

**CHERRY CREEK BASIN  
WATER QUALITY AUTHORITY**

**CHERRY CREEK RESERVOIR WATERSHED**

**SITE APPLICATION REVIEW PROCESS  
EMERGENCY RESPONSE PLAN CRITERIA**

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**MARCH 28, 2002**

## PREAMBLE

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Cherry Creek Reservoir is a prime outdoor recreational and natural amenity in the Denver area, which must be protected to support its uses. The recreation opportunities at the Cherry Creek State Park and proximity of the watershed to the Denver Metro area attract both visitors and development upstream of the reservoir that impact the environment. The Cherry Creek Basin Water Quality Authority (Authority), initially created by an intergovernmental agreement and specially authorized by legislation adopted in 1988, is responsible for maintaining and enhancing the reservoir quality and the quality of the streams that drain into Cherry Creek Reservoir. The Authority develops and implements the means to protect water quality in the Cherry Creek watershed for the benefit of the public for recreation, fisheries, drinking water supplies, and other beneficial uses.

The Authority reviews Site Applications and Utility Plans for wastewater collection and treatment facilities proposed in the Cherry Creek Basin. These application reviews focus on potential impacts to the watershed, streams, and reservoir. The release of untreated wastewater compromises water quality. In 1997 and 2001, sanitary sewer overflows impacted water quality, and in one case caused the closure of the Cherry Creek State Park swim beach. The Authority developed these Emergency Response Plan Criteria as a proactive approach to raise awareness and strengthen wastewater facility design and planning to eliminate water quality impacts from sanitary sewer overflows.

The Authority reviews each Site Application in the Cherry Creek Basin to evaluate risks to water quality. Site Applications in the Cherry Creek Basin are required to include an Emergency Response Plan that satisfies the criteria presented in this document. The Authority reviews each Emergency Response Plan for adequacy, considering factors such as response times and capabilities, flows, and proximity to surface waters and other sensitive areas.

## SECTION I

### GENERAL PROVISIONS

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#### A. PURPOSE

The purpose of these Cherry Creek Reservoir Watershed Emergency Response Plan Criteria ("Criteria") is to provide recommended requirements for sanitary sewer overflow emergency response plans in the Cherry Creek Basin to reduce the likelihood of sanitary sewer overflows and contaminants reaching Cherry Creek and Cherry Creek Reservoir in furtherance of health, safety, and general welfare in the Cherry Creek Basin. The provisions of these Criteria will be incorporated into the Cherry Creek Basin Water Quality Authority ("Authority") review of Site Applications in the Cherry Creek Basin. Site Applications are required by the Colorado Department of Public Health and Environment Regulation No. 22, Regulations For The Site Application Process, for construction or expansion of wastewater treatment works, lift stations, and major interceptor lines.

#### B. AUTHORITY

The Authority is a quasi-municipal corporation and political subdivision of the State that has primary responsibility for water quality in the Cherry Creek Basin, and the Authority is specifically empowered to develop and implement plans for water quality controls for the Reservoir, drainage basin and watershed (Authority's enabling legislation --C.R.S. § 25-8.5-101, et seq.). The Authority is recognized in the Metro Vision 2020 Plan as the designated water quality management agency for the Cherry Creek Basin Watershed, and in accordance with the roles and responsibilities described in 22.4 (2)(b-e), the Site Application review and comment agencies shall include the local management agency and water quality planning agency.

#### C. GENERAL CRITERIA

The Colorado Regulation for the Site Application Process (Regulation No. 22) does not include specific requirements for emergency response plans in the event of a sanitary sewer overflow. The Authority developed these Criteria, which outline the information that each Site Application should include for an Emergency Response Plan and approval by the Authority. The Criteria provide consistent guidance for applicants to develop emergency response plans.

## SECTION II

### EMERGENCY RESPONSE PLAN CRITERIA

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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 the Authority for review. The Criteria considers existing guidance and requirements by incorporating information consistent with the following documents:

- Design Criteria Considered in the Review of Wastewater Treatment Facilities, Policy 96-1 (Colorado Department of Public Health and Environment)
- Colorado National Pollutant Discharge Elimination System Permit Application Requirements (Colorado Department of Public Health and Environment)
- Lift Station Report Guidance and Checklist (Denver Regional Council of Governments)
- Manual of Practice 11 for Operation of Municipal Wastewater Treatment Plants (Water Environment Federation)
- U.S. Environmental Protection Agency Proposal for Sanitary Sewer Overflows and Capacity, Management Operation, and Maintenance (CMOM) Requirements (40 CFR 122 and 123)

#### A. SUBMITTAL REQUIREMENTS

The Authority 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 1). The Authority 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 the Authority. If specific information is viewed as not relevant, the plan should explain why the information is not relevant.

**Table 1. Emergency Response Plan Outline**

Section	Information to Include	Check List
I. Purpose and Background	<ul style="list-style-type: none"> <li>• Purpose of Site Application (e.g., construction of new lift station)</li> <li>• Site/facility name and location</li> <li>• Owner and operator</li> <li>• Name of and distance to closest surface drainage or water (e.g., creek, reservoir)</li> <li>• Date of construction and/or last major upgrade</li> </ul>	
II. Identification of Potential Overflow Causes	<p><b>Gravity System</b>—Identify potential causes specific to the facility, which may include but are not limited to:</p> <ul style="list-style-type: none"> <li>• Pipe failure</li> <li>• Blockages, root growth, grease, heavy debris and foreign objects</li> <li>• Vandalism</li> <li>• Construction (boring, open trenching, utility repairs, excavations, installation of pipeline plugs by contractors)</li> <li>• High inflow during storm event causing surcharging</li> <li>• Groundwater infiltration causing surcharging</li> <li>• Other</li> </ul>	
	<p><b>Pressure Mains and Lift Stations</b>—Describe potential causes specific to the facility, which may include but are not limited to:</p> <ul style="list-style-type: none"> <li>• Commercial power failure with backup power failure</li> <li>• Pump failure</li> <li>• Valve and gate failure</li> <li>• Wet well level indicator failure</li> <li>• Construction (boring, open trenching, utility repairs, excavations, installation of pipeline plugs by contractors)</li> <li>• Sediment loading that plugs pumps</li> <li>• Plugged pressure mains</li> <li>• Other</li> </ul>	
III. Operation and Maintenance Practices to Prevent Occurrence and Effects of Sanitary Sewer Overflows	<p><b>Collection Systems</b>—Describe the schedule and practices specific to the system and facilities, which may include but are not limited to:</p> <ul style="list-style-type: none"> <li>• Routine maintenance program and self assessment</li> <li>• Schedule for cleaning, inspection, repairs</li> <li>• System rehabilitation program</li> <li>• Process for pipe replacement, pipe relining, pipeline infiltration</li> <li>• Sealing and manhole rehabilitation</li> <li>• Grease and Sand Trap Inspections</li> <li>• Capabilities for response (e.g., number of dedicated staff, availability, certification level)</li> </ul>	

Section	Information to Include	Check List
III. Operation and Maintenance Practices to Prevent Occurrence and Effects of Sanitary Sewer Overflows (continued)	<p><b>Lift Stations</b>—Identify practices and schedule specific to the facility, which may include but are not limited to:</p> <ul style="list-style-type: none"> <li>• Routine maintenance program and self assessment</li> <li>• Schedule and program for site and system inspection</li> <li>• Schedule for alarm testing</li> <li>• Schedule for backup power testing</li> <li>• Schedule for exercising valves and gates</li> <li>• Capabilities for response, including number of dedicated staff, availability, and certification level</li> </ul>	
IV. Engineering features to address sanitary sewer overflows	<p>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:</p> <ul style="list-style-type: none"> <li>• <b>Overflow Protection</b>—<i>Emergency storage of raw sewage or portable pumping in the event of an extended power outage.</i></li> <li>• <b>Pump Redundancy</b>—<i>At least two pumps must be provided. Each pump shall be capable of handling flows in excess of the expected maximum flow.</i></li> <li>• <b>Back-up Power</b>—<i>Power supply should be available from at least two independent generating sources (two different sub-stations), or emergency power equipment shall be provided.</i></li> <li>• <b>Alarm Systems</b>—<i>Alarm systems shall be provided and be activated in case of power failure, pump failure, or any cause of pump station malfunction.</i></li> </ul> <p>With the goal of preventing a wastewater release, the Authority requires additional measures. The Authority requires that the applicant provide a differential flow measurement on the force main. The Authority 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:</p> <ul style="list-style-type: none"> <li>• Bypass designed into lift station (e.g., stand pipe, valve vault in force main, quick fittings, portable pump).</li> <li>• Engine driven self-priming pump in separate structure with separate controls.</li> <li>• Identification of nearest manhole for diversion with dedicated piping, fittings, and pump for bypass</li> <li>• Hauling plan with demonstrated adequate capacity (truck cycles, number of trucks, etc.), firm agreements for hauling and discharge.</li> <li>• 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 the Authority.</li> </ul>	

Section	Information to Include	Check List
VI. Emergency Preparedness	<ul style="list-style-type: none"> <li>• Estimated time for overflow at peak flow, in the even of a critical failure that makes the lift station inoperable.</li> <li>• Estimated remedial response time.</li> <li>• 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).</li> <li>• 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.</li> <li>• Written Standard Operating Procedures (SOPs) for responding personnel and authority to act. Address incoming flows if equipment is down for extended period of time.</li> <li>• Availability and accessibility of facility plans and maps</li> <li>• Identification, maintenance and storage of equipment and supplies for emergency response, including equipment that is readily available from local vendors</li> <li>• Identification of agreements with other agencies (e.g., for equipment, hauling, receiving, and monitoring)</li> <li>• Training requirements for operation and maintenance staff and first response staff.</li> <li>• Procedures and schedule for updating Emergency Response Plan.</li> </ul>	