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CHERRY CREEK BASIN
WATER QUALITY AUTHORITY

CHERRY CREEK RESERVOIR WATERSHED

SITE APPLICATION REVIEW PROCESS AND EMERGENCY RESPONSE PLAN CRITERIA

October 1, 2020

GENERAL PROVISIONS

A. PURPOSE AND SCOPE

The purpose of this document is to provide submittal requirements to assist CCBWQA in reviewing Site Applications and recommend requirements for sanitary sewer overflow emergency response plans in the Cherry Creek Basin. Site Applications are required by the Colorado Department of Public Health and Environment Regulation No. 22, Site Location and Design Regulations for Domestic Wastewater Treatment Works, including wastewater treatment plants, onsite wastewater treatment systems, lift (pumping) stations, and certain interceptor sewers, that are designed to receive greater than 2,000 gallons per day of domestic wastewater, as well as certain facilities that produce reclaimed domestic wastewater.

CCBWQA is a quasi-municipal corporation and political subdivision of the State specifically empowered to preserve water quality in the Cherry Creek drainage basin and watershed (C.R.S. § 25-8.5-101, et seq.). CCBWQA is the Designated 208 Water Quality Management Agency for the Cherry Creek Basin Watershed, and in accordance with Regulation 22, reviews Site Applications. Additionally, CCBWQA is responsible for implementing Control Regulation, the Cherry Creek Reservoir Control Regulation (CR 72).

B. GENERAL CRITERIA

CCBWQA reviews Site Applications for compliance with CR 72, CCBWQA's watershed plan and the regional water quality management plan[1]. The Water Quality Control Division (WQCD) is the technical reviewer for Site Applications. And is ultimately responsible for reviewing the technical completeness and correctness of the submittal.

While Regulation 22 does not include specific requirements for emergency response plans in the event of a sanitary sewer overflow, CCBWQA developed Criteria that each Site Application in the Cherry Creek basin should include in its Emergency Response Plan. The Criteria provide consistent guidance for applicants to develop emergency response plans. To the extent these criteria conflict with Regulation No. 22 or Control Regulation 72, the Regulatory requirements shall supersede this document.

SUBMITTAL REQUIREMENTS FOR SITE APPLICATIONS

Regulation 22 includes: Application Procedures for New Domestic Wastewater Treatment Plant (Section 22.6), Application Procedures for Increasing or Decreasing the Design Capacity of an Existing Domestic Wastewater Treatment Plant where Construction has taken place or will take place (Section 22.7), Site Location Application Procedures for Interceptors and Certification Procedures for Eligible Interceptor Sewers (Section 22.8), Application Procedures for Lift Stations (Section 22.9), and Application Procedures for Amendment of Existing Site Location Approval (Section 22.10). Each Section requires different information to evaluate the Site Application in compliance with CCBWQA's watershed plan, supporting regulations for stormwater discharges (such as CR 72), and the regional water quality management plan. CCBWQA developed the following Outline that shows the process, schedule, and additional information to be included for review (Table 1).

[1] The Colorado Department of Public Health and Environment's Water Quality Control Division (Division or WQCD) is the 208 Water Quality Planning Agency and is responsible for the regional water quality management plan.

Table 1. Authority's Site Application Review Process, Schedule, and Additional Information

Regulation 22 Information			Authority's	
Section	Description	Review Period	Process and Schedule	Additional Information Needed for Review
22.6*	Application Procedures for New Domestic Wastewater Treatment Plant	60	Pollution Abatement Project Manager (PAPM) Review (0-45 days), Technical Advisory Committee (TAC) Update (w/n 30 days), TAC and Board Action (w/n 60 days), Manager to send review letter and action on site application (w/n 60 days)	List Authority on Spill Notification List in Operations and Maintenance Plan and Emergency Response Plan.** Water Quality Planning Targets meet CR 72 requirements. Treatment project is consistent with Authority's watershed plan.
22.7*	Application Procedures for Increasing or Decreasing the Design Capacity of an Existing Domestic Wastewater Treatment Plant where Construction has taken place or will take place	60	PAPM Review (0-45 days), TAC Update (w/n 30 days), TAC and Board Action (w/n 60 days), Manager to send review letter and action on site application (w/n 60 days)	List Authority on Spill Notification List in updated Operations and Maintenance Plan and Emergency Response Plan. ** Water Quality Planning Targets meet CR 72 requirements. Treatment project is consistent with Authority's watershed plan.
22.8	Site Location Application Procedures for Interceptors and Certification Procedures for Eligible Interceptor Sewers	30-60	PAPM Review (0-15 days), TAC or Board Action (w/n 30 days), Manager to send review letter and action on site application (w/n 30 days), Update TAC or Board of action taken (next meeting after 30 days)	See ERP Requirements in Section IIB` Manholes within Stream Preservation Corridor include water-tight locking lids.
22.9	Application Procedures for Lift Stations	60	PAPM Review (0-45 days), TAC Update (w/n 30 days), TAC and Board Action (w/n 60 days), Manager to send review letter and action on site application (w/n 60 days)	See ERP Requirements in Section IIB

22.10	Application Procedures for Amendment of Existing Site Location Approval	15-30	PAPM Review (0-10 days), Coordinate with CR 22 Committee (5-15 days), Manager to send review letter with any exceptions (w/n 15 days), TAC and Board Update (w/n 30 days)	Provide comparison of existing and proposed capacities. Water Quality Planning Targets meet CR 72 requirements. Treatment project is consistent with Authority's watershed plan

* Authority's role is to comment on the consistency of the proposed treatment works to the watershed plan, supporting regulations for stormwater discharges (such as CR 72), and regional water quality management plan.

** Operations and Maintenance and Emergency Response Plans may not be available at time of Site Application. If so: indicate when Operations and Maintenance and Emergency Response Plans will be completed, CCBWQA will be included on the spill notification list, and the final approved version will be submitted to CCBWQA.

CCBWQA does not review Application Procedures for Demonstration Projects (Section 22.11) or In-Kind Replacement (Section 22.12) as part of the Site Application process; however, CCBWQA may review them through Land Use Referrals.

EMERGENCY RESPONSE PLAN CRITERIA

An Emergency Response Plan should be included as a technical support appendix in all Site Applications in the Cherry Creek Basin that are submitted to CCBWQA for review. The Criteria considers existing guidance and requirements by incorporating information consistent with documents (as updated) including the following:

- Regulation 22, Site Location and Design Approval Regulations for Domestic Wastewater Treatment Works, 5 CCR 1002-22, effective June 14, 2020
- Guidance Document for the Site Location and Design Approval Regulations for Domestic Wastewater Treatment Works 5 CCR 1002-22, Water Pollution Control Program Policy Number WPC-SA-1, Revision 2.0, effective date: 8/31/2010[2], as amended.
- Manual of Practice 11 for Operation of Municipal Wastewater Treatment Plants (Water Environment Federation)
- Guide for Evaluating Capacity, Management, Operations, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems, U.S. Environmental Protection Agency, EPA 305-B-05-002, January 2005[3]

CCBWQA requires that all domestic wastewater treatment works be designed and constructed to meet or exceed the preceding documents. The WQCD provides the detailed technical review, and CCBWQA may provide comments and assistance as needed for compliance.

SUBMITTAL REQUIREMENTS

CCBWQA developed the following outline, which provides the minimum planning information to be included in an emergency response plan as part of a Site Application (Table 2). CCBWQA will use the outline as a checklist in the Site Application review, to evaluate the adequacy of the emergency response plan. Any changes to remove information must be accepted by CCBWQA. If specific information is viewed as not relevant, the plan should explain why the information is not relevant.

[2] https://drive.google.com/file/d/1Hc7gBeRZySu_5WoSQok2-8oup4gtkPrj/view

[3] https://www3.epa.gov/npdes/pubs/cmom_guide_for_collection_systems.pdf

Table 2. Emergency Response Plan Outline

Section	Information to Include	Check List
I. Purpose and Background	• Purpose of Site Application (e.g., construction of new lift station) • Site/facility name and location • Owner and operator • Name of and distance to closest surface drainage or water (e.g., creek, reservoir) • Date of construction and/or last major upgrade	
II. Identification of Potential Overflow Causes	**Treatment Plants and associated appurtenances*** • Identification of Potential Overflow Causes.	
	Gravity System—Identify potential causes specific to the facility, which may include but are not limited to: • Pipe failure • Blockages, root growth, grease, heavy debris, and foreign objects • Vandalism • Construction (boring, open trenching, utility repairs, excavations, installation of pipeline plugs by contractors) • High inflow during storm event causing surcharging • Groundwater infiltration causing surcharging • Other	
	Pressure Mains and Lift Stations—Describe potential causes specific to the facility, which may include but are not limited to: • Commercial power failure with backup power failure • Pump failure • Valve and gate failure • Wet well level indicator failure • Construction (boring, open trenching, utility repairs, excavations, installation of pipeline plugs by contractors) • Sediment loading that plugs pumps • Plugged pressure mains • Other	
III. Operation and Maintenance Practices to Prevent Occurrence and	**Treatment Plants and associated appurtenances*** • Provide staffing plan and Operations and Maintenance Plan.	
	Collection Systems—Describe the schedule and practices specific to the system and facilities, which may include but are not limited to:	

Section	Information to Include	Check List
Effects of Sanitary Sewer Overflows	• Routine maintenance program and self-assessment • Schedule for cleaning, inspection, repairs • System rehabilitation program • Process for pipe replacement, pipe relining, pipeline infiltration • Sealing and manhole rehabilitation • Grease and Sand Trap Inspections • Capabilities for response (e.g., number of dedicated staff, availability, certification level)	
	Lift Stations—Identify practices and schedule specific to the facility, which may include but are not limited to: • Routine maintenance program and self-assessment • Schedule and program for site and system inspection • Schedule for alarm testing • Schedule for backup power testing • Schedule for exercising valves and gates • Capabilities for response, including number of dedicated staff, availability, and certification level	
IV. Engineering features to address sanitary sewer overflows	**Treatment Plants and associated appurtenances*** • Provide plans to prevent/mitigate any spills.	

Section	Information to Include	Check List
V. Engineering features to address sanitary sewer overflows (continued)	**Lift Stations**—Describe how the design will prevent the occurrence of an overflow and release of wastewater to the watershed. The Colorado design criteria for lift stations (Policy 96-1) requires the following: • ***Overflow Protection:*** *Emergency storage of raw sewage or portable pumping in the event of an extended power outage.* • ***Pump Redundancy:*** *At least two pumps must be provided. Each pump shall be capable of handling flows in excess of the expected maximum flow.* • ***Back-up Power:*** *Power should be available from at least two independent generating sources (two different sub-stations), or emergency power equipment shall be provided.* • ***Alarm Systems:*** *Alarm systems shall be provided and be activated in case of power failure, pump failure, or any cause of pump station malfunction.* With the goal of preventing a wastewater release, CCBWQA requires additional measures. CCBWQA requires that the applicant provide a differential flow measurement on the force main.** CCBWQA also requires that the applicant provide for onsite storage equal to the amount of time required to respond and rectify the problem spill, or one or more of the following alternatives to additional onsite storage, as appropriate (some level of storage could still be required, depending on the time it would take to implement the alternative(s)): • Bypass designed into lift station (e.g., stand-pipe, valve vault in force main, quick fittings, portable pump). • Engine driven self-priming pump in separate structure with separate controls. • Identification of nearest manhole for diversion with dedicated piping, fittings, and pump for bypass • Hauling plan with demonstrated adequate capacity (truck cycles, number of trucks, etc.), firm agreements for hauling and discharge. Other. Another alternative to additional onsite storage could also be applied to achieve the goal of preventing a wastewater release. The alternative would require approval from CCBWQA.	

Section	Information to Include	Check List
VI. Emergency Preparedness	• Inclusion of Authority on Spill Notification List. • Estimated time for overflow at peak flow, in the event of a critical failure that makes the lift station inoperable. • Estimated remedial response time. • First response personnel with chain-of-command and prioritized notification procedure —Address both day and after hours. Identify first response service vendors, if any (e.g. pumping and tank providers). • Prioritized notification process for other affected entities—Colorado Department of Public Health and Environment; County Health Department; Authority; and affected downstream entities such as drinking water system, Cherry Creek State Park, Division of Wildlife, etc. Identify public information procedures. • Written Standard Operating Procedures (SOPs) for responding personnel and authority to act. Address incoming flows if equipment is down for an extended period. • Availability and accessibility of facility plans and maps • Identification, maintenance and storage of equipment and supplies for emergency response, including equipment that is readily available from local vendors • Identification of agreements with other agencies (e.g., for equipment, hauling, receiving, and monitoring) • Training requirements for operation and maintenance staff and first response staff. • Procedures and schedule for updating Emergency Response Plan.	

* Authority's role is to comment on the consistency of the proposed treatment works to the watershed plan, supporting regulations for stormwater discharges (such as CR 72), and regional water quality management plan.

** Differential Flow Metering requires flow meters at both ends of force main, telemetry, alarms, and logic to determine breaks or discrepancies in flows in real-time.