

ELEMENT 8: SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

This Section describes the BCPUD's System Evaluation and Capacity Assurance Plan and fulfills the SWRCB Element 8 SSMP requirements.

SWRCB REQUIREMENTS FOR THE SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

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

(a) **Evaluation:** Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape the system) associated with conditions causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;

(b) **Design Criteria:** Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and

(c) **Capacity Enhancement Measures:** The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I & I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.

(d) **Schedule:** The Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a) – (c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements.

EVALUATION OF HYDRAULIC SUFFICIENCY

The BCPUD sewer system has not historically experienced SSO discharges caused by hydraulic deficiency. The BCPUD sewer system is a gravity-fed collection system which transports wastewater to a single wetwell and lift station located approximately eighteen (18) feet underground in the Bolinas downtown area on Wharf Road. Wastewater is pumped via two thirty (30) horsepower (hp) pumps into the system's force main, a six-inch diameter pipe approximately 3,500 feet in length, to the system's wastewater treatment facility at 101 Mesa

Road. As noted, the BCPUD maintains two pumps at its lift station; one is redundant in the event of a failure or damage to the other pump. A single pump in operation runs an average of approximately 1.8 hours per day, conveying approximately only 0.024 MGD of wastewater.

The BCPUD sewer system is designed to treat an average daily flow of 30,000 gallons (or 0.030 MGD), with a maximum flow into the treatment plant of 65,000 gallons (or 0.065 MGD). Peak flows historically occur on July 4th, when thousands of visitors arrive in Bolinas to attend the annual July 4th downtown parade and, during significant storm events due to I&L. Based on historic records of peak flows into the BCPUD's sewer system since 2000, staff estimates that peak flows on July 4th average 0.064 MGD and that wet weather flows (i.e., November – March) average 0.050 per day. The current hydraulic capacity of the two pumps located at the downtown lift station is adequate to handle these peak flows. The BCPUD sewer system has not experienced any SSOs caused by peak flows into the collection system.

As noted earlier in this SSMP, prior to 1990 the BCPUD periodically experienced significant infiltration and inflow into the collection system during major storm events, a problem that was significantly improved by a rehabilitation project (primarily via slip-lining) of the entire collection system, with the exception of a 900 foot section of collection main located under Wharf Road. In 2013 and again in 2017, the BCPUD video-inspected the collection main and all private laterals on this 900-foot section, as well as the remainder of Wharf Road, and required several homeowners to make repairs to their sewer laterals. In the meantime, the BCPUD regularly inspects its manholes and periodically smoke-tests the sewer system in an effort to identify and correct any continued infiltration and inflow from other sources.

DESIGN CRITERIA

Not applicable.

CAPACITY ENHANCEMENT MEASURES

BCPUD staff has not identified any hydraulic deficiencies in the district's existing sewer collection system upstream of the treatment facility and, because the system essentially is fully built out, staff does not foresee the need to increase pipe size, pumping capacity or storage facilities. That said, the importance of vigilant inspection and maintenance of the district's existing facilities and equipment, including the integrity of the district's collection mains and pumps, cannot be overstated. On average, the district video-inspects its entire collection system every four years and the district fully upgraded both of its lift station pumps in 2016. The district currently also plans to rehabilitate the sewer system wet well and, as mentioned above, inspect the 3,500 foot long force main that runs between the lift station and the treatment ponds on the Bolinas Mesa. .

SCHEDULE OF COMPLETION DATES

Rehabilitate wet well: 2020 or 2021. Source of funding: operating budget derived from service charges paid annually by customers and district reserve funds.

Relocation of Collection Main on Terrace Avenue at Surfer's Overlook: unknown at this time Source of funding: operating budget derived from service charges paid annually by customers and district reserve funds. The district also plans to apply for state funding for this project if it should be necessary. The County of Marin replaced the road-level retaining walls and stabilized the roadway and bluff at this location in the Fall of 2015.

Pump Replacement: Both of the district's lift station pumps were replaced and upgraded in 2016. Source of funding: operating budget derived from service charges paid annually by customers and district reserve funds. The district's irrigation pump station at the treatment ponds will be replaced and upgraded in FY2019-20.

Preventative Maintenance: Specific to activity (see below). Source of funding: operating budget derived from service charges paid annually by customers and district reserve funds.

- Regular cleaning of gravity sewers (i.e., hydrojet cleaning) – annually
- Manhole inspection and diaphragm replacement, if needed – annually
- Root control – as needed (historically not a major problem)
- Investigation and resolution of customer complaints – as needed
- CCTV – every four years (entire system)
- Smoke test – every two – five years or when deemed necessary