Requirement:**

The District must demonstrate that prioritized preventive maintenance activities are performed by the District.

##### **SWRCB Requirement:**

The District must 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 program should have a system to document scheduled and conducted activities, such as work orders.

#### **4.1.4 Condition Assessment**

##### **RWQCB Requirement:**

The District must identify and prioritize structural deficiencies and implement a program of prioritized short-term and long-term actions to address them.

##### **SWRCB Requirement:**

The District must 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 and a schedule for developing the funds needed for the capital improvement plan.

#### **4.1.5 Equipment**

##### **RWQCB Requirement:**

The District must demonstrate that contingency equipment is provided to handle emergencies, and that spare parts are available to minimize equipment/facility downtime during emergencies.

##### **SWRCB Requirement:**

The District must provide equipment and replacement part inventories, including identification of critical replacement parts.

#### **4.1.6 Training**

##### **RWQCB Requirement:**

The District must provide training on a regular basis for its collection system operations, maintenance, and monitoring staff.

##### **SWRCB Requirement:**

The District must provide training on a regular basis for staff in sanitary sewer system operations, maintenance, and require contractors to be appropriately trained.

### **4.2 Measures and Activities Discussion**

The section summarizes the measures and activities of the District to manage their sewer system.

#### **4.2.1 Map**

The District maintains three sets of full size (1"=40') hard copy maps of the entire sewer system. The sewer system is also saved and available in digital format. Maps include manholes with identifying number, pipe diameters, pump stations, street names, invert elevations, and pipe materials. Maps are dated at time of construction, or revision.

The District Engineer is responsible for updating maps as facilities are added, rehabilitated, and as corrections are identified through fieldwork.

Field personnel use a hard-copy map book that contains the entire sewer system at a scale of 1" = 220'. Each crew carries a copy of the map book in their truck. Map books are updated frequently to include any addition or changes.

#### **4.2.2 Resources and Budget**

The District prepares an annual budget during the first quarter of the year for the following fiscal year. The annual budget includes funds for operations (e.g. sewer line maintenance, and repairs) and capital improvements (e.g. sewer line replacement, monitoring equipment, contract labor, and

miscellaneous equipment). Section 2 lists the District personnel with their responsibilities for overseeing implementation of the various SSMP Sections.

Appendix B contains a copy of the budget for the latest fiscal year.

#### **4.2.3 Preventive Maintenance**

The District uses an asset management system from Hansen Technologies (now known as Infor) to schedule routine maintenance by generating work orders for recurring maintenance and track unscheduled maintenance as needed.

The District's entire sewer system is on a schedule to be hydro cleaned every three years, and televised every six years. Known problem lines are scheduled to be cleaned on a more frequent basis, such as monthly, quarterly, or yearly depending on information derived from our televising crews.

Maintenance is performed by three, two man maintenance crews with revolving responsibilities. The crews rotate monthly between cleaning lines, televising lines, repair lines, or general maintenance/customer service duties.

The District's seven sewer lift stations are controlled and monitored by a SCADA system at the District's main office. The lift stations are checked remotely every day, and checked onsite at least once a week.

The District's service calls are generated manually by general office staff during normal working hours and by the District's answering service after hours. Service calls are logged as completed by office staff when finished.

#### **4.2.4 Condition Assessment**

The District's continuous operation of closed circuit television (CCTV) inspection of the system is the basis for line repair work order generation through the Hansen Technologies system. Problem areas of pipe or manhole conditions are logged and assigned a priority rating. Urgent conditions that might cause an SSO are scheduled for repair immediately and completed by the general crew members. Lower priority problems are scheduled to be repaired by an outside contractor at a later date.

A Sanitary Sewer Evaluation Survey (SSES) was completed by ADS Environmental Services, located in San Diego, CA, in 1998. The SSES consisted of smoke testing, manhole inspections, line lamping (pipe inspections proximate to each manhole), and flow isolations. Smoke testing was used as a rainfall simulation technique to identify potential inflow sources/ defects. Manhole inspections and line lamping are physical inspections that were conducted to determine potential infiltration sources/ defects. Flow isolations enabled measurement of actual nighttime base flows within smaller areas of the study basins or micro-basins. The flow isolation results provided benchmark infiltration estimates and helped isolate areas in need of additional investigation work.

As a result of the ADS survey and the District's ongoing CCTV inspection of the sewer system, 255 mainline and lateral repairs have been completed, and 57 manholes have been rehabilitated.

The District's Engineer completed a Sewer Master Plan in 2002 (available upon request). The Sewer Master Plan included studies of historical wastewater flows and projections, I/I studies, projected growth and flows, based on hydraulic flow models, to the year 2021. The study also includes proposed system improvement costs, and method of financing. The study identified several areas where mainlines would reach capacity when full "build out" of the area occurred. The District is currently monitoring these areas with flow monitors to gauge when it will be necessary to construct relief lines for the areas.

#### **4.2.5 Equipment**

The District has equipment available for regular maintenance and repairs, and to respond to an SSO event. The District's OERP (discussed in Section 6 of this SSMP) contains a current list of the District's equipment including quantities, also a list of contractors that can be contacted during an SSO event to provide a variety of services including private residence cleaning, force main and pipeline repairs.

The District maintains an adequate supply of repair parts to make point repairs when needed. Parts are stored at the Sewer Department maintenance building at 417 Grenfall. Inventory list is included as Appendix C.

The District's seven Lift Stations have backup generators in times of power outages, and the District is equipped with a "Lift Station Bypass" unit that can independently pump effluent from the lift station to the next gravity fed line.

The District has a Mutual Assistance Agreement with the local treatment plant operation (BBARWA), and has worked with the neighboring city (City of Big Bear Lake) upon occasion to supplement equipment when needed. Copy of agreement is included as Appendix D.

#### **4.2.6 Training**

All District staff receives safety training in accordance with Occupational Safety and Health Administration (OSHA) requirements.

The District utilizes the Safety Compliance Coordinator and the Fire Department personnel to provide training to District staff for confined space, blood borne pathogens, self-contained breathing apparatus (SCBA), and general emergency response.

The District provides "on the job training" on system equipment, operations and maintenance, and annual lockout/tagout procedures. All operations personnel will be trained in overflow emergency response. When new equipment is acquired, the District utilizes the equipment supplier to provide training to appropriate crew members. The District maintains a log of safety training activities that is kept at the Safety Compliance Coordinator office.

The District sewer department's personnel regularly attend local section meetings of the CWEA and annual conferences. CWEA guidelines for continuing education are followed, and Continued Education Units (CEUs) are logged with CWEA.

## **Section 5 Design/Performance Standards**

### **5.1 Regulatory Requirements for Design and Construction Standards**

The requirements for the Design and Construction Standards section of the SSMP are summarized below:

#### **5.1.1 Installation, Rehabilitation, and Repair**

##### **RWQCB Requirement:**

The District must demonstrate that minimum design and construction standards and specifications are in place for the installation of new sewer systems and for the rehabilitation and repair of existing sewer systems.

##### **SWRCB Requirement:**

The District must have design and construction standards and specifications for the installation of new sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sewer systems.

#### **5.1.2 Inspection and Testing of New and Rehabilitated Facilities**

##### **RWQCB Requirement:**

The District must demonstrate that procedures and standards are in place for the inspection and testing of the installation of new sewers, pump stations, and other appurtenances, as well as for rehabilitation and repair projects.

##### **SWRCB Requirement:**

The District must have procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

### **5.2 Design and Construction Standards Discussion**

The District maintains Standard Specifications and Drawings (Standards) that are available upon request by developers, outside engineers, or contractors. The Standards include information on both installation and inspection of sewer and force mains as discussed below. Specifications for pump stations have historically been developed on a case-by-case basis as needed for construction of specific pump station facilities.

#### **5.2.1 Installation, Rehabilitation, and Repair**

Criteria for the design of new sewer lines and manholes are detailed in Titles 2 and 6 of the District's Code of Regulations. Criteria include pipe materials, minimum pipe sizes and slopes, pipe depths and clearance with other utilities, and required fittings. Title 6 of the District's Code also includes design requirements for private laterals including minimum slopes and cleanouts. Detailed technical requirements for pipe materials and appurtenances are included in Title 4 - Sewer and Water Drawings.

#### **5.2.2 Inspection and Testing of New and Rehabilitated Facilities**

Criteria for testing and inspecting new and rehabilitated sewers and force mains are detailed in Title

6.5 (Field Tests) of the Districts Code of Regulations including water tests, air tests, infiltration tests, deflection tests, cleaning and television inspection.

## **Section 6 Overflow Emergency Response Plan (OERP)**

This section of the SSMP provides a summary of the District's overflow emergency response plan. The complete plan is attached in Appendix E. This section fulfills the Overflow Emergency Response Plan requirement of both the RWQCB (Section 3) and the SWRCB (Section 6) SSMP requirements.

### **6.1 Regulatory Requirements for Overflow Emergency Response Plan**

The summarized requirements for the Overflow Emergency Response Plan section of the SSMP are as follows:

#### **RWQCB Requirement:**

The District must develop an overflow emergency response plan (OERP) that provides procedures for SSO notification, response, reporting, and impact mitigation. The response plan should be developed as a stand-alone document and summarized in the SSMP.

#### **SWRCB Requirement:**

The District 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 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. All SSOs shall be reported according to the regulations the California Water Code, other State Law, and other applicable Regional Water Board WDR or National Pollution Discharge Elimination System (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 untreated wastewater and prevent discharge of untreated wastewater to waters of the United States and 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.

### **6.2 OERP Discussion**

The OERP is divided into sixteen sections as follows:

- Summary
- Working Definitions

- Legal Requirements
- Sanitary Sewer Overflow (SSO) Reporting
- Reporting Required By Law
- BBCCSD – Sewage Overflow Reporting Guidelines
- Response
- BBCCSD Spill Response Flow Chart
- Quantity Of Spill
- Enforcement
- Bypass
- Overflow Emergency Response Plan
- Sewage Collection And Facilities
- Sewage Collection System
- Cover Letter
- Sewage Spill Report

## **Section 7 Fats, Oils and Grease Control Program**

This section of the SSMP discusses the District's Fats, Oils, and Grease (FOG) control measures, including identification of problem areas, focused cleaning, and source control. This section fulfills the FOG Control Program requirement for both the RWQCB (Section 4) and the SWRCB (Section 7) SSMP requirements.

### **7.1 Regulatory Requirements for FOG Control Program**

The requirements for the FOG Control Program section of the SSMP are summarized below:

#### **RWQCB Requirement:**

The District must evaluate its service area to determine whether a Fats, Oils, and Grease (FOG) control program is needed. If so, a FOG control program shall be developed as part of the SSMP. If the District determines that a FOG program is unnecessary, proper justification must be provided.

#### **SWRCB Requirement:**

The District shall evaluate its service area to determine whether a FOG control program is needed. If the District determines that a FOG program is not needed, the District must provide justification for why it is not needed. If FOG is found to be a problem, the District must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. The FOG source control program 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 grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;
- e. Authority to inspect grease producing facilities, enforcement authorities, and whether the District has sufficient staff to inspect and enforce the FOG ordinance;
- f. An identification of sewer system sections subject to FOG blockages and establish a cleaning maintenance schedule for each section; and
- g. Development and implementation of source control measures, for all sources of FOG discharged to the sewer system, for each sewer system section identified in (f) above.

### **7.2 FOG Control Program Discussion**

Currently, BBCCSD performs preventive sewer cleaning for identified grease hot spots and has the legal authority to require grease traps or interceptors (Title 5.6.3 - Code of Regulations). The sections of the District's FOG control program and planned FOG control activities are described below.

### 7.2.1 Public Outreach

Information regarding keeping FOG out of the sewer system is included in the District's website along with best management practices (BMP) for restaurants and other food establishments.

Beginning in January of 2010, the District will initiate yearly inspections of food establishments. As part of the contact with the food establishment, the owner/manager will be given informational materials such as:

- The District's Sewer Regulations outlining the requirement of grease traps in the establishment
- Locations of areas to properly dispose of FOG materials
- Log sheets to document the disposals
- A list of Best Management Practices (BMPs) to reduce the amount of FOG entering the sewer

The food establishment will be inspected for grease traps and asked to show records of FOG removal, and to demonstrate what BMPs their establishment employees are using.

### 7.2.2 Plan and Schedule for FOG Disposal

The nearest disposal area for FOG materials is:

San Bernardino Household Hazardous Waste Program  
2828 East "W" Street  
San Bernardino, CA 92415  
M-F 9:00 AM to 4:00 PM  
(Inside the San Bernardino Airport)  
1-800-645-9228

### 7.2.3 Legal Authority

Through its Water and Sewer Standards, the District has legal authority to:

Limit types of wastes discharged to public sewers (Title 5.6.2)

Types of Water Prohibited. Except as hereinafter provided, no Person shall discharge or cause to be discharged to any Public Sewer all prohibited wastes as listed in Chapter 7.12.020 of the BBARWA Ordinance No. 69 (Title 13 of the District's Code of Regulations)

#### **7.12.020 Prohibited discharges.**

**A. General prohibition.** No person shall discharge, or cause to be discharged, to the regional system or a community system a quantity or quality of material which causes, or is capable of causing, either alone or by interaction with other substances, pass through, interference, nuisance, abnormal or uncontrollable odors, damage to any part of the regional system, abnormal maintenance of the regional system, a threat to public health, or a violation of federal, state, or local law, including this title.

**B. Specific prohibited discharges.** The following is a non-exclusive list of substances, materials, and pollutants, which shall not be discharged to the regional system or a community system. As used herein, "excessive" shall mean any concentration or quantity of material or substance that by itself or in combination with other discharge may cause a violation of this section.

1. Any liquids, solids, gases or pollutants such as gasoline, diesel oil, benzene, naphtha, solvents, and fuel oils that would cause or tend to cause flammable or explosive conditions including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit (60 degrees Centigrade) using the test methods specified in Title 40 CFR section 261.21.
2. Any solids or viscous substances of such size or in such quantities that may cause an obstruction to flow in the sewer or be detrimental to regional system operations. These objectionable substances include, but are not limited to, asphalt, concrete, earth, construction debris, dead animals, ashes, diatomaceous earth, mud, straw, industrial process shavings, metal, glass, rags, feathers, grass clippings, tar, plastics, wood, blood, paunch manure, grease, bones, hair, flashings, entrails, paper cups, paper dishes, milk cartons, or other similar paper products, either whole or ground.
3. Any waste except from community systems with a pH of less than 7.0 or greater than 9.0 pH units. Sanitary wastes are prohibited if they have a pH of less than 6.0 or greater than 10.0 pH units.
4. Any discharge that results in toxic gases, vapors, or fumes in a quantity that may cause acute worker health or safety problems.
5. Any waste containing excessive quantities or concentrations of benzene or other volatile organic compounds, or any other waste constituent that alone or in combination with other materials adversely affects air quality.
6. Any amounts of petroleum oil, non-biodegradable cutting oil, or products of mineral origin which form persistent water emulsions or that will cause interference or pass through.
7. Any biodegradable oils, fats, or greases, such as lard, tallow, or vegetable oil, in concentrations that may cause adverse effects on the regional or a community system except as allowed in section 7.12.030.
8. Any waste which causes excessive incrustations or scale, or precipitates on sewer walls, or has any corrosive or detrimental characteristics that may cause damage to the regional system or a community system or injury to service and maintenance personnel.
9. Any excessive amounts of dissolved or undissolved solids.
10. Any waste containing excessive quantities or concentrations of chlorides, fluorides, nitrogen, sulfates, borates, or any other materials that can pass through treatment facilities and degrade water quality or limit reuse of the wastewater.
11. Any amount of a hazardous substance except as allowed in section 7.12.030. "Hazardous substance" includes, but is not limited to, the substances, compounds, mixture, or solution listed or identified as hazardous or having hazardous characteristics pursuant to the following laws: Title 40 CFR Part 300.6 (1988); sections 307 and 311(b)(2) (A) of the Clean Water Act; section 13050(p) of the California Water Code; section 102 of Comprehensive Environmental Response, Compensation, and Liability Act; section 3001 of the Solid Waste Disposal Act; section 112 of the Clean Air Act; section 7 of the Toxic Substances Control Act.
12. Any hazardous waste discharged to any portion of the regional system or treatment plant by truck or dedicated pipeline.
13. Any slug load.
14. Any radioactive waste except as permitted by local, state, or federal law.
15. Any waste containing toxic or poisonous solids, liquids, or gases in such quantities that alone, or in combination with other substances, may create a hazard for humans, animals, or local environment, interfere with wastewater treatment

processes, cause a public nuisance, cause any hazardous condition in the regional system, or cause interference, upset, or pass through.

**16.** Any strongly odorous waste or waste tending to create odors.

**17.** Any substance listed in section 307 (a) of the Clean Water Act containing quantities toxic to humans, animals, the local environment, or to biological wastewater treatment processes except as allowed in section 7.12.030.

**18.** Any rainwater, storm water, groundwater, street drainage, sub-surface drainage, roof drainage, yard drainage, water from yard fountains, ponds or lawn sprays, or any other uncontaminated water.

**19.** Any waste with excessively high BOD, COD, or other oxygen demanding substances, except as permitted in section 7.12.030.

**20.** Any waste containing excessive quantities or concentrations of ammonia or nitrate ions, except as permitted in section 7.12.030.

**21.** Any single pass cooling or heating water. "Single pass" means once through the equipment or process and does not come in contact with the object being cooled or heated.

**22.** Any excessive quantities of de-ionized water, steam, condensate, or distilled water.

**23.** Any waste having a temperature of 140 degrees Fahrenheit (60 degrees Centigrade) or causes the wastewater flowing to the regional plant to exceed 104 degrees Fahrenheit.

**24.** Any waste containing excessive quantities or concentrations of thiosulfate or any other waste constituents, which require chemical applications above levels, used in the normal operation of the regional system.

**25.** Any recognizable portions of the human anatomy.

**26.** Any waste containing substances that may precipitate, solidify, gel, polymerize, or become viscous at temperatures between 40 degrees Fahrenheit and 100 degrees Fahrenheit.

**27.** Any quantity of chlorinated hydrocarbons, pesticides, or fertilizers, which cause interference, upset, or pass through.

**28.** Any water added for the purpose of diluting waste.

**29.** Any waste generated outside the agency boundaries unless otherwise approved by the General Manager.

**30.** Any waste requiring an excessive quantity of chlorine or other chemical compound used for disinfection purposes.

**31.** Any waste containing detergents, surface-active agents, or other substances, which may cause excessive foaming in the regional system.

**32.** Any discharge that discolors wastewater flowing into the treatment plant such that it is detrimental to treatment plant operations or causes the agency to violate any federal, state, or local law.

**33.** Any discharge of sanitary wastes except at discharge points designated by the agency.

**34.** Any infectious waste except where prior written approval for such discharge is given by the General Manager.

**35.** Any waste that violates this title or any applicable federal, state, or local law, regulation, standard, or discharge limitation, or any requirements established by the agency in a permit ordinance, resolution, or other rule.

## 7.2.4 Requirement of Grease Traps

Through its Code of Regulations, the District has legal authority to:

Require installation of grease interceptors (Title 5.6.3)

*Grease Traps or Grease Interceptors Required. Grease, oil and sand traps or Grease Interceptors shall be provided on all drain lines leading from kitchens in all eating establishments or as determined by the District. They shall be sized, located and constructed pursuant to Chapter 10 of the 2006 Uniform Plumbing Code which provides recommended procedures for sizing Commercial Kitchen Grease Interceptors. All Grease Traps and Grease Interceptors shall be so located as to be readily and easily accessible for cleaning and inspection.*

Require maintenance of grease interceptors (Title 5.6.4)

*Maintenance of Grease Traps and Grease Interceptors. All grease, oil and sand traps and Grease Interceptors shall be maintained at the Legal Owner's expense, and shall remain in continuous effective operation at all times.*

## 7.2.5 Authority to Inspect and Enforce Requirements

Through its Code of Regulations, the District has legal authority to:

Inspection of property (Title 5.5.1)

*5.01 Access to Premises. The District, or its duly authorized representatives, shall at all reasonable times have the right to enter or leave Premises to which sewer service is provided for inspection purposes as well as for any purpose properly connected with District operations.*

Enforce Sewer Ordinances (Title 5.11)

### **ARTICLE 11**

#### **GENERAL ENFORCEMENT AND PENALTY PROVISIONS**

*11.01 Violation. Except for disputes to sewer service rates and charges governed by Article 10, any Person violating any provision of these Regulations or any ordinance, resolution or rule adopted hereunder shall be notified by the General Manager in writing. Such notice shall set forth the nature of the violation and provide a reasonable time of not less than two (2) or more than seven (7) working days for satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations, and the Person having charge of, or responsibility for, the offending work, operations, activities or conditions shall immediately correct the same. All Persons shall be held strictly responsible for any and all acts of agents or employees.*

*11.02 Mandatory Sewer Connection. The maintenance or use of any cesspool, septic tank or other local means of Sewage disposal, in an Area where sewer service is available, constitutes a public nuisance. All Buildings or structures maintained or used by human beings in which any Sewage is produced and which are situated upon property contiguous to, abutting, adjacent to or within 200 feet of any street, roadway or easement in which the District sewer system designed to serve the particular parcel exists shall be connected to said sewer system within sixty (60) days after notice by the District to do so. Necessary sewer system extensions shall be made by the Legal Owner in accordance with Article 8 hereof. Notice pursuant to this section shall be deemed given by the District to the Legal Owner or apparent Legal Owner of any such Building or structure upon deposit of same in the United States mail, properly addressed, certified and postage*

prepaid. Connection pursuant to this section shall be at the expense of the Legal Owner of the particular Building or structure and in accordance with these Regulations and District Standards. Enforcement of this section may be undertaken by the District in accordance with any procedure authorized by law, and any person in violation of this section shall pay the District's reasonable attorney's fees and court costs in the event of lawsuit.

**11.03 Misdemeanor.** Any person who willfully violates any provision of these Regulations or any ordinances, resolutions or rules adopted hereunder, including the failure to pay any fees or charges imposed or authorized hereby, or any condition or limitation of a Permit issued pursuant thereto, is guilty of a misdemeanor.

**11.04 Separate Offenses.** A violation of these Regulations or any ordinance, resolution or rule adopted hereunder shall constitute a separate offense for each and every day such violation occurs.

**11.05 Civil Liability.** The District may initiate legal action to recover any amounts due the District under the provisions of these Regulations or any ordinances, resolutions or rules adopted hereunder. Such remedy shall be in addition to any other remedy or penalty provided herein.

**11.06 Disconnection.** As an alternative method of enforcing the provisions of these Regulations, the District shall have the power to disconnect the User from the sewer system of District. Upon disconnection, the General Manager shall estimate the cost of disconnection from and reconnection to the sewer system and such User shall deposit that cost as estimated with the District before such User is reconnected to the sewer system. The District shall refund any part of the deposit remaining after payment of all costs of disconnection and reconnection.

**11.07 Means of Enforcement Only.** The District hereby declares that the foregoing procedures are established as a means of enforcement of the terms and conditions of these Regulations, and not as a penalty.

**11.08 Liability for Violation.** Any Person violating any of the provisions of these Regulations shall become liable to the District for any expenses, loss or damage occasioned by the District by reason of such violation.

**11.09 Relief on Application.** When any Person, by reason of special circumstances, is of the opinion that any provision of these Regulations is unjust or inequitable as applied, that Person may make written application to the Board stating the special circumstances, citing the provision complained of, and requesting suspension or modification of that provision as applied to his or her Premises. If such application is approved, the Board may suspend or modify the provision complained of, as applied to such Premises, to be effective as of the date of the application and continuing as long as the special circumstances exist.

**11.10 Special Relief on Own Motion.** The Board may, on its own motion, find that by reason of special circumstances a provision of these Regulations should be suspended or modified as applied to particular premises and may order such suspension or modification of such provision with respect to such Premises during the period of such special circumstances.

## **7.2.6 Identification of Grease Problem Areas and Sewer Cleaning**

The District has identified sewer line segments in the system that is in need of an increased schedule of routine cleaning. (The list is included as Appendix F) The list includes line segments that have been known problem areas due to grease buildup, grit accumulation, and construction flaws such as poor grade in the line. Additional sewer lines can be added, or frequency of cleaning modified as routine CCTV inspection is completed in the affected areas.

The increased maintenance schedule of the affected lines are scheduled on a monthly, quarterly, six month, or yearly high pressure hydro cleaning schedule depending on the past history of the line. While the District has known areas with commercial grease sources (e.g. restaurants), most of the District's grease, or grit problems are in residential areas and the result of lines with poor grade.

The District currently has seventeen food establishments within its boundaries (Appendix G). Sewer lines in the area of the restaurants will be inspected by CCTV every six months to ensure that the food service establishments are not depositing FOG into the mainlines.

#### **7.2.7 FOG Source Control**

The District's FOG Source Control will consist of the above mentioned food establishment inspection program, and the continued monitoring of known FOG problem areas within the District. The CCTV inspection program will allow the evaluation of the problem areas, and determine the needed enforcement of regulations, and maintenance schedule to reduce SSOs to the absolute minimum.

## **Section 8 System Evaluation and Capacity Assurance Plan**

### **8.1 Regulatory Requirements for Capacity Management**

The requirements for the System Evaluation and Capacity Assurance Plan of the SSMP are summarized below:

#### **8.1.1 Capacity Assessment**

##### **RWQCB Requirement:**

The District must show that a process is established to assess the current and future capacity requirements of its collection system.

##### **SWRCB Requirements:**

The District must 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. Where design criteria do not exist or are deficient, the District must establish appropriate design criteria.

#### **8.1.2 System Evaluation and Capacity Assurance Plan**

##### **RWQCB Requirement:**

The District must prepare a CIP to provide hydraulic capacity of key collection system elements under peak flow conditions.

##### **SWRCB Requirements:**

The District must establish a short- and long-term capital improvement plan (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.

The District shall develop a schedule of completion dates for all portions of the CIP. This schedule shall be reviewed and updated at least every two years.

### **8.2 Capacity Management Discussion**

The District's capacity assessment and assurance plan are discussed below.

#### **8.2.1 Capacity Assessment**

The District completed a Sewer System Master Plan in 2002, it addresses: Land Use, Population, Historical Growth and Wastewater Flows, Infiltration/Inflow, Projected Growth, Projected Wastewater Flows, Existing Sewer System, Lift Stations, Computer Modeling, Analysis of Computer Modeling (10-year increments), Proposed System Improvement Costs, Financing, and Water Reuse

Discussions.

The scope of work of the Master Plan consisted of information gathering and performing the following engineering tasks:

- Updating the wastewater flow projections based on historical data and current development projections
- Evaluating the adequacy of the backbone wastewater collection system using the updated flow projections and the computer model of the sewer system
- Evaluating the condition and prioritizing needed improvements to the local wastewater collection system to meet future growth
- Developing a capital improvement program to provide needed expansion of the existing system and relief sewers to ensure system reliability and to accommodate future growth; prepared system upgrade cost estimates to evaluate the current sewer connection fee

In order to provide an analysis of the existing collector system capacity, a computer model was developed using the existing sewer system information and tributary areas. Manhole numbers, pipe diameter, pipe length, upstream invert elevation at manhole, downstream invert elevation at manhole were input into the computer model. Tributary flows (set up as equivalent dwelling units) along each segment of collector sewer (from upstream to downstream) were input into the model also. Pipe slope was automatically determined by the difference in invert elevations and pipe length. Sewer pipe slopes reflect the existing “as-built” information.

For the computer model, Manning’s equation for open channel flow was used with roughness coefficient “N” of 0.013 (general industry standard for sewer pipes) was used. The minimum design slopes were verified to ensure minimum flow velocities. Pipes were designed at 50% full for 12 inch and smaller diameters and 75% full for 15 inch and larger diameters (up to 24 inch). Full flow velocity at 2 feet per second (fps) or greater was designed to minimize settlement of sewage solids. The computer model traverses from upstream to downstream for all segments of sewer within each tributary area.

The computer model was established to analyze Y-2001, Y-2011, and Y-2021 peak wet weather flow conditions within each tributary area to ensure that the existing collector and future relief sewer are able to handle the projected flows. Analyses for determining existing system deficiencies (wet weather flow conditions) as well as future relief sewer sizing were performed. Although not shown in the master plan report, an analysis to determine relief sewer sizing under near saturation development were conducted to verify appropriate future pipe sizing. Reaches of deficient pipes were identified in spreadsheet printouts.

### **8.2.2 System Evaluation and Capacity Assurance Plan**

The Sewer Master Plan took tributary flows (set up as equivalent dwelling units, EDUs) in each of the existing sewered areas that were identified with respective manholes (from upstream to downstream sewer reaches). Each piping is similarly identified. Year 2021 flow for each sewered

area was established using adjusted unit peak wet weather flow of 259.75 gallons per day per equivalent dwelling units (GPD/EDU). Year 2001 and Year 2011 unit peak wet weather flows of 227.51 GPD/EDU and 245.18 GPD/EDU were respectively input into the computer model to analyze the system deficiencies. The unit low adjustment was made to reflect the ratio of projected EDUs (growth) versus the near saturation development EDUs with which the hydraulic model was initially established.

Based on the computer model simulations for Year 2001 peak wastewater flow condition, segments of the existing collector sewer system were found to be deficient. These locations are shown on Figure 4-1 of the Sewer Master Plan. Big Bear City Community Services staff has established monitoring stations at three of the high priority locations identified in the Sewer Master Plan, and sample flows on a regular basis. These flow analyses can then be input to the model to locate segments of the sewer pipeline that are approaching design capacity (12 inch diameter and smaller sewers are designed for 50% full and 15 inch diameter and larger will design for 75% full capacity. This flow monitoring data will be used to schedule planning and design for the required “relief sewers”.

Based on the results of the analysis of the computer model, and when segments of the existing sewers reach the 50% “design capacity”, District staff will begin the process of planning design for the relief pipeline. The 50% design capacity criteria for commencing design planning are similarly used for projects funded with Clean Water Grants.

Particular attention was also directed to the interceptor lines along North Mountain View Blvd., Big Bear Blvd. (Highway 38), and East Big Bear Blvd. This review permits the District to systematically establish priorities to plan, design, and construct the future “relief sewers” to ensure adequate capacity to serve its customers.

According to the Sewer Master Plan the total estimated project costs for all of the existing segments of collector sewer system lines found to be deficient, together with the growth needs projected to the Year 2021 was approximately \$2,086,443. The current operating budget for the Sewer Services (2009/10 Fiscal Year Budget) shows that the District’s Sewer Department Fund Reserves are at approximately \$2,300,000.

## **Section 9 Monitoring, Measurement, and Program Modifications**

### **9.1 Regulatory Requirements for Monitoring, Measurement, and Program Modifications Element**

The requirements for the Monitoring, Measurement, and Program Modifications element of the SSMP are summarized below:

#### **RWQCB Requirement:**

The District must monitor the effectiveness of each SSMP element and update and modify SSMP elements to keep the documents current, accurate, and available for audit as appropriate.

#### **SWRCB Requirement:**

The District 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

### **9.2 Monitoring, Measurement, and Program Modifications Discussion**

The District uses its asset management system (Hansen Information Technologies) to track and maintain records of mainline or lateral stoppages. History data of cleaning, other preventative maintenance measures, and records of problems (e.g., excessive debris, manhole defects, root intrusion, etc.) are logged and immediately available if needed.

In 2007, the District began using the RWQCB's electronic SSO reporting system that records the number, volume, locations, and causes of SSOs.

The Hansen management system allows the District to track and measure the effectiveness of the SSMP by tracking various parameters related to maintenance and inspection activities, as well as comparing SSO trends from previous years and identifying system components that contribute to system failures. Specifically, the District plans to track the following parameters with which to measure the effectiveness of the SSMP and its effectiveness in reducing SSOs:

- Number of SSOs per year
- Volume of SSOs per year
- Number of dry weather SSOs per year
- Number of SSOs per year by cause (e.g., roots, grease, pipe failure, I/I, pump failure or other deficiency, etc.)
- Response time to SSOs and other service calls (time from call received to first responder arriving on site)
- Length of gravity sewers cleaned annually

- Actual versus scheduled cleaning dates for gravity sewers
- Length of gravity sewers CCTV inspected annually
- Record of pump station maintenance work orders completed annually

## **Section 10 SSMP Audits**

### **10.1 Regulatory Requirements for SSMP Audits Element**

The requirements for the SSMP Audits element of the SSMP are summarized below:

#### **RWQCB Requirement:**

The District must conduct an annual audit of their SSMP that includes any deficiencies and steps to correct them that are appropriate to the size of the District's system and the number of overflows. The District must submit a report of its annual audit.

#### **SWRCB Requirement:**

The District 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 District's compliance with the SSMP requirements, including identification of any deficiencies in the SSMP and steps to correct them.

### **10.2 SSMP Audits Discussion**

The District will complete annual audits of their SSMP beginning in December 2010. The audit will be completed internally. The audit will include:

- Review of progress made on development of SSMP elements
- Identification of successes of implementing SSMP elements and needed improvement
- Description of system improvements during the past year
- Description of system improvements planned for the upcoming year

Upon completion of the audit, the Sewer Superintendent will submit a report of the audit to the RWQCB and to the SWRCB by March 15 of the year following the calendar year for which the audit was completed.

## **Section 11 Communication Plan**

### **11.1 Regulatory Requirements for Communication Plan Element**

The requirements for the Communication Plan element of the SSMP are summarized below:

#### **RWQCB Requirement:**

There is no requirement.

#### **SWRCB Requirement:**

The District 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 District as the program is developed and implemented. The District shall also create a plan of communication with systems that are tributary and/or satellite to the District's sanitary sewer system.

### **11.2 Communication Plan Discussion**

The District maintains a website ([www.bbccsd.org](http://www.bbccsd.org)) which has link to a page describing the SSMP process and gives information to anyone that would like to comment on any aspects of the Plan. The website also provides information on the FOG (Fats, Oils, and Grease) reduction program, details on the sewer system and staffing, and tips to reduce the exposure to lateral stoppages (i.e., planting non-native trees and proper disposal of household waste).

Monthly staff reports are prepared by the Sewer Department Superintendent for approval at regularly scheduled public meetings. The minutes from the Board Meetings are also available on the District website. As the District's SSMP was being developed, each group of elements was presented to the Board at a public meeting for approval.

As described in this SSMP, the District reports Sewer System Overflows (SSOs) electronically to the California Integrated Water Quality System (CIWQS). The electronic SSO data, as well as information regarding regulatory actions, is available at:

<http://www.waterboards.ca.gov/waterissues/programs/ciwqs/publicreports.shtml>

The District's SSMP, when completed and approved by the District's Board, will be available to the public upon request.