

CHAPTER 8

OPERATIONS AND MAINTENANCE

8.1 GENERAL

This Chapter overviews the routine and emergency procedures that Valley View Sewer District employs for operation and maintenance of its sewer system. Specific recommendations for continued operation of the sewer utility are in accordance with State regulations and the requirements of the jurisdictions within which Valley View operates.

A prerequisite to the delivery of efficient and reliable service to all customers of the District is a competent staff organized such that the responsibility for day-to-day and emergency operations is clearly defined and executed. The following is a summary of Valley View Sewer District's organization.

The Valley View Sewer District operates as a vital sewer system serving its community, notable for its unique configuration. Unlike many other sewer systems, Valley View Sewer District does not possess its own dedicated treatment plant. Instead, it relies on established collaborative relationships with nearby treatment facilities, ensuring effective waste management and treatment processes.

Due to the specific nature of the District's operations, discussions regarding reclaimed water opportunities are notably absent from its current plan. Reclaimed water, which is treated wastewater that can be repurposed for non-potable uses like irrigation or industrial processes, isn't a central component of the District's agenda. This approach aligns with the District's concentrated focus on its core functions and reflects its commitment to fulfilling its primary role of efficient and responsible waste management. Therefore, reclaimed water is not discussed within this sewer plan.

8.2 SYSTEM RESPONSIBILITY AND AUTHORITY

8.2.1 Board of Commissioners

Overall responsibility for the District's operations lies with the elected officials. Valley View Sewer District currently has a three member Board of Commissioners that are responsible for operation, management, regulatory compliance and financial aspects of the District.

The Board of Commissioners holds regular public meetings, which are open to all customers of the District and other interested parties. Meetings are held twice monthly at the District's office.

8.2.2 District Manager and Assistant Manager

The District Manager has the overall responsibility for the management of the sanitary sewer system and all District personnel. In the event that the District Manager is not present, the Assistant Manager has full authority to act on his/her behalf.

8.2.3 Field Superintendent

The Field Superintendent reports to the District Assistant Manager and is responsible for all field operations and personnel, including routine maintenance of the system and equipment, and field emergency repair. The Field Superintendent is state certified.

8.2.4 Outside Consultants

Valley View Sewer District retains the services of outside consultants for its engineering, planning, surveying and legal requirements. In accordance with state law, engineering consultants are selected based on statements of qualifications periodically requested from specialists in sanitary sewer system engineering.

8.2.5 Other Assistance

Other assistance is required from time to time for specific District projects, maintenance and construction. The District maintains a roster of qualified contractors for small works projects and contracts with other service providers as required by District needs and in accordance with Washington State Law.

8.3 RECORD MAINTENANCE

Operation of a sewer utility requires consideration of long term records management in a format which is useful to the variety of staff members and outside consultants which use them. Valley View Sewer District maintains the following records on an ongoing basis:

- ◆ Customer Account Information: Detailed records of each sewer account are maintained through the District's computerized billing system.
- ◆ Interlocal Agreements: Copies of the District's agreements with King County- Metro, as well as monthly reports required for documentation of wastewater treatment and disposal charges are kept on file at the District Office.
- ◆ GIS Mapping: Valley View Sewer District has constructed and maintains an extensive mapping system in GIS format. Mapping is coordinated with King County Base Mapping and takes advantage of a variety of data linked to a comprehensive network of data, exhibits and records.
- ◆ Grid Mapping: The District maintains a comprehensive set of grid maps detailing existing facilities. These maps are derived from the GIS mapping and printed as a scale of 1-inch=100 feet. They are updated using as-built information as system improvements and extensions are completed.
- ◆ Comprehensive Plan Map: The Sewer Comprehensive Map, and other maps included in this document are maintained in a computerized GIS format and detail the general

location of existing and proposed facilities, as well as physical features, land use, and boundary information for the District

- ◆ Maintenance Reports: Detailed records of periodic maintenance schedules and system attributes are kept on a computerized maintenance management system. Additionally, flow monitoring is accomplished year round by the District. A signal flow meter is used to collect data, which is subsequently downloaded, into the maintenance program.

8.4 PREVENTIVE MAINTENANCE

8.4.1 General Preventive Maintenance

The District utilizes the Five Star Maintenance Management System (DMBS) software for scheduling of preventive maintenance work, and the storage, retrieval and manipulation of information, activities, and records. Generally, preventive maintenance on the District's system includes the following elements:

- ◆ All possible hazards are thoroughly and systematically identified.
- ◆ Potential failures are detected while still in their developing stages.
- ◆ Maintenance activities are prioritized and scheduled.
- ◆ Scheduled maintenance of pump stations is completed once weekly, or as needed, and operational checks are performed twice weekly.
- ◆ System cleaning and field and video inspection of the system, including lines and manholes, is scheduled and accomplished.
- ◆ District staff attends workshops and seminars in order to learn up-to-date techniques and materials.

8.4.2 Water Conservation

The District does not provide water to its customers, therefore they do not have control over the water flows and do not have their own water conservation program. The District has similar boundaries with King County Water District 125 and coordinate with them on any conservation measures when necessary. For commercial properties within the District, low flow fixtures are encouraged whenever possible.

8.5 EMERGENCY PROCEDURES

8.5.1 District Personnel

Valley View Sewer District maintains a sanitary sewer emergency response crew on 24-hour call. The District's regular telephone number (206 242 3236) is monitored 24 hours a day to allow the public to notify emergency crews at any time. This is accomplished by a voice messaging and cell phones to take after-hours calls.

The District's on-call crew is available to answer any emergency that may occur within the system and has immediate response responsibility. This includes but is not limited to,

response to lift station alarms, sewer back-ups and forcemain blockages, minor repair work and emergency response procedures required to sustain service. In the event of a major emergency, on-call staff is responsible for notifying other staff members as appropriate to conditions. Figure 8-1 (at the back of this Chapter) outlines emergency contacts and procedures.

8.5.2 Communications

The District maintains a base radio station to keep in contact with field crews. In addition, certain staff members carry portable phones and pagers for communication with the District Office or answering service.

8.5.3 Supplies and Spare Parts

The District maintains an inventory of spare parts that are required for routine maintenance and/or emergency repairs. A list of suppliers for after hours and emergency repairs is maintained for response to major emergency conditions.

8.5.4 Outside Assistance

Valley View maintains relationships with the cities within which it operates for coordination during emergency events. In addition, the District is a participant in the Washington State Association of Water and Sewer District's Mutual Aid Agreement, which provides a mechanism for participants to share resources and staff in the event of an emergency. A copy of that agreement is on file at the District office.

In addition to the relationships that the District has with other jurisdictions for emergency response there are other outside service providers which may be instrumental in emergency response. A summary of emergency contacts, and agencies, which the District may be required to notify, is provided in Table 8-1.

8.6 SYSTEM VULNERABILITY

The Valley View Sewer District sewer system consists of individual drainage basins, which convey wastewater to one of three agencies responsible for treatment and disposal. These three agencies are King County Wastewater Treatment Division (KCWWTD) which receives most flows from the area, Southwest Suburban Sewer District which is just west of Valley View, and Midway Sewer District which is south of Valley View.

The vulnerability of various components of the overall sewer system has been evaluated to identify areas which may be affected in the event of a natural or manmade disaster. System vulnerability includes loss of service, damage to property, and/or health risks which may be associated with failure of the individual components of the sanitary sewer system. A summary of the system vulnerability analysis is presented in the following paragraphs.

8.6.1 Treatment and Disposal

Valley View maintains agreements with KCWWTD, Southwest Suburban Sewer District and Midway Sewer District for the treatment and disposal of wastewater flows generated within the District. These agencies have full responsibility for adequate treatment and disposal of wastewater in accordance with the rules and regulations governing such operations. Any interruption in the treatment services provided by these agencies would likely result in discharge of untreated wastewater to the Puget Sound.

8.6.2 Sewer Mains, Trunks, and Regional Interceptors

Any pipeline is subject to clogging and, under certain circumstances, can break. Clogging of sewer lines can create backups in manholes and in severe cases, can progress back to customer properties. Pipe breaks due to settlement, deterioration of pipe material or other causes can pollute the groundwater and result in excessive infiltration and inflow.

8.6.3 Pump Stations

The District operates pump stations to serve low elevations within the system. Several of the pump stations have overflows which would operate in the event of a mechanical failure or extended power failure. These overflows could create an environmental and health hazard. Failure of a lift station could also cause significant backups.

All of the District's pump stations are equipped with alarm systems which, by telemeter, relay information regarding alarm conditions. Pump station alarms are monitored in the District's maintenance shop during normal working hours. After hours the alarms are relayed by an auto-dialer to the on-call staff member.

8.6.4 Electrical Power

Power to the northern portion of the District is provided by Seattle City Light and to the southern portion of the District by Puget Sound Energy. Both electrical utilities have an extensive power distribution grid in the Valley View area and electrical power can be provided by many different directions. Loss of power would shut down pumps and control operations, potentially resulting in pump station overflows and collector line backups. Historically, the District has not experienced regular or extended power outages and maintains backup generators for power failure events. Thirteen of the 17 stations have on-site back-up power generators. Two of the remaining four do not require back-up power supply because they are equipped with either by-pass lines or overflows to other existing sewer lines. An additional portable, stand-by generator is stored at the District's maintenance shop and is available at all times for response to the remaining two stations. The District office and maintenance building are also equipped with emergency generators.

8.6.5 Fats, Oils and Grease (FOG)

Fats, oils, and grease (FOG) pose a serious danger to sewer systems. When improperly disposed of down sink drains or toilets, FOG can accumulate and solidify inside the sewer

pipes, leading to blockages and clogs. This restricts the flow of wastewater, causing sewage backups in homes, businesses, and public areas. Such backups result in unpleasant odors, property damage, and potential health hazards. Sewer overflows caused by FOG blockages can also lead to environmental pollution, harming aquatic life and ecosystems.

Homeowners and businesses need to be aware that they may be held liable for all cleanup costs related to sewer backups. To prevent these issues, customers can follow the District's website's recommended steps: Pour cooled fats, oils, and grease into a covered, disposable container and dispose of it in the garbage (COOL IT, CAN IT, & TRASH IT). Additionally, they should use paper towels to soak up remaining FOG and dispose of it with food and yard waste. Before washing dishes, it's crucial to scrape food scraps, fats, oils, and grease into compost or trash. Using garbage disposals should be minimized, and sink strainers can be used to catch any remaining food waste while washing dishes. Regular sink drain maintenance can also help by using baking soda and white vinegar (excluding cases where commercial products were recently used to remove blockages). By following these guidelines, individuals can actively protect the sewer system from FOG-related problems and avoid potential liabilities and cleanup expenses.

8.6.6 Wellhead Protection Areas

Wellhead protection areas and unsewered areas are interconnected concepts related to safeguarding drinking water sources. A wellhead protection area is a designated zone around a groundwater well or a surface water intake where activities are regulated to prevent contamination of the drinking water supply. On the other hand, unsewered areas refer to regions lacking a centralized sewage system, relying instead on individual septic systems or other decentralized methods for wastewater disposal. The relationship between the two lies in the potential risk to drinking water sources in unsewered areas, as improper wastewater management can lead to groundwater contamination and compromise the integrity of the wellhead protection area. Therefore, implementing proper wastewater treatment and disposal measures is crucial to ensure the protection of the water supply and the health of the surrounding community.

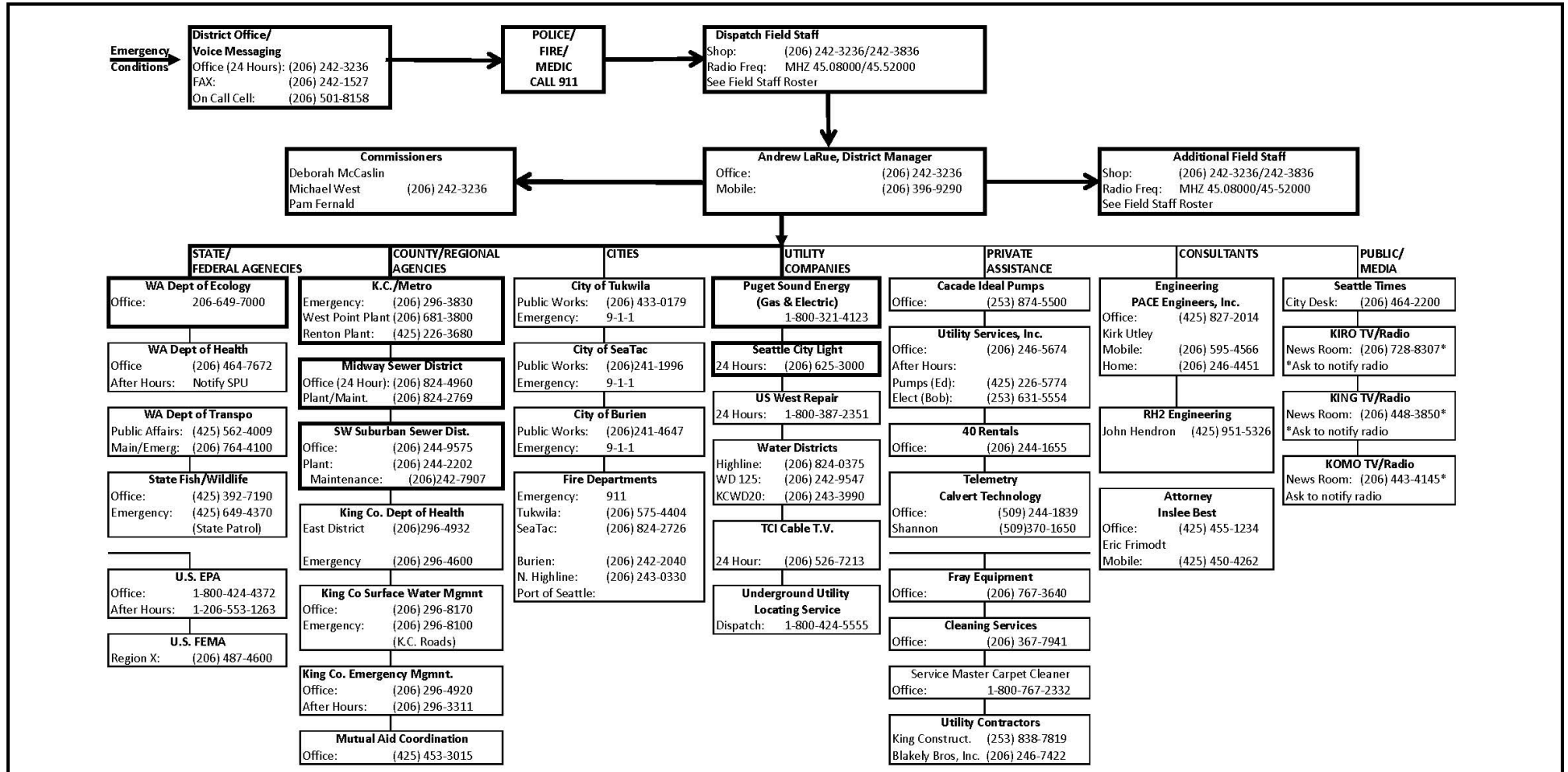
After analyzing the locations of wellhead protection areas in comparison to existing unsewered areas in the District, it is confirmed that the two areas do not intersect. This means that the unsewered areas do not pose a risk to water wells or surface waters.

8.6.7 Odor Control

Rate payers often communicate with the District when issues arise, and the District acts promptly in problem solving. Odor complaints, while infrequent, are treated with equal seriousness. The District has observed that such complaints are generally transient and often linked to specific tenant-related factors. Whenever these issues do arise, the District's resourcefulness comes into play as it employs deodorizers within wet wells to mitigate any unpleasant odors. Moreover, the strategic design and operation of flows and lift stations contribute significantly to managing the potential for odors. These

systems boast sufficient cycling, effectively minimizing the likelihood of odor-related complaints.

In essence, the District's proactive and collaborative approach to addressing challenges, along with its diligent use of effective odor-control methods, has resulted in a notably low occurrence of both corrosion and odor issues. This accomplishment reflects the District's commitment to maintaining a high standard of service and its continuous efforts to ensure the well-being and satisfaction of its community.



**FIGURE 8-1
EMERGENCY CALL-UP LIST**

Figure 8-1

Emergency Call-Up List

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